NORTHERN TRAILS 2022

Northern Regional Trails Strategy Review and Update

April 2024

This document was prepared by ***Fitzgerald Frisby Landscape Architecture***, working with Banyule City Council, Darebin City Council, Hume City Council, Merri-bek City Council, Nillumbik Shire Council and Whittlesea City Council, as well as the specialist subconsultants *SGS Economics & Planning*, and *Quentin Frayne* (trail auditing).

This document is an update of the 2016 *Northern Regional Trails Strategy* prepared by *Arup*.

This document has been endorsed by all of the six northern LGAs.

Council	***Endorsement date***
Banyle	27.02.2023
Darebin	19.12.2022
Merri-bek	08.02.2023
Hume	27.02.2023
Nillumbik	30.04.2024
Whittlesea	21.03.2023

Cover image: Merri Creek Trail

EXECUTIVE SUMMARY

Northern Trails 2022 is a regional trails strategy that has been prepared to establish a framework for the planning and development of regional trails in Northern Melbourne for the next 10 years and beyond. This document is an updated version of a strategy completed in 2016. The original strategy successfully leveraged approximately $11 million of State Government funding to deliver key priority projects. The delivery of projects and recent significant State Government infrastructure projects have necessitated the review and update of the strategy to reflect the changing circumstances and priorities.

The study area

The study area includes six local government areas (Banyule City Council, Darebin City Council, Hume City Council, Merri-bek City Council, Nillumbik Shire Council and the City of Whittlesea) on the traditional lands of the Wurundjeri Woi-wurrung and Taungurung people of the Kulin Nation.

The study area covers approximately 159,100 hectares and includes a mix of urban, suburban and rural areas. The current population of the area is a little over one million, stretching from the inner-city suburbs of Brunswick, Northcote, Alphington and Ivanhoe, to the outer areas of Craigieburn and Sunbury, and to the Kinglake National Park and rural and interface communities of Whittlesea and St Andrews.

Regional trails

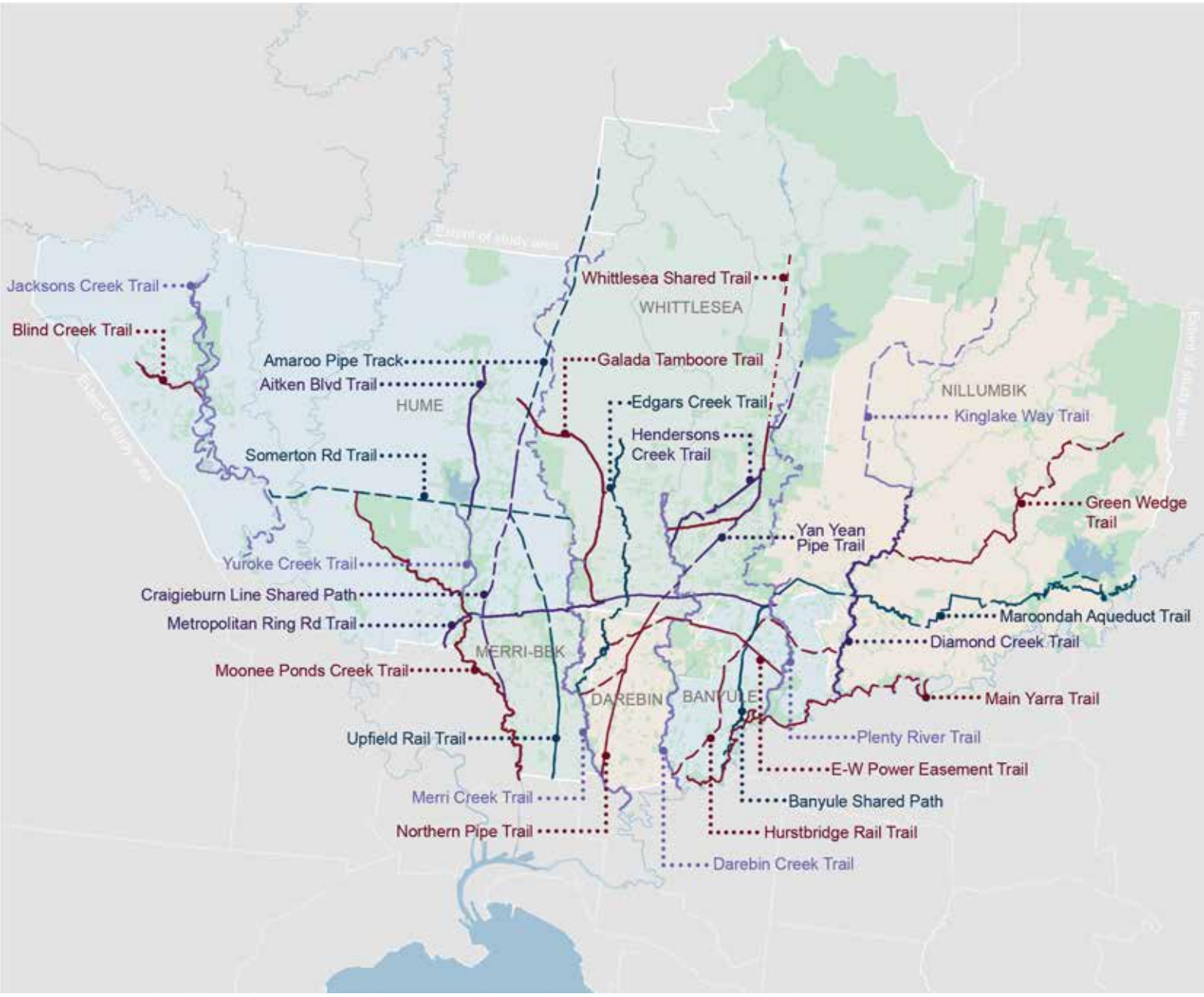
For the purposes of this study, trails have been defined as having the following characteristics:

- multiple potential user groups
- an off-road location
- a relatively long and continuous length.

This study focusses upon ‘regional trails’, which are defined as being higher order trails that have a regional scale, purpose and/or impact.

Twenty seven existing and potential regional trails have been identified within the study area. They are listed below in alphabetical order, and are located on the accompanying map.

- Aitken Boulevard Shared Trail
- Amaroo Pipe Track
- Banyule Shared Trail
- Blind Creek Trail
- Craigieburn Line Shared Trail
- Darebin Creek Trail
- Diamond Creek Trail
- East-West Power Easement Trail
- Edgars Creek Trail
- Galada Tamboore Trail
- Green Wedge Trail
- Hendersons Creek Trail
- Hurstbridge Rail Trail
- Jacksons Creek Trail
- Kinglake Way Trail
- Maroondah Aqueduct Trail
- Merri Creek Trail
- Metropolitan Ring Road Trail
- Moonee Ponds Creek Trail
- Northern Pipe/ St Georges Rd/ Cheddar Rd Trail
- Plenty River Trail
- Somerton Road Trail
- Upfield Rail Trail
- Whittlesea Shared Trail
- Yan Yean Pipe Track
- Main Yarra Trail
- Yuroke Creek Trail



The Northern Melbourne regional trail network

As a part of this project, each of the identified regional trails have been assessed (including a trail auditor riding all of the existing trails) and individually mapped. Investigations into the trails and the auditing process identified recommended trail improvement projects for each trail.

The benefits of regional trails

Regional trails provide a range of benefits to the community that can be broadly grouped into four categories.

- *Social*
  Trails provide cost-free locations where planned and unplanned social interaction occurs. People use trails to exercise together and also have chance interactions with people with shared interests (e.g.. dog walkers). The state government strategy *Plan Melbourne 2017-2050* identifies a goal of creating '20 minute neighbourhoods' (where most everyday needs are within a 20 minute walk, ride or public transport trip from a person's home) as a way to improve the quality of life for residents of the city.

Central to this plan is the infrastructure, including trails, that allow people to safely and conveniently move around their 20 minute neighbourhood.

- *Health*
  The most common physical activities that people undertake (walking, jogging and cycling) are activities that are highly suited to trails. Trails provide safe, convenient, attractive and cost-free ways for people to exercise, either as a recreational activity, or integrated with their day-to-day life (e.g.. riding to the shops).
- *Environmental*
  A high quality regional trail network encourages people to choose to walk or cycle to destinations, rather than using motorised transport modes. This results in reduced vehicle numbers on roads, and the resulting reductions in air pollutants, noise pollution and congestion issues. Trails can also provide access to natural environments which can assist in fostering an appreciation of the environment and help to develop awareness of environmental issues.
- *Economic*
  A Cost Benefit Analysis (CBA) has been undertaken as a part of this study in order to quantify the economic benefits of regional trail investment. The CBA highlights that the Northern Regional Trails upgrade is expected to generate a net present value of around $114 million and a benefit cost ratio of 1.6. This indicates that benefits directly attributable to the project will be around 1.6 times that of the investment.

Findings

This strategy makes recommendations regarding a range of factors, grouped into four categories.

- *Trail infrastructure*
  Standards and guidelines are provided relating to physical trail infrastructure, including the trails themselves (incorporating width, surface material, and intersection design), signs, facilities (such as drinking fountains and toilets), and trail-side vegetation.
- *Trail management*
  Regional trails often cross municipal boundaries, regularly traverse land managed by multiple different organisations and are funded from a range of sources. This document identifies the current management bodies and challenges, and identifies opportunities for improving management processes across organisations for the betterment of the regional trail network.
- *Trail marketing*
  While individual regional trails are quite well-known by residents of Northern Melbourne, few know about the extent of the regional trail network. The trail network also provides potential opportunities for greater use by visitors to the region (and the associated potential economic benefits that this can bring). The existing marketing activities and target audiences are examined here, and recommendations made about the most effective ways to communicate to different groups about the trail network.
- *Trail improvement projects*
  Trail improvement projects have been identified for all of the 27 regional trails within the study area, ranging from major trail construction works to small-scale improvements to intersections or signage (the list of trail improvement projects are itemised into a schedule which can be found in Appendix B and/or cross referenced to the trail maps in chapter 6).
- *Prioritising trail improvement projects*
  Following the identification of trail improvement projects, each action item was assessed using a multi-criteria analysis in order to identify priority projects that provide the most benefit to the region and most closely align with the objectives of this study. The top ten priority projects were determined to be:

No.	Trail action item	Project description	LGA
1	MaroondahAqueduct_01	Construct new section of trail connecting the Plenty River Trail near Lear Court, east along the aqueduct across Diamond Creek Road to the Diamond Creek Trail at Allendale Road.	Nillumbik
2	MerriCreekTrail_08	Complete missing section of trail from the Metropolitan Ring Road to existing section of trail south of Horne Street.	Hume
3	MaroondahAqueduct_02	Extend the Maroondah Aqueduct Trail through to Yarra Glen. Two options have been identified for this extension: i. Construct a new section of trail from the existing Aqueduct Trail at Calwell Road through to Ashmore Road and on to Yarra Glen; or ii. Construct a new section of trail from the existing Aqueduct Trail at Calwell Road via the Melbourne Water Caretakers trail to Ashmore Road and on to Yarra Glen.	Nillumbik
4	EdgarsCreekTrail_01	Construct new section of trail from the Merri Creek Trail to Ronald Street on the west bank.	Merri-bek
5	MerriCreekTrail_02	Partner with Parks Victoria and DELWP to extend the Merri Creek Trail from Merri Concourse (north) to Cooper Street.	Hume
6	UpfieldRail_02	Advocate to Department of Transport to construct a new section of trail from the Metropolitan Ring Road to Somerton Road.	Hume
7	WhittleseaShared_01	Construct a new trail from Mernda station to Whittlesea. Ensure there is provision for horse riders on parts of the trail	Whittlesea
8	MerriCreekTrail_03	Advocate for and investigate the staged extension of the Merri Creek Trail from Cooper Street Somerton/Epping north to OHerns Road as a part of the Upper Merri Creek Regional Parkland Plan.	Hume & Whittlesea
9	MerriCreekTrail_04	Advocate for and investigate the staged extension of the Merri Creek Trail from OHerns Road to Craigieburn Road as a part of the Upper Merri Creek Regional Parkland Plan.	Hume & Whittlesea

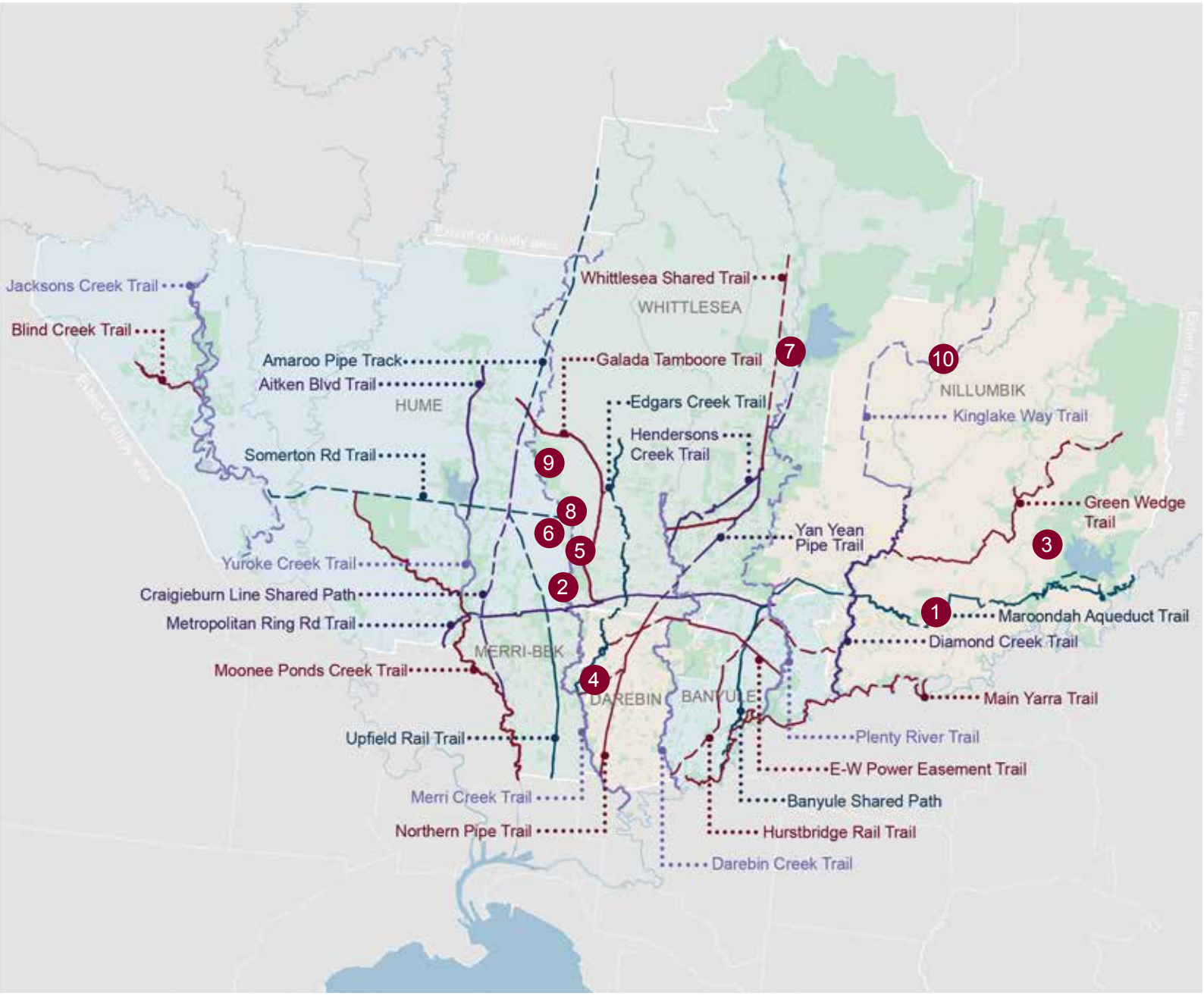
Schedule of top ten unfunded trail action items

In order to undertake the multi-criteria analysis, a series of qualitative and quantitative criteria were developed and assigned a weighting in collaboration with the Project Steering Group. The criteria and the relative weighting used are as follows:

1. Contribution to an integrated and connected network (26%)
2. Encouraging use by spatial location (18%)
3. Potential economic benefits (5%)
4. Contribution to community health and well-being (5%)
5. Contribution to uniqueness and the quality of the natural environment (18%)
6. Encouraging diversity of use through facility quality and maximising usability (5%)
7. Strategic alignment (18%)
8. Ease of implementation (5%)

This criteria, assessment process and the priority action items outline the priorities for the Northern Region and the whole regional trail network, as opposed to individual Councils.

Refer to chapter 10 for more detail on the assessment method and implementation.



Top ten trail action items

- *Trail improvement filters*
  Due to the wide variety in project types, and to allow project types to be easily sorted, a series of 'filters' were also developed. Using these filters, a project based on specific requirements regarding the filter categories can be identified.

  The top ten projects identified during the multi-criteria analysis process outline the priority projects for the Northern Region however there may be instances where a grant or funding opportunity arises that is suited to an improvement project that is not highly ranked. In these instances, projects can be sorted using the filters to identify suitable projects for implementation or funding applications.

It is important to note that this strategy is high level and as such many of the trail action items require further investigation in order to determine their feasibility and alignment, and to ensure they are in alignment with all relevant authority and land manager acts, strategies, plans and policies. Many of the action items are significant in complexity, i.e. involve multiple land owners or managers or include kilometres of new trail construction, and therefore may present barriers for implementation and take longer than the life of this study to be realised.

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1. THE PROJECT

Merri Creek Trail

1.1 ABOUT THE PROJECT

In 2016 the original *Northern Regional Trails Strategy* was developed by the Councils in the Northern Region (Banyule City Council, Darebin City Council, Hume City Council, Merri-bek (formerly Moreland) City Council, Nillumbik Shire Council, City of Whittlesea, plus Yarra City Council), to establish a framework for the planning and development of trails to support the increasingly dense urban footprint and population, while providing accessible recreation and active travel opportunities and economic benefits to the communities in Melbourne's north.

The 2016 strategy has successfully leveraged approximately $11 million of State Government Funding to deliver the key priorities identified in the strategy as well as focusing individual Council's budget allocations into the planning and delivery of priority trail projects. However, since the adoption of the strategy, significant State Government infrastructure projects have changed and will continue to change the physical landscape of the northern region necessitating the review and update of the strategy to reflect the impact these have had and the changing priorities.

This study reviews the 2016 strategy and provides an updated framework for the next ten years and beyond in order to deliver a comprehensive trail network taking into consideration projects already completed, changed Council priorities and the changed landscape as a result of significant state infrastructure projects.

This project provides an in-depth strategic analysis of the network that has been created and seeks to determine the key trails of regional importance, who and why people use these regional trails and how to encourage greater use of the regional trail network. The study will also provide the strategic direction required to allow local government and other land management authorities to work together towards an interconnected and well-used trail network that prioritises accessibility and promotes healthy and active communities.

This is a high-level strategy covering a large study area and many recommended actions dealing with complex sites. Many of the trail action items will require further investigations prior to being realised, including to ensure that any proposed construction works are in alignment with all relevant authority and land manager acts, strategies, plans and policies.

1.2 STUDY AREA

Melbourne's Northern Metropolitan Region stretches from the inner-city suburbs of Brunswick, Northcote, Alphington and Ivanhoe, to the outer areas of Craigieburn and Sunbury, and to the Kinglake National Park and rural and interface communities of Whittlesea and St Andrews. It is a diverse and vibrant region, featuring Melbourne's Tullamarine Airport, arts and cultural precincts, the National Employment and Innovation Cluster in La Trobe and new growth communities on the northern fringe of the city.

The total area of the Northern Region is approximately 159,100 hectares and includes a mix of urban, suburban and rural areas. Much of the study area lies within the Yarra River catchment, including Diamond Creek, Plenty River, Darebin Creek, Merri Creek and the Moonee Ponds Creek. Areas in the north-west of the study area are within the Maribyrnong River catchment.

The Wurundjeri Woi-wurrung and the Taungurung people of the Kulin Nation are the traditional custodians of the land in the Northern region of Metropolitan Melbourne.

The region's population is estimated at approximately 938,000 people and includes a diverse range of communities in terms of age groups, cultural backgrounds and socio-economics. The geography and topography are varied as is the nature of township and urban development.

The six Local Government Authorities in the Northern Region of Metropolitan Melbourne and included in this project are: Banyule City Council, Darebin City Council, Hume City Council, Merri-bek City Council, Nillumbik Shire Council, and the City of Whittlesea.

To the north of the study area lie municipalities that are predominantly rural in nature (the Shires of Macedon Ranges, Mitchell and Murrundindi) and currently have no regional trails that link to the regional trail network within the study area. This is likely to change in the future as the southern parts of the Shire of Mitchell, for instance, become more urban. Future strategies should consider extending the study area to accommodate this. The areas to the west and east of the study area are covered by separate regional trail strategies.

Figure 1.1: Project study area

1.3 PROJECT OBJECTIVES

The 2016 Northern Regional Trails Strategy was developed by the Councils listed above (plus Yarra City Council) in recognition of the need to plan and deliver appropriate infrastructure to support urban development and population growth while providing accessible recreation facilities, active transport opportunities and economic benefits in Northern Metropolitan Melbourne. The strategy was endorsed by all participating councils (with the exception of Yarra City Council) and whilst considered successful, the development of State Government Infrastructure has impacted the landscape of the region necessitating a review and update of the trails strategy.

The key objectives for this new and revised strategy include:

- Consideration of the recommendations of the existing strategies prepared by each of the participating Councils in the Region, the *Victorian Cycling Strategy 2018-28*, *Victoria's Trails Strategy 2014-24*, *Northern Regional Trails Strategy 2016* and other relevant state and local strategic plans including State Government's Strategic Cycling Corridors.
- Identification of gaps and opportunities in the provision of an integrated and linked network of trails.
- Development of a strategic framework for establishing, upgrading and maintaining trails across the network.
- Recognition of the changing physical landscape of the Northern Region and the impact and opportunities significant infrastructure projects may have.
- Definition and quantification (where possible) of the economic, social, health and commuter benefits of developing the regional trail network.
- Consideration of the recent impact of COVID-19 on travel patterns and active transport demand.
- Positioning the strategy as a key advocacy document to attract funding to deliver the Northern Region Trail Network.

1.4 PROJECT APPROACH

There have been a number of key steps undertaken in the completion of this project, as briefly outlined below.

- ***Trail desktop assessment***
  Identifying the locations of key existing and proposed trails from maps and relevant Council strategies.
- ***Trail audit***
  Riding each of the existing trails on a bicycle, providing an accurate map of the existing trails and an understanding of the network, including trail surfaces, navigational signs and trail character.
- ***Initial community engagement***
  Including an on-line questionnaire prior to the preparation of the strategy, promoted by the Councils as well as through a wide range of organisations with a potential interest in regional trails. The questionnaire was open for five weeks over July and August 2021 and received 923 responses.
- ***Strategic context review***
  Strategic documents relevant to regional trail provision at a local, regional and state level were reviewed. The information from these, particularly the recommendations from local government strategies, provided a starting point for trail improvement measures assessed in the Action Plan.
- ***Action plan***
  Potential trail improvements were identified through various phases of the project and were assessed against a set of criteria allowing them to be prioritised.
- ***Community review of draft***
  An additional engagement process ran between 26th July and 26th September 2022 allowing people to provide feedback on a draft version of this document. There were 371 individual contributors to this engagement process, with a strong alignment evident between the region wide strategy priorities with those of the community.

1.5 ACKNOWLEDGMENTS

This project was undertaken by a consultant team lead by *Fitzgerald Frisby Landscape Architecture*, with specialist inputs from *Quentin Frayne*, who undertook the trail auditing and *SGS Economics & Planning* who prepared the Cost Benefit Analysis.

This study was undertaken with extensive and invaluable input from the Project Working Group, led by Banyule City Council, and with representatives from (in alphabetical order):

- Banyule City Council
- Darebin City Council
- Hume City Council
- Merri-bek City Council
- Nillumbik Shire Council
- City of Whittlesea

This project also benefited greatly from the input of a very broad range of people and organisations including government departments, authorities, advocacy groups, clubs and the hundreds of individuals who responded to the questionnaire undertaken as a part of this project.

2.VISION

Edgars Creek Trail,

2.1 PROJECT VISION

The Northern Trails: Connecting People, Places and Spaces

The Northern Trails Strategy will document a realistic planning framework and implementable action plan to establish a high quality network of integrated and connected shared trails sensitively linking communities, destinations and a diverse range of urban and natural environments.

The regional trail network will provide desirable, safe and accessible transport and recreation opportunities for residents and collectively reinforce the region as a world class trails destination for visitors.

2.2 GUIDING PRINCIPLES

Complementing the project vision, this Strategy is guided by the following principles:

1. Connected:
The trail network must create useful and convenient routes that link communities, destinations and environments.

2. Integrated:
Individual regional trails must link with other trails to create a continuous network, and also link to other networks and transport modes where possible.

3. Multi-use:
The trail network must be designed to cater for the widest possible range of user modes and types, including commuting and recreational use, and including consideration of equestrian where appropriate.

4. Universal access:
The trail network must be designed to ensure that it is accessible and usable by as many people as possible, including the young, old, people with limited mobility and people from diverse cultural and social backgrounds.

5. User safety:
The trail network must be safe to use, including compliance with standards and the appropriate application of guidelines relating to trail design, construction and management.

6. User experience:
The trail network must provide appropriate facilities and settings, and be managed in a way that facilitates usage, including the provision of navigational signs, shade, trail-side vegetation, drinking fountains and toilets where possible.

7. Longevity/robustness:
The trail network must be constructed and managed in a sustainable way to ensure that it continues to provide appropriate standards of safety, usability and presentation into the future.

8. Environment:
The trail network must be designed and constructed to minimise negative environmental impacts from both construction and ongoing use.

9. Cultural Heritage:
The trail network must be designed and constructed to ensure cultural heritage values are retained and protected.

3.REGIONAL TRAILS

Yuroke Creek Trail

3.1 WHAT ARE TRAILS?

The *Victorian Trails Strategy 2014-2024* defines a trail as:

'an established path, route or track which often traverses natural areas and is used by people for non-motorised recreation, such as walking, running, cycling, mountain biking and horse riding.'

Key characteristics of a trail include:

- multiple potential user groups, but with a recreational and restorative focus
- an off-road location
- a relatively long and continuous length.

These definitions, with a focus on off-road routes and connections to nature, fit comfortably with many trails within the study area. However, trails in urban areas may also be used to provide links to schools and shopping centres, rather than connections to nature. Similarly, the establishment of long and continuous trails in densely-developed urban areas very often requires the incorporation of routes of a more urban nature, including road-side shared paths and on-road bicycle lanes. To accommodate the full range of conditions found across the study area, the term 'trails' in this document incorporates these kinds of urban trail characteristics.

The *Victorian Trails Strategy* definition notes horse riders as a trail user group. While equestrian use of urban trails is not as common as other use modes, consideration of equestrian trail use is included within this study.

3.2 WHAT ARE REGIONAL TRAILS?

'Regional trails' fit the definition of trails developed above, and also have a regional scale, purpose and/or impact. Other key defining characteristics of regional trails are:

- ***Connecting regionally important locations:*** the provision of routes accessing and linking key civic/commercial destinations, activities and natural/cultural features of regional importance.
- ***Integrated:*** Regional trails in a metropolitan context do not exist in isolation, and must be integrated with a network of other regional and local trails.
- ***Recreation***: the provision of recreation opportunities that are both accessible and attractive to a group of users of a regional scale and/or distribution.
- ***Economic benefit***: the potential to deliver economic benefits of regional importance (including promoting economic development and/or tourism)
- ***Ease of access***: the ability to be readily accessed by the community living and working within the region, as well as by visitors. Trails that require special skills or equipment to access (e.g. trails only accessible by mountain bikes) are not defined as regional trails for the purposes of this study.

Therefore, the kinds of facilities not defined as regional trails for the purposes of this study include local footpaths (i.e. roadside pedestrian-only paths that serve a very local function), on-road cycling opportunities, and informal mountain biking routes.

3.3 THE BENEFITS OF REGIONAL TRAILS

Regional trails provide a range of benefits to the community that can be grouped into four categories:
- Social
- Health (including active transport)
- Environmental, and
- Economic.

There are strong inter-relationships between these categories, as can be seen in the discussion of these benefits below.

3.3.1 Social

Regional trails create spaces for people to exercise with others, facilitating community connection and health benefits. Approximately half of the respondents to a questionnaire undertaken as a part this study indicated that they regularly use the regional trail network with friends and family.

These project-specific findings about the prevalence of people exercising in groups are backed up by broader analysis. The Victorian Government health promotion foundation, VicHealth, undertakes regular analyses of public health in the state. The *VicHealth Indicators Survey 2015* that found that;

> *just under a third (31.8%) of all Victorians (45.1% of those who participated in non-organised activities) reported that they participated in non-organised activities with someone else.*

Unplanned social interactions also occur, particularly where there is a shared interest (such as dog walkers, families, or neighbours). These chance encounters provide opportunities for social interaction for people who may otherwise be socially isolated. Importantly, these opportunities for social interaction are available to all members of the community, regardless of social or economic standing.

The state government strategy *Plan Melbourne 2017-2050* identifies a goal of creating '20 minute neighbourhoods' (where most everyday needs are within a 20 minute walk, ride or public transport trip from a person's home) as a way to improve the quality of life for residents of the city. Trails can play an important role in realising this goal, by providing infrastructure to facilitate active transport modes.

3.3.2 Health

The *VicHealth Indicators Survey 2015* identifies 'physical activity and sedentary behaviour' as one of five key public health indicators. The top non-organised physical activities that Victorians participate in are all activities highly suited to regional trails: walking (51.2%), jogging/running (14%), and cycling (11.8%).

The *VicHealth Indicators Survey 2011* identified three key reasons for lack of physical activity and sedentary behaviour within the population:

- an increased reliance on cars for transportation
- leisure activities have become more sedentary in nature
- many workplaces require people to sit for long periods
  (*VicHealth Indicators Survey 2011, Selected Findings, page 55*)

A high-quality trail network in an urban environment has the potential to strongly influence the choices people make regarding two out of three of these reasons for inactivity.

- Trails can make active transport options more attractive, by providing locations for safe, convenient and desirable alternatives to vehicles for personal transport.
- Trails can stimulate participation in active recreation activities, by providing allocation for a range of cost-free, convenient and attractive leisure opportunities.

The COVID-19 pandemic has highlighted the health and well-being benefits derived from visiting green and blue spaces (i.e.. open space and spaces in proximity to water bodies), enabling not only exercise but also opportunities for respite and connection. In *Time for 'Green' during COVID-19? Inequities in Green and Blue Space Access, Visitation and Felt Benefits* (Burt & Feng, 2021) Australian residents surveyed reported greater levels of green and/or blue space visitation and felt benefits during the pandemic. However, these benefits were not equally distributed. People with greater socio-economic disadvantage reported lower levels of visitation and felt benefits. This highlights the value of strengthening our trail network as a strategy to equalise access to green/blue spaces and their associated health and wellness benefits.

Trails also often provide shady routes, often in vegetated areas and along waterways, that provide valuable refuges from the 'urban heat island' (i.e.. higher temperatures in urban areas caused by high densities of hard-paved surfaces).

3.3.3 Environmental

A high quality regional trail network encourages people to choose to walk or cycle to destinations, rather than using motorised transport modes. This results in reduced vehicle numbers on roads, and the resulting reductions in air pollutants, noise pollution and congestion issues.

Trails can also provide access to natural environments which can assist in fostering an appreciation of the environment and help to develop awareness of environmental issues. The 2017 State Government strategy *Protecting Victoria's Environment – Biodiversity 2037* identifies increasing opportunities for all Victorians to have daily connections with nature as a priority action.

Trails are regularly located in sensitive environments (e.g. along waterways). Care needs to be taken in developing trails in sensitive locations to limit negative environmental and cultural heritage impacts. It should also be noted that creating trail access into such spaces can drive positive environmental outcomes by making problems (such as weed infestations) more visible. Trails can also make these areas easier to access for weed control and native vegetation management activities.

3.3.4 Economic

Some aspects of economic and tourism benefits of regional trails are closely linked, especially if a relatively broad definition of tourism is applied. Most of the visitors to the regional trails in Northern Melbourne live in Melbourne themselves. These local tourists have the same potential to provide economic advantage as those travelling greater distances before arrival.

There are also strong relationships between economic benefits of trails and the two previous categories (social and health benefits). The cost to the community of ill health is very large, and a portion of this can be attributed to physical inactivity. Mental illness also has an associated economic cost, which includes the costs from loss of productivity and absence from the workforce. Regular participation in physical activity has been shown to improve mental and physical health, and regional trails are a direct way to invest in improving that participation.

In addition to providing a healthy transport alternative, regional trails can also prove to be time-efficient, reducing costs such as lost productivity associated with transport congestion. Commuting time is also associated with negative health effects. The *VicHealth Indicators Survey 2015* noted that 'perceived stress during or immediately after commuting increases with commute time, lack of predictability or control associated with commuting, and crowding during the commute journey'. It also noted that commuting is also linked with negative health outcomes not directly related to the commute itself, such as time spent commuting resulting in less time available for health-promoting behaviours such as physical activity and relaxation.

4. STRATEGIC CONTEXT

Edgars Creek Trail

4.1 EXISTING STRATEGIC AND POLICIES

Given the large geographical size of the study area and the multitude of benefits associated with regional trails, there are a large number of existing strategies and policies that are relevant to this study. Relevant documents have been reviewed as a part of this study and are summarised in Appendix A.

The documents reviewed can be broadly grouped into the following categories.

- Municipal cycling and walking strategies
- Municipal open space strategies
- Municipal integrated transport strategies
- Municipal road management plan/ safe travel strategies
- Miscellaneous municipal strategies
  (including feasibility studies and Master Plans for trails).
- Northern Melbourne regional strategies
  (including the *Northern Horizons – 50 Year Infrastructure Strategy for Melbourne's North 2016, Northern Metro Region Five Year Plan for Jobs, Services and Infrastructure 2018–2022,* and the *Northern Regional Trails Strategy* completed in 2016, which is a significant precursor to this study).
- Higher-level strategic documents
  (typically state government strategies relating to particular issues, including open space provision, waterways, cycling, trails, infrastructure plans and tourism).

4.2 STRATEGIC CONTEXT OVERVIEW

The review of existing strategies and policies highlights the strong alignment between the objectives of this study and broader strategic directions at all levels of government. These strategic directions include:

- Identification of cycling and walking infrastructure as an important part of an integrated transport network for Melbourne in state government plans and strategies (including *Open Space for Everyone 2021, Plan Melbourne 2017-2050*, the *Victorian Cycling Action Plan 2013-2023* and the *Victorian Cycling Strategy 2018-28*).
- Strong support for trail infrastructure development in local government strategies across the study area, including relating to transport, recreation, and health and wellbeing.
- The identification of regional trails as key recreational facilities for the region in the *Northern Horizons – 50 Year Infrastructure Strategy for Melbourne's North 2016* and the *Northern Regional Trails Strategy 2016*.

4.3 NORTHERN REGIONAL TRAILS STRATEGY 2016

Completed in 2016, the *Northern Regional Trails Strategy* was undertaken to facilitate the implementation of an effective and integrated trail network to support an expanding, increasingly dense urban footprint and population, provide accessible recreation opportunities and promote and support a diverse range of employment and economic opportunities for the residents of Melbourne's north and beyond.

The aim of the 2016 strategy was to develop a trail network that is a highly connected, functional off-road network with regional-scale economic, social and environmental value. To date, the strategy has been effective in leveraging approximately $11 million of State Government funding to deliver key priorities identified in the strategy as well as focusing individual Councils' budget allocations into the planning and delivery of priority trail projects.

The following table outlines the recommendations and key priorities identified in the 2016 strategy and their current status.

Trail	Project description	Status
Banyule Shared Trail	Two sections of new trail construction (2km) adjacent to the Greensborough Highway: 1. Wattle Drive north to Watsonia Station 2. Watsonia Station north to Grimshaw Street	High level concept design completed. Funded
East-West Power Easement Trail	Two sections of new trail construction (1.7km): 1. From Plenty Road to Watsonia Road / Railway Station / Greensborough Highway precinct 2. From the Greensborough Highway to the Plenty River Trail	Concept design partially completed. Partially funded
Main Yarra Trail	Bridge crossing over the Yarra River to Banksia Park at Vine Street, Heidelberg	Feasibility study is required. Funded
Main Yarra Trail	Realignment of the Main Yarra Trail through the Banyule Flats	On hold, pending further investigations and consultation. Not funded
Banyule Shared Trail	New trail construction (2.1km) from Banksia Street south to the Yarra Trail just north of McArthur Road	Concept design
Darebin Creek Trail	Bridge Crossing over the Darebin Creek at Tee Street providing a link between the existing Darebin Creek Trail and Beenak/ McMahon Reserve Path	Constructed
La Trobe University Shared Path	New trail construction (1.97km) from the La Trobe University at Plenty Road/ Main Drive to the existing Shared Path at Kingsbury Drive	Construction commenced
Plenty Road Shared Path	New trail construction (1.61km) along Plenty Road from Drive Road north to Arthur Street	No design undertaken to date
Aitken Boulevard Trail	Three sections of new trail construction (2.97km): 1. Along Kirkham Drive from the Yuroke Creek north to Kirkham Drive Reserve 2. Along Aitken Boulevard from Somerton Road to James Mirams Drive 3. From Fairways Boulevard north to Aitken Creek	1. Concept design 2. Constructed 3. Constructed
Aitken Creek Trail	New trail construction (0.58km) from Hothlyn Drive east to join the proposed Merri Creek Shared Trail.	Concept design developed for Stage 1
Blind Creek Trail	New trail construction (0.6km) from the rail line in Sunbury, east to the Jacksons Creek	Partial detailed design
Greenvale Reservoir Park Trail	New trail construction (1.2km) from Mickleham Road/ Garibaldi Road, east along Venezia Promenade to the Greenvale Reservoir Park	No design undertaken to date
Meadowlink Shared Pathway	Two sections of new trail construction (2.55km): 1. Through Rotary Park/ Johnstone Street Reserve to Johnstone Street 2. From Dimboola Road, along Tanderrum Way, Pascoe Vale Road then east to Merlynston Creek	1. Detailed design 2. Constructed
Yuroke Creek Trail	New trail construction (0.55km) along the Melbourne Water Pipe Track from Greenvale Reservoir Park south to the existing Yuroke Creek Trail	No design undertaken to date
Merri Creek Trail	Major trail extension (24.51km) from the north side of Barry Road to the far northern border of Hume.	Concept Design between Barry Road and Cooper Street
Upfield Rail Trail	New trail construction (1.4km) from Box Forest Road north to Metropolitan Ring Road	Funded - Construction commencing

Trail	Project description	Status
Upfield Rail Trail	Six sections of new trail construction (1.16km): 1. Missing section at Jewell Station 2. From Reynard Street to Munro Street 3. Missing section south of Gaffney Street 4. Missing section at Batman Station 5. Missing section at Ararat Avenue 6. Missing section at Merlynston Station	1. Constructed 2. Under construction 3. Constructed 4. Concept Design 5. No design 6. Some sections planned via car park upgrade.
Edgars Creek Trail	Three sections of new trail construction (2.19km): 1. From the Merri Creek Trail to Ronald Street 2. From Ronald Street to Photography Drive 3. From Photography Drive to Carrington Road	1. Partially constructed 2. No design undertaken to date 3. No design undertaken to date
Diamond Creek Trail	New trail construction (7.34km) along the Diamond Creek from Luscombe Drive to Ferguson's Paddock	Partially constructed
Aqueduct Trail	Three sections of new trail construction (20.63km): 1. From the Plenty River Trail, over the Metropolitan Ring Road to the existing Banyule Diamond Creek Trail 2. Eltham-Yarra Glen Road to Henley Road 3. From Warrandyte Kinglake Road, north along Westering, Ridge and Muir Roads to Skyline Road	Concept design, partial detailed design
Green Wedge Trail	Four sections of new trail construction (8.22km): 1. From the proposed Diamond Creek Trail (Wattle Glen Station) to existing trail on Watery Gully Road 2. Missing section at Alma Road and Eltham-Yarra Glen Road 3. Missing section at Motschalls Road 4. Missing section from Spanish Gully Road to Kinglake	No design undertaken to date
Edgars Creek Trail	Four sections of new trail construction (7.98km): 1. North of Metropolitan Ring Road, from Spring Street to Main Street 2. Between Cooper Street and Tramoo Street 3. From Willandra Drive to Rockfield Street 4. From Gammage Boulevard to Craigieburn Road	1. Constructed 2. No design 3. Constructed 4. Partially constructed
Merri Creek Trail	New trail construction (0.34km) from the Merri Creek Trail to the Whittlesea Public Gardens.	Constructed
Whittlesea Rail Trail (also known as the Whittlesea Shared Trail)	New trail construction (16.8km) along the train line from Mernda Station to Whittlesea.	No design undertaken to date
Yan Yean Pipe Track	Three sections of new trail construction (6.88km): 1. From the Western Ring Road north to Childs Road 2. From Moorhead Drive to Williamson Road 3. From Vincent Drive to Gordons Road	Partially constructed
Plenty Road Shared Path	New Trail Construction (0.43km) from Centenary Drive, Mill Park to the proposed Yan Yean Pipe Track at Hickey Court	No design undertaken to date
Darebin Creek Trail	Upgrade existing trail from M80 to Childs Road and Childs Road to Findon Road from granitic sand to concrete	Partially constructed
Merri Creek Trail	Upgrade existing trail in the City of Whittlesea from granitic sand to concrete	
Hendersons Road Drain Trail	Upgrade existing trail in the City of Whittlesea from granitic sand to concrete	Partially constructed

South Morang Pipe Trail	Upgrade existing trail in the City of Whittlesea from granitic sand to concrete	Detailed design
Craigieburn Line Shared Path	Construct 8 new sections of trail (15.65km): 1. From Moonee Ponds Creek Trail to Gaffney Street 2. From Gaffney Street to Bothwell Street, on the western side 3. From Bothwell Street to Devon Road, on the western side 4. From Devon Road to Cartwright Street, on the western side 5. From Cartwright Street to Glenroy Road, on the western side 6. From Glenroy Road to Glenroy Station 7. From Glenroy Station to Jacana Station, on the eastern side 8. From Jacana Station to Craigieburn Station	1. Strategic Plan 2. Funded for constuction 3. Design underway 4. Completed 5. Design underway 6. Construction underway 7. Strategic Plan 8. No design undertaken to date

Since the adoption of the *Northern Regional Trails Strategy (2016)*, significant State Government infrastructure projects have changed and will continue to change the physical landscape of the northern region necessitating the review and update of the 2016 strategy to reflect the impact these have had and the changing priorities. This updated strategy considers the recommendations and priorities outlined in the table above and establish an updated framework for the future development, prioritisation and maintenance for off road trails in the Northern Region of Metropolitan Melbourne.

5. TRAIL USERS

Merri Creek Trail

5.1 DEMOGRAPHICS

The study area for this project is very diverse ranging from established inner-suburban areas to rural townships. The population of Northern Melbourne is similarly diverse. Figures 5.1 to 5.5 illustrate the key population characteristics of the study area, including land area, population numbers, population change and population density. These figures demonstrate that:

- The municipalities that make up the Northern Melbourne study area range in population size (from approximately 65,000 to 241,000 residents).
- The density of the population is heavily weighted to the south of the study area
- The area to the north of the region has the highest population, but low population densities. The growth areas have the fastest growing populations with their population densities projected to increase.
- The far eastern side of the study are has the lowest population and lowest density and due to the green wedge and larger rural lots.

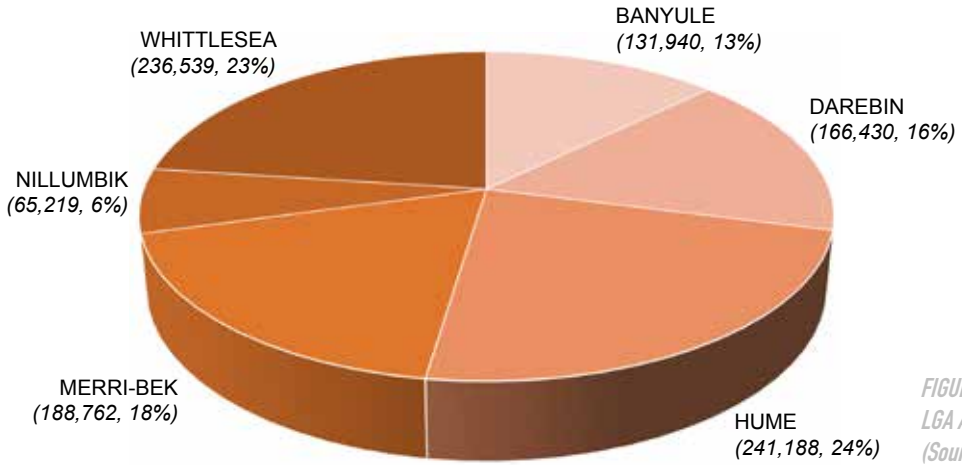


FIGURE 5.1:
LGA ABS Estimated Resident Population 2020
(Source: www.profile.id.com.au)

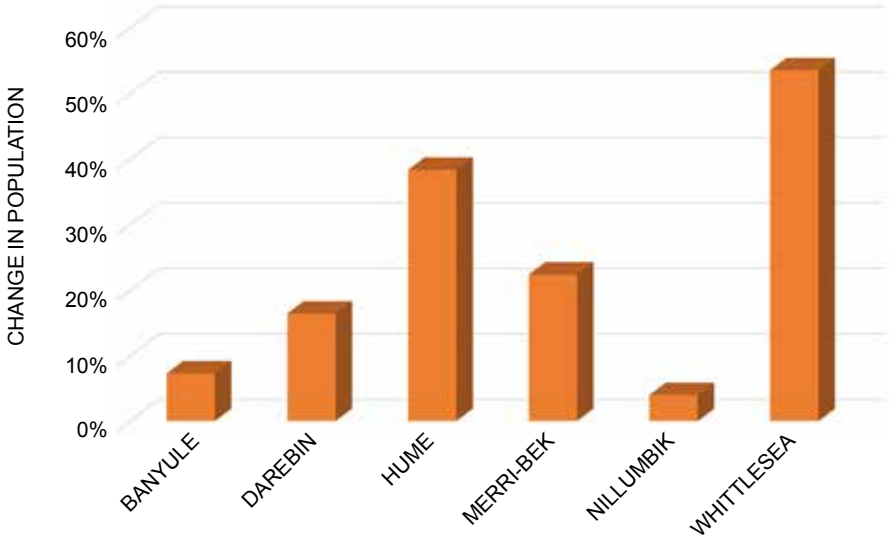


FIGURE 5.2:
Change in Estimated Resident Population from 2011 to 2020 by Local Government Area
(Source: www.profile.id.com.au)

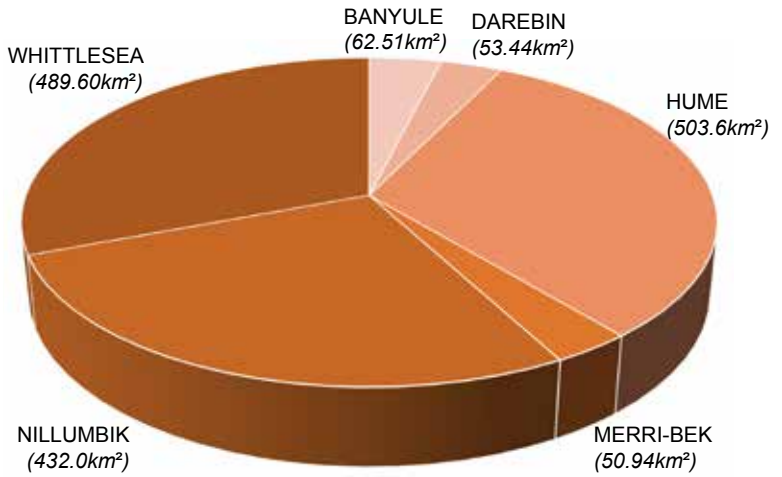


FIGURE 5.3:
LGA Land Area
(Source: www.profile.id.com.au)

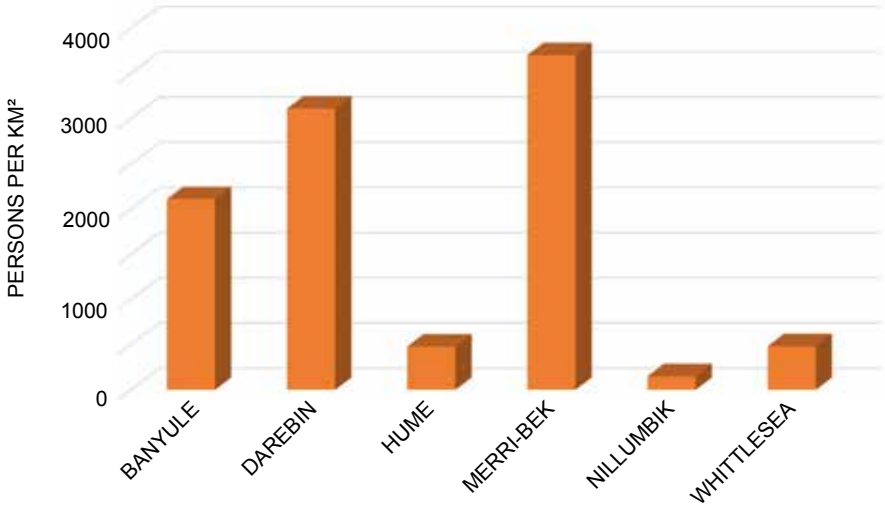


FIGURE 5.4:
Population Density by Local Government Area 2020
(Source: www.profile.id.com.au)

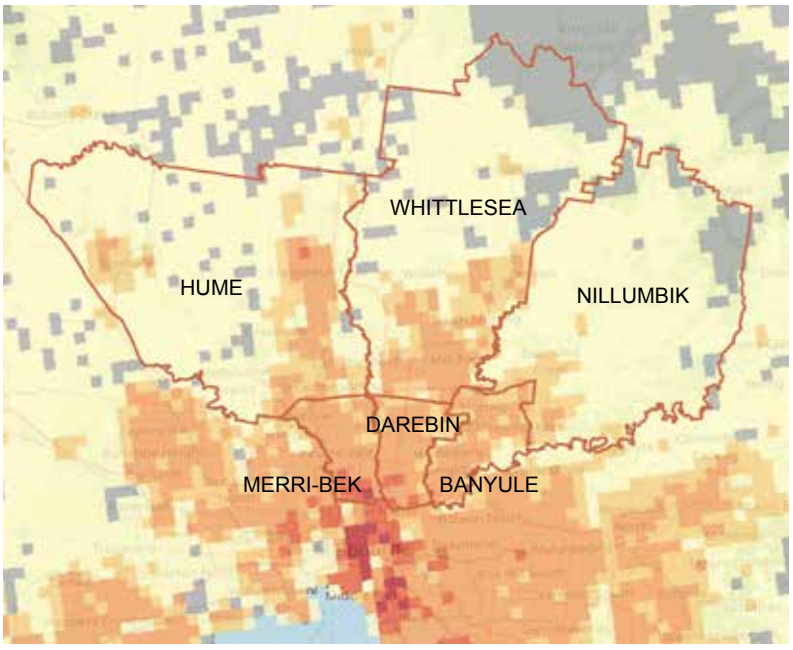


FIGURE 5.5:
Study area population density map grid (2020)
(Source: Australian Bureau of Statistics, Population Grid, 2020)

It can also be seen that all of the Councils within the study area are recording population growth and that this is projected to continue over the coming decades, particularly within the growth areas.

Figure 5.6 shows the age distribution for each of the Councils within the study area and a comparison to the Greater Melbourne average. The study area as a whole has high numbers of residents in the 35-49 year age bracket.

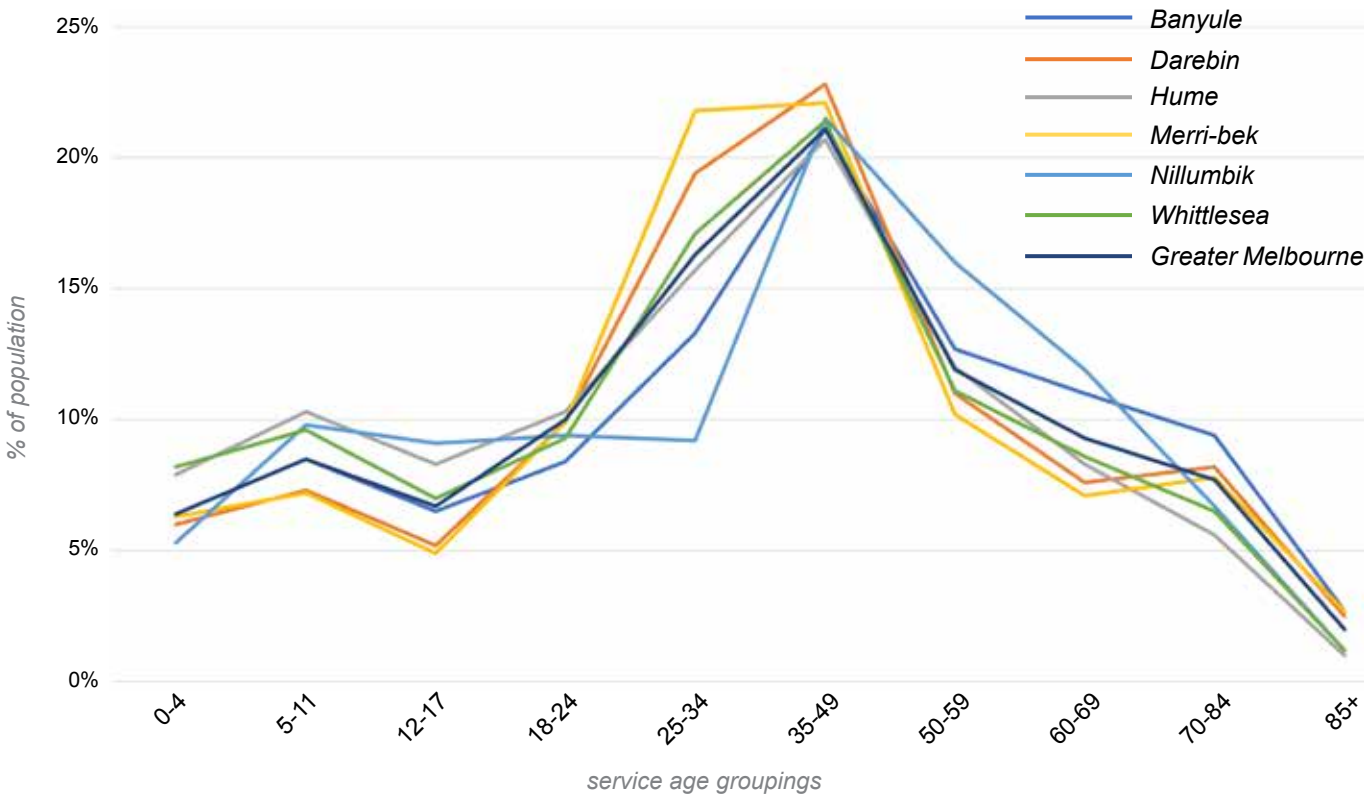


FIGURE 5.6:
Service age group distribution by Council within study area, compared to the Greater Melbourne population (2016) (Source: www.profile.id.com.au)

Figure 5.7 shows the relative socio-economic disadvantage by suburb measured against the Australian Bureau of Statistics Socio-economic indexes for areas (SEIFA) measures. This dataset broadly defines socio-economic advantage and disadvantage through an assessment of people's access to material and social resources, and their ability to participate in society.

Within our study area the majority of the key population centres within the study area are ranked as having low levels of disadvantage. The areas of disadvantage identified are predominantly in the centre of the study area.

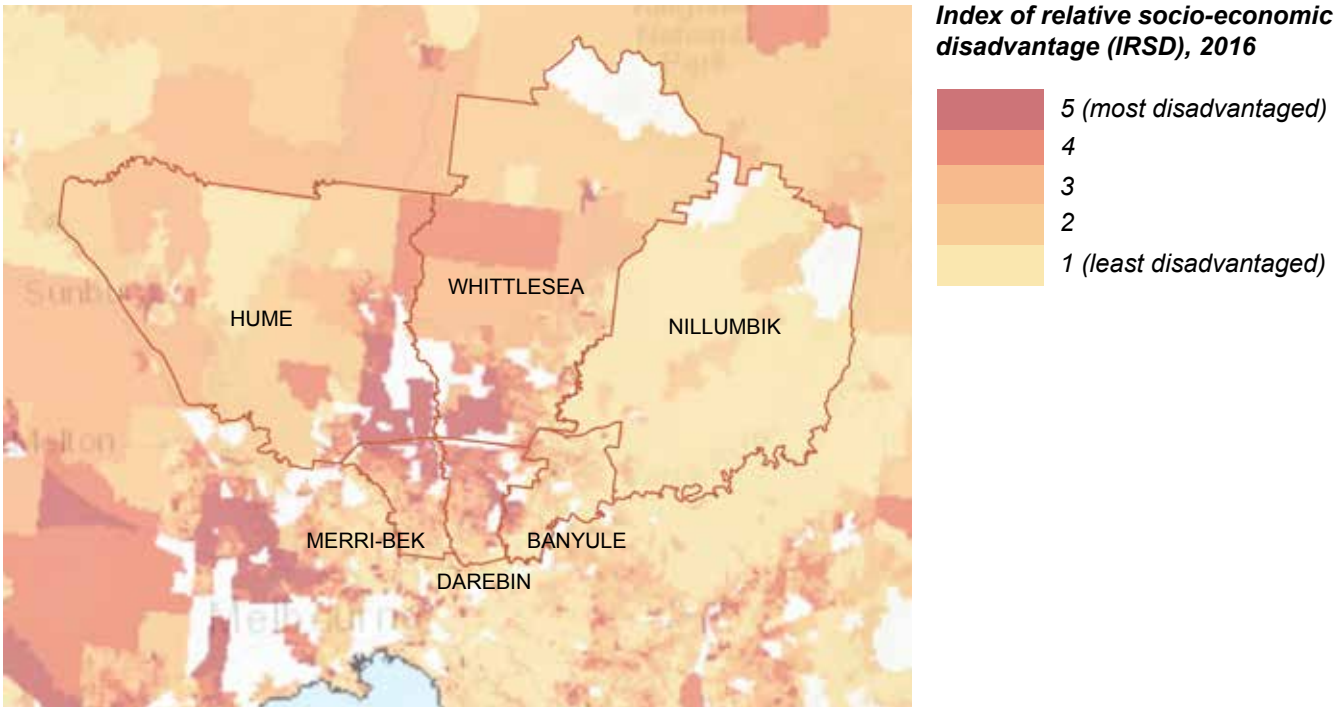


FIGURE 5.7:
Relative socio-economic disadvantage by suburb (2016)
(Source: Australian Bureau of Statistics, Socio-economic indexes for areas, SEIFA, 2016)

The implications of this demographic data on regional trail provision in the study area include:

- Population growth in the study area is inconsistent, with growth areas experiencing major growth in past decade, a trend that is likely to continue. There is potential to take advantage of new trail projects being delivered as a part of growth corridor planning and broad-scale land development activities.
- Increasing populations across the study area create a strong argument for investment in community infrastructure, including regional trails.
- The high densities of population in the southern part of the study area create demand for regional trails, but also make the construction of new regional trails very difficult (due to the constraints that come with density).
- There are currently no regional trails within the far-eastern and northern portions of the study area due to the low population densities. These areas are unlikely to become a priority for regional trail construction, with the exception of tourism-focused, nature based trails.
- Consideration should be given to prioritising regional trail improvement in areas identified as being socio-economically disadvantaged. Regional trails provide a free and accessible recreation resource, and also contribute to the feasibility and attractiveness of low-cost transport options.

5.2 EXISTING TRAIL USERS

There is no comprehensive information available about regional trail network use and users in the Northern Melbourne study area. In this section, information has been compiled from a number of sources in order to build a picture of regional trail use:

- The *Super Tuesday Commuter Bike Count* (undertaken annually by the bicycle advocacy organisation *Bicycle Network*).
- The *Super Sunday Recreational Count* (also undertaken annually by *Bicycle Network*).
- Individual count data provided by some Councils.
- The on-line questionnaire undertaken as a part of this project. Please note that this open questionnaire went out to Bicycle Network members, which may weight results towards this interest group.

The purpose of understanding existing trail use is to determine:

- Who is using the regional trail network, and why? This provides a framework for trail planning, management and focuses potential improvements to meet their needs of these users.
- Who isn't using the regional trail network, and why? This provides a framework for improvements that appeal to a broader demographic and increase usage.

Regional trail network use and users were established through three key questions:

- Quantity/location - how many people are using the regional trails, and which trails are they using?
- Mode - how are people using the trails?
- Function - why are people using the trails?

5.2.1 Quantity/location

How many people use the regional trails of Northern Melbourne, and which trails are they using?

An indication hierarchy of use is provided via the questionnaire undertaken as a part of this study in which we asked people to identify which of the regional trails in the study area they had used, and how often (see figure 5.8).

The Merri Creek Trail recorded the highest level of use with over 13% of respondents indicating that they use the Merri Creek Trail 'daily or several times a week'. This trail is located within the most densely populated areas of the northern region. Its north-south alignment and position within a creek corridor supports both commuter and recreational use. Bicycle Network Victoria's Super Tuesday count data from 2019 recorded over 300 trips per hour on the Merri Creek Trail. The impact on commuter traffic from the COVID-19 lock downs is demonstrated in the 2020 count data which recorded only 125 trips per hour.

The Darebin Creek Trail, another north-south trail with both commuter and recreational appeal, recorded the second highest level of usage with almost 10% of respondents indicating they use the trail 'daily or several times a week'. Bicycle Network Victoria's Super Tuesday count data from 2020 saw an increase of usage of up to 60% for the section of trail located within Whittlesea. Due to its relative distance from the CBD this section is more commonly used for its recreational benefits. It could be inferred that this spike in usage during the COVID-19 lock downs demonstrates an increase in residents turning to trails for exercise, socialising and relaxation.

Lack of name recognition of the Northern Trails network is demonstrated by over one third of respondents reporting that they have 'never heard of' 11 of the 19 listed trails. This indicates a need to broaden public awareness of the Northern Trails network to increase user diversity and frequency of use.

An indication of trail use frequency is provided by the on-line questionnaire. Figure 5.9 illustrates how often respondents indicated they use the regional trails. Close to three quarters of the respondents indicated they used the regional trails at least weekly ('several times a week', 36%, 'weekly' 21% and 'daily',17%).

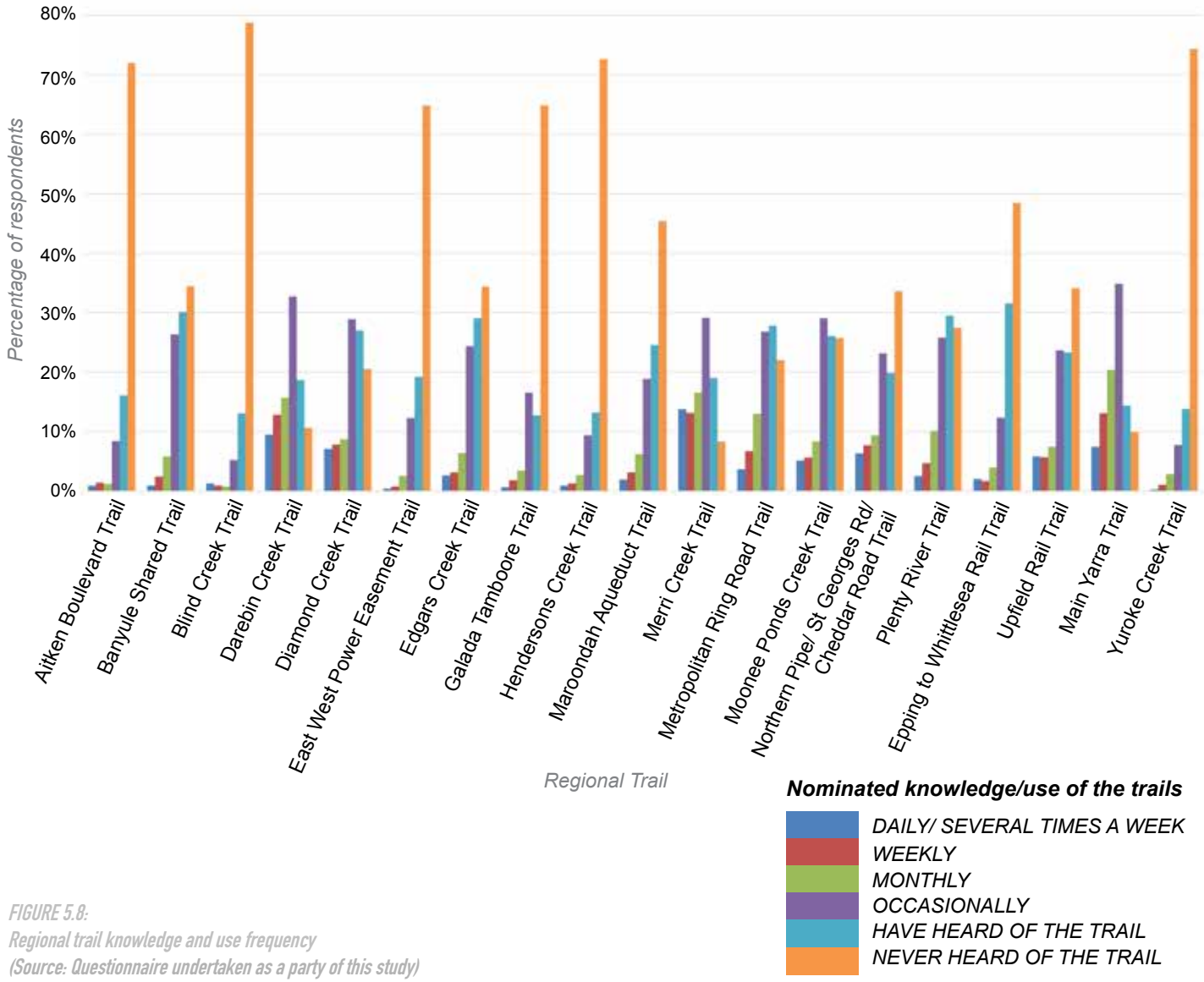


FIGURE 5.8:
Regional trail knowledge and use frequency
(Source: Questionnaire undertaken as a party of this study)

5.2.2 Mode and function

Why are people using the regional trails of Northern Melbourne?

The questionnaire undertaken as a part of this project asked people to identify how they most often used regional trails in the study area (see figure 5.10). Bike riding was the most common response, being selected by over 52% of respondents, followed by walking (23%) and walking with a dog (almost 10%). It is recognised that there is often significant cross-over in reasons for trails use. Being able to use trails for multiple purposes is one of their key benefits.

Regarding the dominant recreation and exercise categories, supporting this are the findings of the *VicHealth Indicators Survey 2015* that notes at a state-wide level, walking (51%), jogging/running (14%) and cycling (12%) are the highest participation non-organised physical activities.

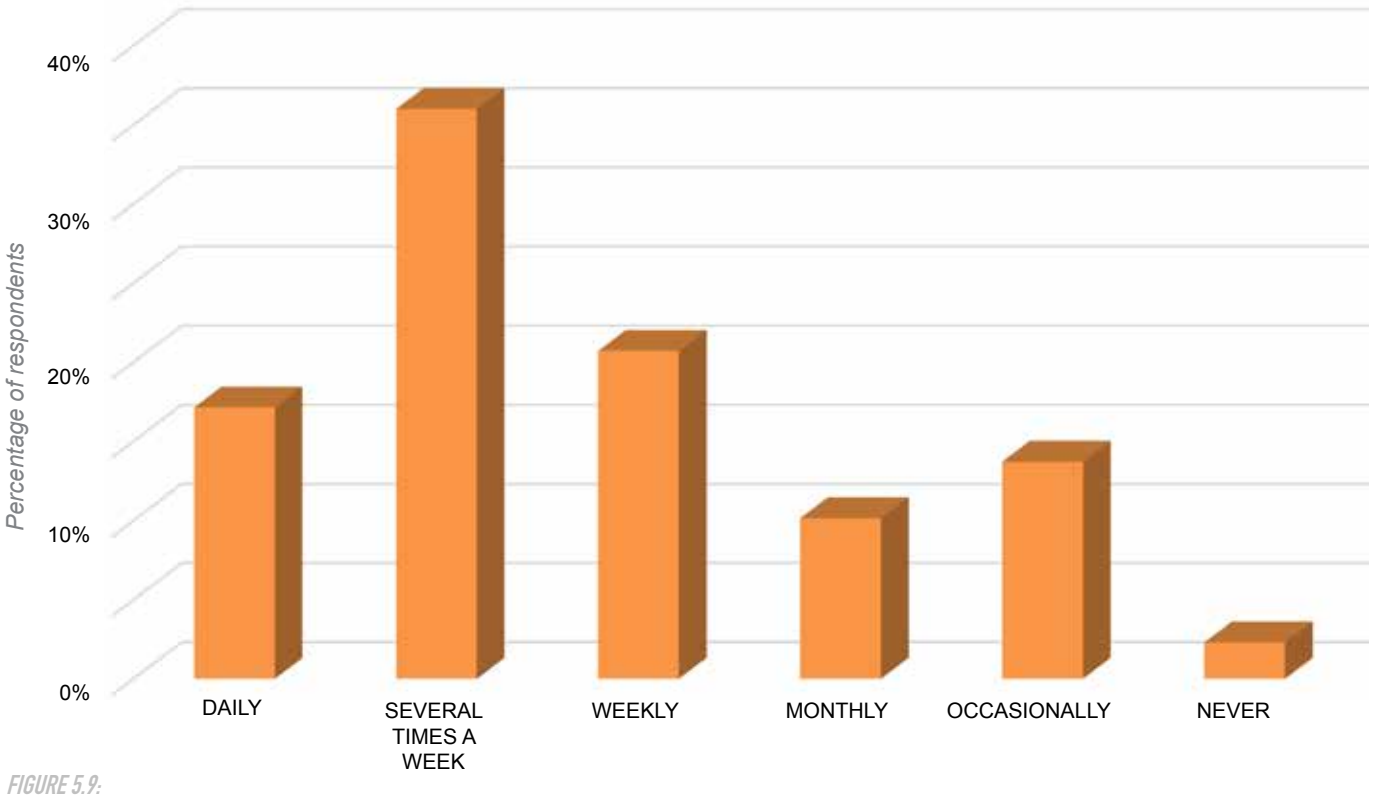


FIGURE 5.9:
Regional trail use frequency: 'How often do you currently use the regional trails in Northern Melbourne?'
(Source: Questionnaire undertaken as a party of this study)

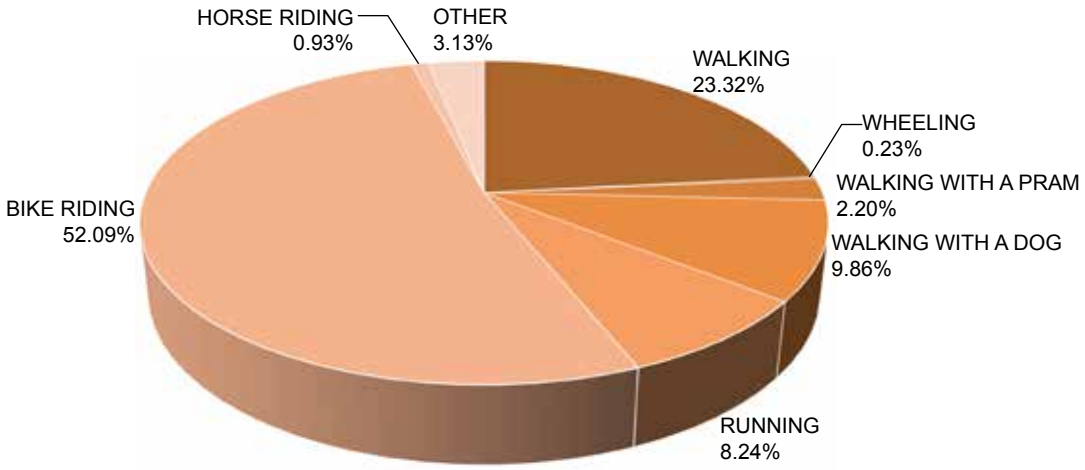


FIGURE 5.10:
Primary use mode of the regional trails: 'How do you most often use the regional trails in Northern Melbourne?'
Source: Questionnaire undertaken as a party of this study)

Cycling for transport is an important function of many regional trails in Northern Melbourne. The questionnaire was undertaken during the COVID-19 pandemic. The increase in people working from home and the reduced movement experienced under lock down conditions may mean that this use is not accurately represented in the findings (figure 5.11). At a population level the *Victorian Cycling Strategy 2018-28* reports that cycling makes up just 2% of daily trips to work in Melbourne (compared to 4% walking, 18% public transport, and 74% private vehicle).

Trails are traditionally perceived as rural or natural in setting. This perception is reflected in the alignment of many existing urban trails, which are more likely to connect to parkland and natural reserves than to centres of activity and employment. This may also impact the prevalence of cycling for transport as a reason for using regional trails. As active transport routes, regional trails have room for improvement.

The questionnaire identified that many respondents used trails with family and/or friends (refer to figure 5.12) indicating that the trails play an important role in facilitating social engagement and interaction. Anecdotal evidence suggests that COVID-19 restrictions amplified the importance of trails as a public and locally accessible facility where the community can gather and interact with family and friends.

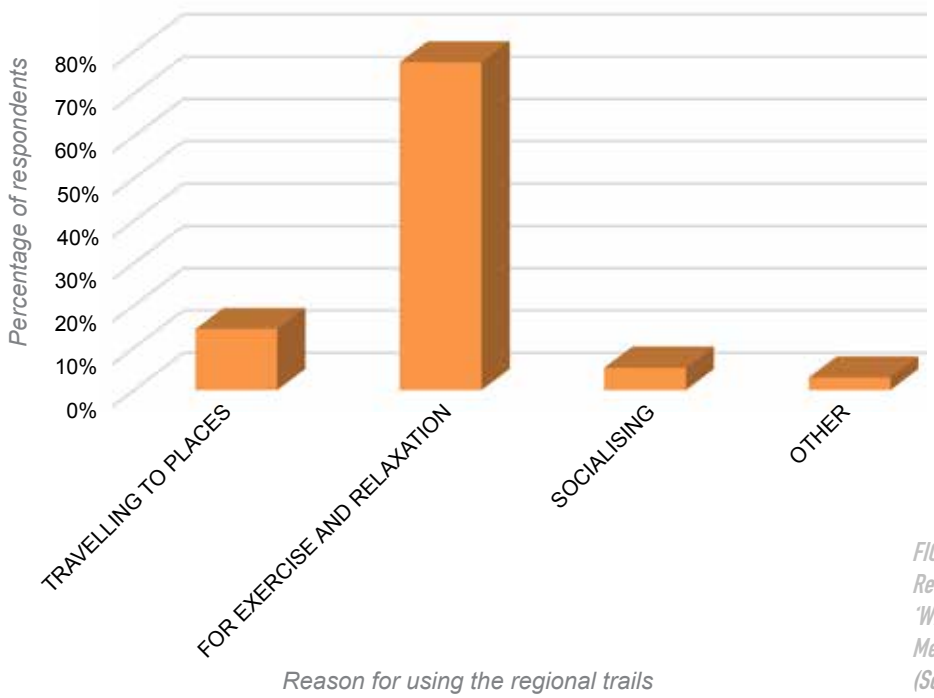


FIGURE 5.11:
Reason for trail use:
'Why do you most often use regional trails in Northern Melbourne? '
(Source: Questionnaire undertaken as a party of this study)

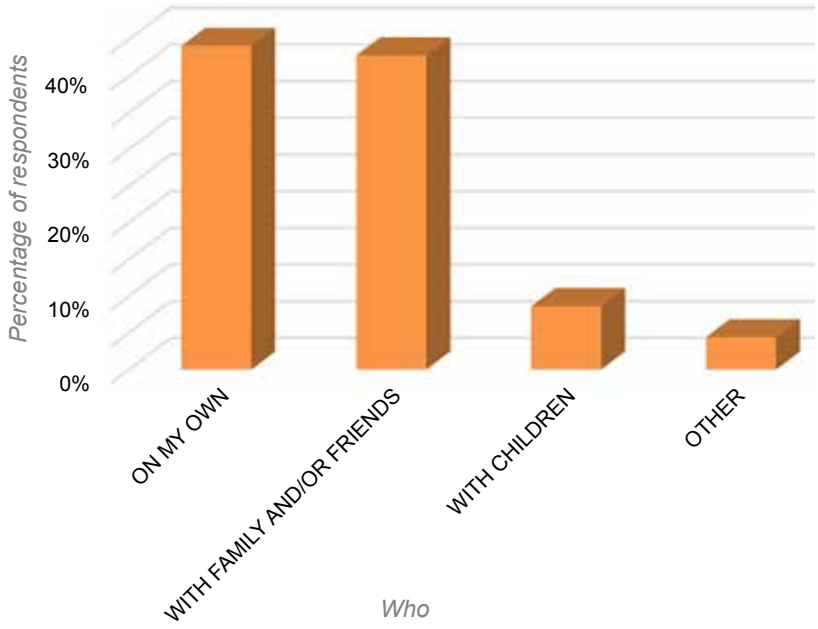


FIGURE 5.12:
Who do you use the regional trails with?
'Who do you most often use the regional trails in Northern Melbourne with?'
(Source: Questionnaire undertaken as a party of this study)

5.3 POTENTIAL TRAIL USERS

One of the key measures of success for a regional trail network is the number of users. A growing regional trail network should prioritise attracting additional users.

External factors that are likely to effect regional trail usage include:

- Population growth within the region (as identified within the demographics section earlier in this chapter), and in Melbourne as a whole.
- Usage trends relating to exercise and active transport.
- Increase in the use of electric bikes which allow broader access to trails, where route length or gradient may be prohibitive for standard cycling.
- The growth of dockless share bike schemes.

Trail improvements impact usage. A key focus of this project is to identify and examine which improvements are most valued among current and potential users. Within our on-line questionnaire the most valued preference to 'increase your usage of the trails' was 'improved connectivity between the trails,' with 77% of respondants citing it as a preference (see figure 5.13).

The popular support for improved connectivity between trails reflects the broad user benefits this would have. For recreational users, connecting trails create the potential for circuits and loops, which provide a more interesting and varied user experience, and allows users to set goals and challenges relating to circuits of a particular length. For people using regional trails for transport, inter-connecting trails open up a larger range of destinations which increases the likelihood of frequent use.

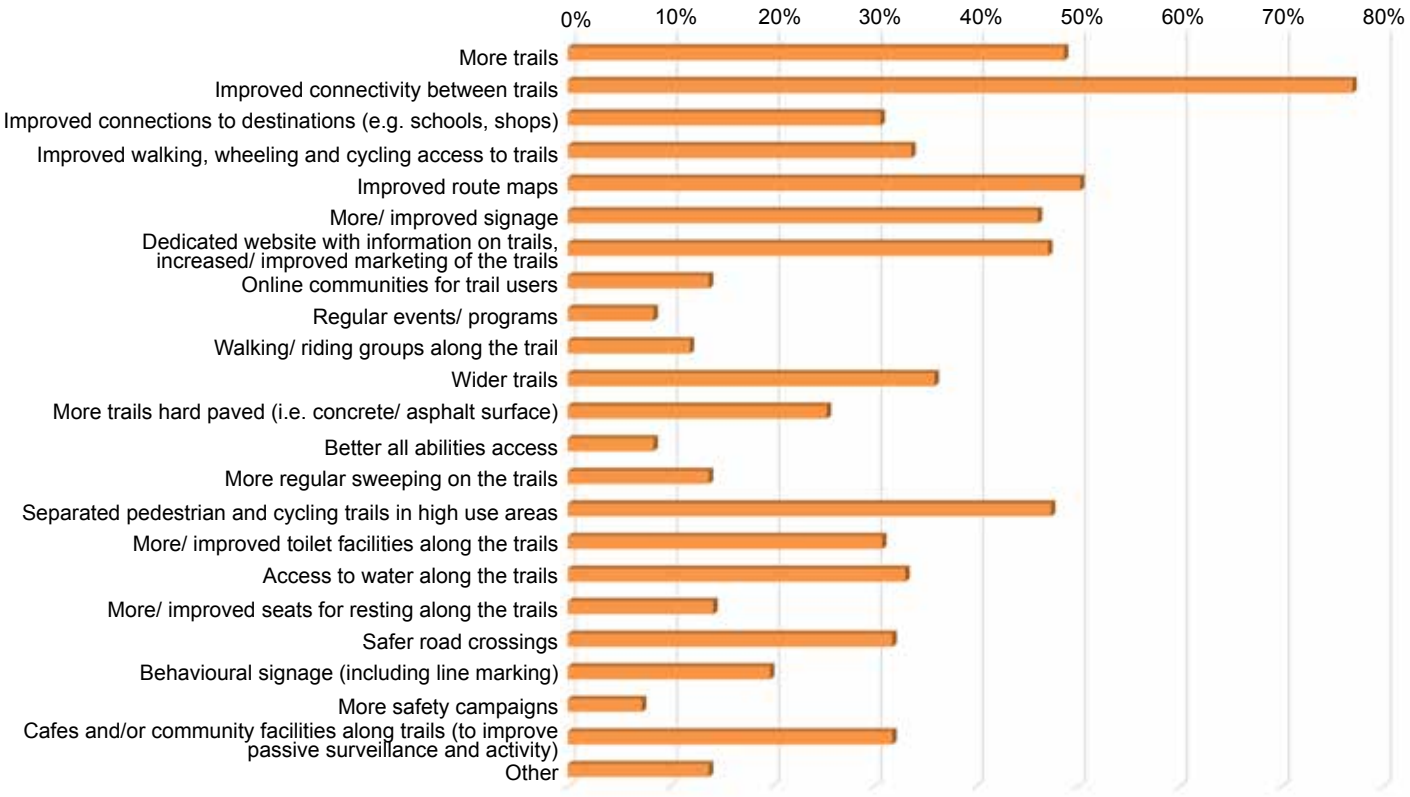


FIGURE 5.13:
Trail improvement preferences:
'Which of the following could increase your usage of the trails? (Tick all that apply)'
(Source: Questionnaire undertaken as a part of this study)

'Separated pedestrian and cycling trails in high use areas' also had popular support. This reflects the concern for conflicts that arise on shared-use trails. A key issue here is the difference in speed between cyclists and pedestrians using the trails. This is discussed in more detail in Chapter 7: Trail Infrastructure.

The responses regarding trail improvements provide useful insights into user perceptions of the existing trail network. The respondents to the questionnaire are, in general, people who already use the regional trails. How can new users be attracted to use regional trails?

The *Victorian Cycling Strategy 2018-28* identifies four groups of people relating to their propensity to cycle:

- *'Strong and fearless' cyclists will cycle regardless of road conditions and are ready to mix with traffic.*
- *'Enthused and confident' cyclists are already riding, but they could ride more and their riding experience could be better*
- *'Interested but concerned' cyclists are the largest group, and they vary in age and cycling ability. They are curious about cycling and like to ride but are afraid to do so and put off by the need to ride close to motor vehicles and pedestrians, especially on higher-speed, higher-volume roads or where conflicts are more likely.*
- *'No way, no how' people will not cycle because they can't, because the terrain is unsuitable or because they have no interest whatsoever in it.*

The 'interested but concerned' category are estimated to make up 60% of the population (compared to only 1% who are 'strong and fearless', and 7% 'enthused and confident'). The off-road condition of regional trails make them an attractive option for this safety conscious group. To increase regional trail usage within the 'interested but concerned' category, a focus should be placed on improvements that make trails more convenient, safe, and easy to navigate.

Tourism-related use has strong potential to introduce new users to regional trails. While not all regional trails are scenic or adjacent to tourist-attracting destinations, an interconnecting network means that visitors can utilise the network to access the more scenic trails and destinations.

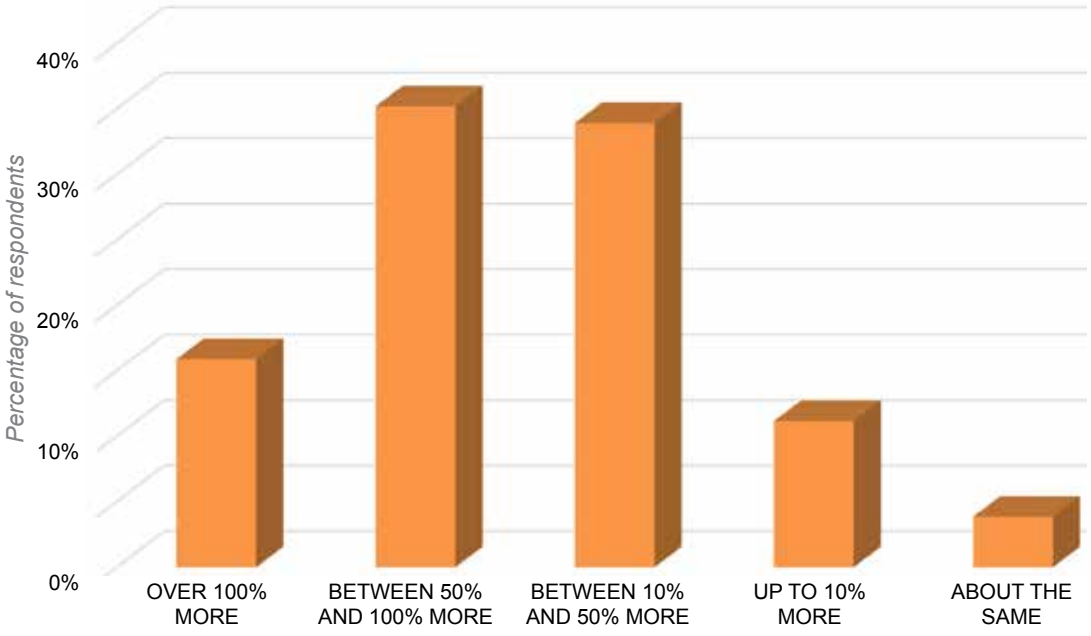


FIGURE 5.14:
Regional trail use frequency if improvements undertaken:
'If the improvements that you identified (listed above) were implemented, how much more often do you think you would use the trails?'
(Source: Questionnaire undertaken as a party of this study)

5.4 EQUESTRIAN USE

For the purposes of this study, regional trails have been defined as trails providing opportunities for multiple user types. However, there are challenges in accommodating all potential trail users, and these challenges are perhaps most pronounced with equestrian use.

Whilst horse riding on the northern regional trails is relatively limited at present, the feasibility of equestrian use of the entire trail network should be considered. Should trail users be able to ride horses from the rural fringes to the city centre on off-road trails? This level of equestrian use of regional trails in Northern Melbourne is hindered by a number of factors including:

- **Suitability of surfaces:** many urban shared trails are hard paved (for all-weather access, accessibility for people of all abilities, and the minimisation of ongoing maintenance requirements) which makes many trails unsuitable for equestrian use.
- **Width of trail corridors:** many trails within the network are highly constrained due to adjacent waterways, rail lines or sensitive environments and cannot accommodate the additional width required for a second parallel path for equestrian use.
- **External stakeholders:** many trail corridors are owned or managed by external stakeholders who may not be supportive of equestrian use on their land due to increased risk to trail users (which as land owners, they share some responsibility for), and the potential for environmental damage.
- **Low demand:** the numbers of regular horse riders are very low compared to pedestrian and cycling numbers. The 2017 Equestrian Victoria *State Facility Plan* estimates that there are 53,246 participants in equestrian sport in Victoria. This equates to less than 1% of the total population. Of these participants, many are involved in the competitive aspects of horse riding, including dressage, show jumping and eventing. These activities are undertaken at purpose-built facilities, not on trails.
- **Conflict of use:** Shared-use trails can create issues for horse riders, including the potential for horses to be troubled by other trail users and dogs. This makes shared trail use less desirable than riding on private land (such as at the many commercial equestrian facilities within the region) or on quieter bushland trails.

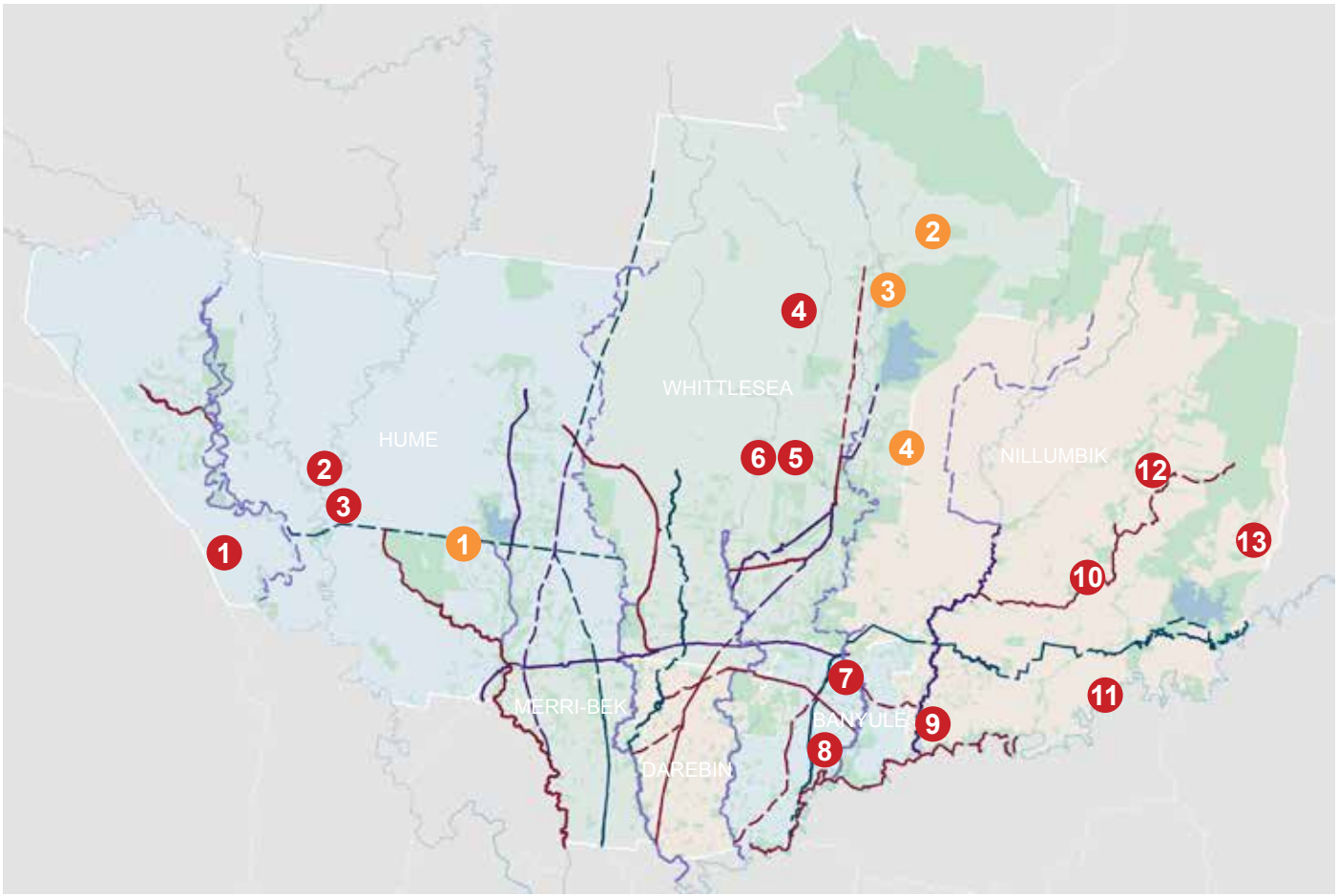
For these reasons, equestrian use of trails needs to be targeted rather than broadly applied. There are three types of equestrian use of trails that seem most likely to be attractive to riders and compatible with broader regional trail planning objectives.

- ***Off-road horse riding opportunities***, particularly in rural areas. As the population of Melbourne has grown, once-rural areas have become more developed and quiet roads have been progressively upgraded to accommodate increased populations. The quiet country roads that used to be ideal for horse-riding (either on unmade roads, or on the grassy verges of made roads) are becoming busier and less suited to equestrian use. Regional trails that are more rural in nature have the potential to provide the kind of riding opportunities being lost through road upgrades.
- ***Trail connections to equestrian facilities***. As noted previously, many horse riders prefer experiences other than riding on shared use trails. However, there is the potential for them to access these experiences via a shared trail network. The potential benefits to riders is that they can ride between equestrian facilities and places of agistment, rather than needing to transport riders and horses by vehicle.
- ***Tourism use***. Trails with a tourism focus can benefit from accommodating equestrian use. The presence of horses on a trail can add to the rural experience being sought by other users. There is also the potential for economic benefit through commercial operators providing tourism experiences based around horse riding on the trails.

If equestrian use is to be accommodated on the regional trails, which trails should be targeted? One method for targeting regional trails for equestrian use is to identify existing trails that are aligned closely to the areas of existing equestrian activity. The 2017 Equestrian Victoria *State Facility Plan* identifies five key venues for equestrian events within the study area (out of 55 venues identified state-wide). These, along with other equestrian facilities identified as a part of this project, are mapped in figure 5.15 with the regional trail network. It can be seen that there are many equestrian facilities that are located in close proximity to regional trails, providing the potential for a relationship between them.

Trails where equestrian use and tourism activities could be mutually beneficial are those concentrated in the northern and more rural parts of the study area. Consideration should be given to the following trails in terms of accommodating equestrian use:

- the proposed extension of the Moonee Ponds Creek Trail within Hume on Parks Victoria land
- the Main Yarra Trail within Banyule
- the proposed extension of the Maroondah Aqueduct Trail
- the Green Wedge Trail
- the Diamond Creek Trail
- the Kinglake Way Trail



Key equestrian facilities*

1. Greenvale Equestrian Centre
2. Victorian Showjumping Stables
3. Whittlesea Agricultural Society
4. Yarrambat Horse & Pony Club

** as* identified in the *2017 Equestrian Victoria State Facility Plan*

Other equestrian facilities with proximity to regional trails

1. Elle Equestrian Centre
2. Wildwood Equestrian Park
3. Woodlands Trail Riding
4. Ripawood Equestrian Park
5. Findon Pony Club
6. Fursan Farm
7. North Eastern Horse & Pony Club
8. Riding for the Disabled, Viewbank
9. Eltham Horse & Pony Club
10. Unicorn Valley Equestrian Centre
11. Barratta Equine Agistment
12. St Andrews Pony Club
13. Yarra Valley Trails

FIGURE 5.15:
Location of key equestrian facilities in relation to the regional trail network
(Source: key equestrian facilities are as identified in the 2017 Equestrian Victoria State Facility Plan)

6. THE TRAIL NETWORK

Edgars Creek Trail

A number of steps were undertaken to determine which of the many paths that exist in the study area should be incorporated in this study as regional trails:

- ***Northern Trails Strategy (2016) review*** - a review of the 2016 study identified the major trails within the study area.
- ***Desktop review*** - a review of available local government, regional level and State Government strategic documents
- ***Trail audit*** - the major trails identified were audited, including riding all of the identified trails with a GPS device to map the trail extent and characteristics.
- ***Action Plan*** - potential trail improvements for each of the major trails were identified through various phases of the project. Because of the strategic nature and proposed lifespan of this study, trails were assessed not just on their existing condition, but also taking into account the proposed and potential future development of the trails.

Of the trails identified as a part of the desktop review, 27 were assessed to be, or have the potential to be, regional trails. These trails are shown in figure 6.1, and individually mapped in this chapter, along with descriptions of the trails and the recommended trail improvement projects for each.

Of the 27 regional trails, eight were either non-existent or have a substantial potential for expansion. They are:

- ***Jacksons Creek Trail -*** The Jacksons Creek Trail is proposed to run along the length of the Jacksons Creek in Sunbury to eventually connect with the Organ Pipes National Park (outside the study area).
- ***Somerton Road Trail -*** this proposed trail is expected to be implemented with the Somerton Road Duplication Project and will connect the Jacksons Creek Trail in the west to the Merri Creek Trail in the east.
- ***Merri Creek Trail -*** Whilst a substantial length of this trail exists, mostly within Darebin, plans to extend the trail north along the creek corridor will more than double it's length.
- ***Plenty River Trail -*** The proposed extension of the Plenty River Trail will provide a connection from the southern end of the region to Mernda. It will also provide connections in to Nillumbik from Greensborough in the south and Mernda in the north
- ***Maroondah Aqueduct Trail -*** Whilst sections of this trail exists, the proposed extension east would provide a route to the Sugarloaf Reservoir.
- ***Kinglake Way Trail -*** This proposed trail of approximately 20km in length provides a connection from the existing Diamond Creek Trail to Kinglake National Park.
- ***Craigieburn Line Shared Path -*** With construction having already commenced, the completed Craigieburn Line Shared Path will run from the Moonee Ponds Creek Trail in the south to Craigieburn Station in the north, providing over 15km of new trail along the rail corridor.
- ***Amaroo Pipe Track -*** The Amaroo Pipe Track, once realised, will provide a direct trail from Craigieburn Station in the south through to the proposed train station in Beveridge

Any summary of regional trails will always be a snapshot in time and a work in progress. Priorities will change over time, new opportunities will arise, and the planning and management of regional trails will need to respond to these changes.

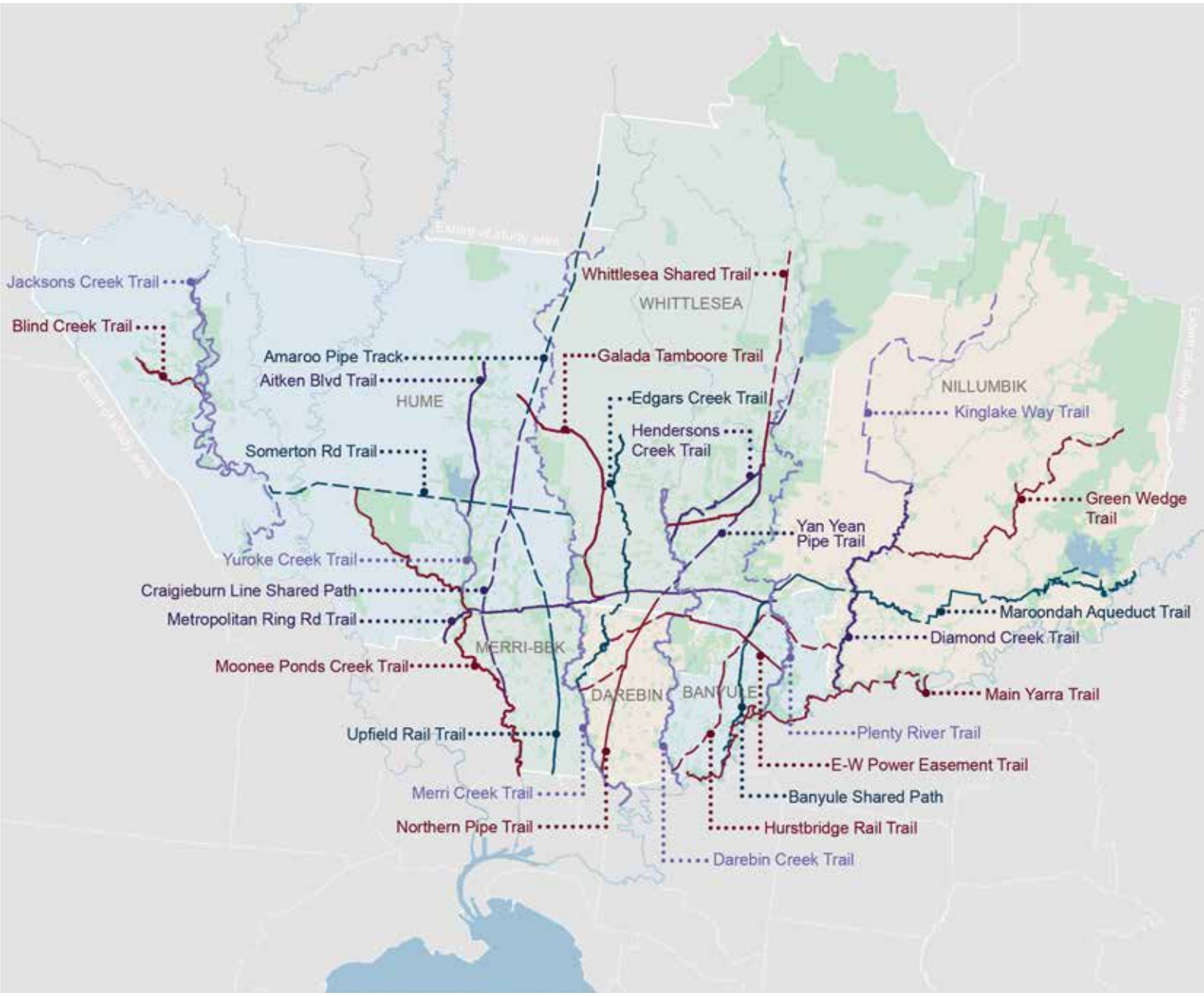


FIGURE 6.1:
The Northern Melbourne regional trail network

6.1 AITKEN BOULEVARD SHARED TRAIL

Trail information

Length:
9.6km

SCC:
Yes

Location:
The Aitken Boulevard Trail follows Aitken Boulevard from the Yuroke Creek Trail through Roxburgh Park and Craigieburn, to Mt Ridley Road

Local Government Area:
Hume

Additional Stakeholders:
-

Auditor comments:
"Basically a wide footpath with access issues at the south end and major gaps in the northern sections"

Priority Actions

1. Provide wayfinding signage along the length of the trail
2. Construct new section of trail on the eastern side of Aitken Boulevard from the Aitken Creek to Craigieburn Road
3. Construct new section of trail from Brookfield Boulevard to Highlands Shopping Centre
4. Construct new section of trail from the Yuroke Creek Trail to Somerton Road following duplication of Somerton Road and a safe crossing point being constructed

6.2 AMAROO PIPE TRACK

Trail information

Length:
14.5km

SCC:
Yes

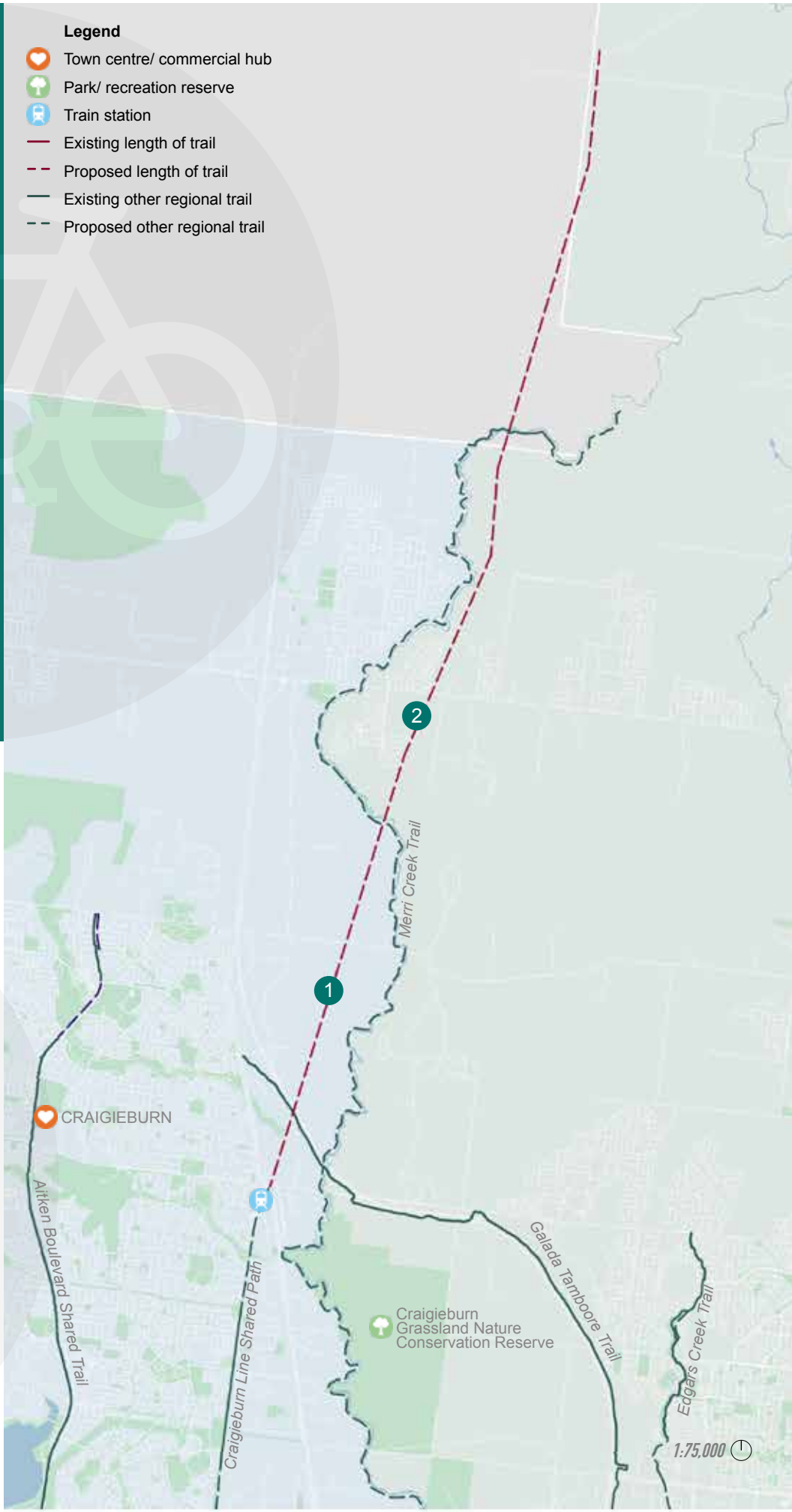
Location:
The Amaroo Pipe Track is a direct trail from Craigieburn Station in the south through to the City of Whittlesea and beyond the study area to Mitchell Shire

Local Government Area:
Hume & Whittlesea

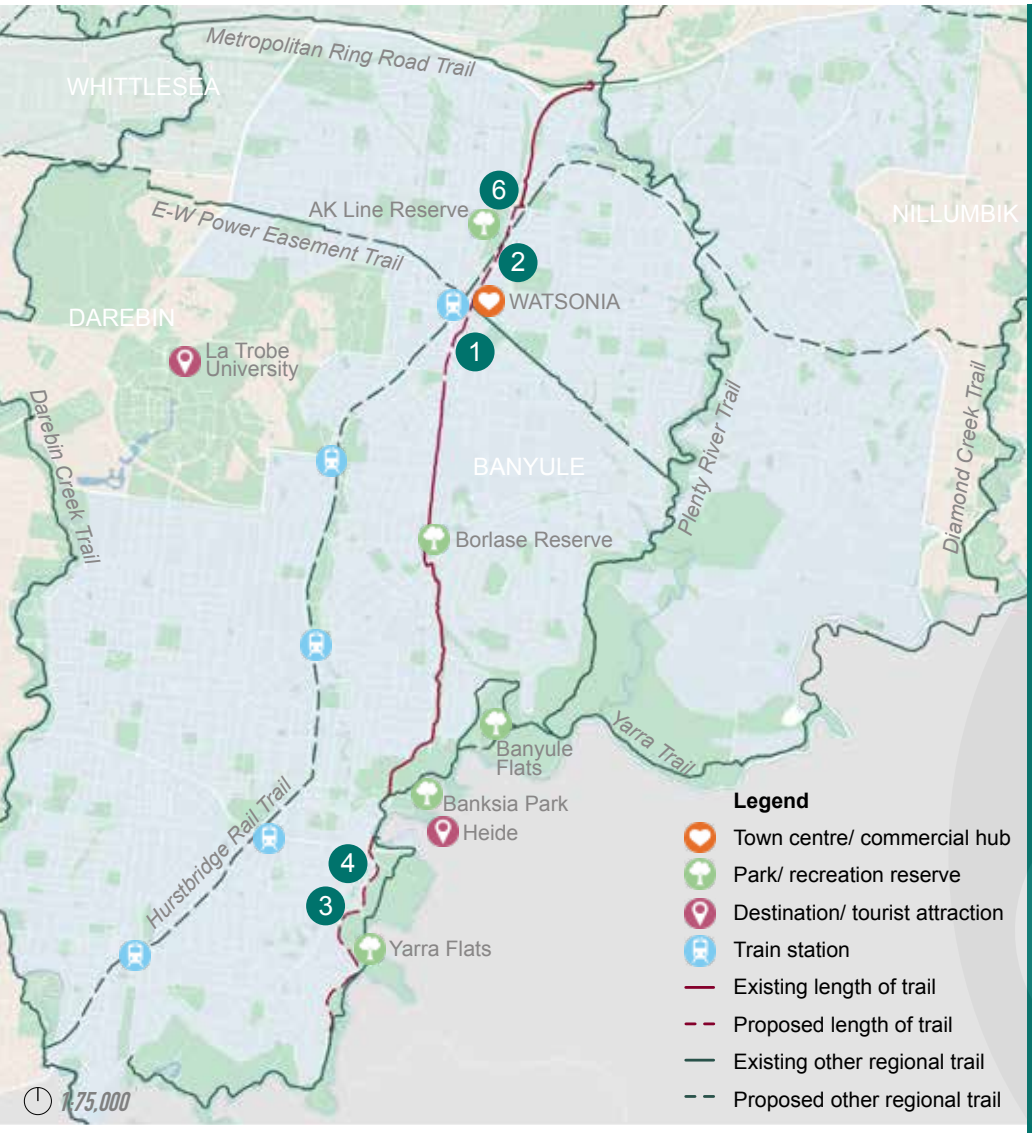
Additional Stakeholders:
Mitchell Shire and Yarra Valley Water

Priority Actions

1. Advocate for a new trail along the sewer easement from Craigieburn Station north toward Beveridge (within Hume)
2. Advocate for a new trail along the sewer easement north to Beveridge (within Whittlesea)



6.3 BANYULE SHARED TRAIL



Priority Actions

1. Construct new section of trail from Wattle Drive north to Watsonia Station
2. Construct new section of trail from Watsonia Station north to Grimshaw Street
3. Construct new section of the trail from Banksia Street south to the Yarra Trail just north of McArthur Road
4. Realign trail at playground on River Gum Walk to reduce incline
5. Provide wayfinding signage along the length of the trail
6. Provide a grade separated north-south walking and cycling link across Grimshaw Street at the Greensborough Bypass

Trail information

Length:
10.6km

SCC:
Yes

Location:
The Banyule Shared Path runs in a north-south direction through Watsonia and Rosanna from the Metropolitan Ring Road Trail to the Yarra Trail

Local Government Area:
Banyule

Additional Stakeholders:
Melbourne Water, Parks Victoria, VicRoads

Auditor comments:
“A potentially effective commuter trail if some major improvements are made to address the gaps in continuity”

6.4 BLIND CREEK TRAIL

Trail information

Length:
7km

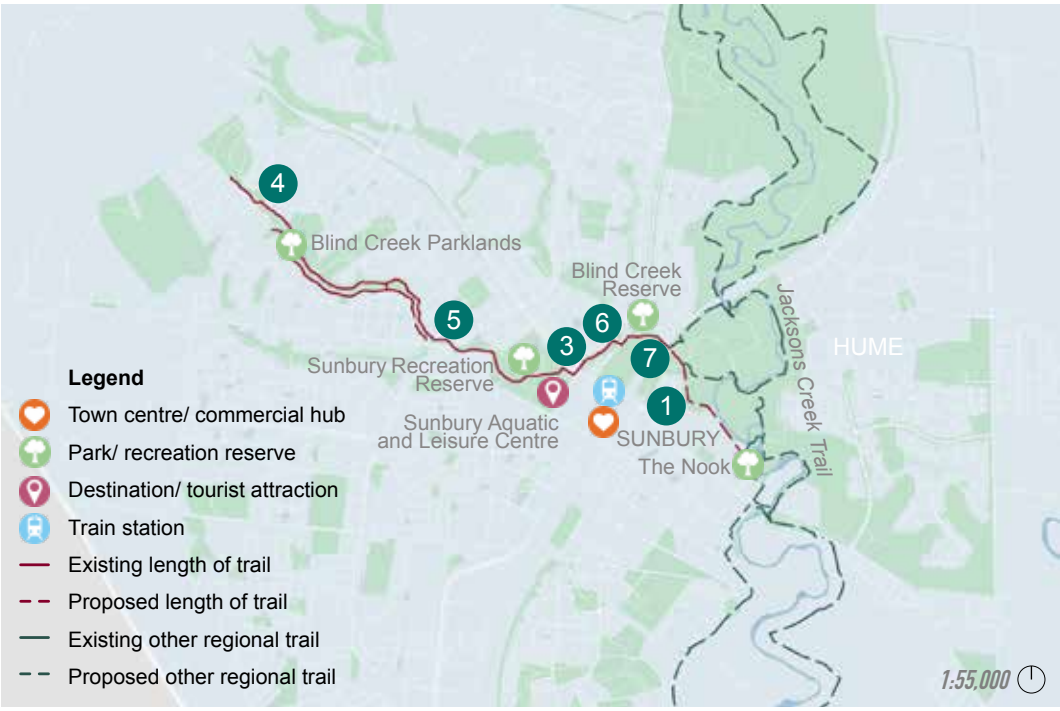
SCC:
No

Location:
The Blind Creek Trail follows the creek through parkland across Sunbury and will connect with the future Jacksons Creek biik wurrdha Regional Parklands in the east (in accordance with the *Jacksons Creek biik wurrdha Regional Parklands Plan*)

Local Government Area:
Hume

Additional Stakeholders:
Major Road Projects Victoria, Melbourne Water, private landowners, Salesian College Sunbury, VicRoads

Auditor comments:
"Pleasant trail of good quality marred by lack of signage and general waymarking."



Priority Actions

1. Advocate and plan for a new section of trail from the rail line in Sunbury east to Jacksons Creek and The Nook/Bicentennial Park
2. Provide wayfinding signage along the length of the trail
3. Investigate the feasibility of realigning the underpass at Riddell Road to cater to all users (cyclists) and improve access and safety
4. Investigate a pedestrian priority crossing with wayfinding signage at Phillip Drive
5. Investigate a pedestrian priority crossing at Elizabeth Drive
6. Investigate a pedestrian priority crossing with wayfinding signage at Racecourse Road
7. In partnership with Salesian College construct trail on southwest side of the Dam to connect with Ardcloney Drive.

6.5 CRAIGIEBURN LINE SHARED PATH

Trail information

Length:
15.65km

SCC:
Yes

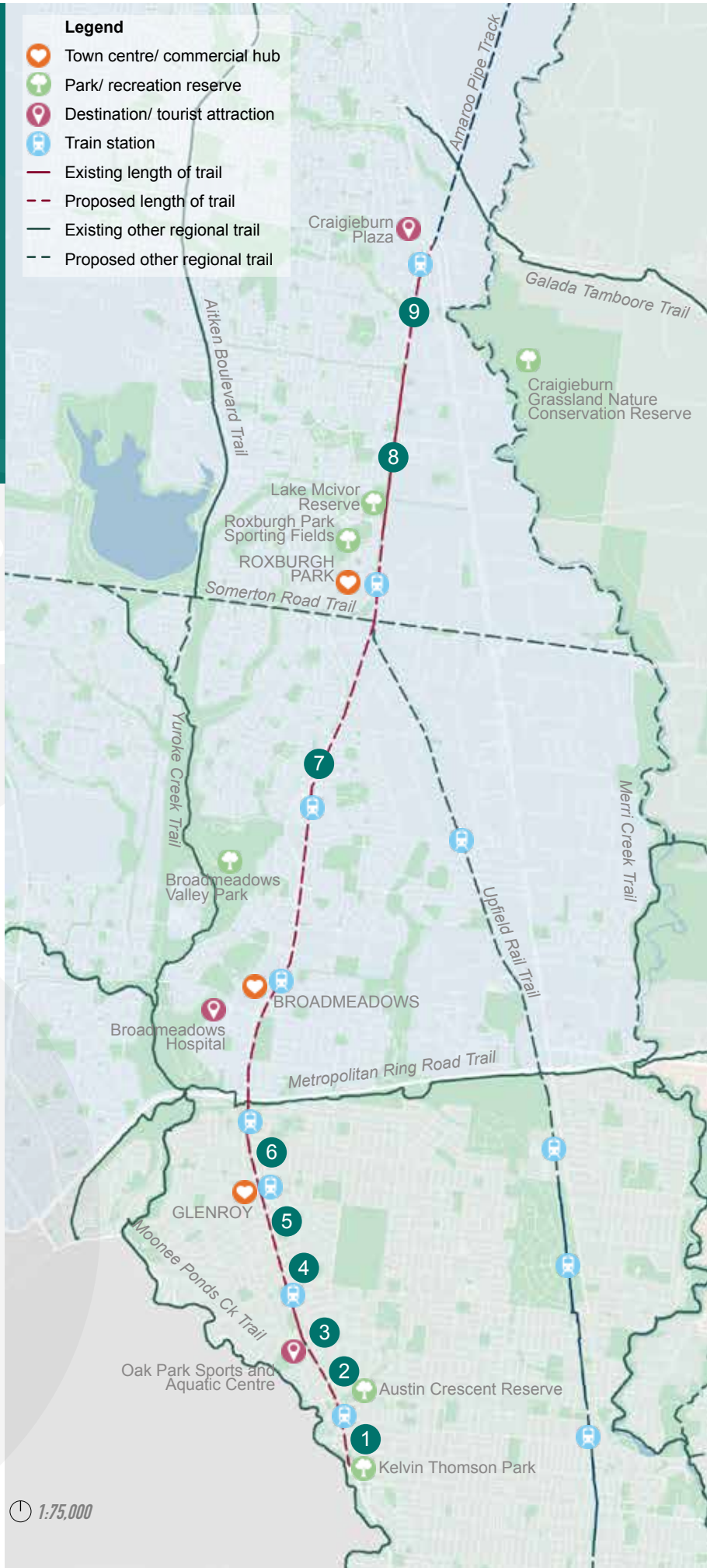
Location:
The Craigieburn Line Shared Path runs along the rail corridor from the Moonee Ponds Creek in the South through to Craigieburn Station

Local Government Area:
Hume & Merri-bek

Additional Stakeholders:
VicTrack

Priority Actions

1. Construct new section of trail from the Moonee Ponds Creek Trail to Gaffney Street
2. Construct a new section of trail, on the western side of the train line, from Gaffney Street to Bothwell Street including fencing and lighting
3. Construct a new section of trail, on the western side of the train line, from Bothwell Street to Devon Road including retaining, fencing and lighting
4. Construct a new section of trail, on the western side of the train line, from Cartwright Street to Glenroy Road including fencing and lighting
5. Construct a new section of trail form Glenroy Road to Glenroy Station
6. Construct a new section of trail, on the eastern side of the train line, from Glenroy Station to Jacana Station including fencing and lighting
7. Advocate for a feasibility study for a new continuous shared path from Jacana Station to McConnell Crescent (north of Roxburgh Park Station)
8. Widen the existing section of trail from McConnell Crescent to Zambezi Court Reserve
9. Advocate for a feasibility study for a new continuous shared path from Zambezi Court Reserve to Craigieburn Station



6.6 DAREBIN CREEK TRAIL

Trail information

Length:
30km (extends beyond study area)

SCC:
No

Location:
This trail runs along the Darebin Creek Trail from Ivanhoe in the south to Epping in the north.

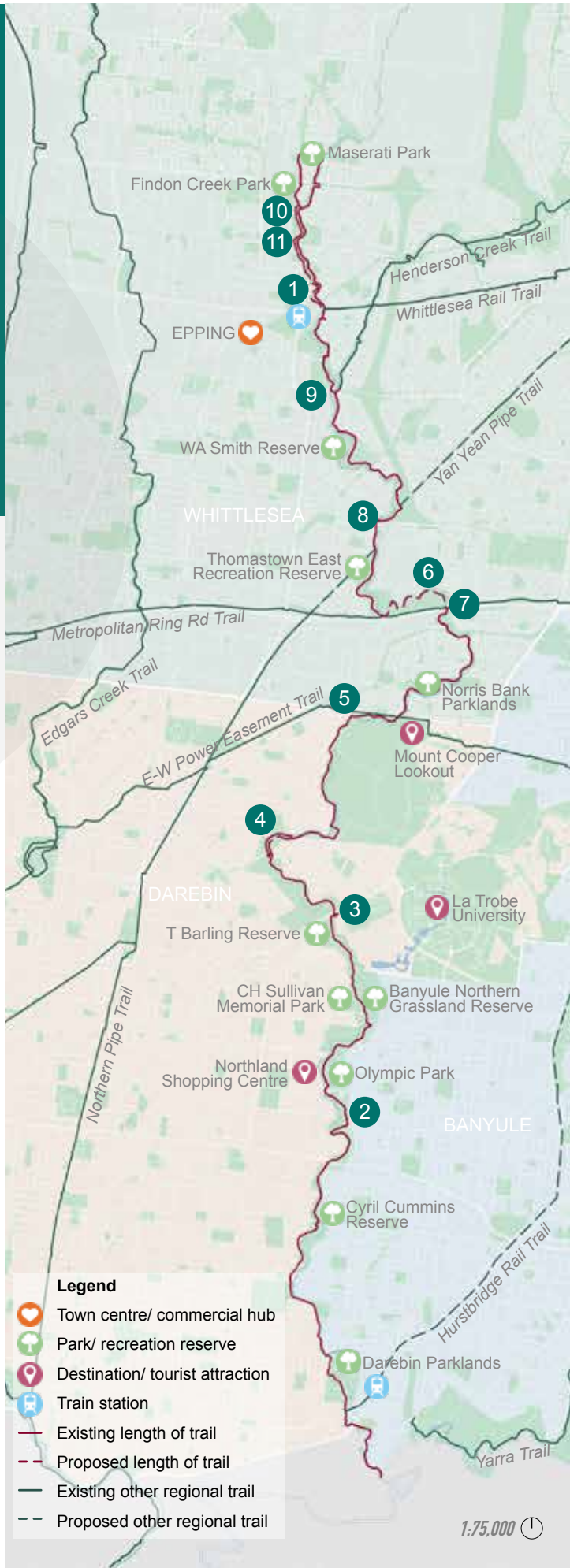
Local Government Area:
Banyule, Darebin, Whittlesea

Additional Stakeholders:
La Trobe University, Major Road Projects Victoria, Melbourne Water, VicRoads

Auditor comments:
"A generally first class trail that utilises the creek's green margins to excellent effect, with only a few minor sections that require upgrading/attention"

Priority Actions

1. Construct new section of trail on the western side of the creek from the train underpass east of Epping Station to Greenbrook Drive
2. Upgrade section of trail between Gona Street and Southern Road
3. Investigate the feasibility of an underpass or bridge crossing Plenty Road intersection to avoid section of trail on Plenty Road footpath
4. Construct a new section of trail on the eastern side of the Darebin Creek from Dunne Street to Chenies Street including an underpass at Dunne Street and Chenies Street
5. Investigate the feasibility of an underpass or signalised pedestrian crossing at Settlement Road to improve trail continuity
6. Construct a new section of trail that follows the creek from the Metropolitan Ring Road through the Darebin Creek Linear Reserve to connect to the new section of trail
7. Elevate the section of the Darebin Creek Trail where it passes beneath the Western Ring Road to avoid flooding
8. Investigate the feasibility of an underpass and bridge crossing at McKimmies Road to avoid section of trail on McKimmies Road bridge
9. Investigate the feasibility of an underpass and bridge crossing at Childs Road to avoid section of trail on Childs Road bridge
10. Investigate the feasibility of an underpass and bridge crossing at Findon Road to avoid section of trail on Findon Road
11. Provide a pedestrian priority crossing at McDonalds Road roundabout



6.7 DIAMOND CREEK TRAIL

Trail information

Length:
20.2km

SCC:
Yes

Location:
Following the creek corridor, the trail begins at the Yarra Trail in Lower Eltham and continues north to Hurstbridge

Local Government Area:
Nillumbik

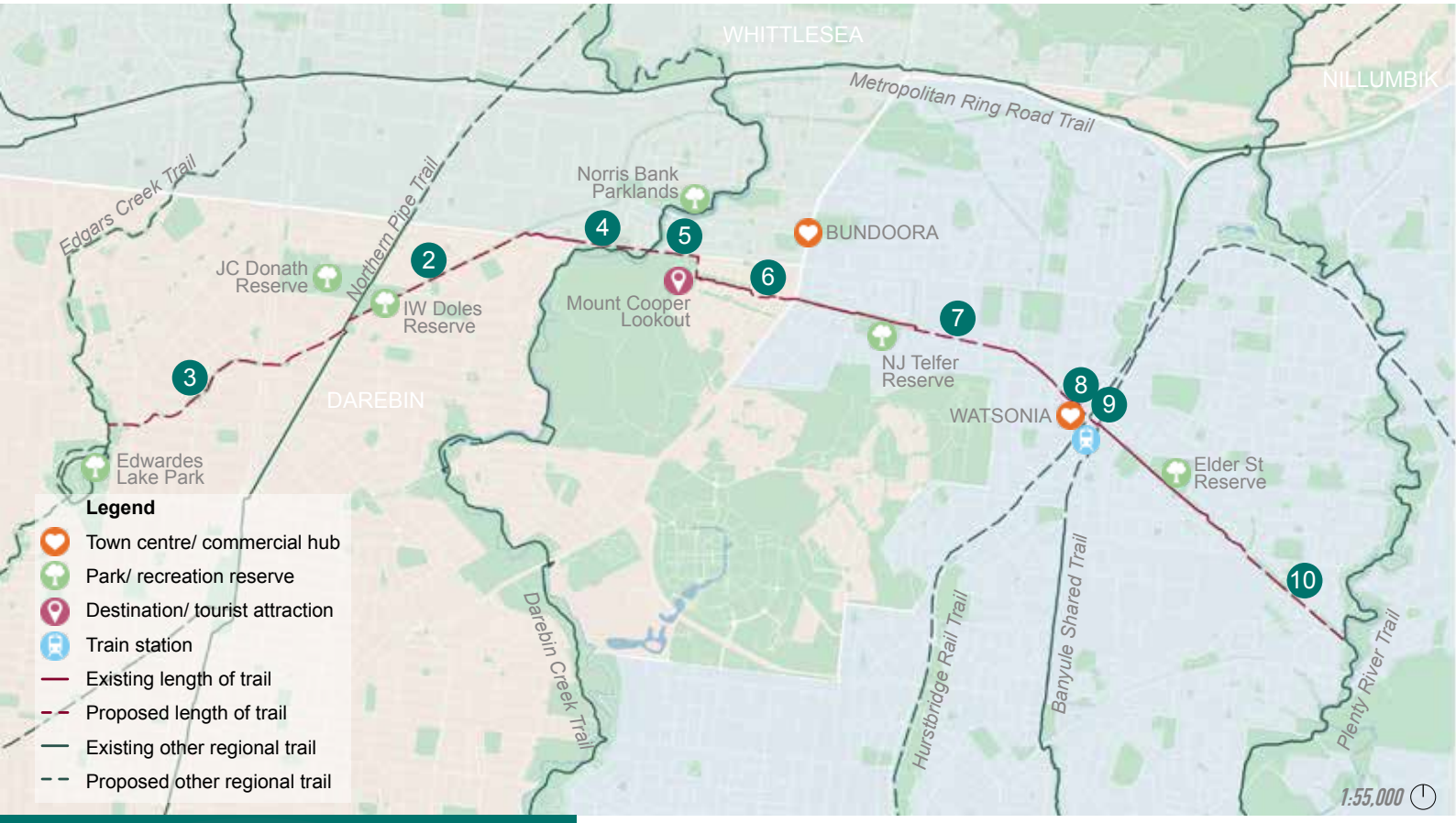
Additional Stakeholders:
Melbourne Water, VicRoads

Auditor comments:
"A reasonably complete trail through some quite scenic areas, with a superb new extension to Wattle Glen but marred badly by a gaping hole in Eltham."

Priority Actions

1. Construct new section of trail from Wilson Road to Graysharps Road, Hurstbridge.
2. Construct new section of trail from Graysharps Road to Fergusons Paddock
3. Construct an underpass at Main Hurstbridge Road, Diamond Creek to avoid busy traffic crossing
4. Widen trail surface from Allendale Road north to Main Hurstbridge Road
5. Install a signalised/ pedestrian priority crossing at Allendale Road
6. Maintain/ upgrade sections of bitumen trail surface through Eltham North Reserve, Research Gully, Eltham North Playground, and Edendale Community Farm
7. Realign the section of trail at the Wattletree Road and Gastons Road underpass to create a gentler grade and wider trail surface
8. Construct new section of trail with wayfinding signage around Main Road and Diamond Street, Eltham to fill the gap in the trail and direct users to the continuation of the trail
9. Upgrade surface of existing trail between Susan Street Oval and Ely St, with wayfinding or linemarking to create a consistent and legible trail
10. Provide wayfinding signage along the length of the trail
11. Maintain/ upgrade sections of bitumen trail surface through Eltham Bushland Reserve alongside Main Road
12. Realign/ enhance the section of trail through the Eltham Lower Park.
13. Realign the sharp bend in the trail between Laurel Hill Drive and Allendale Road

6.8 EAST WEST POWER EASEMENT TRAIL



Trail information

Length:
11.6km

SCC:
No

Location:
This trail runs from the Edgars Creek Trail in the west to the Plenty River Trail in the east, following an existing power easement through Reservoir, Bundoora and Watsonia.

Local Government Area:
Banyule, Darebin, Whittlesea

Additional Stakeholders:
AusNet, Melbourne Water, Private landowners, VicRoads

Auditor comments:
"A somewhat odd amalgamation of sections, ranging in quality from poor to excellent, and several glaring gaps that seem to make an effective and enjoyable trail an impossibility."

Priority Actions

1. Provide wayfinding signage along the length of the trail
2. Construct a section of trail from the Northern Pipe/ St Georges Rd/ Cheddar Road Trail north west along the vacant pipe reserve
3. Construct a section of trail from the Northern Pipe/ St Georges Rd/ Cheddar Road Trail south east along the vacant pipe reserve to Edwardes Lake Park
4. Construct a section of trail along Holt Parade to connect to the Darebin Creek Trail (at Valley Road)
5. Investigate the feasibility of a new section of trail, including a new bridge crossing, from the Darebin Creek Trail, at Holt Parade, around Mount Cooper to connect to the existing section of trail at Snake Gully Drive
6. Construct a section of trail from Reedy Rise to Plenty Road including a new pedestrian priority crossing at Plenty Road
7. Investigate options for providing a new section of trail from Dilkara Avenue to Gleeson Drive
8. Construct a section of trail from the existing trail on Morwell Avenue to Watsonia Station
9. Upgrade existing footbridge over the rail line at Watsonia Station including an underpass/ overpass at Greensborough Road to avoid footpath and multiple road crossings
10. Construct a new section of trail along Wendover Place and Yallambie Road, along the easement to the Plenty River Trail

6.9 EDGARS CREEK TRAIL

Trail information

Length:
20.9km

SCC:
No

Location:
Beginning in Coburg at the Merri Creek Trail, this trail follows the creek north through Thomastown and Epping.

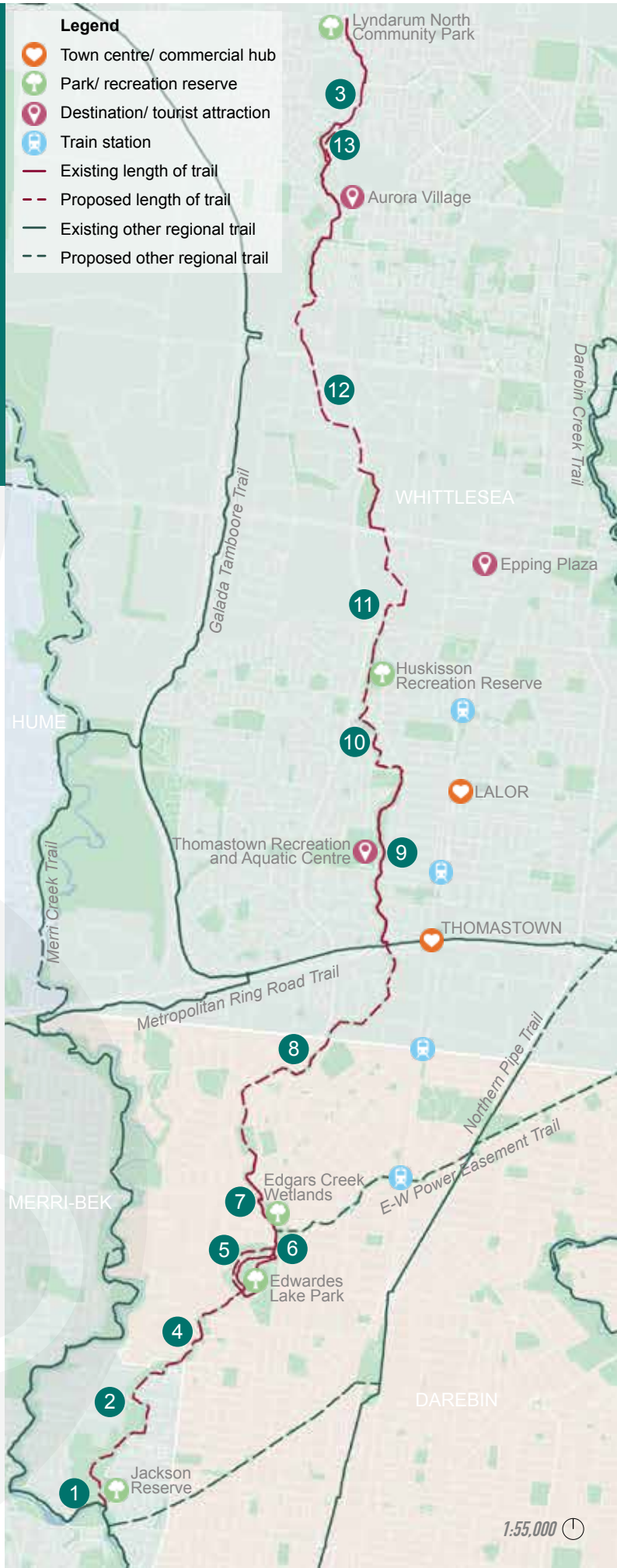
Local Government Area:
Darebin, Merri-bek, Whittlesea

Additional Stakeholders:
Melbourne Water, VicRoads

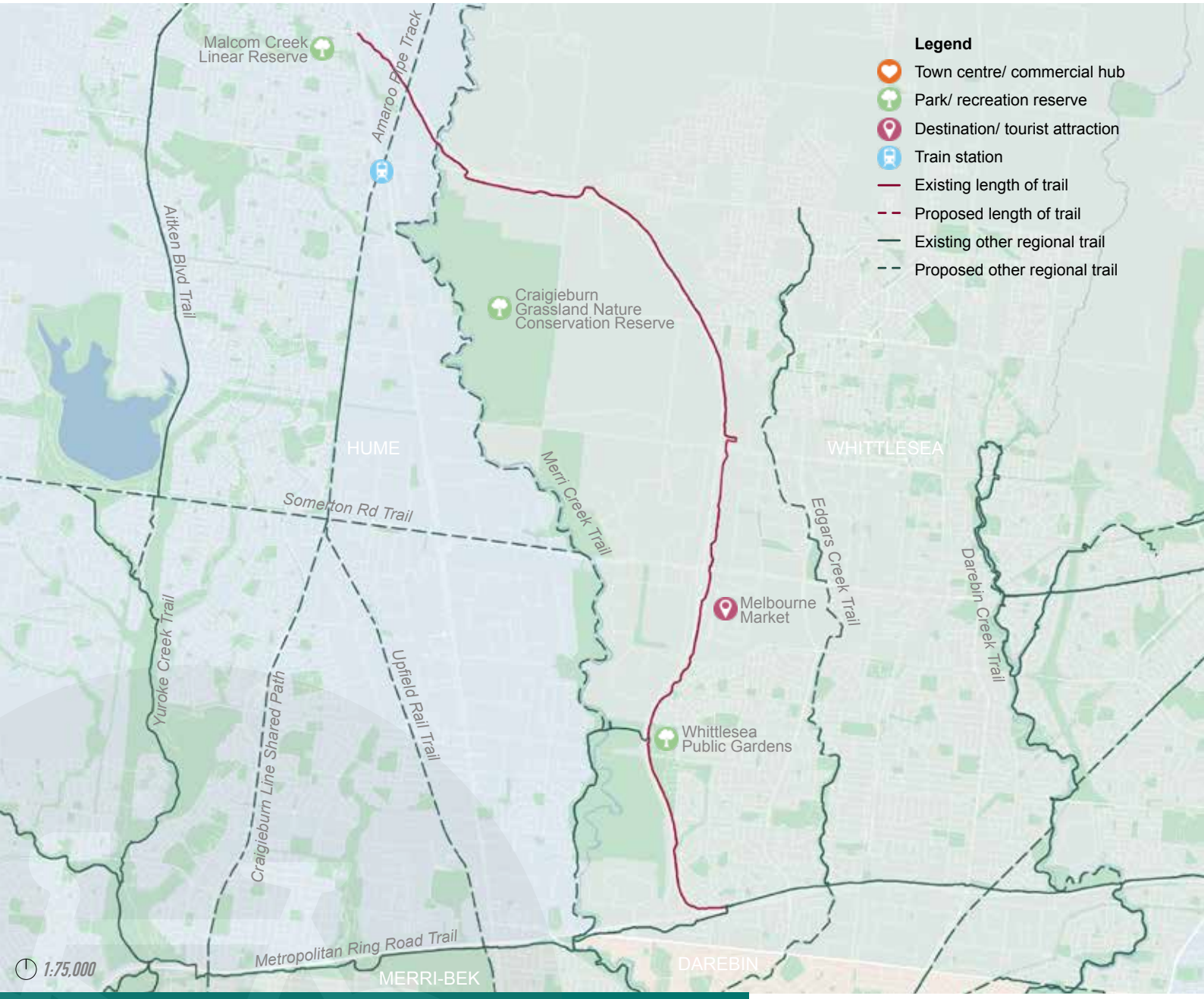
Auditor comments:
"A potentially useful and rewarding trail along Edgars Creek that is at this time, a long way short of that."

Priority Actions

1. Construct new section of trail from the Merri Creek Trail to Ronald Street on the west bank
2. Construct new section of trail from Ronald Street to Carrington Road. Consider keeping the trail away from the creek and along development frontages
3. Construct new section of trail from Strahalbyn Chase to Contempo Boulevard
4. Investigate a new section of trail along the creek from Carrington Road to Edwardes Lake. Explore the feasibility of a trail between Kia Ora Road and Henty Street on the east bank.
5. Construct a separate cycling only trail through Edwardes Lake Park
6. Construct a dedicated shared trail from the public toilets in Edwardes Lake Park, around the car park and over Leamington Street
7. Investigate the feasibility of an underpass and bridge crossing at Broadhurst Avenue
8. Construct a section of trail along the creek from Glasgow Avenue to the Metropolitan Ring Road
9. Upgrade surface of trail between Main Street and Melaleuca Drive
10. Construct section of trail between German Lane and Kingsway Drive, Lalor
11. Construct section of trail along the street from Deveny Road to Cooper Street, Epping
12. Construct a section of trail along the creek from Jersey Drive to Rockfield Street
13. Construct section of trail along the creek from Sheba Way to Snowy Place
14. Provide wayfinding signage along the length of the trail



6.10 GALADA TAMBOORE TRAIL



Trail information

Length:
15.5km

SCC:
No

Location:
Running along the Hume Freeway/ Craigieburn Bypass, this trail begins at the Metropolitan Ring Road Trail in the south and continues north to Craigieburn.

Local Government Area:
Hume, Whittlesea

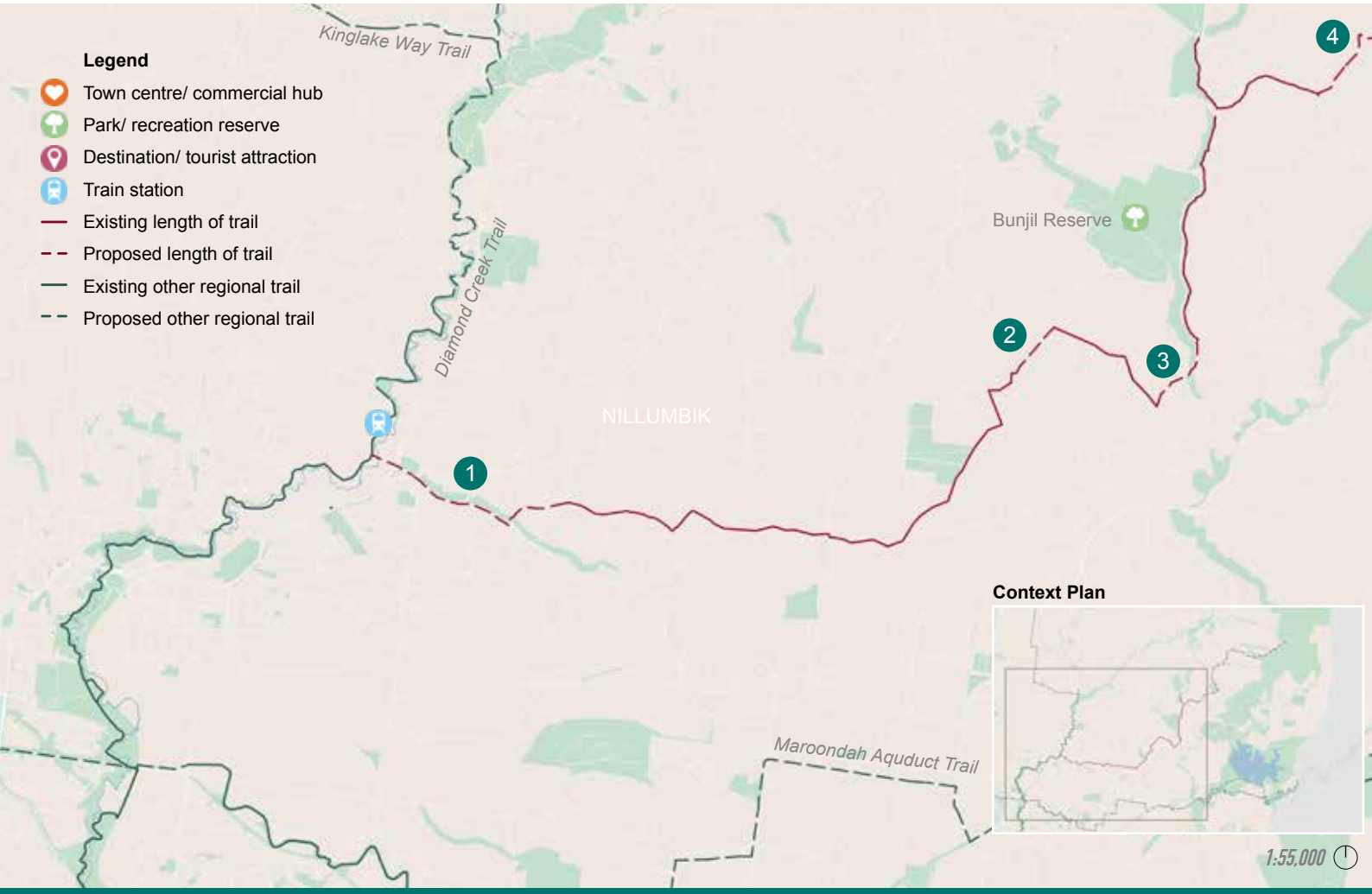
Additional Stakeholders:
Merri Creek Management Committee, VicRoads

Auditor comments:
"An effective path that offers reasonable off-road bicycle exercise options or, for the hearty long-range cycle commuter, a direct route from Melbourne's northern urban reaches to the city-access trails."

Priority Actions

1. Provide wayfinding signage along the length of the trail
2. Reinstate centre linemarking along the trail

6.11 GREEN WEDGE TRAIL



Trail information

Length:
21.5km

SCC:
No

Location:
Located entirely with Nillumbik, this trail begins at the Diamond Creek Trail in Wattle Glen to Kinglake National Park

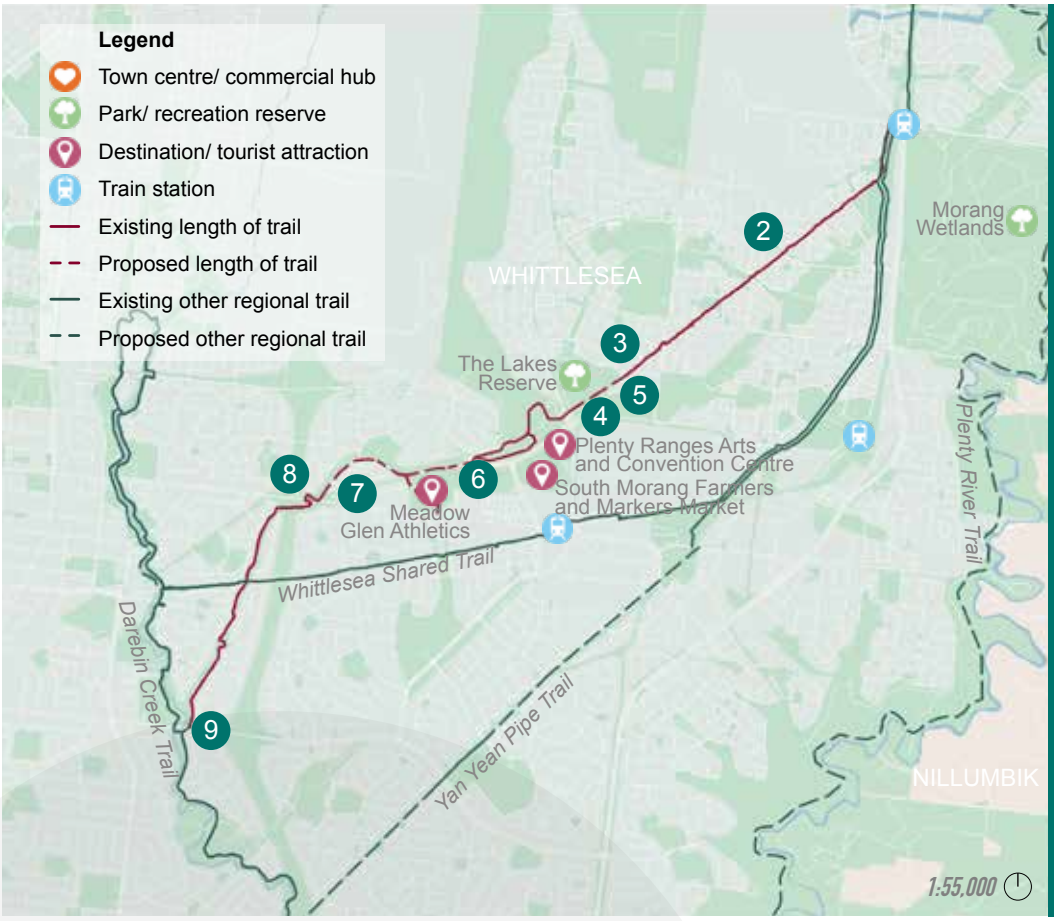
Local Government Area:
Nillumbik

Additional Stakeholders:
Parks Victoria

Priority Actions

1. Construct a new section of trail east from the Diamond Creek Trail at Wattle Glen Station along Watery Gully Creek to existing trail on Watery Gully Road
2. Construct a new section of trail from Couties Road to Alma Road
3. Construct a new section of trail along Long Gully Road from Alma Road to Turnung Road
4. Construct an extension of the trail from the intersection of Clintons Road and Spanish Gully Road to the Marshalls Road car park within the Kinglake National Park
5. Upgrade existing sections of the trail surface to match width and material treatment of new sections
6. Provide wayfinding signage along the length of the trail

6.12 HENDERSONS CREEK TRAIL



Trail information

Length:
8.6km

SCC:
No

Location:
Following the Henderson Road Drain and The Henderson Creek, this trail begins at the Darebin Creek Trail in Lalor and heads in a north-east direction to Yan Yean Trail in South Morang.

Local Government Area:
Whittlesea

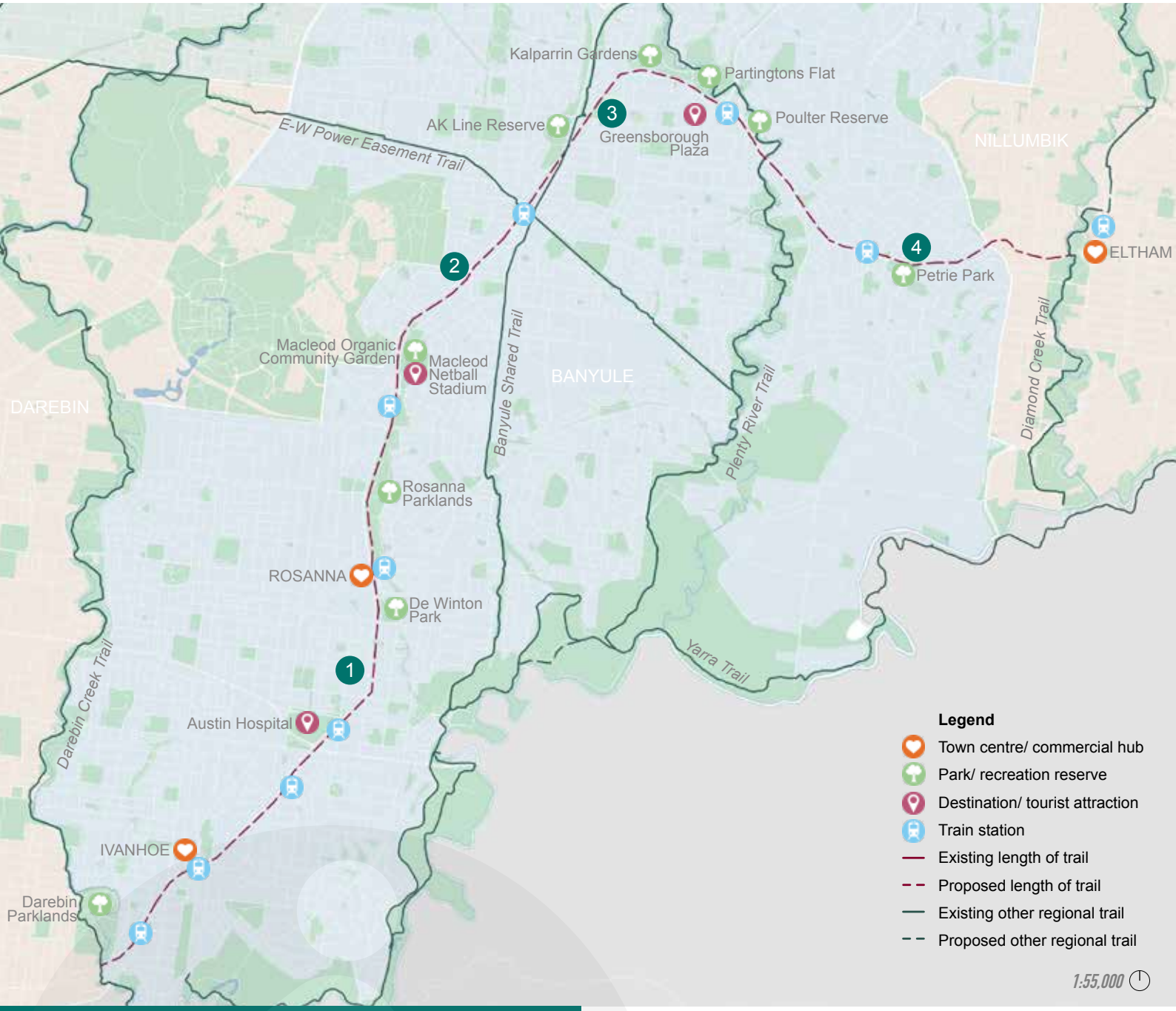
Additional Stakeholders:
Major Road Projects Victoria, Melbourne Water, VicRoads

Auditor comments:
"A trail of two parts where the southern half makes sense and is easy to follow, and the northern half, where virtually nothing makes sense."

Priority Actions

1. Provide wayfinding signage along the length of the trail
2. Provide a signalised/ pedestrian priority crossing over The Lakes Boulevard and Glenorchy Way
3. Upgrade trail surface from Gordons Road to Darius Terrace
4. Construct a section of trail from Darius Terrace to The Lakes Boulevard (at Findon Road) including a bridge crossing to connect to existing trail
5. Provide a signalised/ pedestrian priority crossing over The Great Eastern Way
6. Provide a signalised/ pedestrian priority crossing at Findon Road
7. Upgrade trail surface from Findon Road to McDonalds Road
8. Provide a signalised/ pedestrian priority crossing at McDonalds Road
9. Provide a signalised/ pedestrian priority crossing or Underpass at Childs Road to connect to the Darebin Creek Trail

6.13 HURSTBRIDGE RAIL TRAIL



Trail information

Length:
16.1km

SCC:
Yes

Location:
This trail begins at the Darebin Creek Trail in Ivanhoe follows the Hurstbridge rail line to the Diamond Creek Trail in Eltham.

Local Government Area:
Banyule and Nillumbik

Additional Stakeholders:
Metro Trains, VicTrack

Auditor comments:
-

Priority Actions

1. Construct a new section of trail along the Hurstbridge rail line from the Darebin Creek Trail north to Macleod Station
2. Construct a new section of trail along the Hurstbridge rail line from Macleod Station to Elder Street
3. Construct a new section of trail along the Hurstbridge rail line from Elder Street to the Plenty River Trail
4. Construct a new section of trail along the Hurstbridge rail line from the Plenty River Trail to the Diamond Creek Trail

6.14 JACKSONS CREEK TRAIL

Trail information

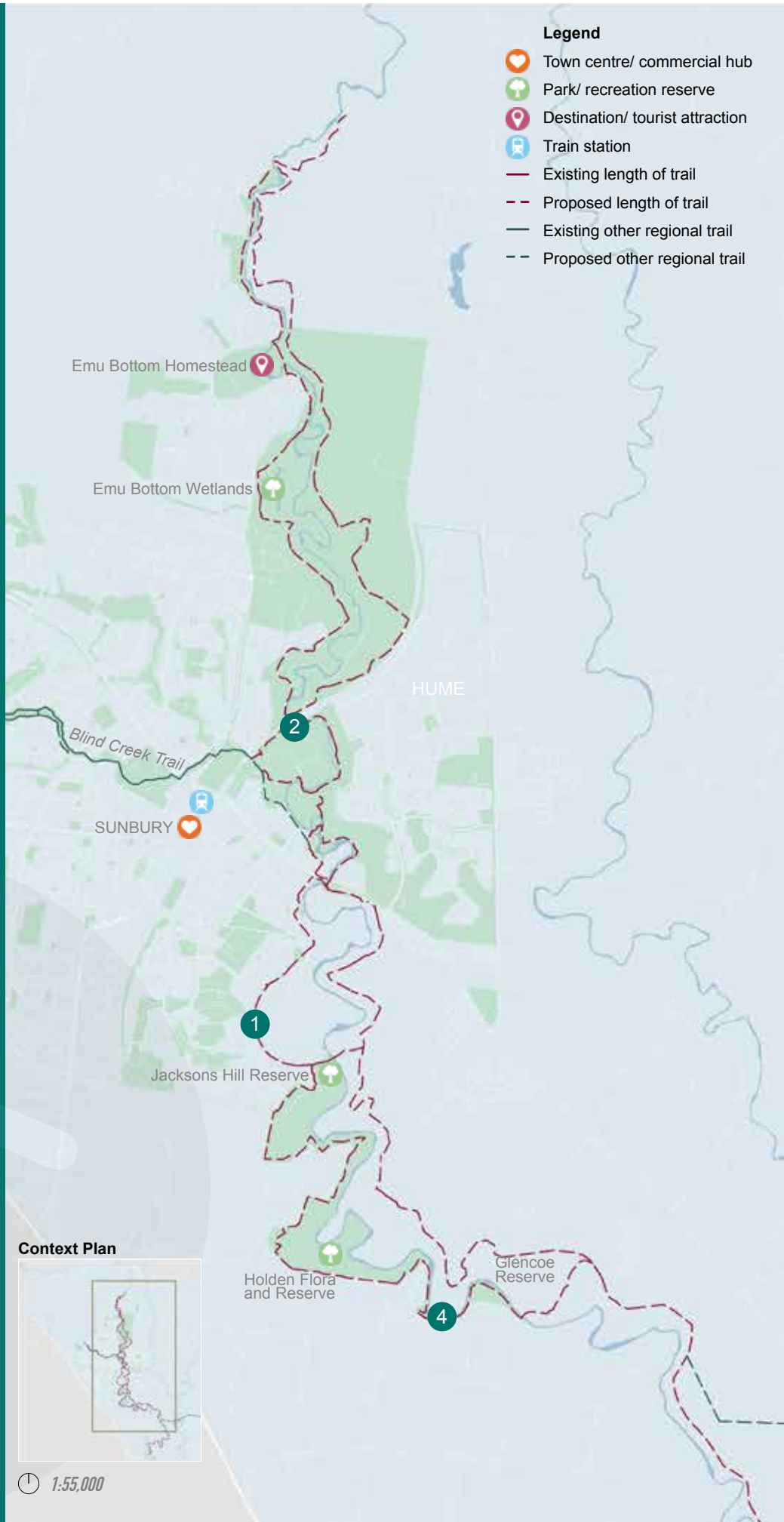
Length:
50.3km (potential to extend beyond study area)

SCC:
No

Location:
This proposed trail runs through the Jacksons Creek corridor in Sunbury and continues south to the border of Hume and the Organ Pipes National Park

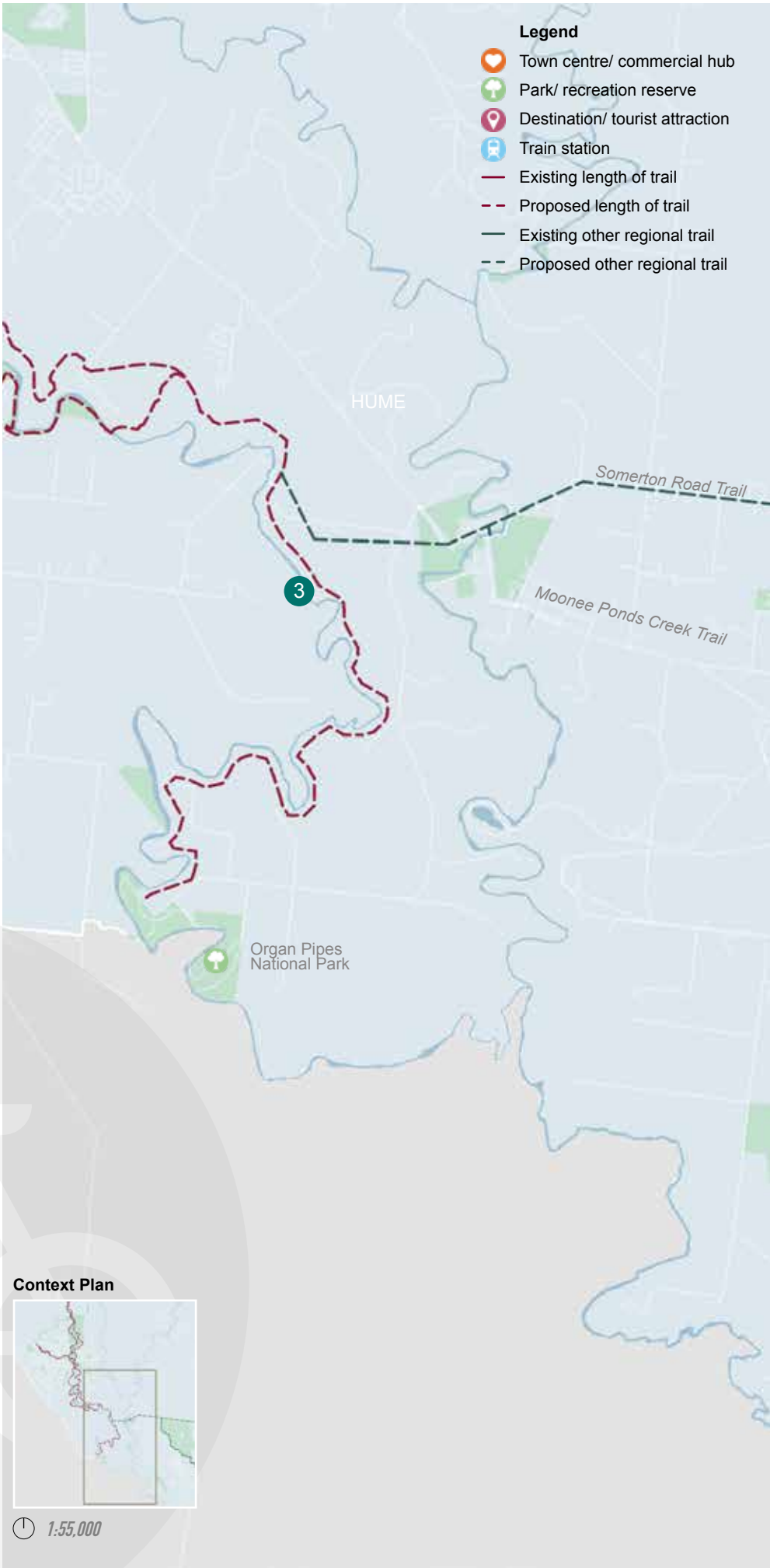
Local Government Area:
Hume

Additional Stakeholders:
DELWP, Greater Western Water, Melbourne Water, Parks Victoria, Wurundjeri Land Council

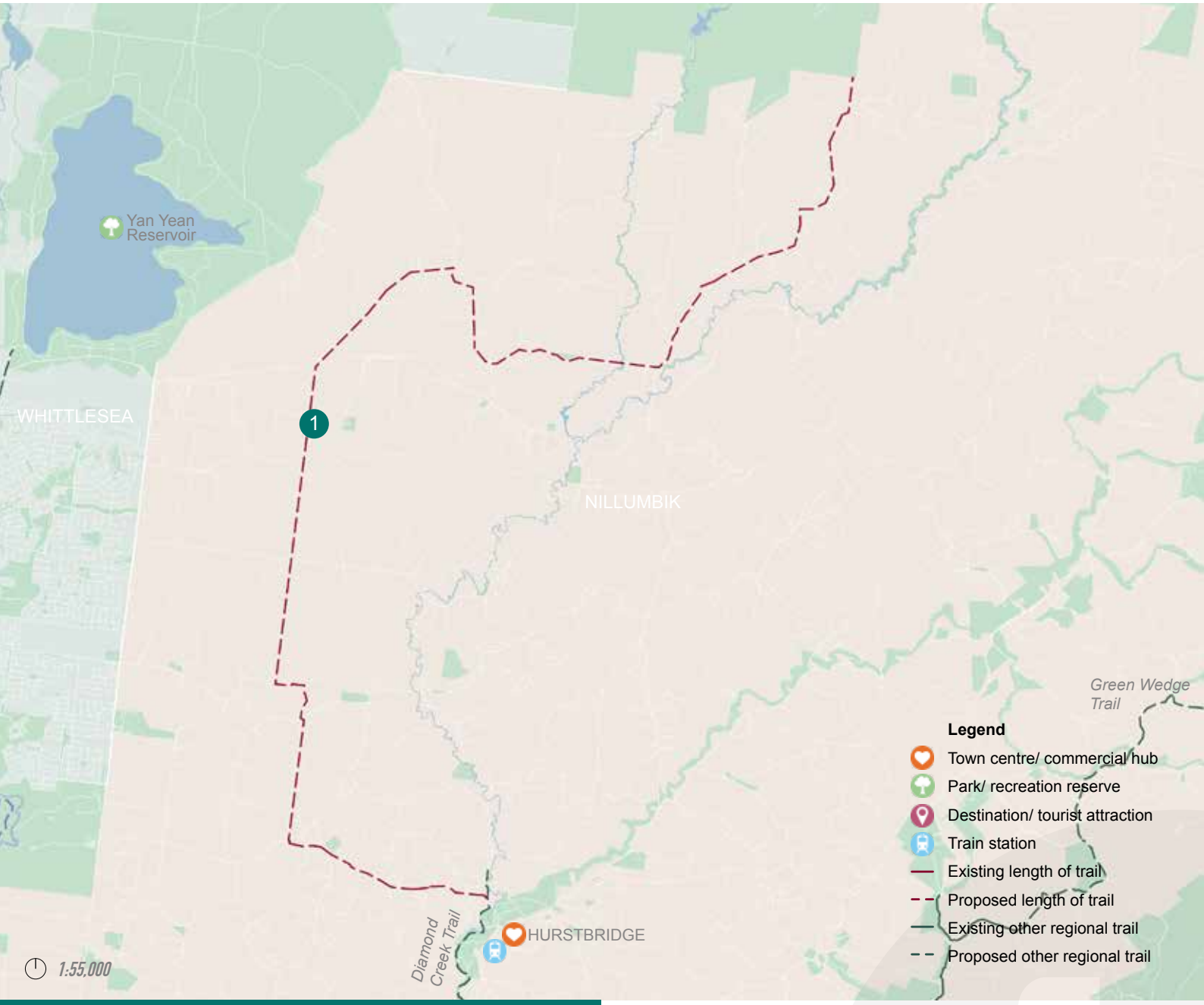


Priority Actions

1. Construct new section of trail from Harker Street to Hammersmith Court
2. Plan and investigate the staged construction of trails on both sides of the Jacksons Creek with project partners and other landholders in line with the priorities of the Jacksons Creek biik wurrdha Regional Parklands Plan
3. Investigate opportunities to construct a new section of trail from Bulla-Diggers Rest Road to Organ Pipes National Park in partnership with Parks Victoria and Brimbank City Council
4. Construct a new section of trail from Duncans Lane to Glencoe Reserve along the south side of the creek



6.15 KINGLAKE WAY TRAIL



Trail information

Length:
20.8km

SCC:
No

Location:
Located entirely with Nillumbik, this trail begins at the Diamond Creek Trail in Hurstbridge and heads north to Arthurs Creek

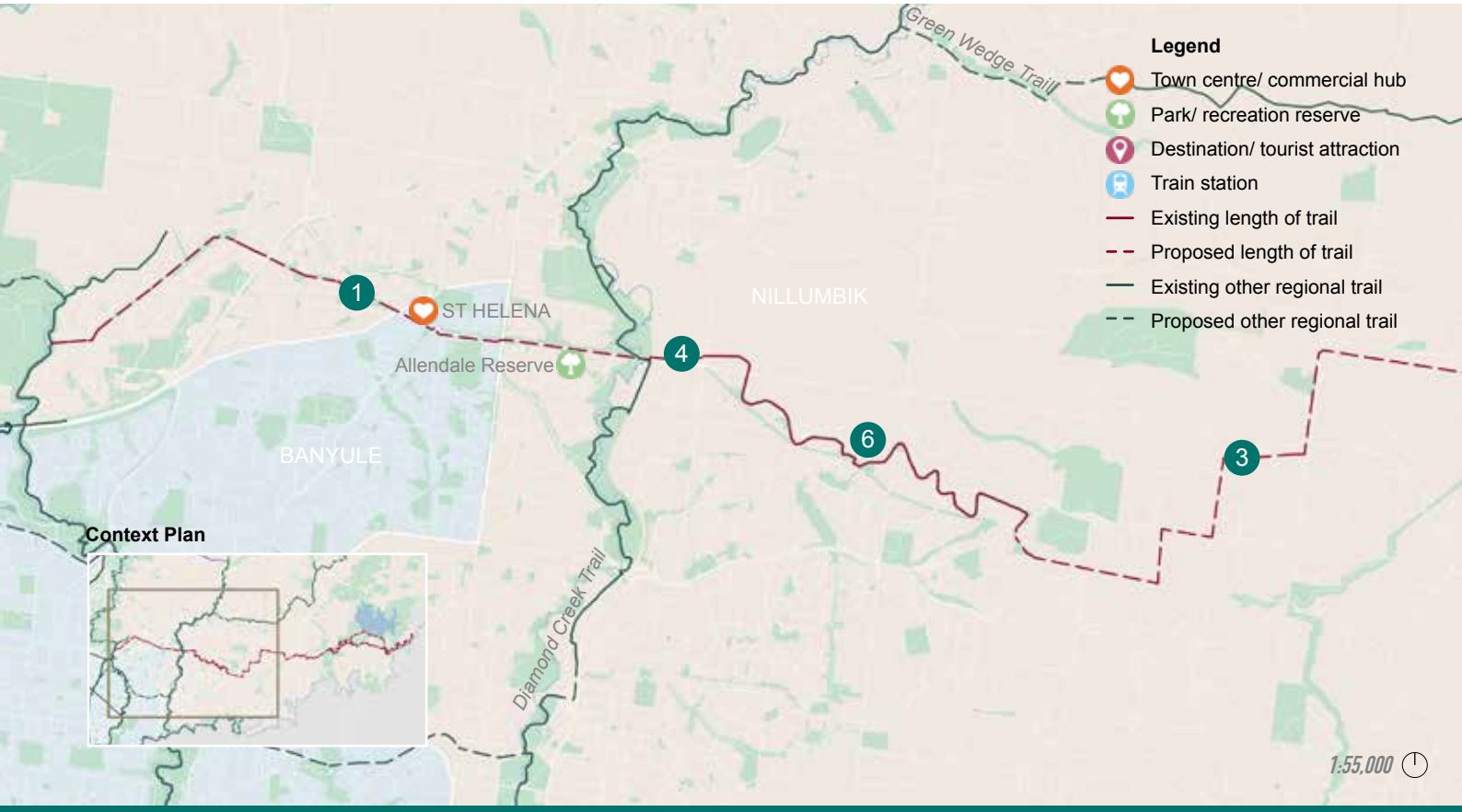
Local Government Area:
Nillumbik

Additional Stakeholders:
ParksVic

Priority Actions

1. Establish a new trail from Hurstbridge to Arthurs Creek

6.16 MAROONDAH AQUEDUCT TRAIL



Trail information

Length:
24.1km

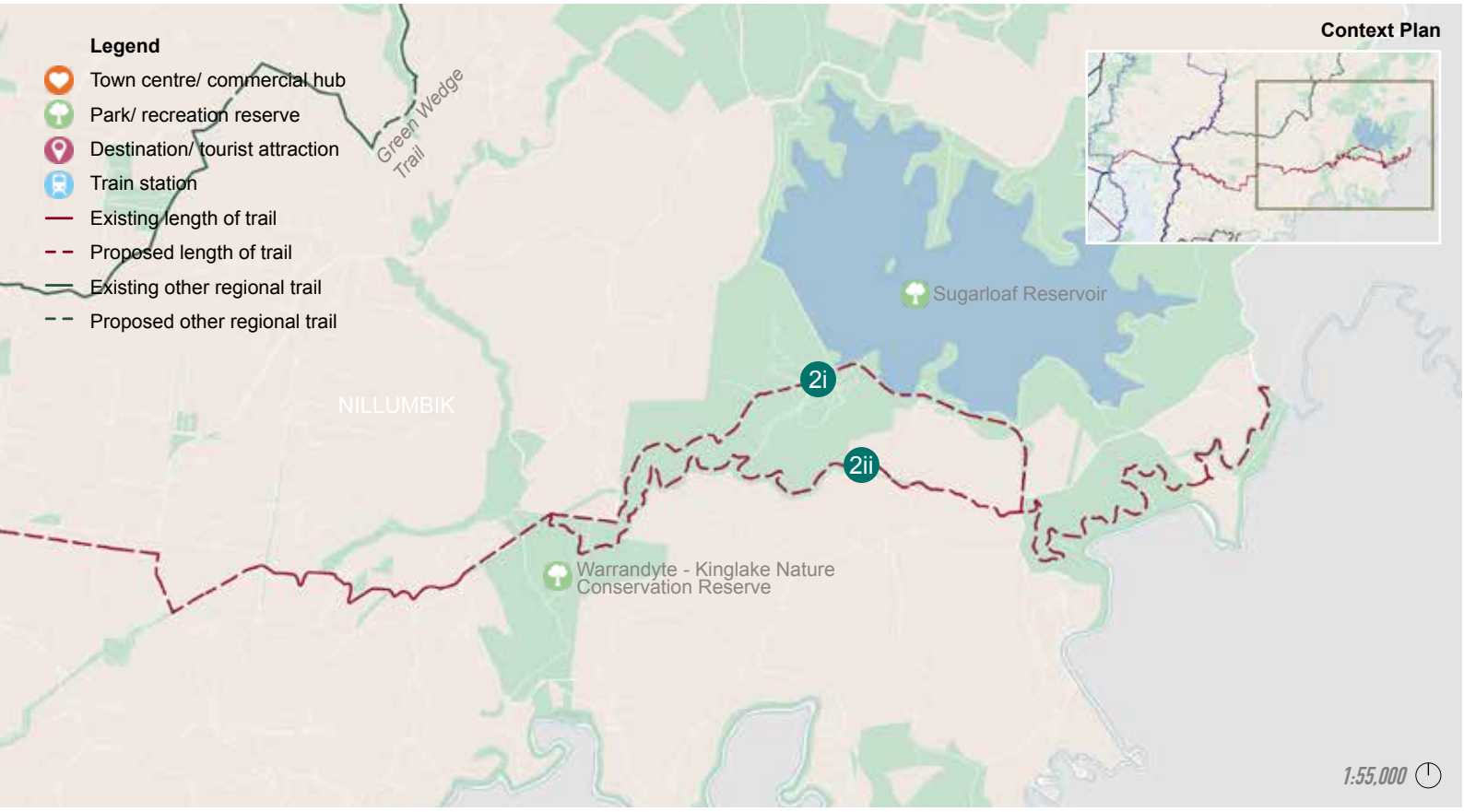
SCC:
No

Location:
This trail runs in an east west direction from the Diamond Creek Trail in Greensborough in the west to the Sugarloaf Reservoir in the east.

Local Government Area:
Banyule, Nillumbik

Additional Stakeholders:
Melbourne Water, Parks Victoria, VicRoads

Auditor comments:
“A very pleasant trail that has mostly a neutral gradient, marred only by very steep access at the west end and a busy main road at the east end.”



Priority Actions

1. Construct new section of trail connecting the Plenty River Trail near Lear Court, east along the aqueduct across Diamond Creek Road to the Diamond Creek Trail at Allendale Road.
2. Extend the Maroondah Aqueduct Trail through to Yarra Glen. Two options have been identified for this extension:
   - 2i Construct a new section of trail from the existing Aqueduct Trail at Calwell Road through to Ashmore Road and on to Yarra Glen; or
   - 2ii Construct a new section of trail from the existing Aqueduct Trail at Calwell Road via the Melbourne Water Caretakers trail to Ashmore Road and on to Yarra Glen.
3. Construct new section of trail from existing Aqueduct Trail at Main Road. New trail to head south east to cross over Bells Hill Road, continuing east then north to meet to Eltham-Yarra Glen Road. Head east along Eltham-Yarra Glen Road, north alongside New Road, then east alongside Donaldson Road. The trail then continues north alongside Eltham-Yarra Glen Road before turning south alongside Henley Road where it will connect with the existing Aqueduct Trail.
4. Extend the trail west from Godber Road to connect to the Diamond Creek Trail
5. Provide wayfinding signage along the length of the trail
6. Realign section of trail either side of Afton Street to reduce grade

6.17 MERRI CREEK TRAIL

Trail information

Length:
35.1km (extends beyond study area)

SCC:
No

Location:
The Merri Creek Trail follows the creek corridor from Northcote in the south through Coburg, Thomastown, Craigieburn and onto Donnybrook in the north (in accordance with the future *Merri Creek Regional Parklands Plan*).

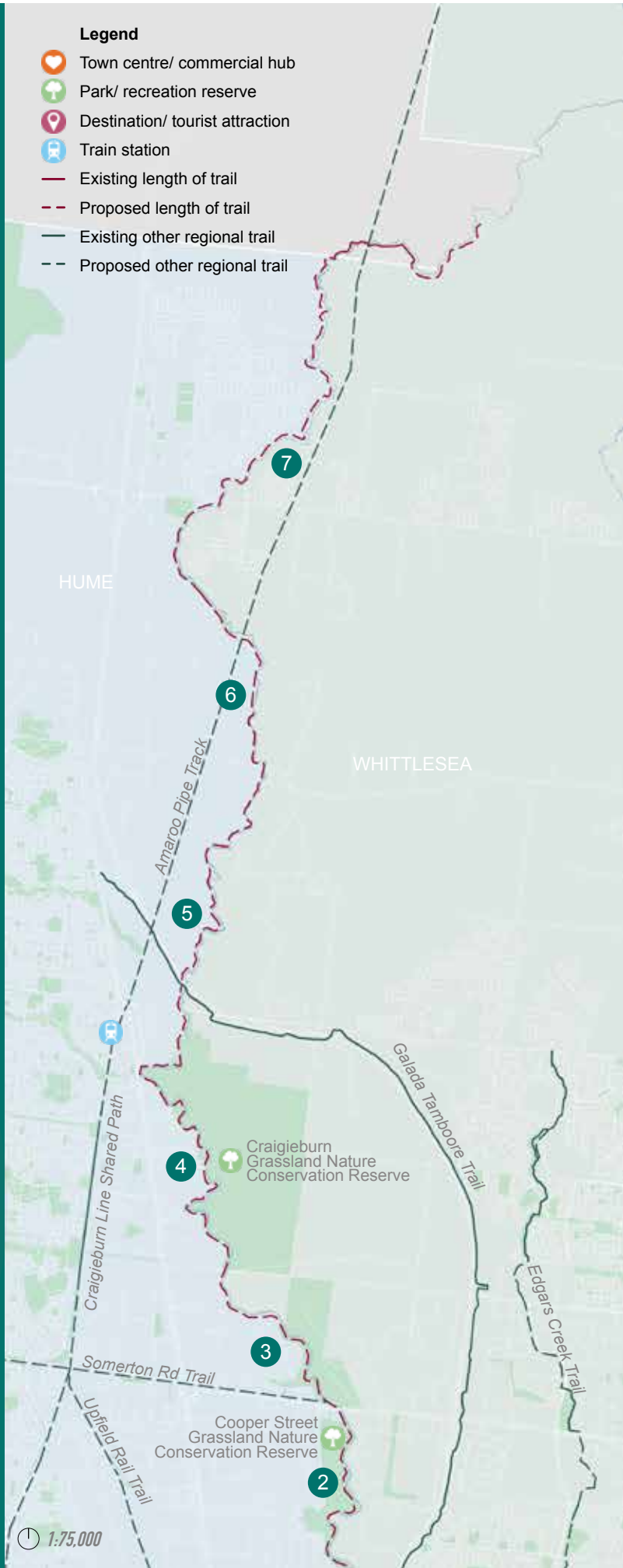
Local Government Area:
Darebin, Hume, Merri-bek, Whittlesea

Additional Stakeholders:
City of Yarra, Mitchell Shire, Developers, Melbourne Water, Parks Victoria, VicRoads, DELWP, MCMC

Auditor comments:
"An excellent off-road trail that serves both local and commuter cycle traffic and walkers, with fundamental continuity issues."

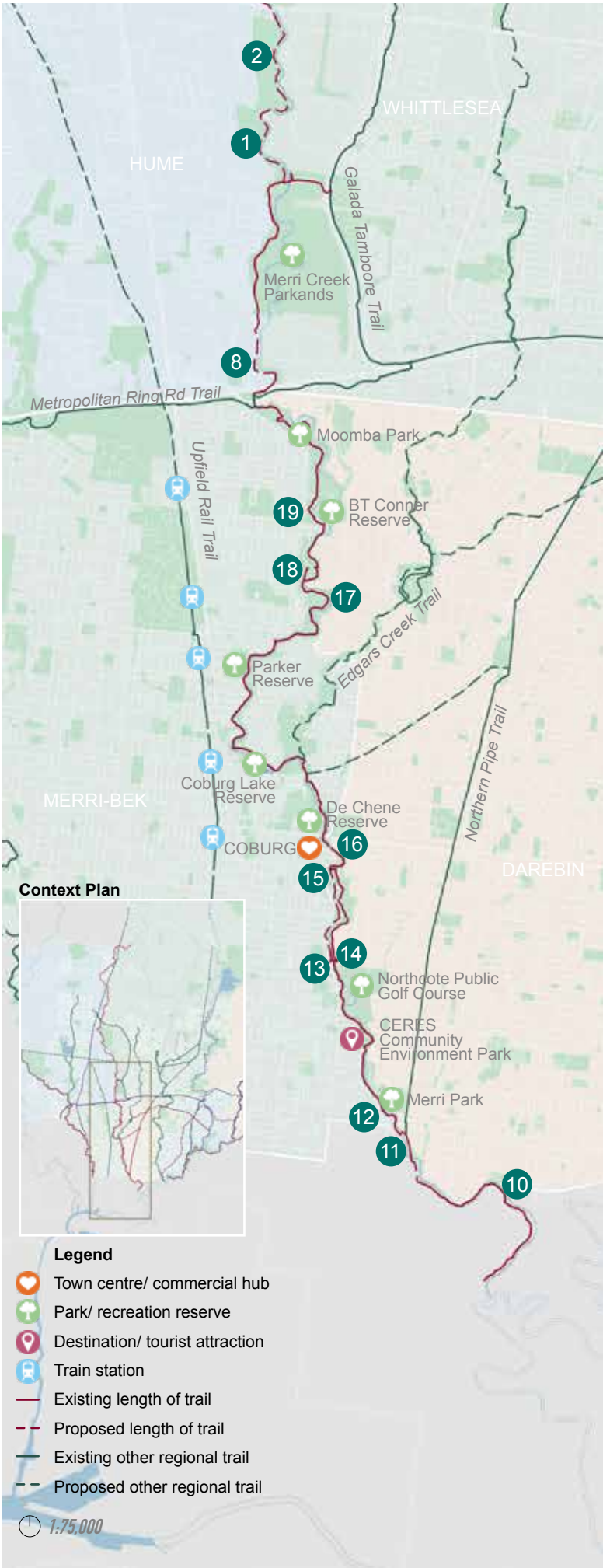
Notes:
Whilst sitting outside the study area in the City of Yarra, it should be noted that an additional section of trail is required at Rushall Station to improve the continuity in this area.

Context Plan

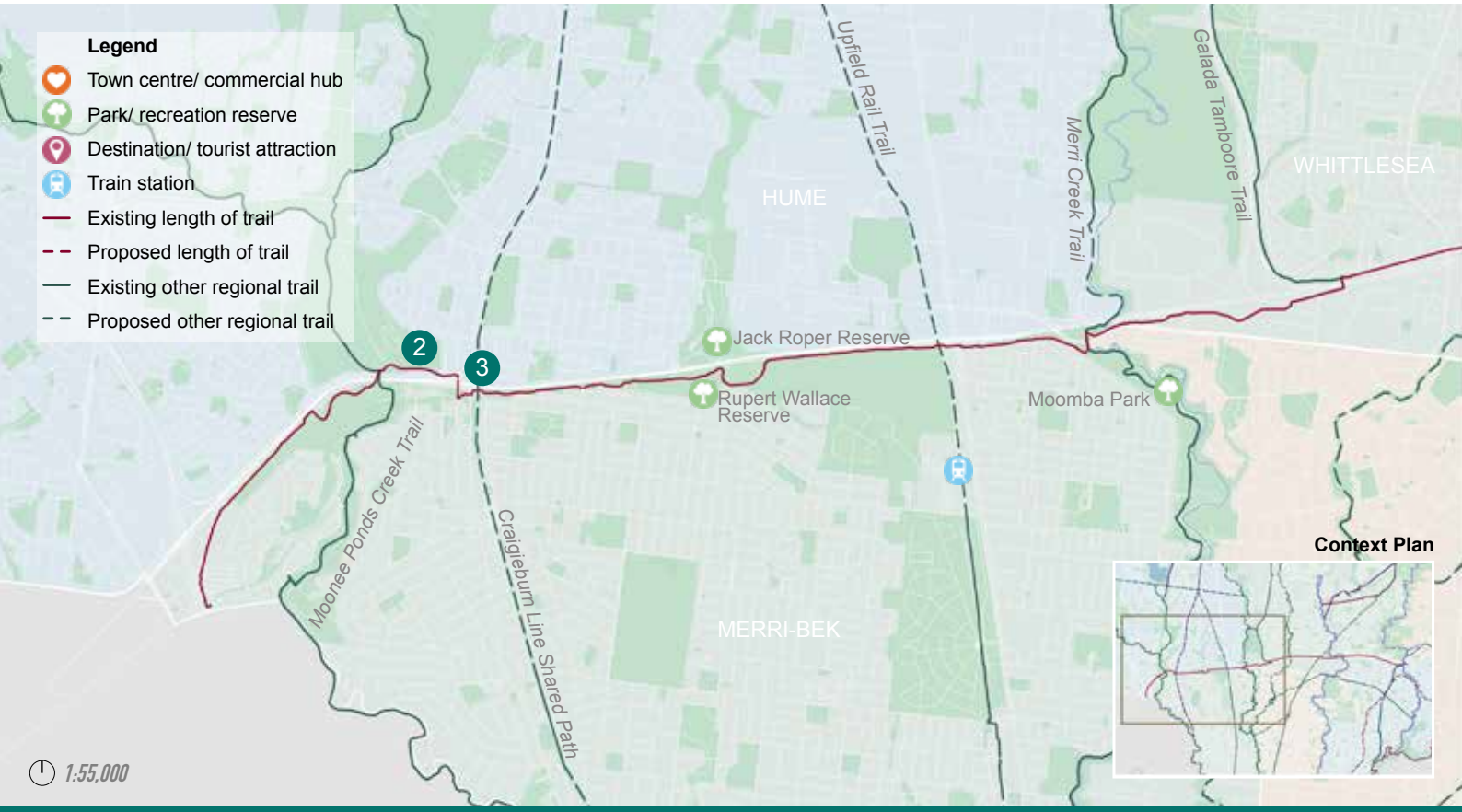


Priority Actions

1. Extend the Merri Creek Trail from the south end of Merri Concourse to Premier Drive
2. Partner with Parks Victoria and DELWP to extend the Merri Creek Trail from Merri Concourse (north) to Cooper Street
3. Advocate for and investigate the staged extension of the Merri Creek Trail from Coopers Street Somerton/Epping north to OHerns Road as part of the Upper Merri Creek Regional Parkland Plan
4. Advocate for and investigate the staged extension of the Merri Creek Trail from Oherns Road to Craigieburn Road as part of the Upper Merri Creek Regional Parkland Plan
5. Advocate for and investigate the extension of the Merri Creek Trail from Craigieburn Road to Summerhill Road as part of the Upper Merri Creek Regional Parkland Plan
6. Extend the Merri Creek Trail from Summerhill Road to Donnybrook Road
7. Extend the Merri Creek Trail from Donnybrook Road to the Northern End of Moxham Drive
8. Complete missing section of trail from the Metropolitan Ring Rd to existing section of trail south of Horne Street
9. Provide and upgrade line-marking to ensure continuous white lines indicating trail flow/ direction in high traffic areas
10. Realign section of trail south of Heidelberg Road to reduce steep grade
11. Provide a bridge crossing over the creek near the St Georges Road Bridge
12. Relocate and widen trail from Merri Creek Primary School to Sumner Park outside of the flood zone
13. Realign and widen trail north and south of Moreland Road
14. Modify existing bridge alongside Moreland Road vehicular bridge to better serve pedestrians and cyclists
15. Replace the Harding Street Bridge to cater for shared use
16. Widen and reduce the steepness of the boardwalk section of trail from Edna Grove to Bell Street and create a new connection at Bell Street
17. Widen and realign path outside of flood zone between Basil Nursing Home and Parker Reserve
18. Construct a new section of trail from Vervale Avenue to the bridge crossing to the north to provide an alternative route with a gentler grade
19. Provide wayfinding signage for Fawkner section of the Merri Creek (as per Moreland's Merri Creek Action Plan)
20. Provide wayfinding signage along the length of the trail



6.18 METROPOLITAN RING ROAD TRAIL



Trail information

Length:
11.3km (extends beyond study area)

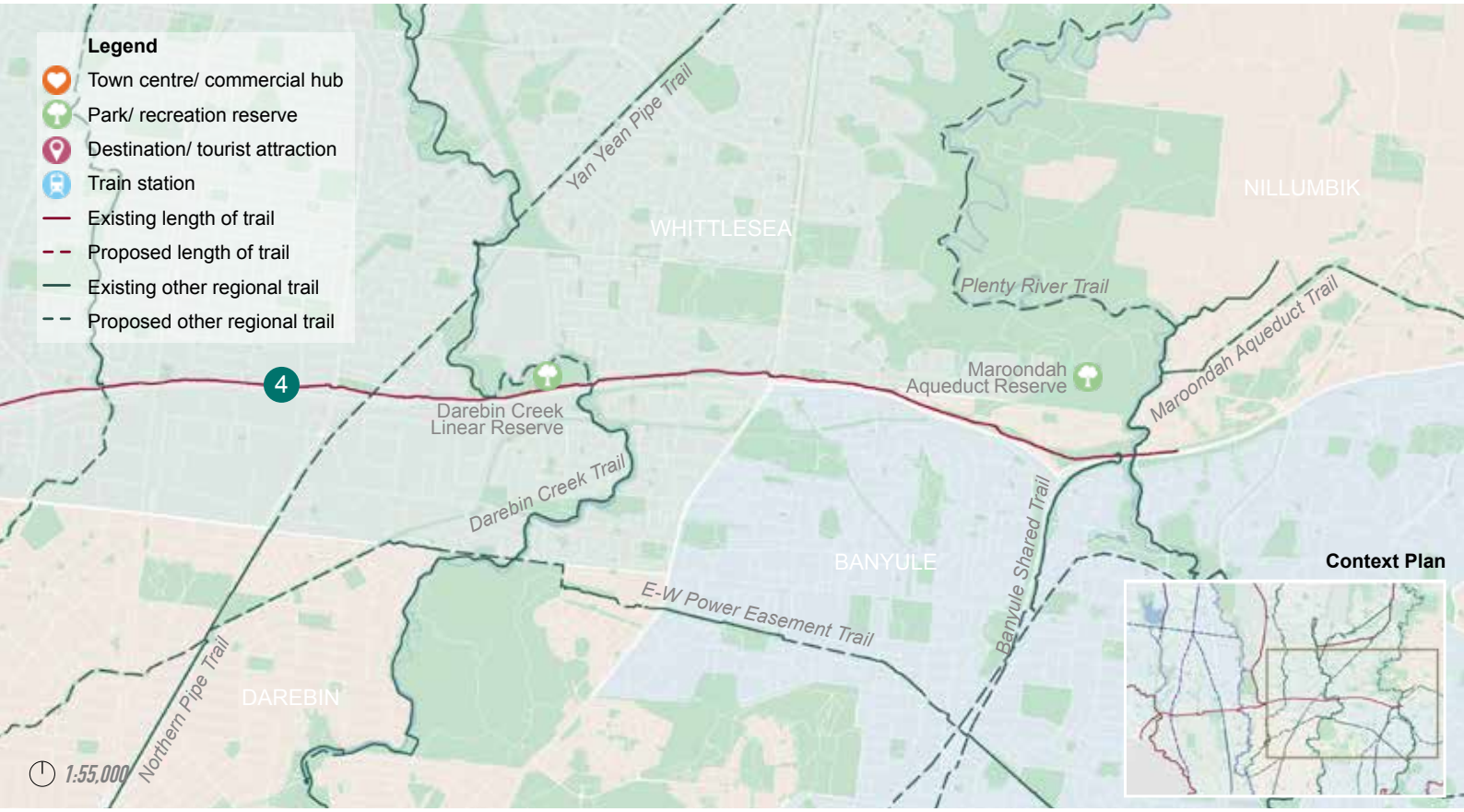
SCC:
No

Location:
Following the Metropolitan Ring Road, this trail connects a number of regional trails as it runs east-west from Greensborough to Gowanbrae within the Northern Region. Beyond the study area, the trail extends further west to Altona North.

Local Government Area:
Banyule, Hume, Merri-bek, Nillumbik, Whittlesea

Additional Stakeholders:
Major Road Projects Victoria, Melbourne Water, Metro Trains, VicRoads, VicTrack

Auditor comments:
“A highly effective transportation/ commuting route with excellent capacity for direct passage east-west, where few or no alternatives are available”



Priority Actions

1. Provide wayfinding signage along the length of the trail
2. Investigate the feasibility of realigning the section of trail east of the section of trail east of the Moonee Ponds Creek towards Jacana to reduce the incline
3. Advocate for an upgrade to the existing overpass at Jacana Station with wayfinding signage to improve connectivity and continuity
4. Upgrade section of trail between High Street and Dalton Road

6.19 MOONEE PONDS CREEK TRAIL

Trail information

Length:
29.8km (extends beyond study area)

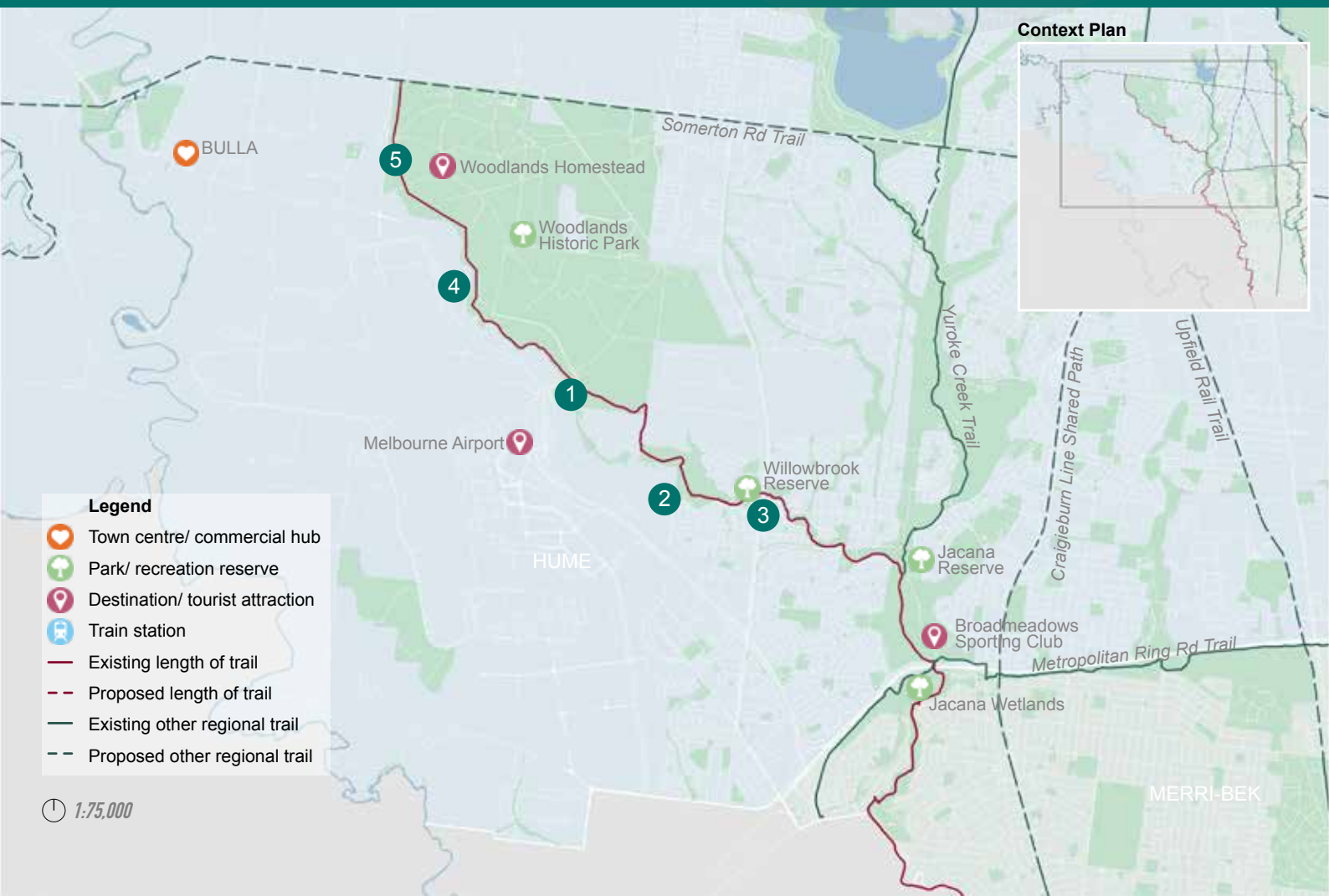
SCC:
Yes

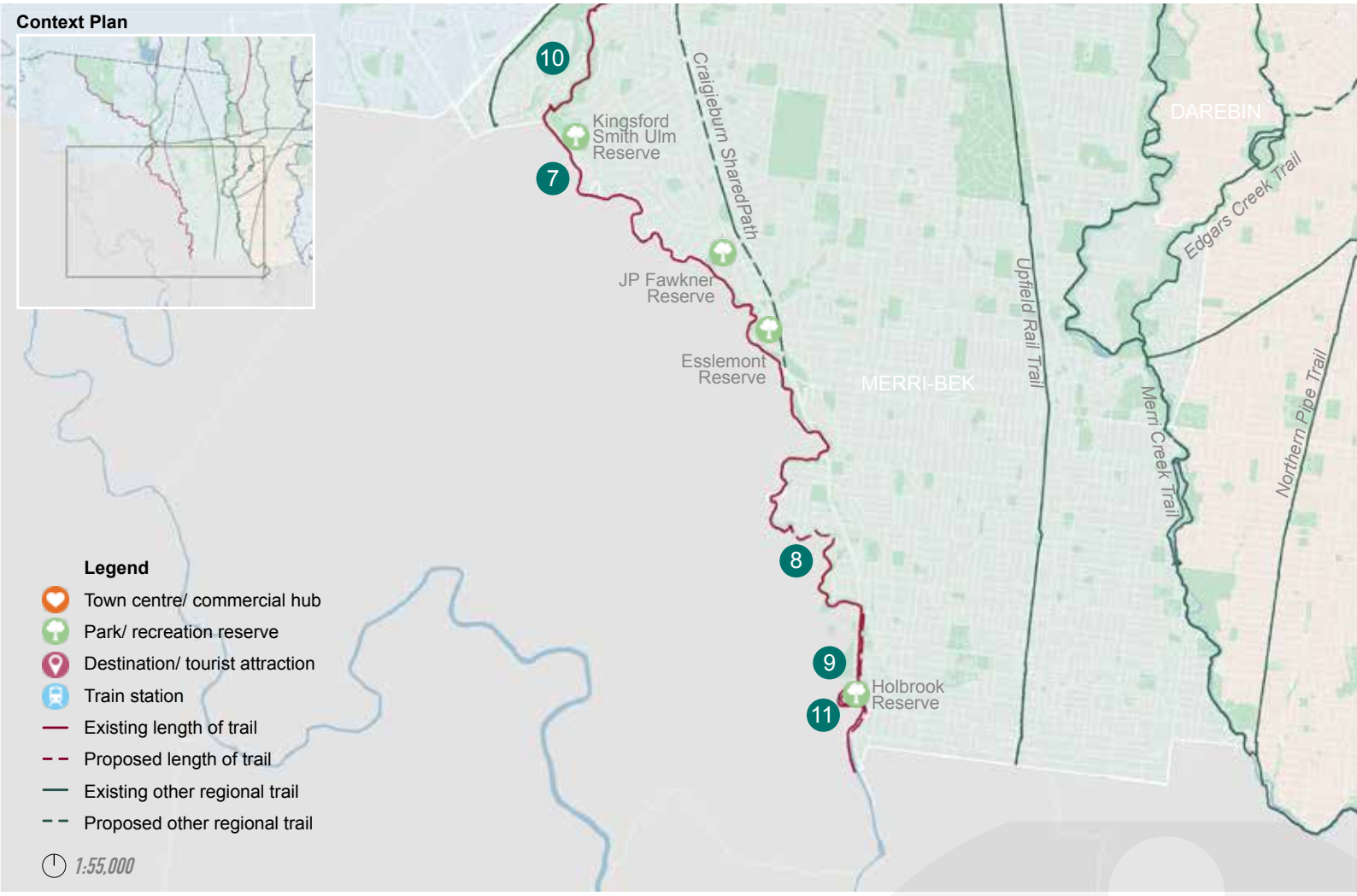
Location:
The Moonee Ponds Creek Trail follows the creek corridor from Woodlands Historic Park in Greenvale, in the north, to Brunswick West in the south. The trail extends beyond the study area in the south to Docklands.

Local Government Area:
Hume, Merri-bek

Additional Stakeholders:
Crown Land, Melbourne Airport, Melbourne Water, Parks Victoria, Private landowners, The City of Moonee Valley, VicRoads

Auditor comments:
"A super-highway from the NE fringes of the CBD offering excellent commuter and intra urban off-road cycling options and potentially a wonderful mode of accessing Woodlands Historic Park."





Priority Actions

1. Create a trail head at northern end of the trail at Marker Road ensuring alignment is outside federal airport boundary to avoid land access issues
2. Upgrade surface and width of trail from Marker Road to and around Willowbrook Reserve to regional trail standard
3. Upgrade surface and width of trail from Willowbrook Reserve to Westmeadows Reserve to regional trail standard
4. Construct a new section of trail from Marker Road to Living Legends/ Woodlands Historic Park
5. Upgrade existing trail from Living Legends/ Woodlands Historic connecting to Somerton Road Woodlands entrance
6. Provide wayfinding signage along the length of the trail include at crossing points, connections to other trails and where appropriate to direct users to optimal trail route where alternatives occur
7. Upgrade surface of trail from the rail line south to the Essendon Baseball Club
8. Construct section of new trail between Primrose Street and Vanberg Road (within Moonee Valley)
9. Upgrade trail surface from Boeing Reserve, Strathmore, to Brunswick Road to improve safety and cross grade
10. Resurface trail connection from Gladstone Park down the hill to main trail
11. Construct a new section of trail from Union Street to the Hope Street pedestrian bridge. Consider a new bridge using former off ramp to Denzil Don Reserve to Victoria St as an alternative if required

6.20 NORTHERN PIPE/ ST GEORGES RD/ CHEDDAR RD TRAIL

Trail information

Length:
14.1km

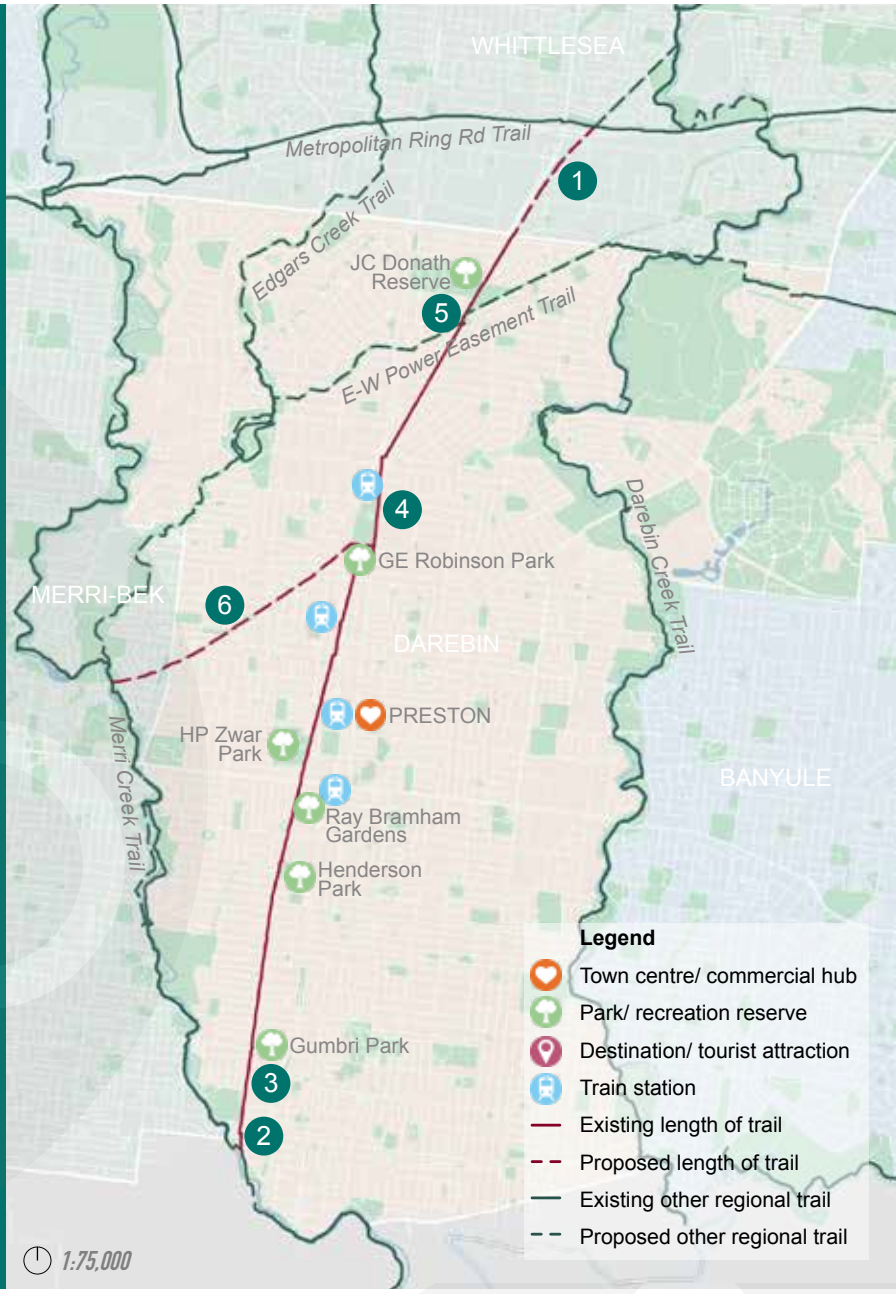
SCC:
Partial (south of Reservoir Station)

Location:
This trail runs relatively north-south through Darebin from Northcote to Thomastown. An additional section of trail is proposed along a series of linear reserves in Preston to connect the trail to Coburg and the Merri Creek and Edgars Creek Trails.

Local Government Area:
Darebin, Merri-bek and Whittlesea

Additional Stakeholders:
Melbourne Water, Metro Trains, VicRoads, VicTrack

Auditor comments:
"A highly effective commuting corridor with inherent issues where cyclists interact with traffic, and access impediments mar an otherwise excellent urban thoroughfare."



Priority Actions

1. Extend the Northern Pipe/ St Georges Rd/ Cheddar Road Trail north to the Metropolitan Ring Road
2. Improve access at the St Georges Rd/Merri Parade/ Charles St intersection to connect the Merri Creek Trail to the Northern Pipe Trail and create a direct access point to and from the trail with pedestrian and cyclist priority
3. Widen and resurface the section of trail between Clarke Street and Arthurton Road to align with newly constructed sections of trail
4. Advocate for trail alignment alongside the train line from Garden Street to Cheddar Road to replace section of trail on the footpath
5. Widen trail surface in the Cheddar Road central median from High Street to Hickford Street
6. Investigate a new section of trail from High Street (near the Melbourne Water Reservoirs) along the vacant pipe reserve to the Merri Creek Trail at Murray Road. Existing road crossings to be considered

6.21 PLENTY RIVER TRAIL

Trail information

Length:
43.5km

SCC:
No

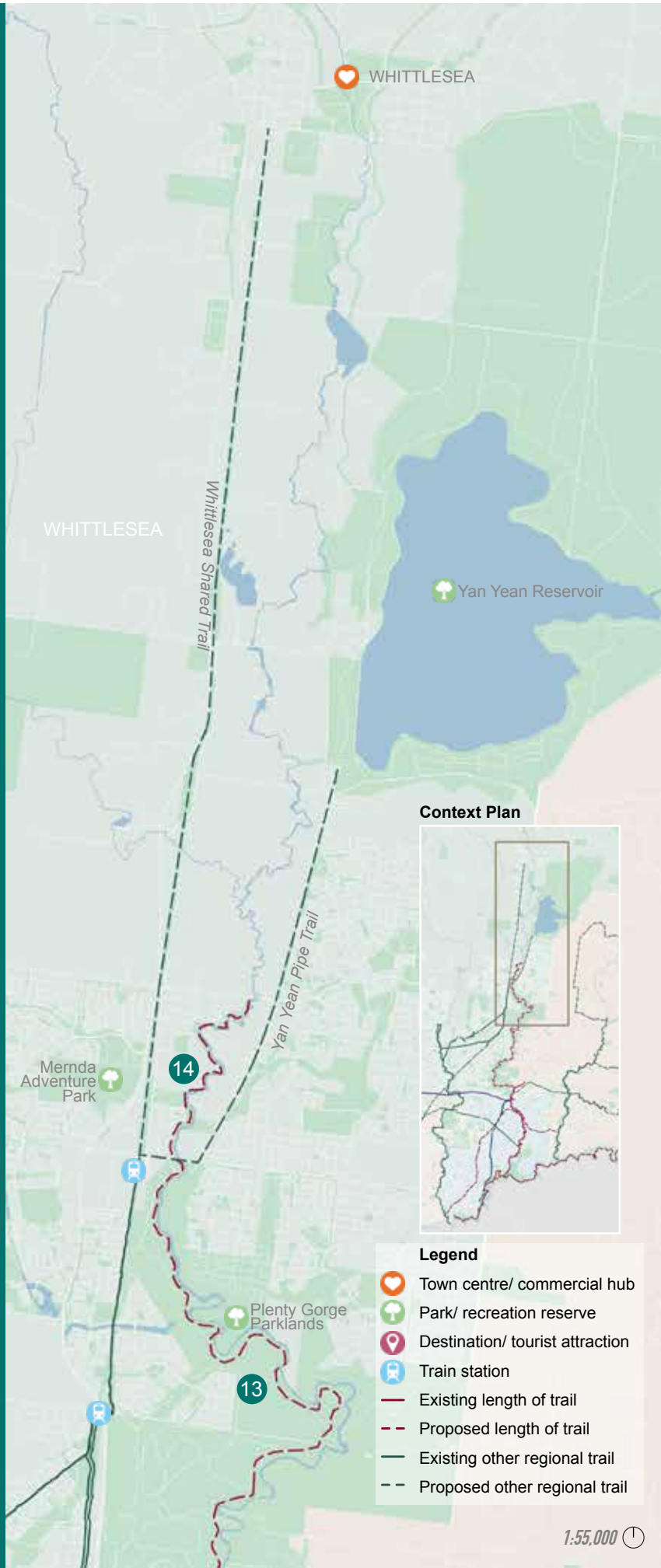
Location:
Following the creek corridor, the Plenty River Trails begins at the Yarra Trail in Viewbank and continues north to Greensborough. The trail is then proposed to extend further to the Township of Whittlesea.

Note: Indicative trail alignment only. Refer to Parks Victoria's Plenty Gorge River Trail design

Local Government Area:
Banyule, Nillumbik, Whittlesea

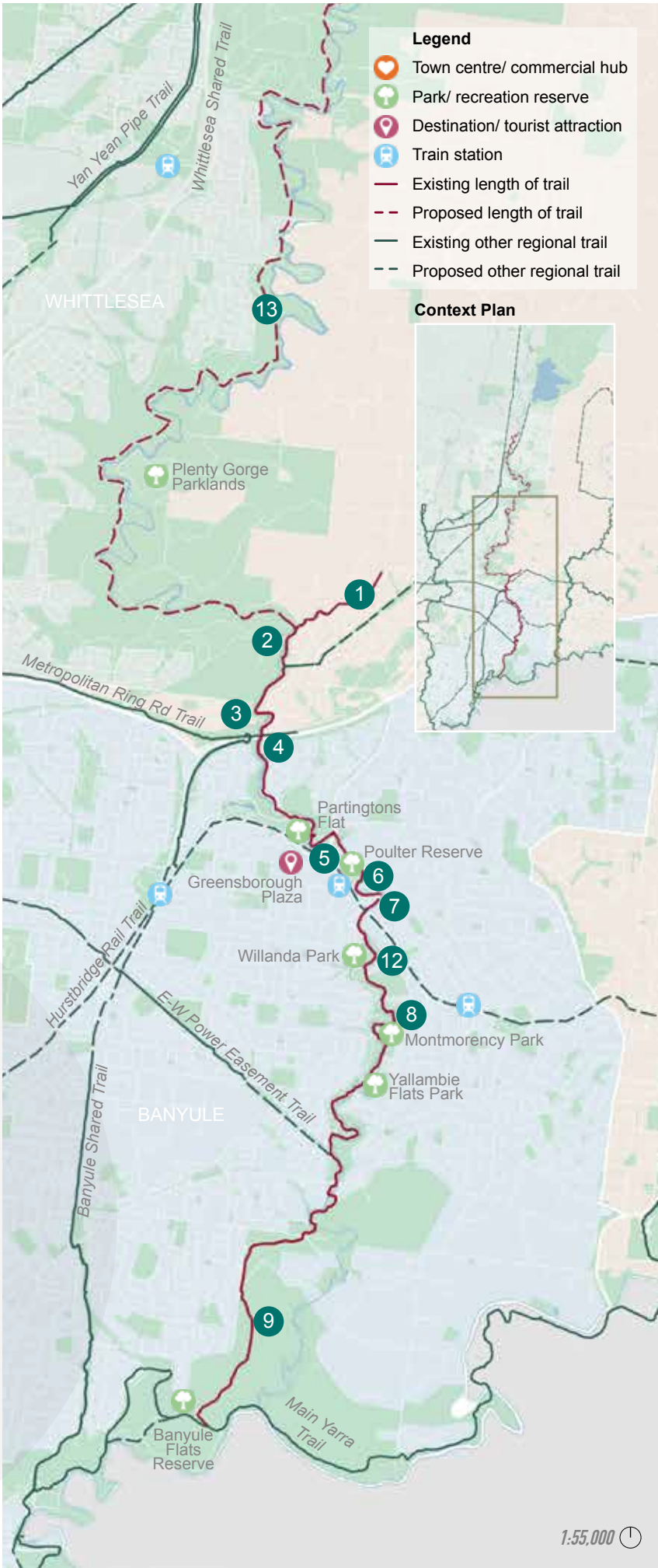
Additional Stakeholders:
Melbourne Water, Parks Victoria, VicRoads

Auditor comments:
"A mostly very scenic trail through urban bushland with quite good flow and continuity, marred mainly by far too much variability in surface quality and width; lacks consistency"

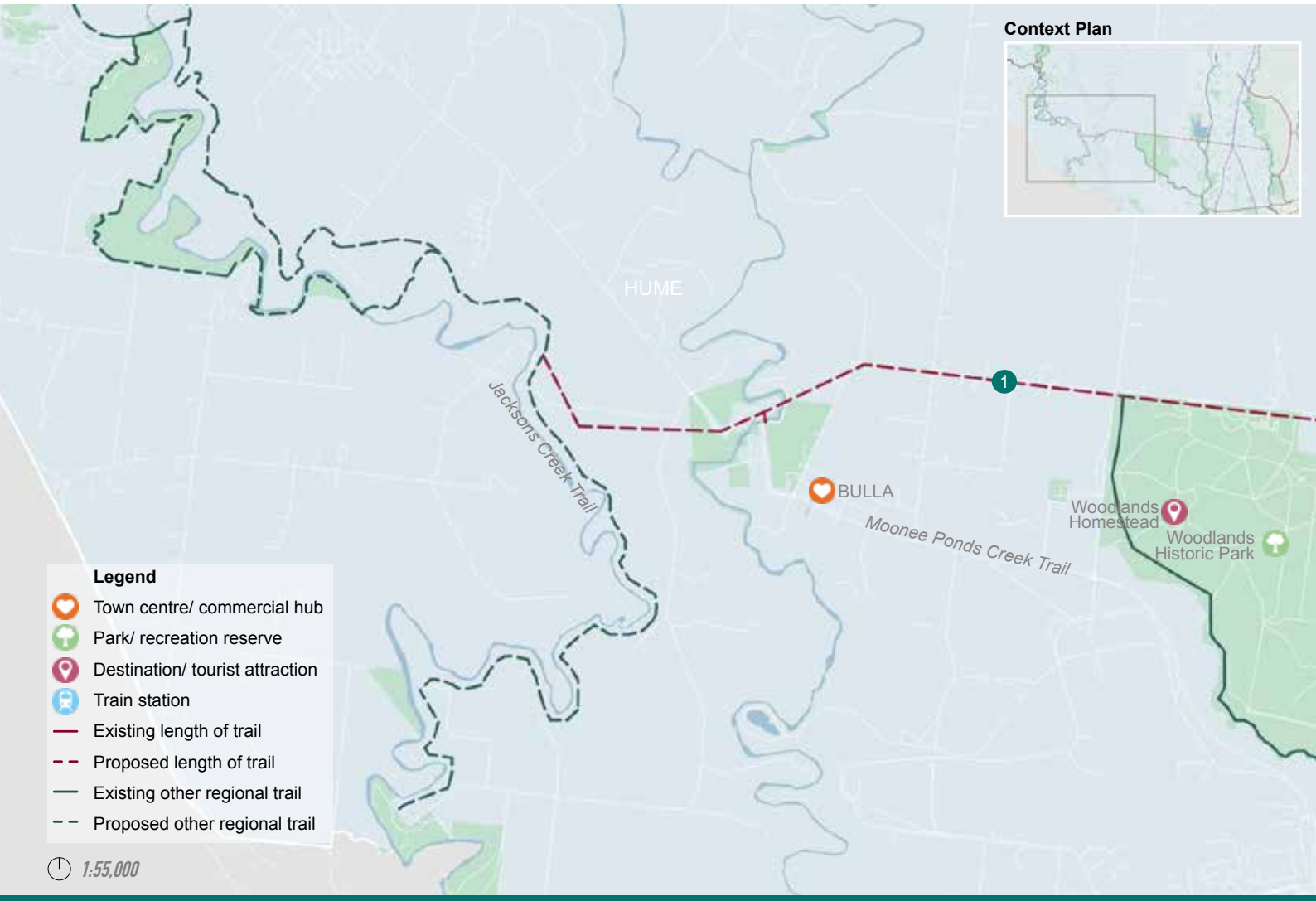


Priority Actions

1. Extend trail east to Mclaughlans Lane
2. Upgrade and widen section of trail from Punkerri Circuit to Booyan Crescent
3. Realign section of trail to reduce grade and provide an underpass at Booyan Crescent
4. Widen section of trail under the Greensborough Bypass
5. Upgrade and widen section of trail at Main Street
6. Improve wayfinding signage at Poulter Reserve to direct users to the wider trail network west of the reserve
7. Construct a new section of trail at Bicton Street
8. Upgrade and widen section of trail with wayfinding signage at Montmorency Park
9. Upgrade surface and realign trail to reduce grade south of Old Lower Plenty Road and through Banyule Flats
10. Improve wayfinding signage along the length of the trail
11. Upgrade pedestrian bridges on the Plenty River Trail where required and improve sight lines where appropriate
12. Investigate the feasibility of realigning the Plenty River Trail to the eastern bank of the Plenty River between George Court and Para Road in order to avoid the steep grade on the west bank
13. Construct a new section of trail along the creek through The Plenty Gorge Parklands to Bridge Inn Road. Support the proposal for a bridge connection from South Morang to Hawkestowe picnic area to Yarrambat Park
14. Extend the trail from Bridge Inn Road north to Hazel Glen Drive



6.22 SOMERTON ROAD TRAIL



Trail information

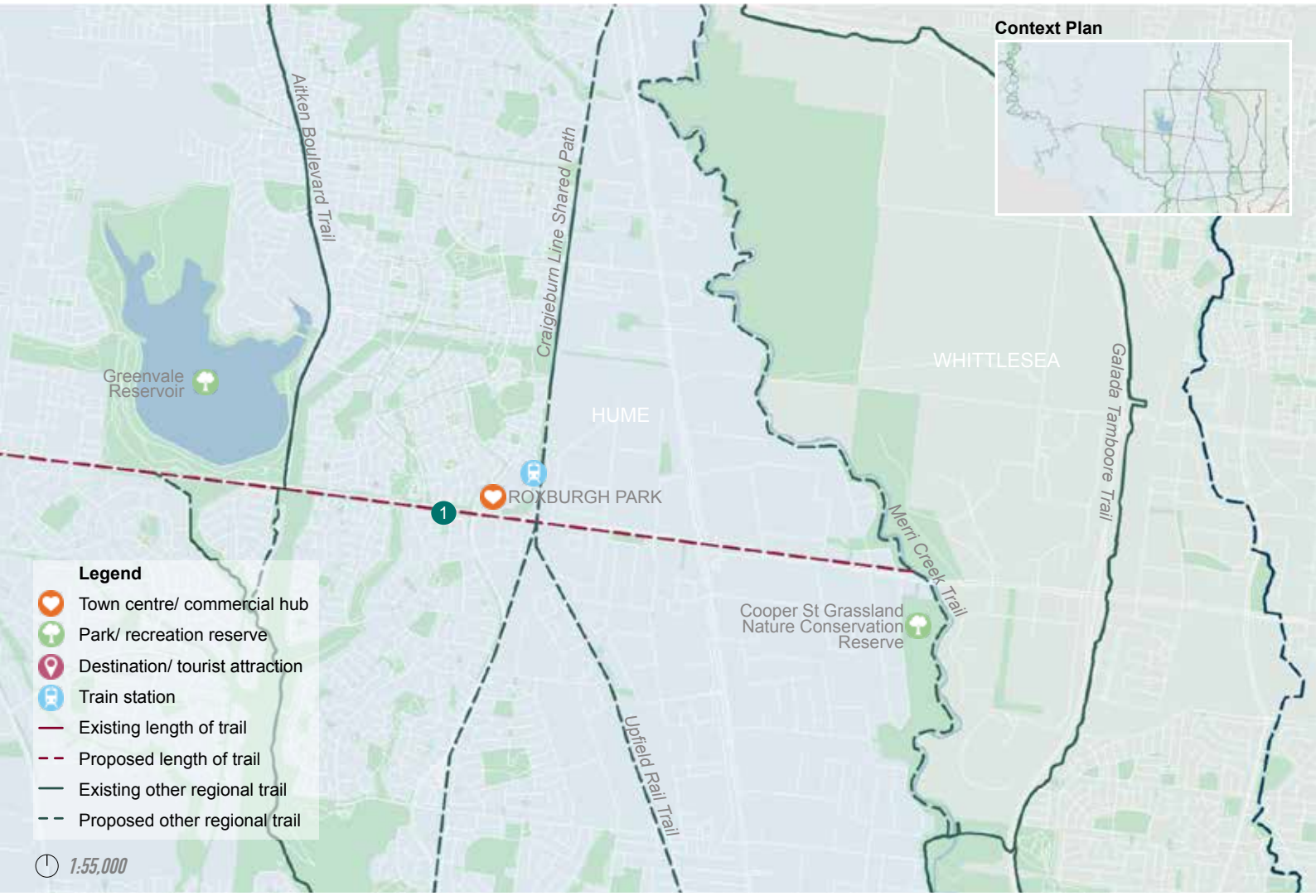
Length:
17.8km

SCC:
Yes

Location:
This potential future trail is proposed to run along Somerton Road in Greenvale connecting the Jacksons Creek Trail in the west and the Merri Creek Trail in the east.

Local Government Area:
Hume

Additional Stakeholders:
Major Road Projects Victoria, Parks Victoria



Priority Actions

1. Advocate for the construction of a new trail along Somerton Road from Jacksons Creek to the Merri Creek Trail

6.23 UPFIELD RAIL TRAIL

Trail information

Length:
11.6 (extends beyond study area)

SCC:
Yes

Location:
This trail follows the Upfield rail line from Brunswick to Fawkner with a proposed extension to Roxburgh Park.

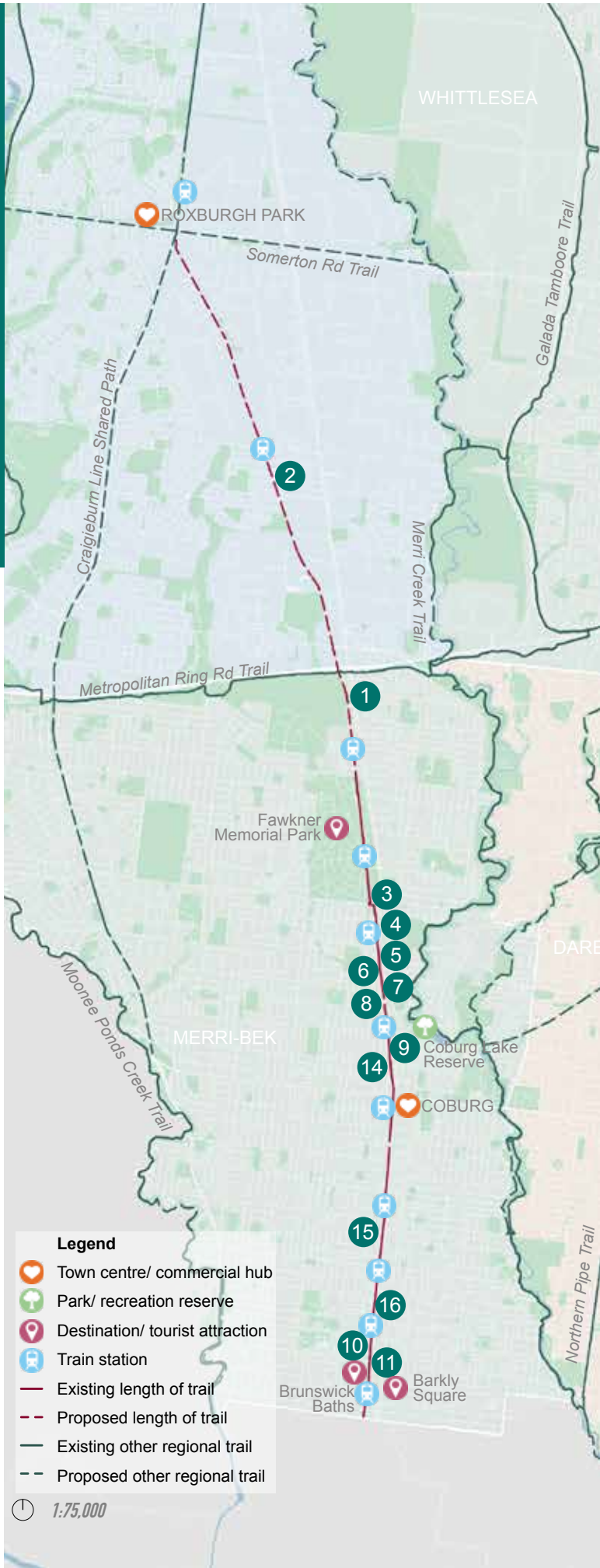
Local Government Area:
Merri-bek and Hume

Additional Stakeholders:
Department of Transport, Metro Trains, VicRoads, VicTrack

Auditor comments:
"A potential cycling 'super highway' with enormous scope as the major north-south corridor through the densely populated suburbs from the inner north."

Priority Actions

1. Construct new section of trail from Box Forest Road north to Metropolitan Ring Road
2. Advocate to Dept. of Transport to construct a new section of trail from the Metropolitan Ring Road to Somerton Road
3. Create a signalised pedestrian crossing over Boundary Rd
4. Construct an off-road shared path along Bain Avenue
5. Widen section of trail between Plaisted St and Shorts Rd
6. Construct an off-road shared path along Ararat Avenue
7. Provide a signalised/ pedestrian priority crossing over Bakers Rd
8. Construct an off-road shared path along Renown St
9. Construct an off-road shared path along Batman Avenue
10. Upgrade and widen trail from Victoria St to Jewell Station
11. Provide a signalised/ pedestrian priority crossing over Albert St
12. Consider long term feasibility of separated cycle path between Park St and Tinning St
13. Create a signalised pedestrian crossing over Box Forest Rd
14. Create a signalised pedestrian crossing over O'Hea St
15. Create a signalised pedestrian crossing over Albion St
16. Create a signalised pedestrian crossing over Victoria St



6.24 WHITTLESEA SHARED TRAIL

Trail information

Length:
13.5km

SCC:
Yes

Location:
This trail connects Epping Station in the south west to Mernda Station. The trail is then proposed to continue to Whittlesea.

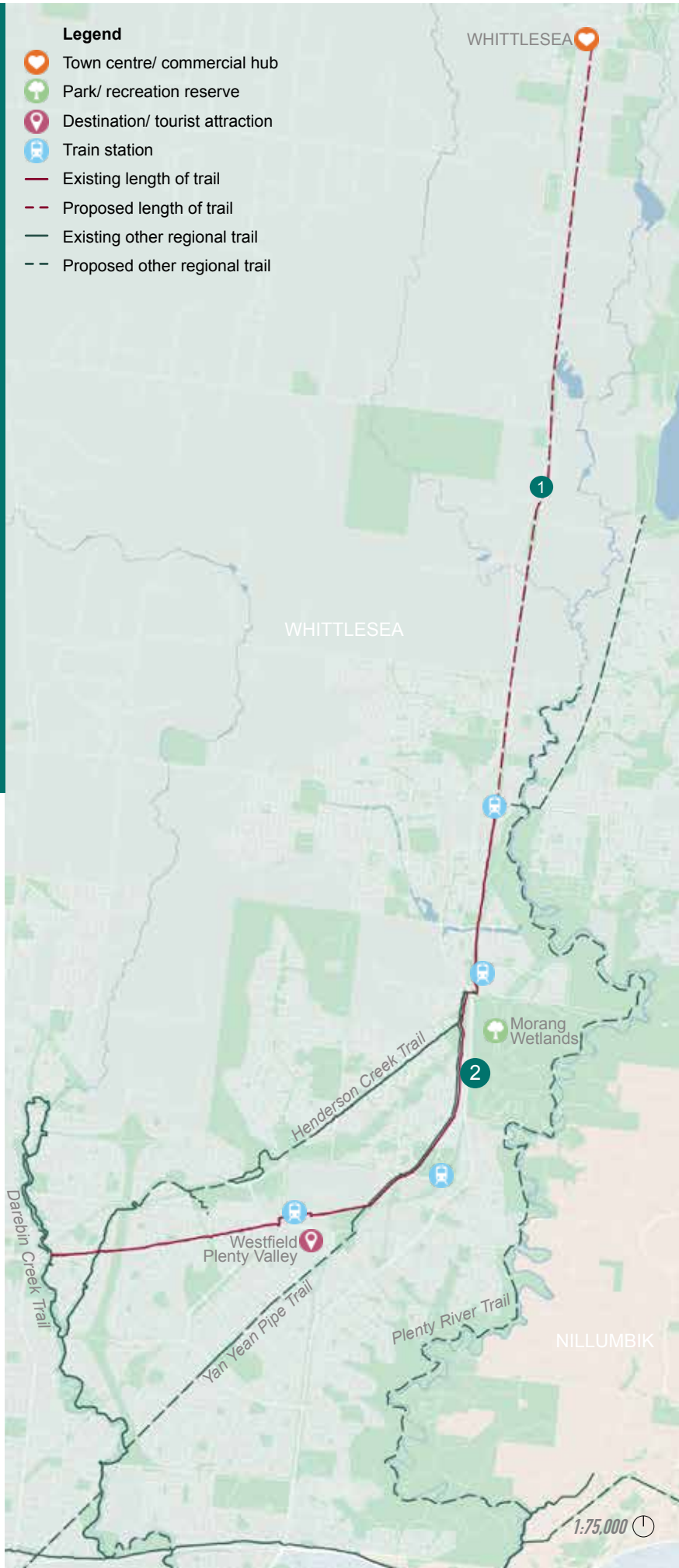
Local Government Area:
Whittlesea

Additional Stakeholders:
Metro Trains, VicRoads, VicTrack

Auditor comments:
"A fundamentally excellent trail that would only benefit further with a bit more thought regarding flow and continuity at a couple of points."

Priority Actions

1. Construct a new trail from Mernda Station to Whittlesea. Ensure there is provision for horse riders on parts of the trail
2. Provide a pedestrian priority crossing on the Pipe Track at the Lakes Boulevard
3. Provide wayfinding signage along the length of the trail



6.25 YAN YEAN PIPE TRACK

Trail information

Length:
13.5km

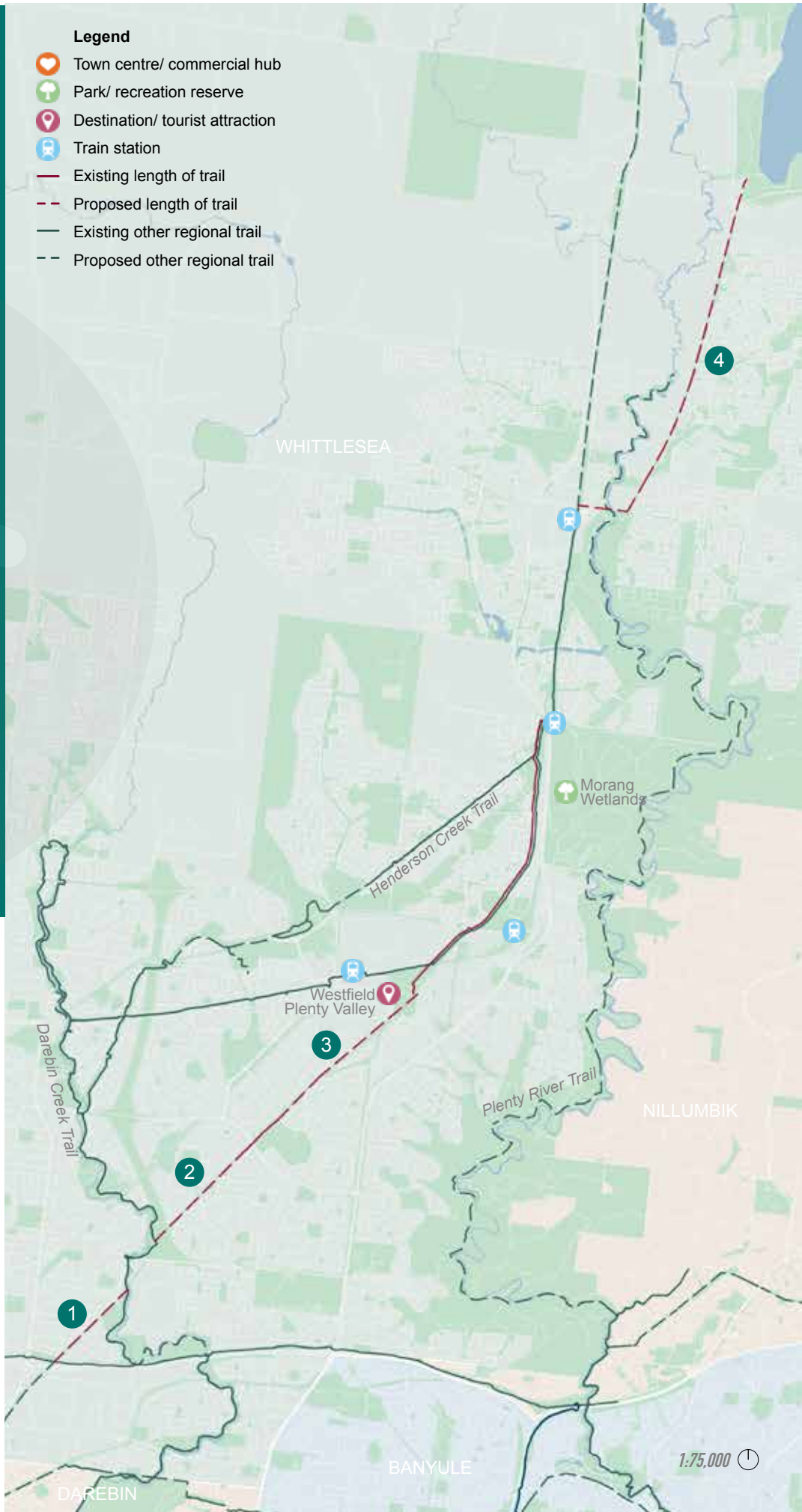
SCC:
No

Location:
The Yan Yean Trail begins at the Metropolitan Ring Road Trail in the south and continues in a north-east direction where it meets the Whittlesea Rail Trail. The Trail then continues from Mernda Station to the Yan Yean Reservoir.

Local Government Area:
Whittlesea

Additional Stakeholders:
-

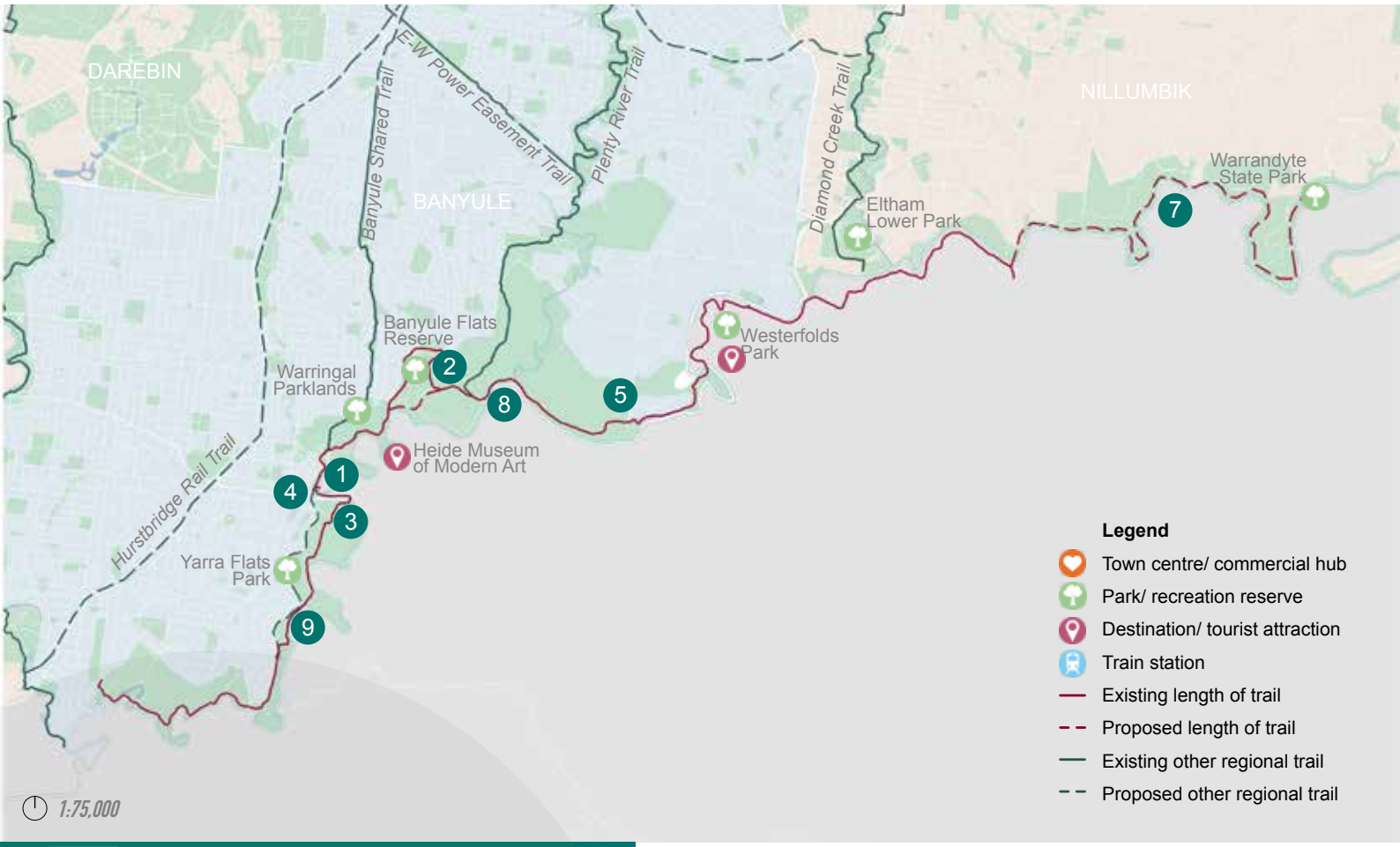
Auditor comments:
-



Priority Actions

1. Construct a new section of trail from The Metropolitan Ring Road Trail and the Northern Pipe/ Cheddar Road Trail to the Darebin Creek Trail
2. Construct a new section of trail from the Darebin Creek Trail to Childs Road
3. Construct a new section of trail from Childs Road to McDonalds Road and the Plenty Valley Activity Centre
4. Construct a new section of trail from Bridge Inn Road to the Yan Yean Reservoir and creating a connection to the Plenty River Trail

6.26 MAIN YARRA TRAIL



Trail information

Length:
26.5km (extends beyond study area)

SCC:
Partial

Location:
Following the Yarra River, the Yarra Trail within the northern region begins in Alphington in the west and is proposed to continue to Warrandyte in the east.

Local Government Area:
Banyule, Nillumbik

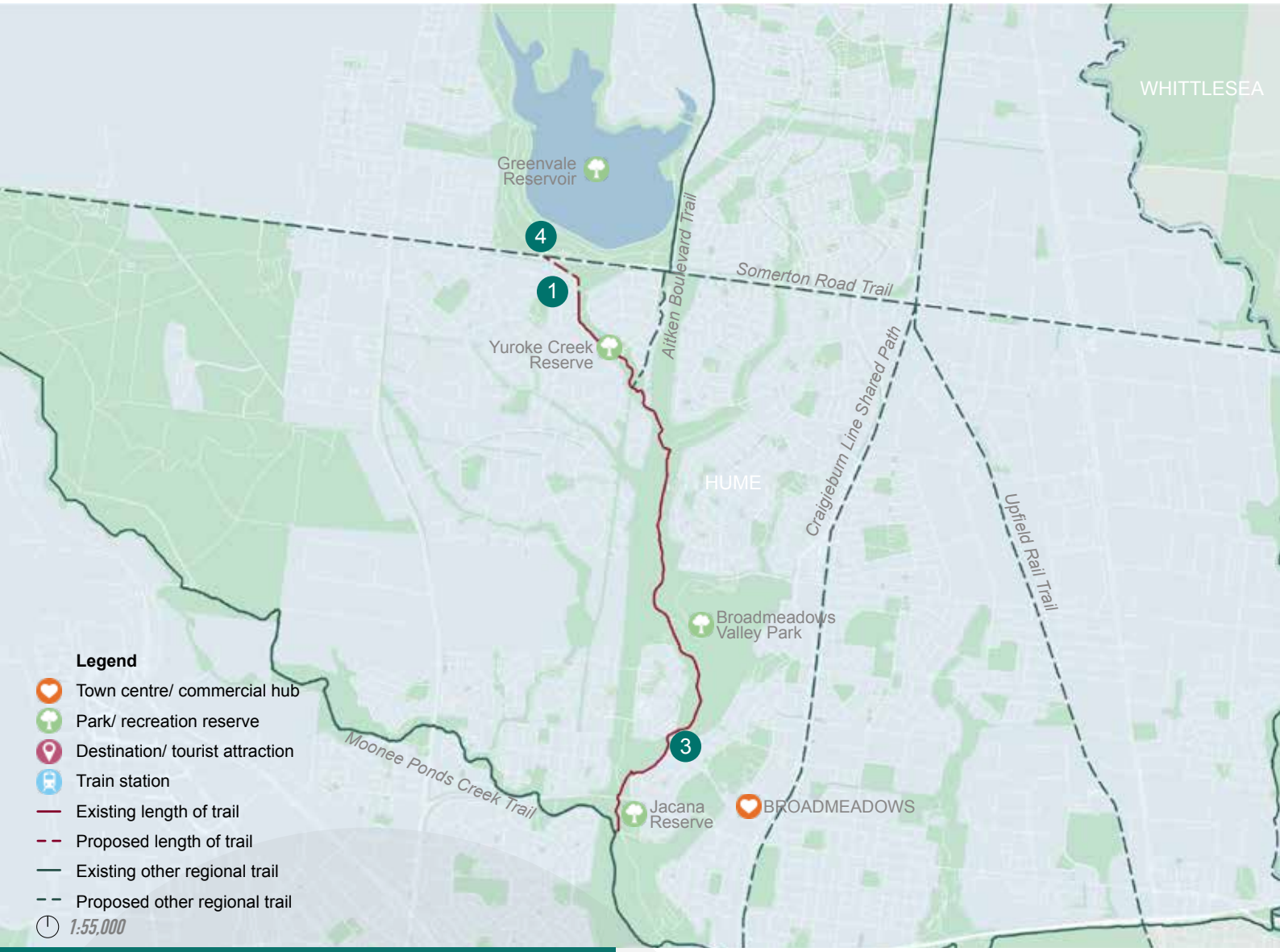
Additional Stakeholders:
City of Boroondara, City of Manningham, Melbourne Water, Parks Victoria

Auditor comments:
"A long, flowing trail through some beautiful riverland countryside, with a combination of surfaces and levels of quality (concrete, gravel, bitumen) that would benefit greatly from an extension to Warrandyte and beyond."

Priority Actions

1. Construct a bridge crossing over the Yarra River to Banksia Park at the eastern end of Yarra Street, Heidelberg
2. Undertake improvements to the Main Yarra Trail at Banyule Flats
3. Realign the section of trail at the Banksia Street underpass to create a gentler grade and wider trail surface
4. Upgrade surface and width of existing trail from Banksia Street to Yarra Street
5. Upgrade surface and width of existing trail from junction with Plenty River Trail to Fitzsimons Lane Reserve
6. Provide wayfinding signage along the length of the trail
7. Construct shared use trail from the Mullum Mullum Creek Trail to the Warrandyte State Park
8. Construct a bridge crossing over the Yarra River to Birrarrung Park
9. Construct a bridge crossing over the Yarra River to Bulleen Park

6.27 YUROKE CREEK TRAIL



Trail information

Length:
6.5km

SCC:
Partial

Location:
The Yuroke Creek Trail runs along the creek corridor from Broadmeadows to Greenvale through the Broadmeadows Valley Park

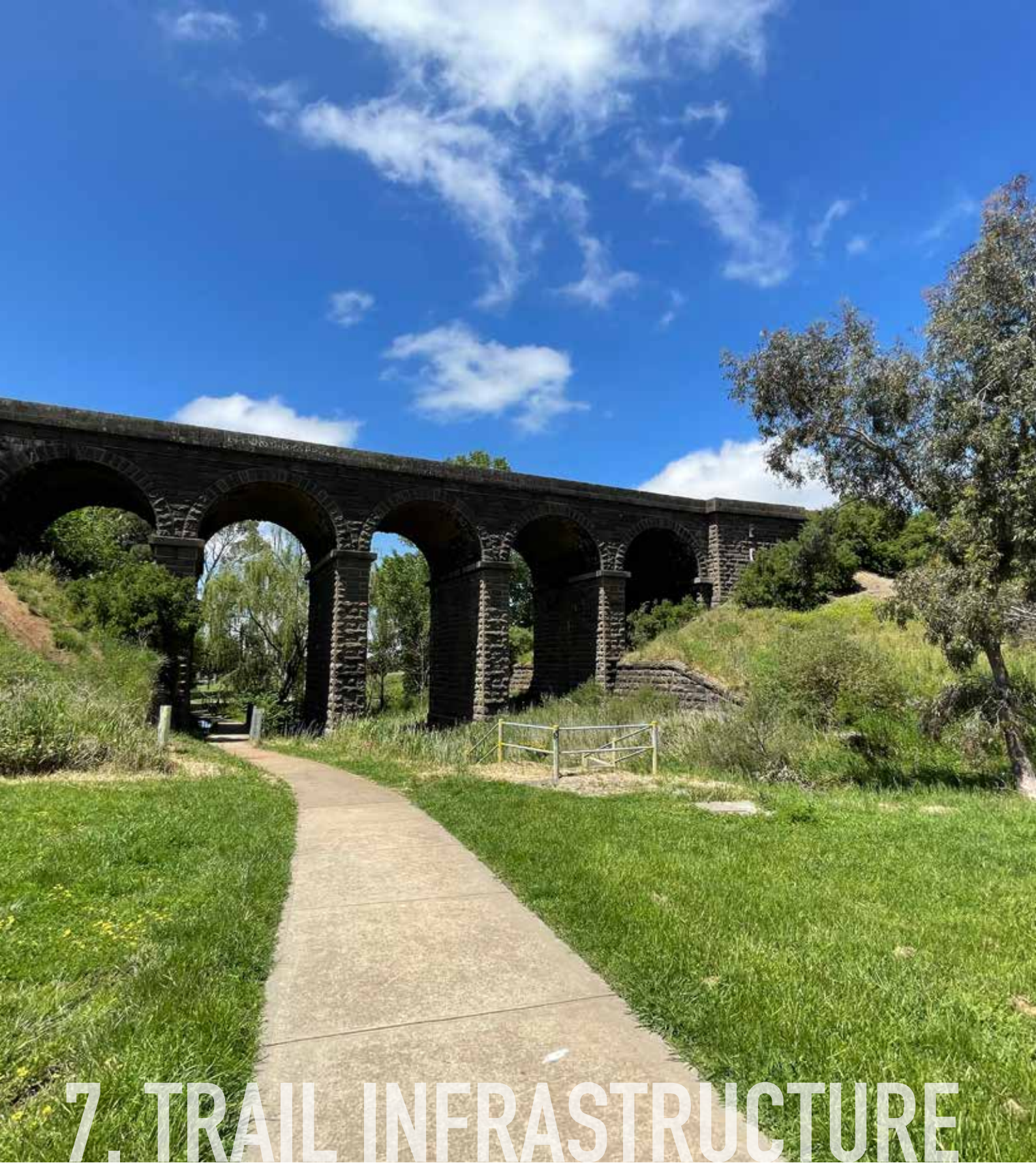
Local Government Area:
Hume

Additional Stakeholders:
Major Road Projects Victoria, Melbourne Water, Parks Victoria, VicRoads

Auditor comments:
"A pleasant and meandering trail of adequate width quality, with good access at the southern end from Moonee Ponds Creek Trail, that could be improved with signage and a safe northern access point."

Priority Actions

1. Partner with Melbourne Water and MRPV to plan and construct new section of trail along the Melbourne Water Pipe Track from Greenvale Reservoir Park south to the existing section of the Yuroke Creek Trail, including a safe crossing option for Somerton Road
2. Provide wayfinding signage along the length of the trail
3. Investigate the provision of a pedestrian priority crossing at Dimboola Road, remove bicycle chicanes from either side and improve the path intersection treatment
4. Provide a pedestrian priority crossing at Somerton Road to connect trail to Greenvale Reservoir
5. Undertake a staged upgrade of the trail to a regional standard width with linemarking



7. TRAIL INFRASTRUCTURE

Blind Creek Trail

There are a wide variety of elements that make up a regional trail network. Firstly there is the trail surface itself, which can vary in width and construction material. Trails often also have a range of supporting infrastructure, including signs (both directional signs to tell people where the trails lead, as well as hazard and use-related signs), lights, seats, shelter, and drinking fountains. There are also functional benefits provided by non-built elements, such as trees providing shade and planted areas acting as buffers between different uses (e.g. creating a soft barrier between a trail and a play space). All of these elements play a role in the way a trail is used and influence the trail-use experience. The type and quality of facilities also have broader impacts upon the way trails present themselves and are perceived, impacting upon the character of a place and sense of community.

The different trail infrastructure components are addressed separately in this section. The key recommendations are then summarised at the end in two diagrams covering trail infrastructure standards and guidelines. The recommendations within this chapter generally outline the ideal outcomes. There are various factors involved in trail and infrastructure implementation that will require case by case consideration and the potential need for compromise.

7.1. TRAIL SURFACES

7.1.1 Materials

Regional trails within Northern Melbourne are made up of three main construction materials. The relative benefits and issues with each are summarised below.

Material	Positive attributes	Negative attributes
Concrete	• Durable - very little maintenance required once installed.	• Inflexible - if tree roots or subsurface conditions cause movement, this will result in cracking and abrupt level changes creating significant hazards. • Regular jointing required, which can create a bumpy ride for cyclists if tooled joints are used (alternative joints are now commonly used). • Runners often avoid using concrete surfaces because the inflexible surface can be harsh on joints. • More expensive than the other two options identified here.
Bitumen/ asphalt	• More flexible than concrete, meaning that they do not need regular joints, and any lifting of pavement tends to occur gradually, initially creating rises and falls within a surface rather than abrupt cracks and edges.	• Because of the flexibility of the material, it needs to be edged to prevent edges deteriorating. Timber edging is commonly used but deteriorates over time. • Problematic when installed on highly reactive subgrades such as clay. Shrink-swell behaviour of reactive subgrades can cause cracking to pavement.
Gravel	• Provides a more natural trail character than hard paved options. • Preferred surface for equestrian use. • The least expensive of the three options identified here. • Reduced speed of cyclists minimising trail conflict between cyclists and other users.	• Variable quality, dependent upon the material used, the quality of the installation and drainage conditions. • Susceptible to water damage (erosion from water flowing, and softening from pooling water). • Edge maintenance can be an issue if a hard edge is not provided. • Gravel surfaces are not particularly well-suited to narrow-tyred ‘road’ cycles. • Not suitable for users with mobility aids or physical ailments due to uneven surface. • More regular and intensive maintenance required.

FIGURE 7.1:
Regional trail construction material examples.
Top: Concrete trail construction (Merri Creek Trail)
Middle: Asphalt surface (Diamond Creek Trail)
Bottom: Gravel (Edgars Creek Trail)

The three options noted (examples pictured in figure 7.1) are ordered from most to least expensive. However it should be noted that the difference in upfront costs are relatively minor compared to the ongoing maintenance costs, i.e. decisions to use gravel surfaces based primarily upon installation costs should be very mindful of the ongoing maintenance costs. Other specialist surfaces (such as boardwalks) are used sparingly to address specific circumstances due to the high costs of construction, long-term maintenance costs and safety concerns.

There is a mix of trail surface materials used for the regional trail network within the study area, but there are some patterns that able to be observed:
- Concrete appears to be the dominant surface material across the network, particularly within the more urban and populated areas.
- Gravel surfaces appear to be preferred for trails within a rural environment or a more natural setting (i.e. sections of the Edgars Creek Trail).

Where compacted gravel surfaces are the preferred trail material, the following guidelines should be considered:
- gravel surfacing should not be used if the trail has a focus upon commuter use
- gravel surfacing should not be used if there is potential for flooding
- gravel surfacing should be used where a trail targets equestrian use
- gravel surfacing should be considered if the trail is in a rural setting.

7.1.2 Conditions
In the community questionnaire undertaken as a part of the project, only 5% of respondents identified trail condition as a reason preventing them for using the trail network. However a significant number of respondents identified the following as changes to the network that would increase their usage of the trails:
- Wider trails - 36% of respondents
- More trails hard paved (i.e. concrete or asphalt surface) - 25.43%
- Better all abilities access - 8.43%
- More regular sweeping of the trail - 13.86%

This indicates that while trail condition does not stop people from using the trails, usage rates would likely increase if the condition of the trail network was improved.

7.1.3 Trail width & trail separation
Regional trails within the study area vary in width, with the majority being between 1.5m and 2.5m wide. In general the narrower paths are older or exist within constrained corridors (i.e. creek or rail corridors), while recently-installed paths are 2.5m wide or more.

One standard available regarding trail width is that provided by Austroads (the peak organisation of Australasian road transport and traffic agencies). Austroad publish the *Guide to Road Design Part 6A: Paths for Walking and Cycling (Second edition, June 2017),* which lists suggested shared path widths for ‘regional’ and ‘recreational’ shared paths. For regional shared paths the suggested desirable minimum width is 3.0m, with an acceptable range from 2.5 to 4.0m. For recreational shared paths the suggested desirable minimum width is 3.5m, with an acceptable range from 3.0 to 4.0m. Building upon the Austroad guide is the *Traffic Engineering Manual Vol 3 Part 218 VicRoads Design Guidance for strategically important cycling corridors, 2016*. As the name suggests, this document focuses upon Strategic Cycling Corridors (SCCs) that are intended to improve cycling to and around major activity centres in metropolitan Melbourne, and to provide routes catering for high volumes of cyclists.

It is noted that the 2016 version of this strategy identified an aspiration for paths to be at the upper end of these width ranges (i.e. minimum 3m wide, and 4m wide where possible). Wide paths do provide benefits to users on busy trails, helping to minimise conflict between trail users, and is a worthy aspiration where space allows and usage expectations are high. However, space is very regularly an issue when retrofitting trails to developed urban areas and wider trails significantly exacerbate the issue.

The latest Austroads document also provides guidance relating to designing path widths based upon known peak hour cyclist and pedestrian volumes. Where known usage volumes are available (i.e. from Council installed counters or Bicycle Network Victoria's Super Saturday and Super Tuesday count data), the following recommendations for regional trails from Austroads should be applied:

Recommended trail type	Pedestrian volumes	Cyclist volumes
Minimum 2.5m wide shared path	0-50 per hour	0-550 per hour
Minimum 3.0m wide shared path	50-100 per hour	550-1000 per hour
Separated dedicated paths for pedestrians and cyclists *(note: if separated paths are not feasible, a wider shared path of 3.5-4.5m should be considered instead)*	Over 100 per hour	Over 1000 per hour

The Austroads *Guide to Road Design Part 6A: Paths for Walking and Cycling (Second edition, June 2017)* notes that;

> *a separated path is a path divided into separate sections, one of which is designed for the exclusive use of cyclists and the other for the exclusive use of pedestrians. A separated path may be appropriate where there are safety or conflict issues such as where there are a high number of pedestrians and/or cyclists, or the desired level of service on a shared path is not being met.*

While this kind of separated path is not a regular feature of the regional trail network in Northern Melbourne, the recently installed section of the Upfield Rail Trail between Moreland and Coburg Station is a good example to follow if being considered in other areas within the region (refer figure 7.2).

The idea of separated paths also has higher-level support. *Victoria's 30-year Infrastructure Strategy* (2016), prepared by Infrastructure Victoria, makes recommendations relating to walking and cycling infrastructure to 'increase walking and cycling for transport' and 'encourage people living along congested corridors and in higher density areas to shift to active travel to reduce the demand on other transport modes'. It specifically notes trail separation as a key part of this, under both recommendations 4.1 and 10.3:

> *improving standards for existing walking and cycling networks, in particular the separation of walking and cycling paths and also from other road users.*

FIGURE 7.2:
An example of a separated regional trail recently installed along the Upfield Rail Trail, Coburg

The idea of separated paths is also popular among trail users. In the questionnaire undertaken as a part of this project, respondents were asked which potential trail improvements, from a list of 23, would increase their usage of the trails (with multiple selections allowed). The item 'separated pedestrian and cycling trails in high use areas' was selected by just under half (47.43%) of the respondents, the fourth most popular response. By comparison, the item 'wider trails' was selected by 36% of the respondents. The popularity of the idea of separated paths arises from the conflicts between users, including pedestrians feeling unsafe sharing trails due to fast-moving bicycles and many cyclists feeling unsafe sharing trails with dogs that are off-lead and not under effective control.

Factors working against heavily-used regional trails in Northern Melbourne being separated include:

- ***Space*** - Many existing trails are located within relatively tight corridors, often also constrained by existing vegetation or infrastructure. Finding the space to build separated paths will not be possible in many locations. This is particularly true when talking about longer lengths of trail, rather than just individual sections. Separation of trails may not be particularly effective if separation is achieved for only short sections due to 'bottle-necks', therefore requiring regular merging.
- ***Character*** - Separated paths are the freeways of trail infrastructure, and inevitably have a larger footprint and more visual impact than shared paths.
- ***Construction cost*** - Providing separate trails for cycling and pedestrian use doubles the cost of providing the facility.

7.2 TRAIL SIGNAGE

Signs play a significant role in the experience of trails, whether they be behavioural, wayfinding or interpretive signs.

- Behavioural signs along trails are used to direct user behaviour in order to reduce user conflicts and to ensure comfort for users. Key examples include:
  - notification that paths are shared, which may include directions regarding shared trail etiquette (such as warning other users prior to passing, keeping left, and keeping dogs on leads).
  - directions for cyclists to slow down due to trail conditions ahead.
  - notification of potential hazards, including flood information, dog off-lead areas and playgrounds.
- Wayfinding (or directional) signs assist users in finding their way around the trail network and to reach destinations. This includes destinations along the trail, surrounding destinations, and connections to other paths and trails.
- Interpretive signs typically provide information and stories about the nature, culture and/or history of a place. This type of sign is not integral to the functioning of a trail network, and so is not a focus of this project. This kind of sign can provide interest and improve the user experience of a trail.

7.2.1 Sign types and styles

As is inevitable for a trail network developed by different parties over a long period of time, there is a wide variety of existing sign types and styles existing on the regional trails of Northern Melbourne.

It is recommended that a standard suite of directional signs be developed for regional trails in Northern Melbourne, and that these be used on all new regional trail construction projects and gradually replace signs on existing trails. The benefits of a standard suite are:

- Consistent quality. A standard suite of signs sets a minimum quality, both aesthetically and in the way information is being communicated.
- Ease of maintenance. A standard suite of signs streamlines repair and maintenance of signs.
- Marketing. A standard signage suite contributes to visual branding of the trails.

It is recommended that the standard suite of signs link with proposals for standard regional trail signs elsewhere across Melbourne and Victoria. The recommended sign type is based upon the outcomes of a workshop titled *Bicycle Wayfinding: The case for a metropolitan approach* held by Knox City Council in 2012, and the report *Finding Melbourne: Standardising Melbourne/Victorian Bicycle Wayfinding Systems* (2012) by Chris Hui and Winchelle Chuson. The aim of this workshop and resultant report is to have a standard suite of wayfinding signage across the shared trails within the Melbourne Metropolitan areas and across the state.

Key features of this signage suite include:

- ***Legibility*** - The signs are simple and legible.
- ***Robustness*** - The signs are robust, do not attract vandalism or graffiti, and are easily cleaned or replaced in the event of damage.
- ***Simple and affordable*** - Having many simple signs is more beneficial to users than fewer ornate ones.
- ***Information hierarchy*** - A hierarchy of information is established, with priority given to destinations, but also including distances and the route name, where applicable.

Figure 7.3 shows an example of the proposed signage suite recommended in *Finding Melbourne: Standardising Melbourne/Victorian Bicycle Wayfinding Systems* (2012). This suite is also a recommendation of the *Western Regional Trails Strategic Plan* (2017) and *Eastern Metropolitan Trails Strategy* (2018). Implementation of this suite across the study area will allow for a consistent approach to wayfinding across the eastern, western and northern regions of Metropolitan Melbourne.

Some customisation of this standard sign type may be appropriate to allow the branding of key regional trails with a strong tourism focus, but the key features of the standard sign suite should be retained.

As an alternative, a distinctive signage suite may be developed on a trail-by-trail basis. Whilst this would mean that each trail within the Northern Trails network would be different (and therefore potentially negate the benefits of a standardised signage suite as discussed above), it would allow for individual branding of each of the trails and a consistent suite along the length of the trail. Implementation of this type of suite may involve coordination and involvement from neighbouring Councils outside the northern region. The signage suite recently implemented along the Merri Creek Trail, as shown in figure 7.4, is a good example of a distinctive suite implemented along the length of the trail across multiple municipalities. The recently installed signage on the Darebin Creek Trail is another example of a successful cross-municipality signage suite.

7.2.2 Emergency markers

Emergency markers are signs that allow locations to be pinpointed for emergency services. They are of greatest use in locations, such as many of the trails, where other navigational aides such as street intersections and house numbers are not available. Emergency markers in Victoria are managed by the Emergency Services Telecommunications Authority (ESTA). They produce the *Emergency Marker Signage Guidelines* document that identifies the sign types required and location guidelines.

Emergency markers are recommended along regional trails every 500 to 1000 metres, as well as at trail heads, junctions, significant features, activity nodes, and where the level of risk is increased.

FIGURE 7.3:
An example of the proposed standard sign type for regional trails in Eastern Melbourne.

FIGURE 7.4:
An example of the existing signage suite along the Merri Creek Trail by Aspect Studios.
Source: www.aspect-studios.com/project/merri-creek-trail

7.3 TRAIL FACILITIES

Trail facilities such as seating, drinking fountains, toilets and lighting can play an important part in the regional trail usage experience. Where trails intersect with parks, activity centres and civic facilities, these functions can be provided separate from the trail. Toilets, shelters and barbecues, for instance, are better addressed as a part of a municipal open space strategy, keeping trail users in mind.

Commercial precincts and town centres can provide good opportunities for rest stops, food and drink, and toilet facilities. Indeed these locations, along with transport hubs such as train stations, are in many cases the destinations of trails users. In such cases, the 'trail head' infrastructure is being provided by these facilities.

Where facilities are provided on trails, they need to be designed to avoid interfering with the safe use of the trail by all users. For instance, seats should not be placed too close to the trail surface.

The following are types of trail infrastructure, with recommendations regarding their use associated with regional trails in Northern Melbourne. Recommendations regarding their provision are summarised in figure 7.5.

- ***Seats*** - Seats should be provided in locations where people may want to sit. This may apply to locations with attractive views or outlooks. It may also apply to locations where people may want to rest or wait for others, such as at destinations, trail heads, or in the vicinity of other facilities such as toilets. In general, seats with backs and arm rests provide more comfortable seating for people wishing to sit for a period of time, while benches are more suitable for short term seating.
- ***Lights -*** The majority of regional trail usage occurs during daylight hours. Lighting is therefore generally not considered as a standard requirement for regional trails, except in situations such as tunnels or underpasses where low levels of light are experienced during daylight hours. There are a number of potential disadvantages of providing lighting to trails, including disturbance of wildlife, the potential attraction of undesirable and antisocial night time activity, and the cost of operation. The kind of users who most benefit from lighting are people using sections of regional trails in a relatively local way over the winter months, such as recreational walkers, dog walkers, and commuters. Where there is evidence of strong potential benefits for these groups without the potential disadvantages noted above, lighting should be considered.
- ***Drinking fountains -*** Drinking fountains provide opportunities for trail users to rehydrate while using the trail. They are particularly popular with people undertaking exercise on trails during warmer weather. Walkers and joggers are more likely to use them than cyclists, who have more opportunity to carry their own water bottles. Drinking fountains are most efficiently provided associated with parks, where water connections are likely to already exist. Dog drinking bowls can also be associated with drinking fountains.
- ***Rubbish bins -*** Rubbish bins should be provided only at key activity nodes, destinations and in key dog off-lead/dog walking areas. In many cases these nodes and destinations will already have bins (e.g.. parks, railway stations, civic buildings). Bins should only be considered where there is easy access for rubbish trucks and the capacity to service them. Parks Victoria has a carry-in carry-out rubbish policy throughout its estate.
- ***Bicycle parking -*** Regional trails attract a lot of cycling users, so there is a strong demand for bicycle parking at key destinations and stopping points along the way. In most cases simple 'hoop' style parking is appropriate, but for destinations such as railway stations where people are likely to be regular users requiring secure longer-term parking, cage style parking should also be considered. E-bike charging stations should be considered at transport node connections or on higher use commuter trails.
- ***Bicycle pump and repair stations -*** Further to bicycle parking, maintenance stations allow cycling users to perform on-the-go repairs to allow safe and convenient travel along the trails. These should be considered for key activity nodes such as trail heads and transport hubs.

- ***Shelter -*** The length of the trail network means that the provision of shelter needs to be focussed upon points where it is most needed. These points logically include trail heads, key destinations and stopping points. Where shelters are provided, other facilities are also likely to be appropriate, including seating, drinking fountains and bins. Shelter types can vary depending upon the preferences of the relevant Council, but should provide both sun and rain protection. Shelters directed primarily at trail users do not need to be large (compared to those targeted at picnics and others gathering in larger numbers).
- ***Other 'end of trip' facilities -*** end of trip facilities such as showers and change rooms may be desirable for some regional trail users, especially commuters and tourists. Due to the construction cost and maintenance requirements associated with end-of-trip facilities, having them fulfil the needs of multiple user groups may assist in making them viable. Examples of where a shared approach may work include at beaches (where showers are commonly provided) and at civic buildings (where staff may also use these facilities).

Infrastructure element	Infrastructure provision			
	Regular (<500m spacing)	*Occasional (500-1000m spacing)*	*At key activity nodes*	*Where required for safety reasons*
Behavioural signs		o	o	
Bicycle parking		o	●	
Bicycle pump & repair stations			o	
Directional signs	●			
Drinking fountains		o	●	
Emergency markers (in accordance with ESTA requirements)		●		
End of trip facilities (e.g. showers)			o	
Interpretive signs		o	o	
Lights		o	o	●
Outdoor fitness equipment			o	
Public toilets			●	
Rubbish bins			●	
Seats		●	●	
Shelter			●	
Vegetation (including shade trees)	●			

● *mandatory*
● *recommended*
o *to be considered*

FIGURE 7.5:
Regional trail infrastructure provision recommendations

7.4 TRAIL-SIDE VEGETATION

Trail-side vegetation can provide a range of benefits, including:

- ***Function*** - including the provision of shade from trees, and the use of vegetation in creating a barrier/ buffer between different uses. Shade is particularly important along active transport routes for the comfort of users.
- ***Character*** - vegetation can contribute strongly to the appeal of trail settings, by creating visual interest, contributing to a sense of respite from the urban environment, and by screening undesirable views.
- ***Environmental*** - linear trail corridors are in many cases ideal habitat corridors, and the management of trail-side vegetation can play an important role in their effectiveness.

For these reasons, vegetation should be incorporated into regional trails where possible. The incorporation of vegetation needs to be mindful of potential issues, including:

- ***Existing vegetation impacts*** - installing new trails may result in the need to remove existing vegetation, or create conditions that are detrimental to the health of existing vegetation.
- ***View lines*** - thick vegetation should be offset from trails to allow trail users to see other trail users and to minimise the presence of hiding places.
- ***Collision risk*** - there should be a buffer between the trail and tree trunks to prevent injury from people colliding with them.
- ***Trip risk*** - vegetation should be designed and managed in a way that minimises the risk of plants growing onto the trail surface to avoid potential trip hazards.
- ***Maintenance burden*** - the length of trails means that any maintenance-intensive activities required along trail edges can involve significant resources and cost.

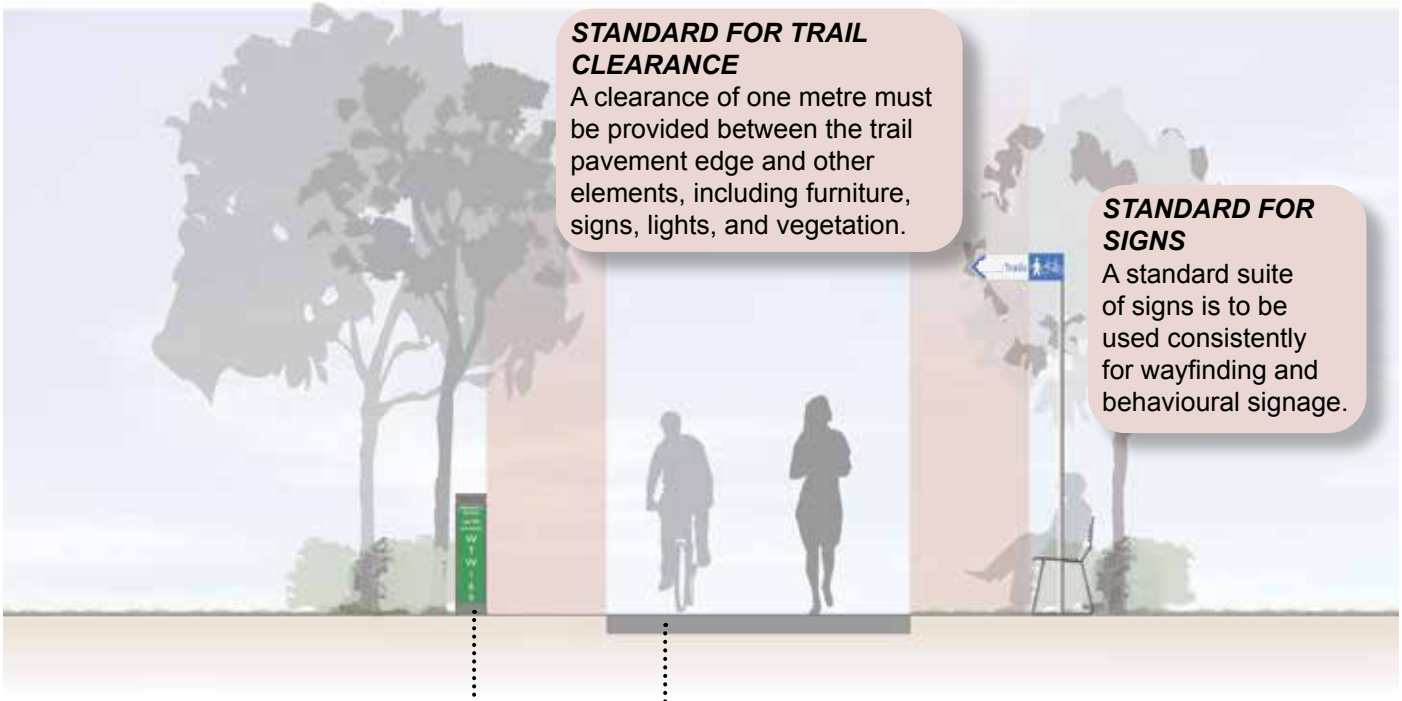
The approach to trail-side vegetation needs to strike a balance on a case-by-case basis regarding the benefits and potential issues noted above. In some cases this may require compromises to the trail infrastructure.

7.5 INTERSECTION TREATMENTS

Especially in built-up urban environments, trail intersections with roads and other paths and trails can be numerous. There are a wide variety of intersection treatments to select from based upon the intersection type. The options range from line marking for trail intersections with paths, through to signalised intersections for busy roads. The options are detailed in the Austroads *Guide to Road Design Part 6A: Paths for Walking and Cycling*, and the recommendations of this document should be applied for all trail intersection treatments.

7.6 TRAIL INFRASTRUCTURE STANDARDS AND GUIDELINES

Standards and guidelines are provided here to guide the development of new regional trails, and regeneration/replacement works on existing regional trails within Northern Melbourne. The standards (items that must be addressed) are shown in figure 7.6, while the guidelines (items that should be considered) in figure 7.7. These standards and guidelines are intended to supplement the Austroads *Guide to Road Design Part 6A: Paths for Walking and Cycling*, which provides the over-arching standards for path and trail construction. Trail infrastructure standards and guidelines should be assessed to align with the existing guidelines and policies of relevant stakeholders.



STANDARD FOR TRAIL CLEARANCE
A clearance of one metre must be provided between the trail pavement edge and other elements, including furniture, signs, lights, and vegetation.

STANDARD FOR SIGNS
A standard suite of signs is to be used consistently for wayfinding and behavioural signage.

STANDARD FOR EMERGENCY MARKERS
Emergency markers complying with ESTA requirements to be installed every 500m-1km. Emergency markers can be incorporated into other trail signage. Bollards should be easily distinguishable from the trail with luminance contrast greater than 30%.

UNIVERSAL DESIGN
Regional trails must be designed to be accessible to as broad a section of the community as possible. This requirement infiltrates most aspects of trail infrastructure design. Though universal access is the ideal outcome, certain topographic conditions and/or ecological or cultural heritage sensitivities may inhibit feasibility in some cases.

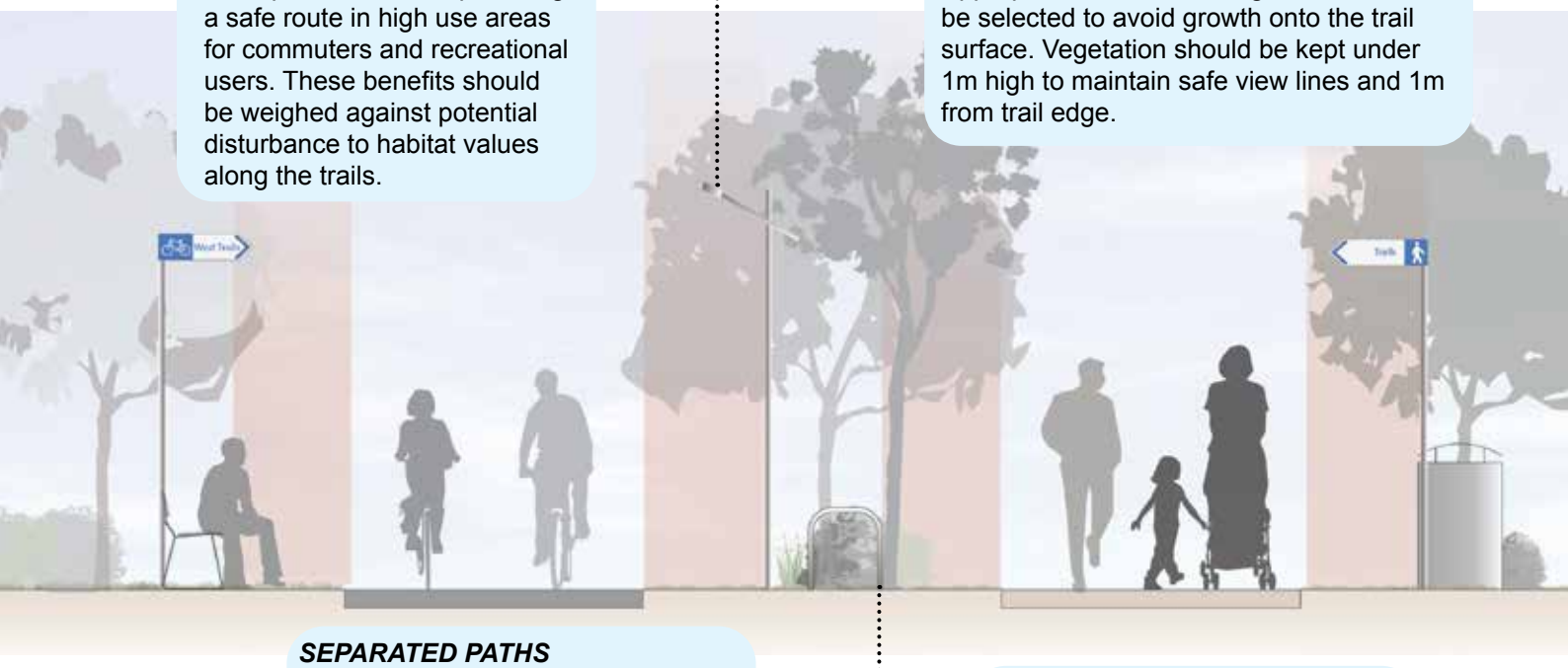
STANDARD FOR TRAIL PAVEMENTS
Surface material
- Most trails to be either concrete or asphalt .
- All pavements to be designed to accommodate maintenance vehicle access (i.e.. for concrete min. 150mm depth reinforced concrete)
- Saw cuts (rather than ruled/tooled joints) to be used for concrete surfaces to reduce 'bumpiness' for cyclists.
- Compacted gravel surfaces are only to be considered on trails that:
  - are not intended to be used for cycle commuting
  - have no flooding risk or drainage issues
  - are to accommodate equestrian use

Pavement width
- Typically 3.0 metres wide to allow clear passing of oncoming trail users.
- Min. 2.5 metres wide where physical constraints prevent greater width.
- Segregated paths to be considered for high-use paths, in line with Austroads recommendations.

FIGURE 7.6:
Regional trail infrastructure standards for Northern Melbourne.

LIGHTING GUIDELINES
Lighting should be considered in areas where there is a clear benefit such as in dark underpasses, and for providing a safe route in high use areas for commuters and recreational users. These benefits should be weighed against potential disturbance to habitat values along the trails.

VEGETATION GUIDELINES
Trees should be planted near trails to provide shade and amenity benefits, but far enough away to avoid interfering with the trail function (min. 1 metre from the trail edge and to ensure good sight lines). Appropriate shrubs and vegetation should be selected to avoid growth onto the trail surface. Vegetation should be kept under 1m high to maintain safe view lines and 1m from trail edge.



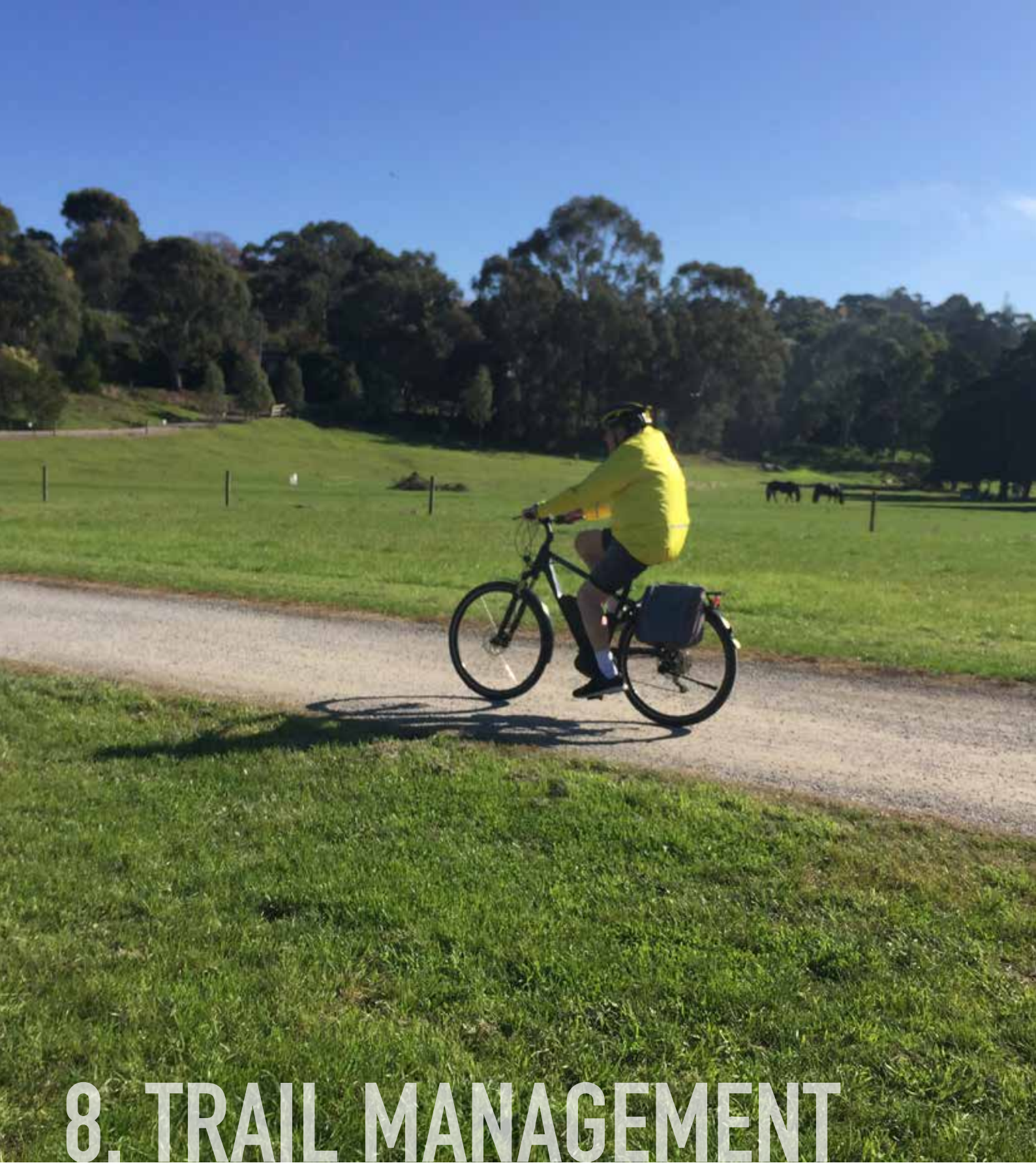
SEPARATED PATHS
Segregated walking/cycling surfaces should be considered for high-use trails in line with Austroads guidelines.

BICYCLE PARKING GUIDELINES
Bike parking should be provided at all key destinations and stopping points (and should be installed at least 1 metre from the path edge onto concrete or asphalt).
Consider e-bike charging stations, particularly on commuter trails or at transport node connections.

FURNITURE GUIDELINES
- ***Seats*** with arm rests and backs should be provided on all trails, approximately every 500 metres, focused upon areas where people will want to sit (view points, trail heads, intersections, facilities and activity nodes).
- ***Rubbish bins*** should be provided only at key activity nodes, destinations and key dog off-lead/dog walking areas.
- ***Drinking fountains*** should be provided at key activity nodes, destinations and key dog off-lead/dog walking areas where these are existing water connections.
- ***Shelters*** should be provided at key activity nodes and destinations, providing shade and rain shelter for small groups.

PUBLIC TOILET GUIDELINES
Access to toilet facilities is important for busy trails. These facilities are most efficiently and effectively provided through adjoining reserves, activity centres and civic facilities.

FIGURE 7.7:
Regional trail infrastructure guidelines for Northern Melbourne



8. TRAIL MANAGEMENT

Yarra River Trail

8.1 EXISTING MANAGEMENT STRUCTURE

The management of the regional trail network comprises a wide variety of activities, relationships and agreements that support trail planning, construction, funding, maintenance and promotion. The management structures of trails are often complex and responsibilities for trails are spread across many different organisations.

The three key types of organisations who have responsibilities and involvement in the management of regional trails are Local Government Authorities, State Government Departments, and Service Authorities/ Statutory Corporations. The involvement of these groups is summarised below.

8.1.1 Local Government Authorities

Local Government Authorities (LGAs, also referred to in this document as Councils) provide a wide range of services and facilities for their local community in accordance with the Local Government Act. This includes the planning, delivery, maintenance and promotion of regional trails within the local government area. The LGAs administer the State's responsibilities for the local government sector through collaboration and seeking input from State Government Departments and/or Service Authorities/Statutory Corporations. Though LGAs have little influence upon State legislation they are required to operate in accordance with it.

LGAs have been the key group involved in the development of this strategy. Each of the six LGAs within the study area are represented on the Project Working Group and have been heavily involved in shaping this report.

8.1.2 State Government Departments

Department of Environment, Land, Water and Planning (DELWP)

DELWP has a broad range of responsibilities relating to the management of Victorian land and natural resources, protection of the environment, responding to fire, flood and biosecurity emergencies, and primary industries. The relationship of these responsibilities and regional trail provision relates most strongly to the waterways along which many of the regional trails are located. DELWP oversees the water corporations constituted under the *Water Act 1989* that manage Victoria's state-owned water resources. This includes Melbourne Water Corporation whose responsibilities include the management of rivers, creeks and major drainage systems.

Department of Transport (DoT)

The Department of Transport is responsible for the planning, building and operation of integrated, sustainable and safe transport systems with Victoria. The DoT is currently investing in new cycling and pedestrian connections across metropolitan and regional Victoria to help relieve congestion and to provide an alternative to public transport. In the 2019/20 budget, the Victorian Government committed $15.3M towards Active Transport Victoria (see below) however, following recent lock downs relating to COVID-19, this investment has been more than doubled to improve existing and deliver new cycling routes and shared user paths in Metropolitan Melbourne.

Active Transport Victoria (ATV)

ATV is a unit within the Department of Transport and was formed in 2016 as a focal point for State Government pedestrian and cycling-related strategies and projects. ATV was responsible for the preparation of the *Victorian Cycling Strategy 2018-28*, which has the subtitle *'increasing cycling for transport'*.

Department of Jobs, Precincts and Regions (DJPR)

The DJPR is responsible for the economic recovery and growth of Victoria by creating more jobs for more people, building thriving places and regions, and supporting inclusive communities. In more recent times, the department has been focussed on the impacts of the COVID-19 pandemic and how it will help communities and businesses adapt, build resilience and recover from a strategic point of view. One of the key initiatives implemented by the DJPR is the Growing Suburbs Fund.

The *Growing Suburbs Fund* is a $375M investment over 7 years to assist local government in the task of delivering new local infrastructure. It is expected that a number of trail related projects will be delivered over the coming years due to this funding opportunity.

The DJPR also provides a series of programs and grants to support Victoria's sporting sector and visitor economy including Visit Victoria and Sport and Recreation Victoria

Visit Victoria is a statutory authority reporting to Minister for Tourism, Sport and Major Events who sits within DJPR. Visit Victoria works to develop and realise the local and global market potential for Victoria's tourism industry. It's strategy work relating to regional trails has included the preparation of a number of documents referred to in this report, being:

- Victoria's Trails Strategy (2014)
- Victoria's 2020 Tourism Strategy (2013)
- Victorian Visitor Economy Strategy (2016)

Sport and Recreation Victoria (SRV)
The role of the SRV is to support Victoria's sport and recreation sector and inspire Victorians to get active. SRV work collaboratively with local government to improve the health and well-being of all Victorians, build strong and more connected communities, deliver economic growth and jobs, and enhance liveability. These goals are closely aligned with this strategy. The work of SRV has a focus upon research, planning and design facilitation relating to sport and recreation facilities, rather than directly constructing or managing facilities.

Victorian Planning Authority (VPA)
The VPA is responsible for providing strategic planning and coordinated infrastructure for the future growth and transformation of Victoria's cities and regions.

Given that the study area includes designated growth corridors, the VPA will have had significant involvement in the planning or provision of regional trails in the study area through Precinct Structure Plans and may continue to do so. This document can be used a guide when working with the VPA to deliver trails within growth corridors.

8.1.3 Service Authorities/Statutory Corporations

VicRoads
VicRoads is the Victorian road and traffic authority. It is a statutory corporation which is responsible for a range of road and transport-related research, strategy, policy and licensing, as well the construction, management and maintenance of assets. While the majority of the activities undertaken by the authority relate to roads for motorised vehicles, VicRoads also has responsibilities relating to pedestrians and cyclists.

VicRoads constructs and maintain on-road cycling facilities as a part of their road construction and maintenance responsibilities. They also construct and manage off-road trails located within road reserves, such as within freeway corridors. Regional trails also frequently intersect with roads, and so the management of these roads (through VicRoads or local government Road Management Plans) can be critical to trail function.

As a part of their activities relating to pedestrian and cycling transport, VicRoads is the body responsible for planning for appropriate infrastructure using a number of planning tools. These include the Principal Bicycle Network (PBN), Strategic Cycling Corridors (SCC), Bicycle Priority Routes (BPR) and the Metropolitan Trail Network (MTN).

The Principal Bicycle Network (PBN) was originally established in 1994 as a bicycle infrastructure planning tool. In 2009 and 2010 VicRoads lead a major review of the PBN, working closely with LGAs and other organisations. The PBN includes both on and off road routes for cyclists, and as a planning tool, also includes both existing and proposed routes.

The 2009-2010 review of the PBN also established Bicycle Priority Routes (BPRs), which create a higher order subset of the PBN. BPRs are identified as 'providing priority access for cyclists into key destinations', and so are intended to act as discrete links rather than as an integrated network. To meet the criteria to be defined as a BPR the route needs to have:

- a high potential for separation from motorised modes of transport making routes more attractive to less experienced bike riders
- a sufficiently direct route
- a focus on varying catchments relative to the size of the activity areas.
  (source: Principal Bicycle Network Fact Sheet, VicRoads, August 2012)

With a focus on separation from motorised traffic, it is not surprising that there is a degree of overlap between BPRs and regional trails.

Strategic Cycling Corridors (SCCs) are also a higher-order subset of the PBN, developed to improve cycling to and around major activity centres in metropolitan Melbourne. These are intended to provide routes catering for high volumes of cyclists.

The Metropolitan Trail Network (MTN) focuses on recreational bicycle and walking routes in metropolitan Melbourne. The MTN was originally developed by Parks Victoria in their *Strategy for Melbourne's Open Space Network: Linking People and Spaces* report 2002, but planning responsibility for the MTN now lies with VicRoads. The MTN is made up primarily of off-road shared trails, often running beside rivers and creeks, but there are some short on-road sections that link off-road sections of trail.

Melbourne Water

Melbourne Water is a statutory corporation operating in accordance with the *Water Act 1989 (Vic)* to manage Victoria's water resources (including Melbourne's water supply and sewerage systems, waterways, drainage, stormwater and recycled water). The relationship that Melbourne Water has with regional trails relates to the ownership and/or management of large areas of land relating to their operations, which also form ideal locations for shared paths.

While Melbourne Water may own the land, their core business and legislative charter does not extend to path construction and maintenance. Instead, Melbourne Water enters into user agreements with LGAs to construct and maintain assets on their land. Typically, Melbourne Water and the local Council have joint maintenance responsibilities, with open space features (bench seats, playgrounds, barbeques, garden beds, etc.) that have a community function being maintained by Council, and elements that are part of the functioning Melbourne Water asset (waterbodies, hydraulic structures, aquatic and edge planting) are Melbourne Water's to maintain. User agreements also address issues such as risk and liability.

Melbourne Water seeks to facilitate the best use of Melbourne Water land and is generally supportive of the development of trails on Melbourne Water-owned land. They have also undertaken work relating to the construction and management of trail assets, such as their *Shared Pathways Guidelines* (Melbourne Water, 2009).

Parks Victoria

Parks Victoria is a statutory authority that operates under the Parks Victoria Act 2018, and is responsible for providing services to the state and its agencies for the management of parks, reserves and other land under the control of the state, including waterways land (within the meaning of the Water Industry Act 1994), for the purposes of conservation, recreation, leisure, tourism or water transport. It is as the manager of land through which trails pass that Parks Victoria is most engaged with regional trails. The minister responsible for administering the Parks Victoria Act is the Minister for Energy, Environment and Climate Change.

VicTrack

VicTrack is a state-owned business created to deliver transport infrastructure for Victoria, operating under the *Transport Integration Act 2010*. VicTrack is the custodial owner of Victoria's railway land and infrastructure.

Railway land is often seen as a desirable location for shared trails, due to the general directness of the route, the relatively flat grades, the opportunities for mixing transport modes. While ‘rail trails’ often refer to trails built on disused rail lines, there are also regional trails associated with operational rail lines, located within the land buffer either side of the tracks.

VicTrack has a number of personnel dedicated to Third Party Access and Licensing issues within their Property Group, who facilitate usage such as shared trails on VicTrack land. This facilitation usually requires VicTrack to negotiate with the core users of their infrastructure (e.g.. the rail operators).

In addition to these key organisations, management committees and local community groups such as Friends groups often assist with ongoing trial works and maintenance requirements.

8.2 MANAGEMENT ROLES

Of the organisations identified in Section 8.1, only the LGAs and Parks Victoria have roles and responsibilities that span trail planning, construction, management and maintenance.

Land ownership along regional trails is often fragmented. In many cases local government has maintenance responsibility for a trail, but does not own the land upon which it is built. There are many examples of regional trails being built on land owned by authorities such as Melbourne Water and VicTrack (who each own extensive tracts of land but have no trail construction charter). These partnerships, though sometimes complex, are central to the provision of many trails that would otherwise not exist.

The management bodies and scenarios presented here reflect the current situation. Many existing trails were built under different organisational configurations and changes in these structures will inevitably continue into the future.

With increased public demand, and pressure from lobby groups regarding trail provision, the authorities and organisations involved have begun to change. Traditionally, authorities such as Melbourne Water, VicTrack and their predecessors have been conservative organisations that have fulfilled their obligations relating to drainage, railway provision and the like, but have, in general, not supported the of use of their land for other purposes. The straightforward approach of restricting public access was preferred over the layered complexities and risk factors associated with allowing it. However this attitude has changed considerably in recent years. Both authorities now have staff responsible for facilitating the use of their land for trails and other purposes and are being more proactive in working through the issues and required agreements associated with this. This has required (and will continue to require) negotiation and compromise, but significant progress is being made to the benefit of trail provision.

There have also been recent changes in the way the state government deals with trail planning and provision. This change reflects a broad shift in thinking regarding trails. Where once they were seen as being primarily for recreation purposes and connecting people to nature, they are now increasingly being seen as also providing an important contribution to an integrated transport network, as well as community health and well-being benefits.

8.3 TRAIL MANAGEMENT OPPORTUNITIES

In reviewing the existing trail management structures, the following key issues have been identified:

- local government has the broadest responsibility for regional trails, but necessarily also has a local focus centred around their rate payers.
- there is a general lack of knowledge about the overall trail network, with information held at a local level being variable in detail and quality.
- there is a general lack of knowledge about trail users, and no existing government body with an interest or responsibility in collecting evidence and data to inform strategic decisions. Where members of the community have feedback on trails, it is directed at LGAs and is therefore is usually restricted to local issues.
- regional trails are regularly delivered as a secondary benefit to large infrastructure projects (e.g. freeway construction, level crossing removals and rail duplication). Large scale trail network improvement projects are therefore being implemented in locations convenient to the primary project, but not necessarily the best location for a trail.

Most of the issues identified above stem from the discrepancy between a management structure that is focussed upon the local, and a trail network that is regional. To address this issue, there is an opportunity for input from a group with a regional focus. This regional study is an example of the broader overview able to be taken from this management viewpoint.

The kind of outcomes that could result from a regional group that are difficult to achieve at an LGA level include:

- Lobbying for increased recognition and funding of the regional trail network (potentially including a metropolitan trail strategy to coordinate the regional strategies and the creation of regular state funding grants for trail projects).
- Collation of detailed mapping and data on the regional trail network via Geographic Information Systems (GIS), and shared data arrangements between Councils and other authorities (such as Melbourne Water and Vicroads).
- The negotiation of formal boundary agreements in relation to the management of boundary interfaces.
- Collection of data relating to trail use to help inform regional trail planning and management decisions.
- The development of the trail network in a way that is strategic and regionally-focussed.
- The development of regional marketing and communications approaches for trails, potentially including regional maps of the network.
- The establishment of events at a regional scale that take advantage of the broad trail network.
- The sharing of information and experience between LGAs, for the betterment of the regional trail network.
- The development of consistent infrastructure, including a standard directional signage suite.

To achieve these benefits, it is recommended that the existing Northern Melbourne regional trails working group be retained. The Northern Melbourne LGAs already have a history of working together on various issues including the previous trail strategy and successful funding applications. Working together collectively is seen as a way to respond to challenges posed to individual LGAs, by pooling resources and advocacy/promotion efforts between LGAs for a regional benefit.

9. TRAIL MARKETING

Yuroke Creek Trail

9.1 INTRODUCTION

Drawing the trail network to the attention of people has the potential to play an important role in increasing use of the trails. Many regional trails are located in places where many members of the community may not see them on a day to day basis (e.g.. alongside waterways).

In general, the marketing of the trails has two potential audiences: residents and visitors. However, the large size of the study area means that residents within the study area are also potential visitors within the region. As the motivations and needs of people who use trails as residents or as visitors can be quite different, it is valuable when considering trail marketing to clarify what is meant when referring to 'a resident' and 'a visitor'.

- ***Residents*** - refer to those who live within the study area using the trails in a way tied to their day to day life (primarily transport/commuting and recreation/exercise).
- ***Visitors/tourists*** - refer to people who have travelled from where they reside (which could be within the study area) for the purpose of travel including holiday, visiting friends and relatives, and business. Trail usage tends to be motivated by leisure, health and fitness. Within this grouping there are two key subgroups: overnight visitors and day trippers.

For an urban trail network the majority of users would normally be residents and the planning of the network is largely based around their transport and recreation needs. However, trails often provide leisure opportunities in scenic environments that can make them attractive destinations for visitors. The study area also includes a range of visitor destinations where access via trails could be a part of the visitor experience.

This section explores existing and potential marketing of the regional trails within the study area to both resident and visitor audiences.

9.2 CURRENT MARKETING ACTIVITIES

All of the municipalities across the study area provide communications and resources to encourage trail usage and provide information about trail facilities and etiquette of usage. The following table lists examples found on local government web pages within the study area (arranged alphabetically by local government area):

Local government authority	Trail marketing product	Description
Banyule City Council	'Banyule Travelsmart Map' (January 2019)	Downloadable map with some trail information, but also strongly focussed upon public transport.
Darebin City Council	'Darebin Travelsmart Map' (June 2018)	Downloadable map with some trail information, but also strongly focussed upon public transport.
	'Darebin Loves Bikes' community mailing list	Able to be subscribed to via the Darebin Council web page, informing subscribers of 'the City of Darebin's bike events, workshops and fun activities'.
Hume City Council	'Travel Smart Maps'	Covering walking, cycling, public transport routes, places of interest and information on clubs and user groups for Craigieburn/Broadmeadows/ Greeenvale, and Sunbury/Bulla. Downloadable PDFs from the council web page.

Merri-bek City Council	Cycle Moreland 'pocket map' (December 2013)	Downloadable map focussed upon cycling routes.
Nillumbik City Council	'Exploring Nillumbik Map' (June 2012)	Downloadable map including places of interest and walking/cycling trails/ routes.
Whittlesea City Council	'Explore Whittlesea' web page (www.explorewhittlesea.com.au)	Includes an online interactive map identifying key attractions, but the map does not locate trails. The site highlights two trails (The Metropolitan Ring Road Trail and Darebin Creek Trail) under a 'Sports & Recreation' heading.
Multiple	'The Merri Creek Trail Shared Pathway' map	Prepared collaboratively by multiple organisations, including Darebin, Merri-bek & Yarra City Councils. Accessed via the Merri-bek City Council web page.
Multiple	'Darebin Creek Trail Map' (www.northerntrails.melbourne/ DarebinCreek/map.html)	Interactive web-based map. (prepared collaboratively by multiple organisations, Banyule, Darebin, Whittlesea City Councils). Accessible via the Darebin Council web page.

The last two examples in the table above have a more regional approach, covering an area across multiple local government area boundaries. The remainder have a local focus.

At a broader scale, trail marketing does occur at a state level, but is concentrated on key branded nature-based walks (e.g.. Great South West Walk) and North-East Victoria as a cycle tourism destination (incorporating the Murray to Mountains Rail Trail). Tourism promotions relating to Melbourne have typically had a strong focus upon central Melbourne.

9.3 MARKETING TYPES

The following table summarises the kinds of existing and potential marketing types most applicable to regional trails in Northern Melbourne.

Communication method	Pros	Cons
Hard copy maps/brochures	• Maps allow route planning and encourage exploration • Meets the needs of a wide variety of users, including those who are not digitally-savvy. • Ideal marketing 'give aways' at events.	• Hard copies not always easy for users to access. • Distribution of hard copies to appropriate locations creates ongoing logistical issues. • Hard copy maps can become out of date very quickly, requiring regular reprints and re-distribution.
Downloadable maps/ brochures	• Maps allow route planning and encourage exploration • Accessible to most people any time • Can be readily accessed and printed by users who prefer hard copy maps	• Can become out of date very quickly if not updated.
Interactive online maps/ brochures	• Maps allow route planning and encourage exploration • Accessible to most people any time • Potential for information to be updated in real time	• An expectation by users that maps are always up to date, which is beyond the current capability of most Councils. This typically means a reliance upon third parties to provide mapping, which can limit the opportunity for controlling what is shown and how it is presented.
Social media	• Local government authorities have social media teams who are skilled at communicating via this media. • Opportunities to answer queries and interact in person. • Potential for information to be updated in real time.	• The broad scope of Council activities means that trail-related information will always be a very small proportion of communications. • A need to monitor activity and manage negative aspects of open public participation.
Email mailing lists	• Provides an opportunity to communicate directly with interested people.	• Communications targeted to already engaged parties, rather than reaching new users.
Events	• Create a focal point for communications • Can encourage people to overcome participation hurdles in order to participate, which can lead to ongoing use.	• Usually require a lot of organisation and resources to be well attended and effective.
On-trail signs/advertising	• A very targeted method of communication, talking directly to trail users.	• Communications targeted to already engaged parties, rather than reaching new users.
Commercial advertising	• Potential to reach large new audiences.	• Requires a well thought-out strategy to ensure it is targeted and effective. • Cost

9.4 TOURISM POTENTIAL

Trails that appeal to visitors can be broadly categorised into three types:

- ***Scenic trails*** – these are a destination in themselves and are enjoyed for their scenic features for example the Plenty River Trail.
- ***Touring trails*** – these provide connectivity to a range of facilities and services near the trails. The trail's major function is as a transport route, even though it may also have some scenic value, i.e. the Merri Creek Trail.
- ***Experience trails*** – these are themed to provide an experience along the trail, usually taking advantage of distinctive local features and themes. This kind of trail may also focus on linking the user to a range of complementary experiences located close to the trail e.g.. a local produce trail.

The definitions above are perhaps most closely associated with rural trails and trails through natural areas. The study area certainly has attractive rural and natural areas that have potential in relation to trails. The study area also has some very urban landscapes that may be equally valuable from a tourism perspective. The recent tourism focus on things like street art in central Melbourne laneways provides an example.

The challenge in developing a trail for tourism is differentiating it from the many kilometres of other trails that exist around the state that are also competing for users. Some potential points of differentiation include:

- ***Proximity*** - While trails in regional Victoria are very popular (i.e. Murray to Mountains or the Lilydale-Warburton Rail Trail), most users need to travel to access them. This often includes the need to transport bicycles, which can be logistically difficult. Trails with a similar rural character can be accessed by bicycle or public transport in Northern Melbourne by many Melbourne residents.
- ***Urban character*** - The urban areas of Northern Melbourne include a high density of cultural and commercial activities, including things like art galleries, cafes and breweries that are highly compatible with an urban trail experience.

9.5 GOALS AND POTENTIAL TARGET MARKETS

9.5.1 Marketing goals

Marketing Goals for Regional Trails include:

- To increase the number of residents who use the trails to improve their health and well-being, with a particular focus on resident groups who undertake the least physical activity, or for whom trail usage would address a particular social disadvantage.
- To increase trail usage by residents to commute to work, school and other leisure facilities.
- To increase visitor usage of the trails
- To increase length of stay and expenditure in the region by visitors and local residents associated with trail experiences.
- To create new and improved trail experiences that are enjoyed by residents and visitors.

9.5.2 Potential Target Markets

Residents

The target markets for trail development, communication and promotions continue to be all current resident markets, with a particular emphasis on those who will gain most from the mobility, health and social and benefits offered by trails.

Visitors

In terms of visitor origin, target markets for the trails should include those who are:

- Living in other parts of the project region,
- Living in greater Melbourne, and
- Visiting Friends and Relatives of those living in these areas.

These markets most closely align with current marketing activities, and are the most cost-effective use of promotional resources. The Visiting Friends and Relatives market can be reached through targeting Melbourne residents and encouraging them to take their visitors to the region's trails. This creates a visitor market benefit from resident-focussed marketing activities.

9.6 MARKETING OPPORTUNITIES

The marketing objectives for regional trails in Northern Melbourne are:

- To increase motivation to visit the trails
- To raise the profile of the trails
- To provide appropriate information about trail usage and associated services/ destinations so people can use the trails easily, safely and enjoyably.

Actions include:

Develop the regional trails product offering and branding

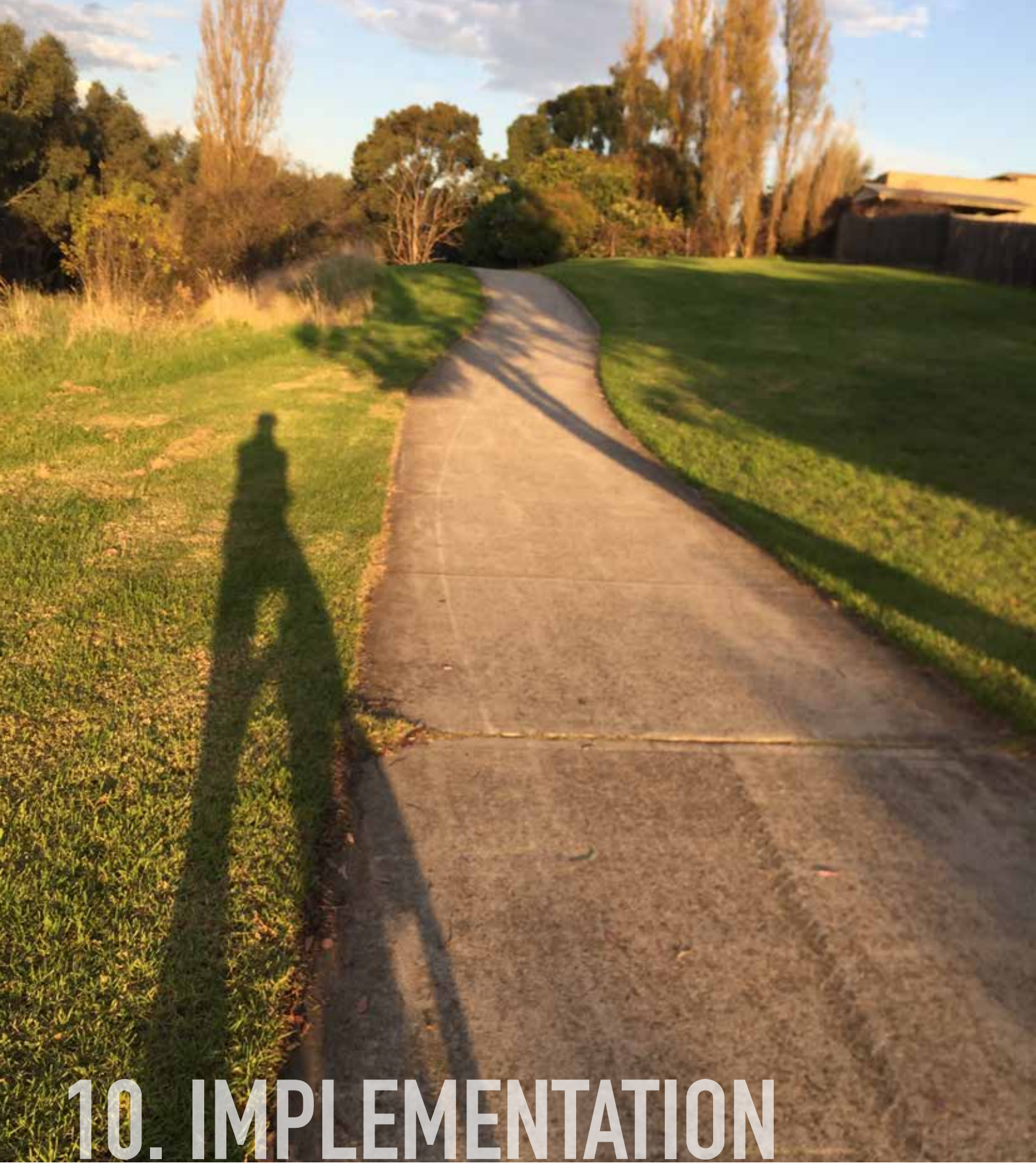
- Develop a series of themed trail-based itineraries across the region that are tailored to a variety of different trail users and their interests, e.g. trail experiences for families that can be undertaken over a weekend featuring low-risk, low impact activities, and the time it takes to do them; identify complementary leisure activities, hospitality and facilities, such as bike hire, etc.
- Encourage tourism operators in the relevant parts of the region to develop trail-themed packages which provide services that meet the needs of trail users, e.g. substantial nutritious food, bike storage, nearby accommodation, etc.

Provide additional information about trails

- Devise a suite of messages about each trail that is regularly refreshed, which is consistently communicated by all stakeholders, including regional tourism organisations.
- Increase the level of information about regional trails on visitor-focused websites, such as Visit Victoria's consumer website (visitvictoria.com.au), and websites appealing to trail users (e.g.. trail cycling, walking or running sites).
- Investigate the potential to develop a regional trails app or website which would be kept up-to-date with the latest trails information. The app or website could be maintained by an external contractor.
- Develop a social media strategy to build awareness about the region's trails.
- Develop an Events Calendar for the trails which can be promoted by all relevant stakeholders.

Trail management & funding

- Develop a formal collaborative structure between the region's councils to guide the development and promotion of regional trails. The collaboration should be adequately funded to outsource key marketing activities, with participating councils guiding the decision making.
- Secure additional funds to undertake more promotion of regional trails to visitor and resident markets, and to support a collaborative structure involving the region's councils for trail marketing and development purposes.



10. IMPLEMENTATION

Darebin Creek Trail

10.1 INTRODUCTION

Two kinds of action items associated with improving the regional trail network in Northern Melbourne have been identified:

- ***Region-wide items*** - these items are recommendations regarding the broader management and operation of the trail network. These are summarised below.
- ***Trail-specific items*** - these trail improvement projects have been assessed against criteria to determine their relative prioritisation.

10.2 REGION-WIDE ACTION ITEMS

The key region-wide action items are summarised below (based upon recommendations made throughout this document).

Category	Recommended actions
Trail infrastructure	• Develop and implement a standard suite of directional signs for regional trails in Northern Melbourne. • Implement the Trail infrastructure standards and guidelines as identified in this document (refer to Chapter 7).
Trail management	• Ensure the Northern Regional Trails working group continue to meet regularly, in order to: - Lobby for trail funding. - Undertake strategic planning of the regional trail network, informed by data collected and shared about the network and users. - Promote the regional trail network.
Trail marketing	• Develop the regional trails product offering and branding - Develop a series of themed trail-based itineraries across the region that are tailored to a variety of different trail users and their interests - Encourage tourism operators in the relevant parts of the region to develop trail-themed packages which provide services that meet the needs of trail users • Provide additional information about trails - Devise a suite of messages about each trail that is regularly refreshed, which is consistently communicated by all stakeholders, including regional tourism organisations. - Increase the level of information about regional trails on visitor-focused websites and websites appealing to trail users. - Investigate the potential to develop a regional trails app or website which would be kept up-to-date with the latest trails information. - Develop a social media strategy to build awareness about the region's trails. - Develop an Events Calendar for the trails which can be promoted by all relevant stakeholders. • Trail management & funding - Develop a formal collaborative structure between the region's councils to guide the development and promotion of regional trails. - Secure additional funds to undertake more promotion of regional trails to visitor and resident markets, and to support a collaborative structure involving the region's councils for trail marketing and development purposes.

10.3 TRAIL-SPECIFIC ACTION ITEMS

A number of trail-specific action items were identified through various phases of the project such as the desktop assessment, strategic document review, trail audit, and the community and stakeholder engagement. These action items, which range from signage projects which can potentially be undertaken by a single Council, to extensive lengths of new trail requiring coordination between Councils and other land owners/ managers, aim to provide a comprehensive and connected trail network.

This list of trail improvement projects are itemised into a schedule which can be found in Appendix B and/ or cross referenced to the trail maps in chapter 6.

Following the identification of the trail improvement projects, each action item was assessed using a multi-criteria analysis in order to identify priority projects that provide the most benefit to the region and most closely align with the objectives of this study. In order to undertake this process, a series of criteria was developed.

10.3.1 The Criteria

Following analysis of the multi-criteria analysis used in the 2016 Northern Trails Strategy, a new set of criteria is proposed based on the strategy's vision and the criteria from the previous strategy. This qualitative and quantitative criteria has been developed in collaboration with the Project Steering Group to assess potential trail improvement projects against the key objectives of the study.

It should be noted that the assessment method used has provided a useful prioritisation tool but it is not scientific. While the method used does rank projects in order, the accuracy of the method means that it is best used to provide only broad groupings regarding relative priorities.

The eight criteria and the relative weighting used are as follows:

1. ***Contribution to an integrated and connected network*** (26%)
   Including linking to other regional and local trails, not having 'missing links', and linking to key destinations such as regional parks and conservation areas, tourism destinations, regional leisure centres, tertiary institutions, activity centres and business parks, and recreational water bodies.

   Rationale: Trail improvement works that create an integrated and connected, network will be more useful and convenient for users, increasing the use of the trail.

2. ***Encouraging use by spatial location*** (18%)
   Including the proximity of trails to population centres and transport hubs.

   Rationale: Trail improvement works located close to dense population centres are more likely to attract higher numbers of users.

3. ***Potential economic benefits*** (5%)
   Including commercial opportunities for local communities as well as cost savings associated with reduced ongoing operational costs such as maintenance.

   Rationale: Trail improvement works that provide economic benefits potentially contribute to capital being available for additional trail improvement works. Works that can demonstrate a strong economic 'business case' also have a better chance of being implemented.

4. ***Contribution to community health and well-being*** (5%)
   Including trails maximising opportunities for the use of the trails for active transport, recreation and social interaction. This includes improvements that positively contribute to a trails recreation values and actions that actively encourage new users to the trails.

   Rationale: Trail improvement works that help to encourage health and well-being provide positive contributions the 'social' aspect of a triple bottom line assessment.

5. ***Contribution to uniqueness and the quality of the natural environment*** (18%)
   Including trails that provide access to natural environments, features and other 'selling points' that make them more attractive to users, including tourists. Provision of trails should also minimise negative impacts on the natural environment.

   Rationale: Trail improvement works that help to increase the attractiveness or positive uniqueness of a trail will make people more likely to use the trail, and also opens up potential economic benefits. This criteria will often relate to the enhancement of environmental values, providing positive contributions the 'environmental' aspect of a triple bottom line assessment.

6. ***Encouraging diversity of use through facility quality and maximising usability*** (5%)
   Including improving accessibility, safety, legibility, facility diversity and the broader user experience of trails.

   Rationale: Maximising the safety of trails is a non-negotiable principle of trail provision. People are also more likely to use trails if they appeal to a diverse range of users, are accessible, safe, legible and provide a positive user experience.

7. ***Strategic alignment*** (18%)
   Level of support from and alignment with adopted strategies and plans and external stakeholder plans.

   Rationale: Trail improvement works that fit with broader strategies, policies and plans help to ensure that works to improve the network are all 'pulling in the same direction'.

8. ***Ease of implementation*** (5%)
   Including projects that are considered to be 'easy wins', are supported by all stakeholders, are easy to construct, are 'shovel ready' or are considered 'feasible', or are relatively low cost.

   Rationale: Trails improvements works that are easy to implement are more likely to be implemented in a timely and efficient manner.

10.3.2 Priority trail improvement projects

The following schedules itemise the priority trail improvement projects identified by the multi-criteria analysis where each project was assessed against the criteria discussed above. These projects can be cross-referenced to the trail maps in chapter 6, using the trail name and identification number. It is important to note that the trail improvement projects that have been identified outline the priorities for the Northern Region and the whole regional trail network, as opposed to individual Councils.

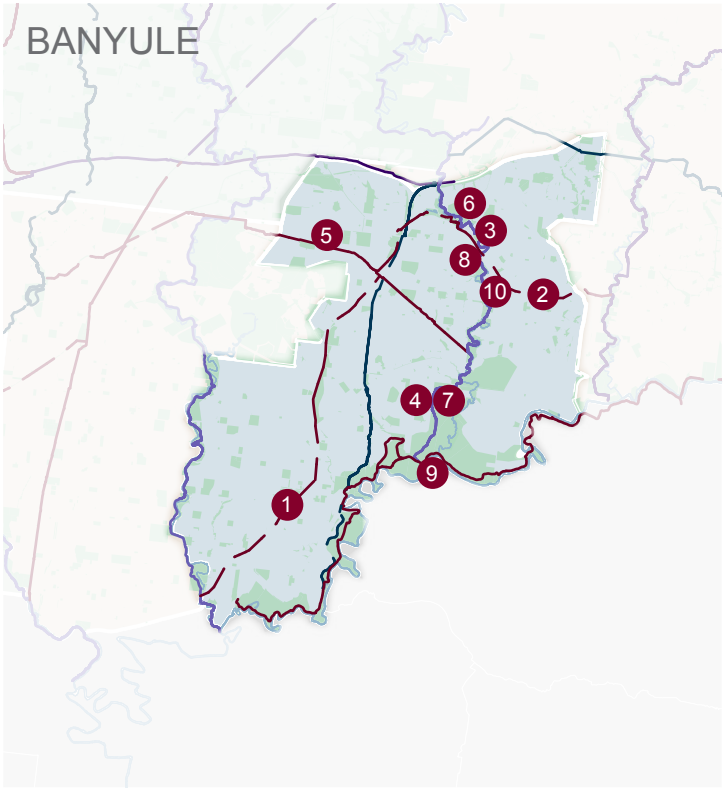
Of the 190 trail improvement projects identified, 25 have already been funded or will be funded through interrelated projects and developments. These projects have been committed to and as such have not been included in the lists below.

The overall top ten priority trail improvement projects for the Northern Region are:

No.	Trail action item	Project description
1	Maroondah Aqueduct_01	Construct new section of trail connecting the Plenty River Trail near Lear Court, east along the aqueduct across Diamond Creek Road to the Diamond Creek Trail at Allendale Road.
2	MerriCreekTrail_08	Complete missing section of trail from the Metropolitan Ring Road to existing section of trail south of Horne Street
3	Maroondah Aqueduct_02	Extend the Maroondah Aqueduct Trail through to Yarra Glen. Two options have been identified for this extension: i. Construct a new section of trail from the existing Aqueduct Trail at Calwell Road through to Ashmore Road and on to Yarra Glen; or ii. Construct a new section of trail from the existing Aqueduct Trail at Calwell Road via the Melbourne Water Caretakers trail to Ashmore Road and on to Yarra Glen.
4	EdgarsCreekTrail_01	Construct new section of trail from the Merri Creek Trail to Ronald Street on the west bank
5	MerriCreekTrail_02	Partner with Parks Victoria and DELWP to extend the Merri Creek Trail from Merri Concourse (north) to Cooper Street
6	UpfieldRail_02	Advocate to Department of Transport to construct a new section of trail from the Metropolitan Ring Road to Somerton Road
7	WhittleseaShared_01	Construct a new trail from Mernda Station to Whittlesea. Ensure there is provision for horse riders on parts of the trail
8	MerriCreekTrail_03	Advocate for and investigate the staged extension of the Merri Creek Trail from Cooper Street Somerton/Epping north to OHerns Road as a part of the Upper Merri Creek Regional Parkland Plan.
9	MerriCreekTrail_04	Advocate for and investigate the staged extension of the Merri Creek Trail from OHerns Road to Craigieburn Road as a part of the Upper Merri Creek Regional Parkland Plan.
10	KinglakeWay_01	Establish a new trail from Hurstbridge to Arthurs Creek.

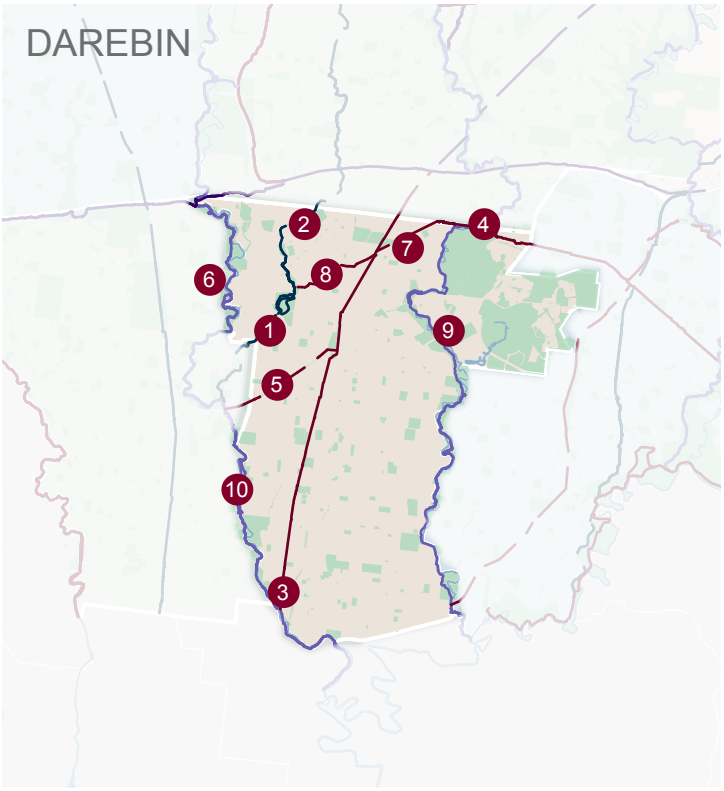
The top ten priority trail improvement projects within the municipality of Banyule are:

No.	Trail action item	Project description
1	Hurstbridge RailTrail_01	Construct a new section of trail along the Hurstbridge rail line from the Darebin Creek Trail north to Macleod Station
2	Hurstbridge RailTrail_04	Construct a new section of trail along the Hurstbridge rail line from the Plenty River Trail to the Diamond Creek Trail
3	PlentyRiver_07	Construct a new section of trail at Bicton Street
4	PlentyRiver_11	Upgrade pedestrian bridges on the Plenty River Trail where required and improve sight lines where appropriate
5	EastWestPower_07	Investigate options for providing a new section of trail from Dilkara Avenue to Gleeson Drive
6	PlentyRiver_06	Improve wayfinding signage at Poulter Reserve to direct users to the wider trail network west of the reserve
7	PlentyRiver_10	Improve wayfinding signage along the length of the trail
8	PlentyRiver_12	Investigate the feasibility of realigning the Plenty River Trail to the eastern bank of the Plenty River between George Court and Para Road in order to avoid the steep grade on the west bank
9	YarraTrail_08	Construct a bridge crossing over the Yarra River to Birrarrung Park
10	PlentyRiver_08	Upgrade and widen section of trail with wayfinding signage at Montmorency Park



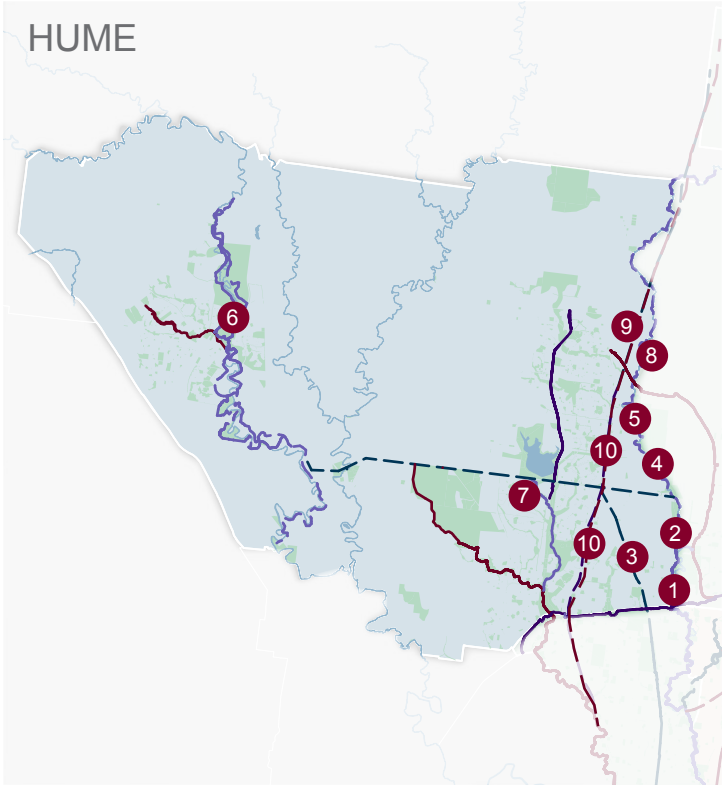
The top ten priority trail improvement projects within the municipality of Darebin are:

No.	Trail action item	Project description
1	EdgarsCreekTrail_04	Investigate a new section of trail along the creek from Carrington Road to Edwardes Lake. Explore the feasibility of a trail between Kia Ora Road and Henty Street on the east bank.
2	EdgarsCreekTrail_08	Construct a section of trail along the creek from Glasgow Avenue to the Metropolitan Ring Road
3	NorthernPipeTrail_02	Improve access at the St Georges Rd/Merri Parade/ Charles St intersection to connect the Merri Creek Trail to the Northern Pipe Trail and create a direct access point to and from the trail with pedestrian and cyclist priority
4	EastWestPower_05	Investigate the feasibility of a new section of trail, including a new bridge crossing, from the Darebin Creek Trail, at Holt Parade, around Mount Cooper to connect to the existing section of trail at Snake Gully Drive
5	NorthernPipeTrail_06	Investigate a new section of trail from High Street (near the Melbourne Water Reservoirs) along the vacant pipe reserve to the Merri Creek Trail at Murray Road. Existing road crossings to be considered.
6	MerriCreekTrail_20	Provide wayfinding signage along the length of the trail
7	EastWestPower_02	Construct a section of trail from the Northern Pipe/ St Georges Rd/ Cheddar Road Trail north east along the vacant pipe reserve
8	EastWestPower_03	Construct a section of trail from the Northern Pipe/ St Georges Rd/ Cheddar Road Trail south east along the vacant pipe reserve to Edwardes Lake Park
9	DarebinCreek_03	Investigate the feasibility of an underpass or bridge crossing Plenty Road intersection to avoid section of trail on Plenty Road footpath
10	MerriCreekTrail_15	Replace the Harding Street Bridge to cater for shared use



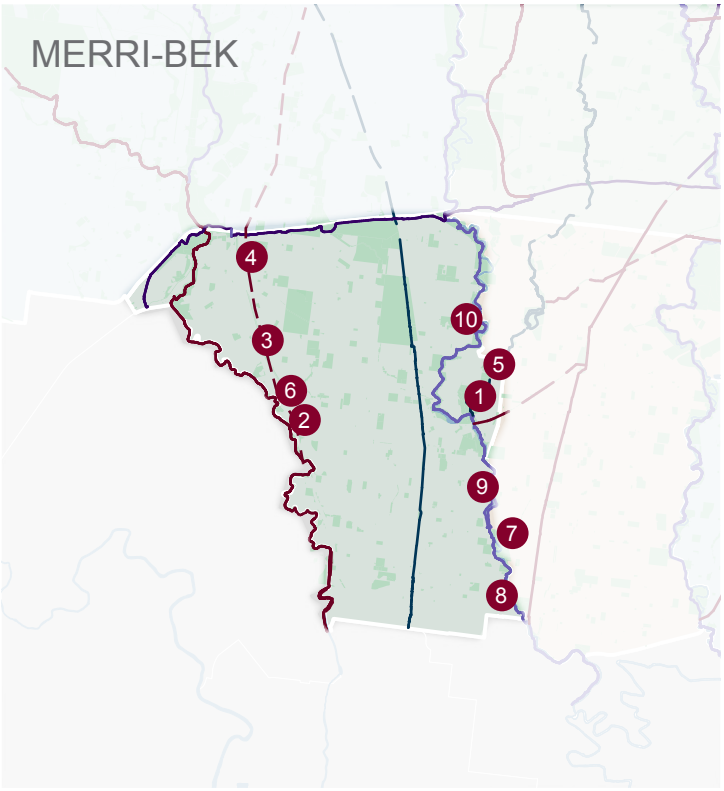
The top ten priority trail improvement projects within the municipality of Hume are:

No.	Trail action item	Project description
1	MerriCreekTrail_08	Complete missing section of trail from the Metropolitan Ring Road to existing section of trail south of Horne Street
2	MerriCreekTrail_02	Partner with Parks Victoria and DELWP to extend the Merri Creek Trail from Merri Concourse (north) to Cooper Street
3	UpfieldRail_02	Advocate to Department of Transport to construct a new section of trail from the Metropolitan Ring Road to Somerton Road
4	MerriCreekTrail_03	Advocate for and investigate the staged extension of the Merri Creek Trail from Coopers Street Somerton/Epping north to and along Oherns Road both east and west as part of the Upper Merri Creek Regional Parkland Plan
5	MerriCreekTrail_04	Advocate for and investigate the staged extension of the Merri Creek Trail from Oherns Road to Craigieburn Road as part of the Upper Merri Creek Regional Parkland Plan
6	JacksonsCreek_02	Plan and investigate the staged construction of trails on both sides of the Jacksons Creek with project partners and other landholders in line with the priorities of the Jacksons Creek biik wurrdha Regional Parklands Plan
7	YurokeCreek_01	Partner with Melbourne Water and MRPV to plan and construct new section of trail along the Melbourne Water Pipe Track from Greenvale Reservoir Park south to the existing section of the Yuroke Creek Trail, including a safe crossing option for Somerton Road
8	MerriCreekTrail_05	Advocate for and investigate the extension of the Merri Creek Trail from Craigieburn Road to Summerhill Road as part of the Upper Merri Creek Regional Parkland Plan
9	AmarooPipeTrack_01	Investigate options for a new trail along the sewer easement from Craigieburn Station heading north (Hume)
10	Craigieburn SharedPath_07	Advocate for a feasibility study for a new continuous shared path from Jacana Station to McConnell Crescent (north of Roxburgh Park Station)
	Craigieburn SharedPath_09	Further investigate opportunities for a new continuous shared path from Zambezi Court Reserve to Craigieburn Station



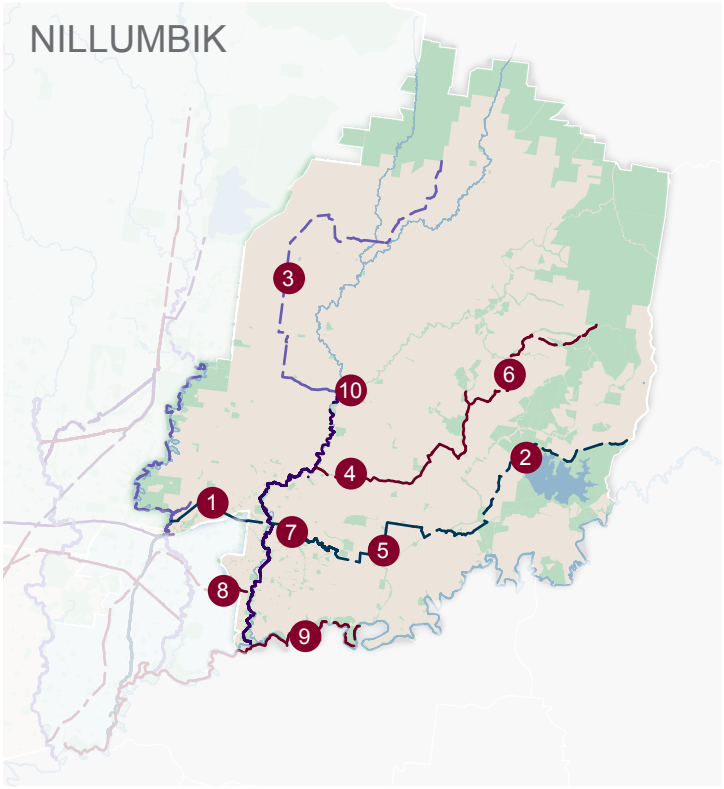
The top ten priority trail improvement projects within the municipality of Merri-bek are:

No.	Trail action item	Project description
1	EdgarsCreekTrail_01	Construct new section of trail from the Merri Creek Trail to Ronald Street on the west bank
2	Craigieburn SharedPath_01	Construct new section of trail from the Moonee Ponds Creek Trail to Gaffney Street
3	Craigieburn SharedPath_04	Construct a new section of trail, on the western side of the train line, from Cartwright Street to Glenroy Road including fencing and lighting
4	Craigieburn SharedPath_06	Construct a new section of trail, on the eastern side of the train line, from Glenroy Station to Jacana Station including fencing and lighting
5	EdgarsCreekTrail_02	Construct new section of trail from Ronald Street to Carrington Road. Consider keeping the trail away from the creek and along development frontages
6	Craigieburn SharedPath_03	Construct a new section of trail, on the western side of the train line, from Bothwell Street to Devon Road including retaining, fencing and lighting
7	MerriCreekTrail_20	Provide wayfinding signage along the length of the trail
8	MerriCreekTrail_12	Relocate and widen trail from Merri Creek Primary School to Sumner Park outside of the flood zone
9	MerriCreekTrail_15	Replace the Harding Street Bridge to cater for shared use
10	MerriCreekTrail_18	Construct a new section of trail from Vervale Avenue to the bridge crossing to the north to provide an alternative route with a gentler grade.



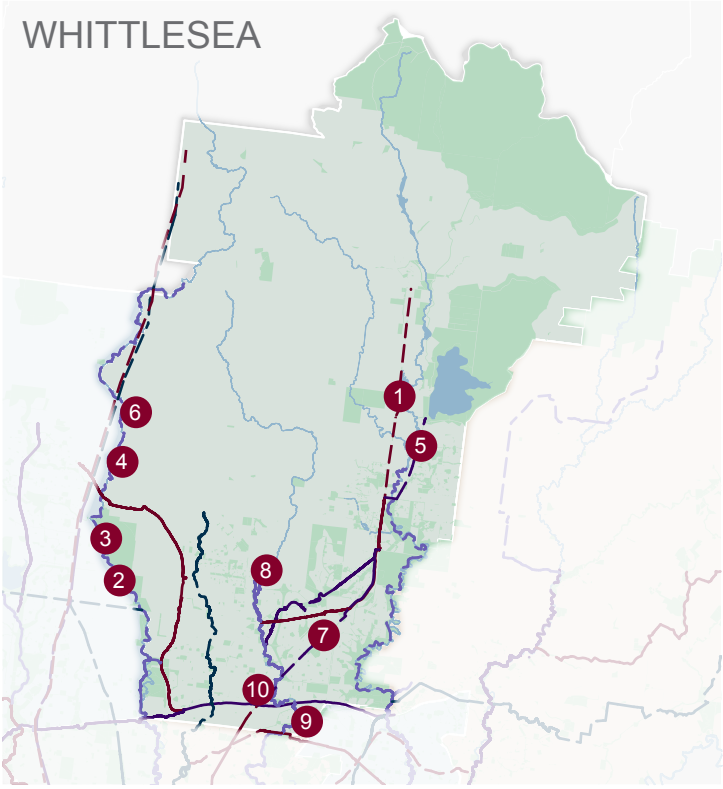
The top ten priority trail improvement projects within the municipality of Nillumbik are:

No.	Trail action item	Project description
1	Maroondah Aqueduct_01	Construct new section of trail connecting the Plenty River Trail near Lear Court, east along the aqueduct across Diamond Creek Road to the Diamond Creek Trail at Allendale Road.
2	Maroondah Aqueduct_02	Extend the Maroondah Aqueduct Trail through to Yarra Glen. Two options have been identified for this extension: i. Construct a new section of trail from the existing Aqueduct Trail at Calwell Road through to Ashmore Road and on to Yarra Glen; or ii. Construct a new section of trail from the existing Aqueduct Trail at Calwell Road via the Melbourne Water Caretakers trail to Ashmore Road and on to Yarra Glen.
3	KinglakeWay_01	Establish a new trail from Hurstbridge to Arthurs Creek
4	GreenWedge_01	Construct a new section of trail east from the Diamond Creek Trail at Wattle Glen Station along Watery Gully Creek to existing trail on Watery Gully Road
5	Maroondah Aqueduct_03	Construct new section of trail from existing Aqueduct Trail at Main Road. New trail to head south east to cross over Bells Hill Road, continuing east then north to meet to Eltham-Yarra Glen Road. Head east along Eltham-Yarra Glen Road, north alongside New Road, then east alongside Donaldson Road. The trail then continues north alongside Eltham-Yarra Glen Road before turning south alongside Henley Road where it will connect with the existing Aqueduct Trail.
6	GreenWedge_04	Construct an extension of the trail from the intersection of Clintons Road and Spanish Gully Road to the Marshalls Road car park within the Kinglake National Park
7	Maroondah Aqueduct_04	Extend the trail west from Godber Road to connect to the Diamond Creek Trail
8	Hurstbridge RailTrail_04	Construct a new section of trail along the Hurstbridge rail line from the Plenty River Trail to the Diamond Creek Trail
9	YarraTrail_07	Construct shared use trail from the Mullum Mullum Creek Trail to the Warrandyte State Park.
10	DiamondCreek_02	Construct new section of trail from Graysharps Road to Fergusons Paddock



The top ten priority trail improvement projects within the municipality of Whittlesea are:

No.	Trail action item	Project description
1	WhittleseaShared_01	Construct a new trail from Mernda Station to Whittlesea. Ensure there is provision for horse riders on parts of the trail
2	MerriCreekTrail_03	Advocate for and investigate the staged extension of the Merri Creek Trail from Coopers Street Somerton/Epping north to and along Oherns Road both east and west as part of the Upper Merri Creek Regional Parkland Plan
3	MerriCreekTrail_04	Advocate for and investigate the staged extension of the Merri Creek Trail from Oherns Road to Craigieburn Road as part of the Upper Merri Creek Regional Parkland Plan
4	MerriCreekTrail_05	Advocate for and investigate the extension of the Merri Creek Trail from Craigieburn Road to Summerhill Road as part of the Upper Merri Creek Regional Parkland Plan
5	YanYeanPipeTrack_04	Construct a new section of trail from Bridge Inn Road to the Yan Yean Reservoir and creating a connection to the Plenty River Trail
6	MerriCreekTrail_06	Extend the Merri Creek Trail from Summerhill Road to Donnybrook Road
7	YanYeanPipeTrack_03	Construct a new section of trail from Childs Road to McDonalds Road and the Plenty Valley Activity Centre
8	DarebinCreek_01	Construct a new section of trail on the western side of creek from the train underpass east of Epping Station to Greenbrook Drive
9	EastWestPower_04	Construct a section of trail along Holt Parade to connect to the Darebin Creek Trail (at Valley Road)
10	YanYeanPipeTrack_01	Construct a new section of trail from The Metropolitan Ring Road Trail and the Northern Pipe/Cheddar Road Trail to the Darebin Creek Trail



10.3.3 Project filters

Due to the wide variety in project types, and to allow project types to be easily sorted for comparison, a series of 'filters' were also developed in collaboration with the Project Working Group. These filters, which can be found in Appendix B include:

- **Location** - relevant Council/s involved in the project.
- **Significant prerequisites and considerations** - including any additional information that may be relevant to the delivery of the action item such as development or major infrastructure that could be leveraged off, significant constraints such as topographical, ecological or cultural considerations, or other strategic work that may be underway.
- **Stakeholders -** identifies other relevant stakeholders and land owners (e.g. Melbourne Water, VicRoads and VicTrack).
- **Project cost** - broken down into broad groupings:
  Small (S) - $0-50,000
  Medium (M) - $50,000-250,000
  Large (L) - $250,000-1M
  Extra Large (XL) - $1M+

The intention behind these filters is to provide relevant information regarding each of the potential trail improvement projects, but also to enable the sorting of the projects by these categories. Using these filters Councils are able to identify a project based on specific requirements regarding the filter categories.

The top ten projects identified during the multi-criteria analysis process outline the priority projects for the Northern Region however there may be instances where a grant or funding opportunity arises that is suited to a trail improvement project that is not highly ranked according to the multi-criteria analysis. In these instances, projects can be sorted using the filters to identify suitable projects for implementation or funding applications. For example, a grant may become available for a project that is low cost and located in a growth area. Whilst none of the top ten priority projects fit the specifications for this grant, *WhittleseaRail_03 (Provide wayfinding signage along the length of the trail)* satisfies all the requirements.

10.4 COST BENEFIT ANALYSIS

A cost benefit analysis (CBA) was undertaken by SGS Economics and Planning in order to assess the merit of the proposed trail improvements and to inform due diligence and investment decision making processes by the Northern Regional Councils. SGS modelled the social, economic and environmental costs and benefits of delivering the trail improvements. It shows the project is expected to generate a net present value of around $114 million and a benefit cost ratio of 1.6. This indicates that benefits directly attributable to the project will be around 1.6 times that of the investment over the appraisal period.

The CBA considers the project case; 10-year staged expansion of the Northern Regional Trails Network, against a counterfactual base case, whereby no additional capital works are undertaken. Only the incremental change between the project case and base case scenario was modelled as a benefit/cost. That is, the change that is directly generated by project case. The assessment has modelled a 30-year benefit period, and standard economic outputs were calculated using a seven per cent discount rate.

Three benefits have been monetised within the CBA. These are:
- Health benefits of increased walking and cycling
- Transport network benefits due to a shift in mode share from private vehicle to active transport modes
- Leisure and recreation benefits associated with increased use of the trail network.

Realisation of these benefits is underpinned by an increase in trail demand associated with the project; in particular, an increase in the distance and time that people walk and/or cycle. Demand forecasts undertaken as part of the analysis indicate that use of the Northern Regional Trail Network will increase by around 33 per cent once the entire planned network is delivered. Around two thirds of this uplift would be associated with existing users using the trail more frequently, and one third of the uplift is associated with new users.

Benefit component	Undiscounted values ($m)	Present value (7%) discount rate ($m)	% Of total benefits (present value) ($m)
Present value of health benefit	$541.7	$180.2	62%
Present value of transport network benefits	$34.9	$11.6	4%
Present value of leisure and recreation benefits	$296.5	$98.6	34%
Total	**$873.2**	**$290.5**	**100%**

FIGURE 10.1:
Present benefit values

Under a seven per cent discount rate, the project results in a net present value (NPV) of around $114 million and a benefit cost ratio (BCR) of 1.6. This means that for each $1 invested, a welfare gain of $1.6 is realised.

Costs exceed benefits until FY2037, at which point costs increase marginally as per OPEX assumptions, while benefits increase rapidly as users enjoy and gain value from an improved and expanded network., (refer to Figure 10.2).

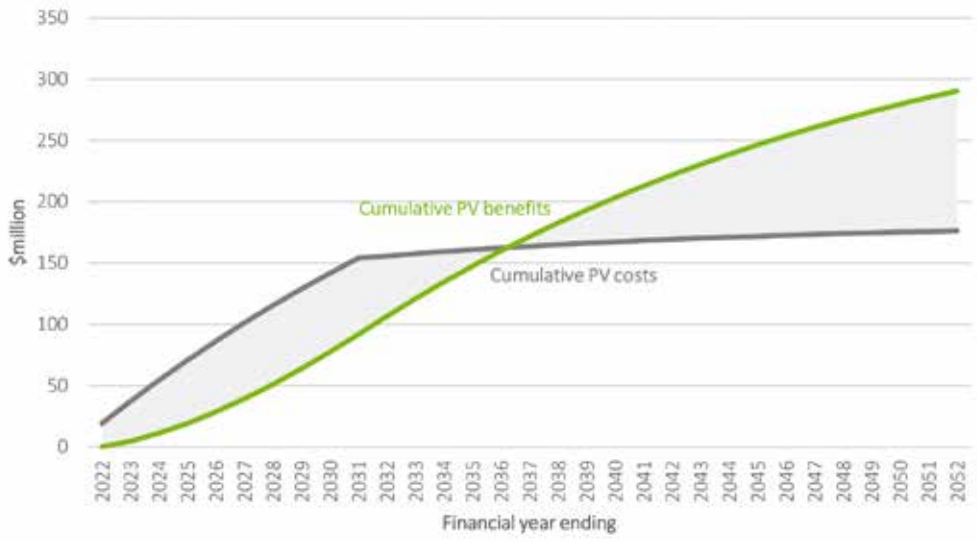


FIGURE 10.2:
Cumulative Net Present Value.
Source: SGS Economics and Planning, 2021

The analysis undertaken by SGS indicates that the Northern Regional Trails network project is economically warranted with consideration of monetised benefits. The case is strengthened when non-monetised benefits are considered. In particular, the upgrade and expansion of the Northern Regional Trails network has potential to lead to increased economic value added derived from additional tourism expenditure, stimulate local businesses, and enhance community cohesion and education opportunities.

For the full Cost Benefit Analysis Report, refer to Appendix C.

10.5 FUNDING THE TRAILS

The 2016 Northern Regional Trails Strategy successfully leveraged approximately $11 million of State Government funding in the last 3 years to deliver key priorities identified in the strategy. Budget allocations for Councils were also given a framework for the planning and delivery of priority trail projects within individual municipalities.

Since the endorsement of the previous plan, the physical landscape of the region has undergone significant change through the delivery of new and future major infrastructure projects. A global pandemic has also impacted the community's reliance on public recreation facilitates and the frequency of which the trails are used. During lock downs in 2020 and 2021, regional trails across metropolitan Melbourne reported significant increases in use. As a result, the State Government (who has been the main funding body for the Northern Trails in recent years) has introduced some initiatives that will assist in funding and delivering the open space and trails across the metropolitan regions including the Northern Trails network:

The Growing Suburbs Fund:
The Growing Suburbs fund is a $375M investment by the State Government over 7 years to assist local government in the task of delivering new local infrastructure including trails. It's anticipated that this funding scheme will drive trail development of the coming years.

Suburban Parks Program:
The Victorian Government is investing $154 million to deliver 6,500 hectares of new and upgraded parks and trail as part of the Suburban Parks Program. This initiative has already assisted in securing funding via DELWP and will continue to assist in the funding and delivery of the following trails:

- Jacksons Creek Trail as part of the Jacksons Creek Parkland Plan
- Plenty River Trail, the program has committed to delivery the missing link between University Hill in Bundoora and Doreen to the north.
- Merri Creek Trail as part of the Upper Merri Creek Parkland Plan.
- Diamond Creek Trail

In addition to these initiatives, Victoria is undergoing significant changes due to major transport infrastructure changes such as:

- The level crossing removal project, such as those currently underway along the Upfield rail line;
- Major road widening and duplication projects including the potential future Somerton Road duplication;
- Rail line duplication such as the Hurstbridge rail line duplication; and
- New road construction, such as the North East Link.

The development of these large State Government funded projects provide the opportunity for trails to 'piggy-back' on new transport infrastructure by taking advantage of left-over land or ensuring the provision and financing of regional trails, in accordance with this study, are delivered alongside these projects. The large scale and budget of these projects also presents the opportunity to deliver larger, more strategic aspects of the trail network that cannot feasibly be delivered by regular grant cycles and capital works programs.

Growth areas and Precinct Structure Plans (PSPs):
A Precinct Structure Plan is a Master Plan for new communities within growth areas which guide development, land use and infrastructure of the area over time. Shared trails and regional trails are included within the PSPs which allow Councils to lobby developers for the development of trails within their land. This study along with the PSPs provide the Northern Regional Trails working group with information to ensure the trails are strategically aligned, funded and delivered in accordance with the region's plans.

APPENDICES

A STRATEGIC CONTEXT

Document	Summary	Relevance
Banyule Strategies		
DRAFT Banyule Bicycle Strategy 2021	This strategy provides a numbers of recommendations to improve the quality of the bicycle network, increase connectivity to the surrounding network and encourage bicycle participation by: • Establishing a framework for investment that follows a regional and corridor based approach; • Prioritising actions to improve the provision of cycling infrastructure; • Encouraging investment in advocacy, education and building a strong cycling culture; • Providing measurable benchmarking tools for goal setting and measuring cycling trends; • Considering constraints to cycling including topography, scale and demand; and • Advocating for cycling infrastructure in all state government projects.	Key recommendations in relation to the Northern Trails Strategy include: • Work with Major Projects to upgrade bicycle connections including Level Crossing Removal and North East Link and Hurstbridge rail line duplication from Greensborough to Montmorency. **Main Yarra Trail/ Plenty River Trail** • Develop a wayfinding signage plan in conjunction with neighboring municipalities. • Realign the Main Yarra Trail at the Banyule Flats to Plenty River Trail by via a direct and paved route. • Investigate environmentally appropriate lighting options in order to promote and allow for safe commuting at night. • SUP crossing of the Yarra River from Heidelberg to Banksia Park, Birrung Park and Bulleen Park. • Explore improvements to avoid steep sections of the Plenty River Trail and to bring the trail up to Aus Standards. **Banyule Shared Trail** • Complete the Strategic Cycling Corridor connection from Lower Plenty Road to Greensborough. • Improve the underpass at Banksia Street (Noting also the Main Yarra Trail). • Extend the Banyule Shared Trail south of Banksia Street to connect to Bourke Road North adjacent to The Boulevard in East Ivanhoe. **Darebin Creek Trail** • Complete the upgrade of the trail including stages 1 to 5 as part of the Northern Regional Trails Strategy 2016 and Banyule Open Space Plan 2016. • Develop a wayfinding signage plan in conjunction with neighboring municipalities. **Power Easement Trail** • Complete missing links including connections to Greensborough and to Lower Plenty Road. Consider installation of wayfinding signage. • Include wayfinding signage and cycling priority treatments to facilitate access between Dilkara Ave and Morwell Ave. • Provision of a grade separated crossing at Watsonia Station across Greensborough Hwy/ NEL to make the trail continuous.
Banyule Walking Strategy 2018-2028	The strategic direction of this plan is to create a consistent and strategic approach to managing walking throughout the municipality and creating a culture where people choose to walk. The key objectives of the strategy are: • Create a Comprehensive Walking Network; • Make it Safer, Easier & More Comfortable to Walk throughout	The following are actions are outlined that should be considered in this study: • Prioritise the delivery of the recreational paths identified in the Northern Regional Trails Strategy, (2016) • Continue to advocate for the identified shared path connections as part of the North East Link including: • The three new sections in the Banyule Shared Trail including the southern portion of

	Banyule; and • Support a Walking Culture in Banyule. In order to achieve these objectives, the strategy sets out to: • Create a high quality, integrated walking network that connects people to activity centres, parks, transport, and schools • Provide safe routes to schools and improved pedestrian environments at rail and transport interchange stations • Remove the barriers that prevent people from choosing to walk as the preferred mode of transport for local trips • Raise the public's awareness of local walking opportunities.	the trail between Yallambie Rd north to the northern end of Service Road, the northern portion of the trail between Elder St north and Grimshaw St and south of Banksia St to the north of MacArthur Rd • The two sections of the East-West Power Easement Trail including extending the trail on the west side from Plenty Rd to Watsonia Rd / Railway Station / Greensborough Highway precinct and on the eastern side from the Greensborough Highway to the Plenty River Trail • Improvements to the Main Yarra Trail including the realignment at Banyule Flat, upgrading the trail between the Chandler Highway and Hoddle Street, a new shared user bridge Banskia Street to link Heide to the trail, and a new shared user path along the rail corridor between Greensborough and Eltham • Improvements to the Plenty River Trail at the Greensborough Bypass intersection • Provide connections to the Diamond Creek Trail in Nillumbik via the Northern Arterial Reservation • Where possible, implement all abilities access throughout the walking network • Develop a wayfinding and signage strategy including directional signage
Banyule Integrated Transport Plan 2015-2035	The Banyule Integrated Transport Plan is centered around the following objectives, with strategic directions and actions to support them: • Accessibility and mobility - a transport network that allows all abilities to travel without relying on a car • Land use and development - concentrating development around activity centres and along public transport routes to promote sustainability and to reduce the distances people have to travel • Walking and cycling - improving connections and navigation across Banyule to promote active travel, reduce demand on roads and parking, and to keep the environment healthy • Public transport - work with the State Government and public transport providers to ensure the system is reliable, frequent, safe and connects people with where they want to go • Streets and public spaces - manage roads to promote sustainable transport, reduce congestion and improve parking opportunities with a safe environment • Advocacy and leadership - advocate on the community's behalf to provide a comprehensive transport network and raise awareness on transport choice and safety	This transport plan outlines a number of specific strategic directions and actions in relation to the six objectives. In regard to trails, the strategy recognises that shared trails are a great way to experience the parklands in the municipality. It also recognises that the off-road trail network help to provide the connections required to cycle safely within and beyond Banyule. As such, the key strategic direction within the strategy in relation to regional trails is to '*support the implementation of the Northern Regional Trails Strategy to improve links through and beyond Banyule*'.

Public Open Space Plan 2016-2031	The guiding vision of Bayule's Open Space Plan is '*a green City that provides high quality, sustainable, accessible and well maintained public open space within 5 minutes walk of residents'.* Supporting this vision is the following objectives: • Quantity- is there enough? • Quality - how good is it? • Access and connectivity - can I get there to use it? • Equitable distribution - is it available throughout the municipality? • Diversity - will it provide different experiences? • Sustainability - will it affect the environment and will it last? The strategy also aims to provide a range of experiences within Banyule's open space including playgrounds, formal sport, informal and passive recreation, as well as more nature based environmental recreational experiences.	Key trail related recommendations outlined in the Open Space Plan include: • Continue to work with Manningham City Council and the State Government to establish pedestrian and cycling connectivity between the Warringal Parklands, the Main Yarra Trail on the western side of the Yarra River with Banksia Park and Heide on the eastern side of the River • Upgrade the sections of the Darebin Creek Trail which don't comply with current shared trail standards • Link the Plenty River Trail with a shared path via the East-West Power Easement to commercial and community facilities in Yallambie Rd • Investigate the feasibility of providing a horse riding trail to connect Lower Plenty and the community horse riding facilities in View Bank, Manningham and Nillumbik • Improve access through the Banyule Flats by realigning the Main Yarra Trail and providing an environmental walk adjacent to the wetlands • Upgrade the sections of the Plenty River Trail within the Eastern Precinct which still don't comply with current shared trail standards • Upgrade pedestrian bridges on the Plenty River Trail where required and improve sight lines where appropriate • Investigate options for overcoming the steep section of Plenty River Trail between Willinda Park and Poulter Ave • Further strengthen pedestrian and cyclist connection between the Greensborough Activity Centre, public open space and the Principle Bicycle Network, particularly the proposed northern extension of the Banyule Trail in the vicinity of the Greensborough Highway and the Western Ring Rd Trail • Provide an accessible connection between St Helena Rd and the Plenty River Trail, through Pioneer Reserve. • Better utilise the East-West Power Easement for public open space purposes; e.g. BMX or skate facilities, outdoor gym equipment, shared trail etc. • Explore opportunities to improve access across Plenty Rd to allow for better connectivity to regional open space in Darebin, including Bundoora Park and the Darebin Creek corridor and trail • Develop on-going maintenance and renewal programs for all parks and gardens asset classes; e.g. provision and on going maintenance of trail side furniture on Banyule's trail network. • Include the recommendations of the Northern Region Trails Strategy in Council's 10 year Capital plan. • Work with other Councils in the region to prepare a joint submission to both State and Commonwealth governments to help fund the implementation of the Northern Region Trails Strategy • Investigate the feasibility of enabling access to open space suitable for horse riding by providing safe ridable links such as shared trails, wide road side verges, etc.

Banyule Safe Travel Plan 2016-2026	The Banyule Safe Travel Plan compliments the Integrated Transport Plan and aims to make Banyule's transport network safer. In particular, the plan seeks to reduce deaths and serious injuries towards zero over the ten year period of the plan. The safe travel themes outlined in the document are: • Safer Walking, Cycling and Travelling by Public Transport; • Reduce Vehicle Impacts; • Think Safe Travel; • Encourage safe behaviour by all road users; and • Support the community to take action on safe travel issues.	The following are specific actions recommended in the plan in relation to trails: • Build confidence among local people to walk or ride instead of traveling by car • Advocate to Parks Victoria for improvements to connections between paths and improved amenity along trails • Progressively upgrade key pedestrian routes, providing shelter, drinking fountains, seating, to assist people of all abilities to utilise these routes • Continue to provide wayfinding signage to destinations for walkers or cyclists. • Continue to implement the Bicycle Strategy Action Plan with a strong focus on safe cycling routes to schools to establish lifelong safe travel habits among young people
Feasibility Study for Multi-purpose Trail Lower Plenty to View Bank May 2019	This feasibility study has been prepared to generate information, responses and opinions from community groups, individuals and stakeholders in relation to a possible multi-purpose trail along the existing pipeline reserve between Lower Plenty and Viewbank. The study examines the proposed trail against five criteria: response to identified community need, future use potential, project cost, risk and funding potential.	On the basis of the five criteria the potential trail was assessed against, the trail is considered highly feasible and therefore should be considered as part of this study. The proposed trail alignment is to start at the intersection of Rosehill Rd and Bonds Rd in Lower Plenty and continue along the Melbourne Water Pipeline Reserve in a westerly direction to Martins Ln where it connects with the Plenty River Trail and the North Eastern Horse and Pony Club.

Document	Summary	Relevance
Darebin Strategies		
Darebin Cycling Strategy 2013-2018	The Darebin Cycling Strategy is a five-year plan to create a culture of cycling by making riding enjoyable, relaxing and safe. It aims to create a municipality where using a bicycle is the best travel option for short and medium trips that can't be made on foot and to build on the already comprehensive on-road and shared trail network within Darebin. The strategy also aspires to provide improved cycling facilities and infrastructure to encourage new and less confident riders as well as people passing through the municipality to cycle. The cycling strategy aims to address the barriers to cycling, such as safety concerns, increased residential density and gentrification.	The key objectives outlined in this strategy should be considered in this study: • Foster a culture of cycling where the bicycle is the first choice for trips between 2 and 7km. • Create a cohesive high quality network of cycle friendly routes accessing popular destinations both within Darebin and the larger Metropolitan network that are suitable for use by those of all abilities, ages and backgrounds. • Express a long-term commitment to building a culture of cycling and engage key partners and stakeholders in prioritising investment in cycling. • Continue to improve the safety of cycling. From these objectives a number of relevant key actions are proposed: • Develop and evaluate innovative design standards for high-quality cycle provision, prioritising bike riders over higher impact modes when on bike routes and managing conflict between pedestrians and bike riders on shared paths. • Work with neighbouring councils to increase connectivity and level of service, and where possible ensure it is consistent across municipal boundaries. The strategy also outlines the following areas located on the regional trails for improvements: • Merri Creek Trail at Moreland Road • St Georges Rd/ High St/ Cheddar St Trail at Merri Parade, Separation St, Hutton St, Cramer St, Murray Rd, Tyler St and Edwardes St

Streets for People Feasibility Report 2018	The Streets for People document aims to restore a balance in the role of streets between their functional modal requirements and their role in defining places and spaces for people. The study, among other goals, seeks to provide a integrated approach in which improvements to the public realm can improve sustainable transport options including pedestrian and cyclist connections to public transport, and neighbourhood destinations. The study also outlines the typical design treatments in delivering pedestrian/ cyclist priority infrastructure, including 2 way cycle lanes, separated from pedestrian and vehicle movement, and the guiding principals in delivery this infrastructure (prioritising people, minimise conflict and increase cycling confidence).	The study, whilst focusing on streets and 'on-road' infrastructure outlines design responses and recommendations in order to achieve its aim, some of which are relevant to this study: • Improvement of the urban condition through new infrastructure and asset upgrades to increase pedestrian/ cyclist safety and amenity. • Minimising conflict between varying modes of transport, with higher priority given to pedestrian and cyclists. • Increasing cycling confidence by providing high-quality cycling infrastructure that is well connected, easily navigated with varying degrees of separation and safety from moving traffic. • Prioritise east- west corridors to achieve cross connections to existing key cycle routes along Darebin Creek, Merri Creek, St Georges corridor and key destinations • Well connected cycling and walking infrastructure. • A 50% increase in length of cycle infrastructure connecting key destinations and activity nodes. • Capacity to support a significant increase in volume of cyclist per house through additional and improved cycling infrastructure. • Unique branding and identity for each corridor to assist with wayfinding.
Streets for People: Northcote - Thornbury Corridor 2018	This strategy focuses on improving the existing 'shimmy' route (an informal bicycle path) that runs parallel to the train in Thornbury, Croxton and Northcote. This corridor is the first project to be delivered as part of the *Streets for People* program. The document aims to capture the community concerns, aspirations and vision for the streets and neighbourhood within the study area in order to improve the value of place and the pedestrian and cycling community.	Whilst this strategy focuses on the local scale and on-road infrastructure for pedestrians and cyclists, it is in close proximity to the northern trail network and provides key connections to and between the trails and should be considered as part of this study. It also presents an example of the *Streets for People* program which will be rolled out across the municipality in line with the 2018 Feasibility study.
Safe Travel Strategy 2018-2028	The Darebin Safe Travel Strategy aims to protect vulnerable road users whilst supporting low impact modes of travel, such as walking, wheeling, and riding, to ensure the municipality is a safe and more sustainable place to travel. The study focuses on improving road safety by: • Reducing the number of vehicle trips by encouraging more people to cycle, walk and use public transport through the implementation of programs and infrastructure; • Reducing vehicle speeds and speed limits, particularly in areas where high volumes of people choose to walk and cycle; • Encouraging safer driving through a combination of education, enforcement and infrastructure; • Advocating for better systems for the collation of data and evidence.	Specific action items relevant to this study include: • Encourage more people to adopt active and sustainable modes of transport. • Improving walking, cycling and wheeling infrastructure to promote active travel (including improving shared paths and removing hazards). • Supporting and delivering cycling skills and education to schools and the community.

Going Places: Darebin Transport Strategy 2007-2027	The Darebin Transport Strategy aims to guide the future decision of transport within Darebin in oder for transport to play a positive role in connecting residents, visitors and employers to ensure that social networks are strong, opportunities are easily accessed and the local economy prospers. The objectives outlined include: • To improve local and metropolitan accessibility • To increase the role of sustainable transport modes • To build new developments that reduce transport demands • To increase social inclusion for residents • To improve health and environmental outcomes • To improve community safety • To integrate quality urban design, economic development and access • To engage stakeholders through effective communication	This strategy notes walking and cycling as a fundamental ingredient to a healthier, more inclusive and more sustainable future for the municipality. The strategy recognises the well connected street network and complimentary recreation trails existing within Darebin however notes that more can be done to improve the safety, attractiveness, ease of use and awareness of this network. It also recognises the importance of shared trails in catering to all abilities. In order to improve sustainable transport infrastructure and increases the rates of walking and cycling, the following objectives are outlined: • Enhancing the actual and perceived safety or walking and cycling routes. • Completing 'missing links' throughout the network. • Increasing the priority of walking and cycling at activity centres. • Promoting and advertising sustainable transport modes. In addition the following specific actions are relevant to this study: • Develop high quality key pedestrian and cycle links. • Develop pedestrian-friendly design and maintenance standards. • Better understand walking and cyclist issues and needs. Note: The review undertaken in 2015 of this study noted that implementation of these action items is still ongoing.
Walking Strategy 2018-2028	This strategy aims to provide the infrastructure, amenity and education to support and encourage walking as a safe and attractive mode of transport for all. This over arching aim is to be achieved through the following goals: • Upgrade the walking network and enhance connectivity across the municipality. • Improve community health, safety and equity of access by reducing barriers to walking. • Increase the community's awareness of walking opportunities and the benefits of walking.	In order to achieve the goals set in this strategy, the following actions, relevant to this study, are outlined: • Provide high quality connections to important destinations (using the PPN to prioritise sections within the network). • Improve connections to support local business and services. • Provide safe and accessible routes to public transport. • Improve safety for people that walk • Promote the benefits of walking. • Support environmentally sustainable transport choices.

Document	Summary	Relevance
Hume Strategies		
Hume Bicycle Network Plan 2015	The aim of the Hume Bicycle Network Plan is to define a comprehensive cycling network of off-road and on-road paths that provides a range of routes to suit different cycling needs. This plan has the following objectives: • Identify and develop a comprehensive municipal wide Bicycle Network Plan that connects residential areas with key destinations and the wider regional network • Identify the priority cycling routes to inform Council's capital works program and future grant applications in order to deliver bicycle infrastructure • Provide an update to the Walking and Cycling Strategy Implementation Plan. The outcomes of this project will inform the prioritisation of the construction or upgrade of the cycling paths that are part of this plan. • Inform the designation of an on-road bicycle network in areas to be redeveloped and subject to future road construction works. • Identify the required locations for cycling support facilities.	The Bicycle Network Plan identifies the following 'target project's that should be considered in this study: • Gap in the Yuroke Creek trail from the Broadmeadows Valley Park Trail to Somerton Rd • Gap in the Aitken Creek Trail from Craigieburn Rd to the Merri Creek • Upgrade of the on the Western Ring Road at Merlynston Creek • Signage to be installed along the Western Ring Road Nth in Jacana • Gap in the Greenvale Reservoir Park Trail from Venezia Promenade to Somerton Road • Extension of the Blind Creek Trail from UGB West to the Sunbury Train line • New trail along the Blind Creek from the Sunbury Train line to Jacksons Creek • Gap in the Moonee Pond Creek Trail and an upgrade required from the Western Ring Road to the Woodland Historic Park • New and extended shared path on the Merri Creek Trail from the Western Ring Road to Cooper Street
Walking and Cycling Strategy 2010-2015 + Walking and Cycling Strategy Action Plan 2010	This Walking and Cycling Strategy aims to guide the development of the Hume's path network to encourage residents, workers and visitors to become more involved in walking and cycling. The principles for achieving this include: • Routes will be planned and developed on a whole-of network basis • All paths are well connected and linked with key points of interest • Paths will be to prescribed standards and in consideration of the primary function or use of the path • Opportunities to increase walking and cycling will be incorporated in all urban and town planning projects • Paths will be managed to ensure safe, clean and attractive environments and usage reviewed regularly to ensure community needs are addressed • Promote and develop paths to optimise community use and benefits • Partnerships will be sought and to develop the path network • Advocate for the provision of diverse and accessible walking and cycling opportunities The accompanying Action Plan proposes a five-year program to develop the path network by addressing barriers in the existing network and ensures barriers are minimised in new path networks (i.e. gaps, indirect routes, lack of facilities and	Trail related recommendations outlined in the Action Plan include: • Signage installation across the network - direction and interpretive • Missing links from Elizabeth Dr to Sunbury Town Centre via Salesian College, and upgrades to existing path on the Blind Creek Trail • Link corner of North Circular Dr and Broadmeadows Rd to Moonee Ponds Creek Trail • Extend sealed path from Limpopa Square to Craigieburn Station on the Craigieburn Railway • Extend Aitken Creek Trail from rear of 24 Eastgate Road to Melbourne Water Pipe Track • Missing link from west side of Hume Fwy on Malcolm Creek Trail to Amaroo Rd and Hume Freeway Trail • Connect Roxburgh Park and the Aitken Creek Trail to the Merri Creek • Create a shared path along the Maribyrnong River and Jackon's Creek between Brimbank path and Sunbury • Extend Merri Creek Trail from Mahoneys Rd and Craigieburn Rd • Extend Moonee Ponds Creek Trail to Woodlands and then onto Bulla • Trail along Aitken Boulevard from Somerton Rd to Mt Ridley Rd • Extend Aitken Creek Trail from Craigieburn Rd to Mt Ridley Rd • Extend the Upfield Bike Path all the way along the railway line • Extend Merylnston Creek Trail from Seabrook Reserve to Barry Rd

	amenities, poor surfaces, conflicts of use).	The strategy also outlines the preferred design characteristics of shared use paths within Hume as being 2.5 - 4.5m wide with either a medium degree of separation between cyclists and pedestrians (i.e. linemarking) or a high degree of separation (i.e. pedestrians on one side of the path and bicycles on the other, either single or bi-directional).
Hume Integrated Land Use and Transport Strategy 2011-2020	This strategy outlines land use and transport initiatives aimed at improving transport options for residents, works and visitors in Hume. It aims to create more accessible, liveable and sustainable communities, with full access to jobs, education, shopping and community facilities by expanding the range of transport choices. The six policy objectives to guide future decision making include: • Leadership and partnerships - promote collaborative and sustainable integrated planning to ensure land use and transport are planned, funded and implemented to offer a range of choice • Land use and development - plan and build an urban form which increases opportunities for walking and cycling, supports effective operation of public transport, and encourages development that minimises travel needs. • Walking and cycling - encourage walking and cycling by providing safe, connected and enjoyable pedestrian and cycling environments • Public transport - plan and advocate for the development of a high quality public transport network • Road Network and Freight - plan and maintain a safe and efficient road system to accommodate all road users. Deliver safe and efficient operations to support industry and economic development. • Education, information and marketing - plan and promote an environmentally sustainable and socially just transport system that offers a range of choices	In relation to trails, the strategy notes the following: • Many of the off-road shared paths were built for recreation but now are used for commuting and/ or to access local services. The most significant recreation cycling paths are located along Moonee Ponds Creek and Broadmeadows Valley Park. The meandering nature of these paths means they are less suitable for commuter cycling and this highlights the need to identify, prioritise and create a more direct cycling network for commuter and utility cycling purposes. • Develop a comprehensive bicycle and pedestrian network plan that identifies priority pedestrian and cyclist routes, and ensures bicycle and pedestrian networks are connected and co-ordinated with neighbouring municipalities. • Work with Moonee Valley, Moreland, and Melbourne Councils to develop plans for a cycling route along the Craigieburn rail-line. • Establish standards for walking and cycling infrastructure
Open Space Strategy 2010-2015	This Strategy was prepared to provide a framework for the future planning and provision of open space across the municipality. It aims to provide equitable distribution of a diverse range of open space opportunities and facilities for all people who live and work in Hume with the following guiding principles: • Environmental sustainability and social well being will be considered in all aspects of open space delivery • Open space corridors and shared use paths will be provided wherever possible to link key activity areas • Protect and enhance significant natural features and landscapes,	In relation to trails, the strategy outlines the following directions and recommendations: • Open Space corridors will be provided wherever possible to link open space areas and along waterways to protect their natural features • High standard shared pathways will be provided in open space wherever possible to encourage physical activities such as walking and cycling, and these pathways will be linked along roadways where appropriate to selected key community destinations • Liaison will be maintained with Melbourne Water and Parks Victoria in relation to the responsibilities of these agencies for managing open space along waterways • Key trails along waterways lack supporting

	and Indigenous and post settlement cultural heritage sites. • Open space will be located, designed and developed in a manner which contributes to the local character • Open space will be planned and designed to maximise safety • A diverse range of opportunities for passive recreation, play, informal and organised sport will be provided • Open space will be planned and designed to provide accessible, high quality spaces	infrastructure such as signage • Potential connection between Broadmeadows Valley Park and Craigieburn • Missing link along Merri Creek Trail from Mahoneys Road to Craigieburn • Missing link along the Melbourne Water pipe track through Attwood and through to the Broadmeadows Valley Park • Opportunity for an east – west link extending from Seabrook Reserve and Merlynston Creek in the east, across the Craigieburn rail line and through the Broadmeadows activities centre to the Broadmeadows Valley Park in the west • Council will work with Parks Victoria, Melbourne Water and the City of Whittlesea to ensure that the development of the Galada Tamboore (Merri Creek) parkland occurs as soon as possible and that the trail links along Merri Creek are completed. • A future corridor and trail along Jacksons Creek to link to the Maribyrnong Metropolitan Trail - in partnership with Western Water, Parks Victoria and the Department of Sustainability and Environment (not all this land is currently in public ownership)

Document	Summary	Relevance
Moreland Strategies		
Moreland Bicycle Strategy 2011-2021	The Moreland Bicycle Strategy seeks to make the City of Moreland a great place to ride a bicycle – a place that is attractive and inviting for people riding for the first time and offers a riding experience superior to driving a car. This vision is underpinned by the following goals: • More people riding • Greater diversity of cyclists • Improved cycling safety • More people happy with the municipality's cycling facilities • A vibrant cycling community • A healthier more sustainable city	This strategy identifies the following trails as key priority routes within Moreland: • Upfield Bike Path (existing) • Moonee Ponds Creek Trail (existing) • Craigieburn Express Trail (proposed) • Western Ring Road Trail (existing) • Merri Creek Trail (existing) • Edgars Creek and Elizabeth St Trail (existing) • Merlynston Creek Trail (existing) A key recommendation of the strategy is to ensure that the bicycle network is easy to navigate with directional signage, information signage alerting the users of difficult terrain, flooding, etc., and network maps. The strategy also defines recommended path widths (from 2.5 - 5m.5) and separation based on the number of pedestrians and cyclists using the paths at peak hour.
Moreland Integrated Transport Strategy 2019	This strategy aims to facilitate a demonstrable mode shift to more sustainable modes of transport that also targets a long-term reduction in car use. This vision is supported by the following key directions: • Make changes to car parking to contribute to better transport, land use, economic and community outcomes. • Reallocating road space for greener more pleasant streets and to allow for walking, cycling and public transport • Advocate for better public transport	Whilst there are no regional trail specific recommendations outlined in the document, the following overarching strategies could be considered in this study • Prioritise access by walking, cycling and public transport over car-based travel. • Establish high-quality pedestrian routes and places that are safe, comfortable and accessible • Make cycling safe, comfortable and a preferred mode of travel in Moreland • Design the pedestrian network to accommodate transport users of all abilities. • Prioritise pedestrian access, safety and amenity at transport interchanges

	• Creating safer, quieter streets with more pedestrian crossings, lower speed limits and closing some locals roads to through traffic • Fostering partnerships for sustainable transport (i.e. schools, communities, traders and businesses.	• Encourage local trips to jobs, services and facilities by walking and cycling • Seek best possible walking and cycling access, safety and amenity in state government transport projects • Encourage zero emissions transport modes • Encourage new development to incorporate sustainable transport into its design • Encourage and educate the community to achieve a shift towards sustainable transport modes
Open Space Strategy 2012-2022	The Moreland Open Space Strategy sets a direction of the future provision, planning, design and management of open space (including open space for recreation and leisure, and conservation). The central purpose of the Strategy is to: • Understand supply and demand for open spaces; • To identify deficiencies of open space and access to open space; • To secure appropriate additional open space where possible; • To protect existing open space and it's values; and • To improve its quality through better planning and management.	In regard to trails, the strategy outlines the following goals and considerations: • Additional shared trails to service the east-west direction; • Implement Moreland's Lighting Strategy focusing on paths through parks and on shared trails at intersecting paths • Develop pedestrian/cycle link between Moonee Ponds Creek trail and Karin Court, Glenroy Develop a network of shared trails to include: perimeter shared paths around large parks; trail circuits throughout each suburb connecting community facilities and parks; and access along key waterways and to regional trails • Provide safe and convenient access between open spaces, with connections to residential areas, civic institutions, schools, activity centres and businesses • Address gaps in access to shared trails on the Merri and Moonee Ponds Creek • Implement recommendations from the Merri Creek Shared Trail Review • Address gaps in access along the eastern side of Moonee Ponds Creek • Investigate further means of improving the Upfield Railway Line shared path as a key trail through the centre of the municipality • Review the location of shared trail amenities on Merri Creek and Moonee Ponds Creek trails • Investigate land ownership, and work with owners to establish a shared trail along the Merlynston Creek alignment, from John Street Glenroy to Merri Creek, Coburg North • Identify additional areas where creeks can be traversed by shared trails • Enhance directional and informational signage along trails. Work with neighbouring local authorities to provide consistent signage • Develop east / west routes to connect the Upfield Rail shared path, and identified habitat corridors to the trails along the Merri and Moonee Ponds Creeks, and other waterways.
Merri Creek Trail Review 2007	The intent of the Draft Merri Creek Trail Review is to ultimately guide future works, management and priorities for upgrade of the trail to cope with existing and future use. It seeks to review the trail according to established Australian standards for shared paths and according to recent guidelines developed by Melbourne Water for paths near waterways. It recommends innovative solutions to create a safer, more environmentally	The Trail review outlines the following recommendations: • Develop and install consistent warning and directional signage and remove redundant signage. • Implement signed on road bypass routes for areas subject to regular flooding to retain continuous public access in all conditions. • Upgrade path to min 2.5m wide with 0.5m clearance either side • Investigate options for secondary walking routes

	sympathetic and user-friendly trail while catering for user numbers.	to improve looped tracks and reduce congestion on the main trail while protecting environmental values. • Undertake staged replacement/upgrade of bridges, boardwalks and underpasses to meet Australian Standards and Melb. Water Guidelines • Replace low level bridges at Broadhurst Ave and Hammersley Ct • Establish new sealed path along the upper escarpment at Moomba Park retaining the low level path • New path link at Lorne St • Resurface and extend unsealed path on west bank to enable loop track and bypass of Brex Ct and Lakeside SC bridges during floods • Upgrade local path drainage and establish on road flood bypass route • Replace path at Coburg Lake • Investigate new path on east bank upstream of Coburg Lake to Bakers Rd and longer term Queens Pde. • Upgrade Newlands Rd underpass and establish flood bypass route via Golf Rd • Replace De Chene Reserve bridge • Establish flood bypass route via Nicholson St and install hydraulic flood gate at Harding St to warn of flooding at Bell St underpass • Upgrade Harding St bridge • Replace the Bowden Res. boardwalk to improve grades and sightlines • Upgrade on road crossing at Moreland Rd providing pedestrian refuge and new path link down Clara St • Upgrade Blyth St underpass • Replace narrow path at Roberts Res. • Widen path at Brunswick Velodrome • Replace and realign narrow path upstream of CERES • Realign path to upper bank downstream of Willowbank Rd to reduce flooding • Widen path at Sumner Park • Replace the steep boardwalk at the Brunswick Electricity Terminal • Construct path on north bank under St. Georges Rd to provide improved off road link to St Georges Rd trail • Investigate new high level bridge near Elizabeth St to enable bypass of on road section St. Georges Rd • Upgrade on road route and footpath from Rushall Station to Merri Pde installing a new pedestrian refuge at Walker St end of bridge • Investigate a new bridge on the existing pipe crossing downstream St. Georges Rd to improve off road links to the Capital City Trail • Investigate an off road link on the west bank above the cliffs from Rushall Station to the existing path and proposed pipe bridge crossing near Holden St • Liase with Dept. Infrastructure to establish new high level path from Heidelberg Rd to High St along south bank bypassing underpasses and low level bridges and retaining off road cycle access during proposed upgrade of Clifton Hill-Westgarth Rail bridge

		Upgrade Roseneath St bridge and seal link to existing Merri Creek trail on east bank to Dights Falls through Yarra Bend Park Rail bridge • Upgrade Roseneath St bridge and seal link to existing Merri Creek trail on east bank to Dights Falls through Yarra Bend Park

Document	Summary	Relevance
Nillumbik Strategies		
Nillumbik Trails Strategy 2011	The Nillumbik Trails Strategy guides the planning and decision making in the provision of the 25km of urban recreational trails and 18km of rural recreational trails. The vision for the strategy is for the municipality to "*be recognised for the quality and diversity of its trail network. The network will be developed and managed sustainably while ensuring economic, heath and wellbeing benefits are provided to the community".* It outlines the following key objectives for the expansion of the trail network: • To efficiently develop the trail network. • Identify and address barriers to the trail network's growth. • Realise the social, economic and environmental potential of each trail.	The following recommendations for capital investment and planning are outlined in the strategy and should be considered in this study: • Extend the Diamond Creek Trail from Diamond Creek to Hurstbridge. • Determine development options for the Aquaduct Trail following the establishment of land owner status, from Eltham to Christmas Hills. • Formalise the Green Wedge Trail from Wattle Glen to Kinglake. • Establish a trail from Hurstbridge to Arthurs Creek (Kinglake Way Trail). The strategy also outlines specific actions items required to deliver the above recommendations.

Walk, Cycle, Ride on the Wild Side 2021	This strategy is a holistic assessment of the trail network within the municipality including an audit that considers the performance and functionality of 18 trails and a gap analysis. The trails were assessed on location, inclusive access, compliance, safety, signage, supporting amenities and experience. This assessment was then used to identify strengths and weaknesses and the potential of each trail which allowed a list of projects and action items to be developed to guide future development and investment in the trail network.	The document provides an in-depth analysis and audit of each of the trails within the network including trail descriptions, issues and opportunities, performance and potential ratings, levels of service and capital works projects required to improve the individual trails. Specific actions items relevant to this study include:
		• Diamond Creek Trail
		  • Relign/enhance the Eltham Lower Park car park link, the Main Rd underpass, Pitt Street car park, Gastons Rd underpass, sharp bend between Laurel Hill Dr and Allendale Rd, and the Chute St underpass.
		  • Widening of trail north of Allendale Rd
		  • Railway line crossing at Allendale Rd
		  • Signage
		  • New trail construction from St Helena to Plenty River Pipe Track Trail
		  • Diamond Creek Trail extension
		• Aqueduct Trail
		  • New trail construction along the Tranmission Line linear reserve
		  • Trail extension to Kangaroo Ground and Research
		• Kinglake Way Trail

Equine in Nillumbik 2019	This Strategy outlines opportunities around Nillumbik's history and participation in equine activities including: • Responding to infrastructure needs • The importance of safe, off-road, shared trails • Promoting support for equine economic development • Encouraging informed land management and emergency preparedness.	Key actions identified in the strategy include: • Collaborate with shared trail users to understand and document synergies and common needs • Identify and formalise access to trails for horse riders • Conduct a trails audit to ensure that existing and planned trails are fit for purpose.

Open Space Strategy 2005	Nillumbik's Open Space Strategy aims to coordinate actions arising from State, regional and local policies that impact on Council's open space and to provide a strategic direction for the development and management of open space with a focus on passive recreation and conservation. The strategy outlines the following vision: • Nillumbik will provide a diversity of open space with a range of high quality regional and neighbourhood parks linked by a network of trails. • Nillumbik's open space network will be easily accessible and provide all residents and visitors with a range of passive and active recreation opportunities. • Nillumbik will ensure its open space is developed and managed on a sustainable basis to meet the needs of the community and protect environmental values for present and future generations.	The Open Space Strategy identifies a number of action items relating to trails: • Improving access along the Plenty and Yarra Rivers • Extending the Diamond Creek trail to Hurstbridge • Improving and substantially extending the Maroondah Aqueduct Trail to Sugarloaf Reservoir • Improving overall signage and condition of the Diamond Creek Trail • Upgrade the Diamond Creek Trail connection across Main Road in Diamond Creek • Connect the Maroondah Aqueduct Trail to Diamond Creek Trail at Allendale Rd along the old Maroondah Aqueduct • Investigate utilising the decommissioned Maroondah Aqueduct Siphon Bridge across the Plenty River to connect into new paths within the City of Whittlesea • Investigate a walking path along the Stony Creek from the Maroondah Aqueduct to the Yarra River in Nor th Warrandyte and Kangaroo Ground that includes providing better public access to Chase Reserve in North Warrandyte • Extend the trail network along the Yarra River by creating links along the length • Investigate the feasibility of constructing a pedestrian bridge across the Yarra River at Glynns Road parkland to Pound Bend, Warrandyte State Park • Encourage the extension of the trail network along the Plenty River from Greensborough to Yarrambat Park, through the Plenty Gorge Parklands • Extend the Metropolitan Ring Road Trail by ensuring the proposed widening of the Greensborough bypass bridge includes a bicycle/ pedestrian lane that connects to the existing Northern Ring Road Bicycle path and to the Plenty River shared path • Investigate the extension of the Metropolitan Ring Road Trail by utilising VicRoads land from the Nillumbik Shire Office precinct to the Challenger Street Wetlands Reserve • Investigate using the existing Melbourne Water Pipe Tracks for shared paths. Key shared paths could occur from the Plenty River in Greensborough to the St Helena Shopping Centre and to the Diamond Creek at Allendale Rd and utilising the pipe track to improve access and entrances to the Maroondah Aqueduct Trail • Investigate ways of providing a link from the Maroondah Aqueduct Trail in Research to the former Kangaroo Ground Waste Disposal Site.

Document	Summary	Relevance
Whittlesea Strategies		

DRAFT Whittlesea Bicycle Plan 2021-2025	This plan builds on the 2016-2020 plan to prioritise the network of bicycle lanes and paths and responds to the opportunities and challenges that have been presented and identified by the community, including bicycle safety and promotion and engagement of cycling. The principles to guide this plan include:
	• Cycling should provide a highly efficient transport options for short and medium trips (up to seven kms)
	• Cycling should contribute to health, economic and environmental outcomes
	• Cycling infrastructure should be focused on facilities suitable for novice or young riders
	• Supporting infrastructure should be provided in key locations
	• Cycling networks should extend the catchment of public transport hubs
	• Work with communities and stakeholders to achieve positive outcomes
	• We are committed to delivering accessible information, facilities, programs and services that encourage people to build social connections and participate in community life.
		Specific actions outlined in the strategy, relevant to this study, include:
		• Engage and collaborate with DOT to address safety issues on our bicycle paths and lanes, such as addressing safety and flooding issues at Darebin Creek Trail under the M80 Freeway
		• Continue progressive removal of swing gates on shared user paths and trails
		• Provide wayfinding signage to bicycle parking at Council buildings, community facilities and along trails
		The following priorities from the plan are also listed in the strategy:
		• Yan Yean Pipe Track:
		  • Childs Rd to McDonalds Rd
		  • Darebin Creek Trail to Childs Rd
		  • Bridge Inn Rd to Hazel Glen Dr
		• Edgars Creek Trail:
		  • German Ln to Deveny Rd
		  • Main St to German Ln
		• Darebin Creek Trail:
		  • Underpass at McKimmies Rd bridge and widening of footpath on bridge
		• Plenty Rd Shared Trail:
		  • Municipal boundary to M80 Ring Rd
		  • Enterprise Dr to M80 Ring Rd Path

Open Space Strategy 2016	The Whittlesea Open Space Strategy sets out the strategic direction for the future planning, provision, design and management of open space in the municipality through to 2026. The following are the principles that guide the development of the strategy and open space: • Access to open space • Open space that is supportive of community health and wellbeing • Diversity of open space • Equitable network of open space • Open spaces that are sustainable • A connected network of open space • Culturally celebratory	This strategy recommends construction of additional shared trail and walking path links to significantly improve the connectivity and accessibility within, to and between open space. Specifically, the strategy recommends the construction some key routes in order to improve the open space network: • Merri Creek Trail - north and south of Galada Tamboore • Edgars Creek Trail - fill in gaps north and south of Cooper St and the Metropolitan Ring Rd to create a continuous shared trail • Development of the Yan Yean Pipe Track • Plenty River Trail within the Plenty Gorge Parklands north from RMIT Bundoora • Construct a linear path along Maroondah Aqueduct • Darebin Creek Trail around the Quarry north of the Metropolitan Ring Rd

Whittlesea Rail Trail Master Plan Review 2018	This document is a review of the 2010 Whittlesea Rail Trail. It concludes that th features are all still relevant in 2018 vindicating design objectives and actions proposed in 2010 as essential in establishing a rail trail fit for community use. The proposed trail begins at Laurel St and continues south along the rail reserve to Bridge Inn Road.	This document outlines the following design objectives and actions: • Provision of a path and access for pedestrians, cyclists and horse riders; • Provision of rest points along the trail at regular intervals with seats and picnic tables of consistent design style; • Avoiding the removal of significant trees and understorey vegetation along the trail alignment; • Retaining and incorporating remnant railway relics for interpretation; • Provision of interpretation signage; • Provision of directional, etiquette and risk management signage; • Provision of a seated and observatory rest point at Staglianos Lake; • New bridge over Barbers Creek; • Provision of maintenance and emergency access at each road crossing; • Establishing licence to access/ stock crossings where landholders own land on both sides of the reserve; and • Re-establishing fencing between private land and VicTrack land to define future Council management and maintenance areas and keep the trail safe.

Quarry Hills Regional Parkland Landscape Master Plan 2019	This Master Plan aims to guide the development of Quarry Hill Regional Parkland from it's current size of 220 ha to it's ultimate size, 1100 ha. Key objectives include:
	• Improving public access into the park, including all ability access if possible.
	• Increase local public use of the park.
	• Increase the regional role of the park.
	• Staged establishment of new local and regional visitor areas.
	• Protection and enhancement of existing park biodiversity and cultural heritage values.
	• Minimising park operational and land management costs.
		Key trail-related design objectives outlined in the Master Plan include:
		• Establish a linear open space corridor and trail to link the northern and southern sections of the park including:
		  • from Granite Hills Park to Simons Creek Wetland, from McArthurs Road to Simons Creek Wetland
		  • from Granite Hills Park to the western end of Regent Street
		  • from the western end of Regent Street to Bridge Inn Road
		  • trail link through to Eagle Shelter and Granite Hills Park from Darebin Creek
		all through leased grazing land.

Document	Summary	Relevance
Regional and State Level Strategies, Policies and Plans		
Open Space for Everyone, DELWP 2021	Open Space for Everyone puts in place the strategic framework to guide the planning, acquisition, design, management, use and maintenance of the Melbourne metropolitan open space network. It also proposes how to put that framework into action. The goals of the strategy include: • Improved community health and wellbeing • Healthier biodiversity • Enhanced climate change resilience • Maxmised economic and social benefits To achieve these goals, the strategy aims to protect and optimise existing open space and grow the existing open space network.	This strategy identifies trails as an important part of the metropolitan open space network and as such outlines the following considerations relevant to this study: • Identifying parks, trails and waterway corridors that improve radial and cross-radial connectivity; • Progressively acquire parcels of priority Public Acquisition Overlay (PAO) land to connect trails; • Consider railway corridors for the potential to create or enhance linear parks and trails. • Complete planning and construction of new cycling and walking trails in municipalities including Nillumbik, Moreland, Banyule, Darebin, Hume and Whittlesea
Cycling into the Future, Department of Transport, Planning and Local Infrastructure 2013-2023	This report aims to increase trips take by bike and to encourage more people to consider cycling. The directions to achieve this include: • Provide evidence to the State Government to make more informed decisions around cycling; • Provide effective governance to improve the co-ordination, planning and delivery of projects; • Reduce safety risks and user conflicts; • Encourage cycling by helping riders to feel more confident about cycling ; • Support opportunities to grow and diversify Victoria's economy through cycling; and • Provide urban cycling networks to improve connectivity and better target investment in trail networks and associated infrastructure.	The report is relevant to the Northern Trails study as it provides a framework for increasing instances of cycling for a range of benefits, such as health, tourism and economy, which aligns with this project objectives. Other relevant objectives are: • Reduce user conflicts; • Increase investment in regional trails; and • Increase visitor numbers on regional trails. Implementation of this strategy is currently underway with $30 million being committed each financial year by the State Government to improve cycling paths, construct new trails and provide end of trip facilities. The department is also investing in safety, education and awareness campaigns to increase the number of cyclists (both locals and tourists) as well as improving conditions for existing cyclists.
Victoria's Trails Strategy, Tourism Victoria 2014-2024	The vision for this strategy is to position Victoria as a leading trail-based destination that provides a range of trail experiences while strengthening the State's economy and improving the health, wellbeing and lifestyle of the community. The key initiatives outlined in the strategy are: • improve the quality of trail experiences • increase awareness and visitation • support complementary tourism and retail businesses • understand trail-users, the market and the target demographic	The actions below are relevant to this study as they aim to raise the profile of the trails by: • increasing attraction of cycling trails by marketing the trails in conjunction with other commercial opportunities that the area has to offer • building recognition of Victoria as a premier cycling destination to increase visitation

Document	Summary	Relevance
Guidelines for developing Principal Pedestrian Networks, Department of Economic Development, Jobs, Transport and Resources 2015	This document aims to identify routes within the built environment that are likely and have the potential to carry more pedestrians walking to key destinations and improve the quality of these routes to encourage more walking. These guidelines present a step by step process for LGAs to follow which include delineating the PPN, validating it and then implementing it.	The PPN guidelines provide local governments with a framework to develop principle pedestrian networks within their municipalities by defining the required catchment area, current and future land use, prioritising pedestrian links and the quality of the pedestrian environment. This framework and methodology could be considered in the Northern Trails Study in regards to identifying regional trails.
Plan Melbourne, Victoria State Government 2017-2050	Plan Melbourne is a 35 year plan to ensure Melbourne grows more sustainable, productive and liveable as its population grows. The strategy aims to achieve the following outcomes: • a productive city that attracts investment, supports innovation and creates jobs; • provides housing choice in locations close to jobs and services; • an integrated transport system that connects people to jobs and services and goods to market; • a distinctive and liveable city with quality design and amenity; • Melbourne is a city of inclusive, vibrant and healthy neighbourhoods • a sustainable and resilient city; and • Regional Victoria is productive, sustainable and supports jobs and economic growth.	The key objective relevant to this study is in relation to providing an integrated transport system. In particular, the strategy aims to • support cycling for commuting by providing Strategic cycling corridors that link metropolitan Melbourne; • create a network of cycling links for local trips; • providing safe cycling and walking routes to schools and other regional facilities; • the creation of 20 minute neighbourhoods - i.e. the ability to meet most everyday needs locally within a 20-minute journey from home by walking, cycling, riding or local public transport. • improve neighbourhoods to enable walking and cycling as a part of daily life;
Northern Horizons, 50 year Infrastructure Strategy for Melbourne's North 2016 update	This report comprises an update of the original Northern Horizons – 50 Year Infrastructure Strategy for Melbourne's North report (2014). This update outlines the latest data and priorities of relevance for transport, social, economic, utilities, environment and economic infrastructure within the seven councils of Melbourne's North, Northern Melbourne RDA Committee, La Trobe University, Melbourne Polytechnic and NORTH Link. Specifically, it consists of two parts: 1. an Infrastructure Report Card (Report Card) that defines the current level of infrastructure provision and performance in Melbourne's North; and 2. a Future Directions section that identifies the short (to 2021), medium (to 2033) and long term (beyond 2033) priorities for the region.	The Northern Horizons report identifies the Northern Regional Trails Strategy as a short term priority stating that future additions and modifications to the bicycle network in Melbourne's North should be developed in accordance with the framework laid out in the Northern Trails Strategy. It goes on to state that implementing the actions in the Northern Trails Strategy is a transport priority for the region in order to achieve an effective bicycle network.

North East Link Project: Improving Melbourne for Wheels, Paws and Feet 2018	This document outlines the 25kms of new and improve paths and trails for riders and pedestrians including: • Completing the eastern bike corridor - a new commuter bike riding route to the inner city along the Eastern Freeway between Chandler Highway and Merri Creek. • Two new crossings of the Yarra River (at Yarra Street, Heidelberg and next to the Eastern Freeway, Kew/ Fairfield). • Completing the missing link in the Greensborough bypass path between Grimshaw Street and Yallambie Road. • New paths along Bulleen Road to improve access to schools and sporting facilities. • Improved bike riding connections to access places where people work, shop and spend time in the northeast.	The proposed cycling and walking infrastruture proposed as part of the North East Link is to be included in this study.
Northern Metro Region: Five Year Plan for Jobs, Services and Infrastructure, Victoria State Government 2018-2022	The Northern Metro Region Five Year Plan provides an update on the northern region's growing population and economy, and outlines the Government's investments from the Victorian Budget 2018/19 to support jobs and deliver infrastructure and services in the region over the next five years including: • a report on the advice provided by the newly formed Northern Metropolitan Partnership on priorities for enhancing the northern region's economy and liveability • the Government's response to the Partnership's advice • a report on the joint development of the Northern Metro Region's Land Use Framework Plan by the Government and northern region councils, creating a shared understanding across all levels of government and the community about future population and employment growth, and housing and land use needs • details on new government initiatives designed to strengthen regional development and engage with communities in identifying and delivering infrastructure and services.	The relevant key priorities outlined by the Partnership include: • Improve connection to the natural environment through recreational trails and increased use of cycling and walking. • Construction of priority trails from the Northern Regional Trails Strategy including the Blind Creek Trail, Diamond Creek Trail, Main Yarra Trail realignment and the East-West Power Easement Trail. This was met by the State Government with: • $1M for cycling and hiking trails priority projects identified in the Northern Regional Trails Strategy (2016) • $22.7 million for priority active transport projects to promote safety and increased use of Victoria's cycling and walking network including the Upfield Bike Path and Diamond Creek to Hurstbridge. • A budget commitment to upgrade and improvement to Diamond Creek Trail. • A budget commitment to complete 17 km of the Plenty River Trail, and new bike and walking trails across Nillumbik, Moreland, Banyule, Darebin, Hume and Whittlesea.
Yarra Strategic Plan (Burndap Birrarung burndap umarkoo) 2022–32	This plan was developed under the *Yarra River Protection (Willip-gin Birrarung Murron) Act 2017*, and creates a long term vision for the proection of the Yarra River, Birrarung, and associated parklands and environments. Melbourne Water is the lead agency for implementing the Plan.	There are a number of trails located within, or intersecting with the river corridor covered by this strategy.

Co-designed Catchment Program for the Maribrynong Catchment Region, Melbourne Water	This report outlines the objectives formed through collaboration between Melbourne Water and community members, organisations and agencies. The aims of this process included providing waterways across the Catchment are places that provide continuous, connected and accessible open spaces for public enjoyment and recreation.	One of the key objectives outlined in this document is to increase access to and along waterways through regional projects and by additional paths and access points in new urban areas, townships (i.e. Sunbury) and larger parks.
Co-designed Catchment Program for the Yarra Catchment Region, Melbourne Water	This report outlines the objectives formed through collaboration between Melbourne Water and community members, organisations and agencies. The aims of this process included: • Providing waterway corridors are used appropriately for places of solitude, enjoyment of nature, and active and passive recreation that support mental and physical wellbeing; and • Protecting and improving the cultural, historical, amenity values and landscape settings of all modified waterways.	One of the key objectives outlined in this document is to increase access to and along waterways including the Merri Creek, Darebin Creek, Diamond Creek, Plenty River, and the Yarra River.
Eastern Regional Trails Strategy 2018	The Eastern Regional Trails Strategy provides the Eastern Metropolitan LGAs and other land management authorities with strategic direction to work together towards an interconnected and well-used trail network. The strategy: • Identifies and defines the regional trails. • Encourages and provides recommendations for regional cooperation regarding the provision, management and promotion of regional trails. • Provides information regarding the use of the regional trail network. • Provides standards and guidelines for future trail development. • Identifies and prioritise potential trail improvement projects.	The boundary of the eastern region is shared with the northern region. As such connections between the two regions should be considered as part of this study, particularly in relation to the Main Yarra Trail.
Western Metropolitan Regional Trails Strategic Plan 2017	The Western Metropolitan Regional Trails Strategic Plan ('West Trails') is a strategic project seeking to improve the quality and usage of regional trails in Western Metropolitan Melbourne. The purpose of the plan was to undertake a planning exercise that reviews the status of regional trails and to ascertain gaps in provision within the identified trail network. The objectives of the project are to: • Establish an action plan to address the identified gaps in provision; • Determine key strategic trail links and obtain an understanding required for feasibility, planning, capital works and staging; and • Establish consistency in maintenance, trail quality, marketing and management.	The boundary of the western region is shared with the northern region. As such connections between the two regions should be considered as part of this study, particularly in relation to the Moonee Pond Creek Trail and the M80 Trail: **Moonee Ponds Creek Trail** • Refresh and install line marking along entire path • Implement a regular maintenance schedule to entire trail (with Moreland, Hume and Melbourne City Councils) • Provide wayfinding and user etiquette signage to the length of Moonee Ponds Creek Trail, including distance • indicators, particularly at junction with other trails (i.e. the M80 Trail) **M80 Trail** • Repair sections of the M80 trail where needed • Provide consistent wayfinding and distance signage along the length of the M80 trail, particularly at connections to other trails

La Trobe National Employment and Innovation Cluster - Draft Framework Plan, 2017	This draft framnework was prepared by the VPA and seeks to Victorian Government is establish clear objectives for the precinct's future. This includes coordination of place-based policy, planning, design, investment and delivery across multiple levels of government and state government departments	Principles established in the framework document include: • supporting sustainable and active modes of transport • connectivity to the Darebin Creek corridor The Darebin Creek Trail, Hurstbridge Rail Trail and Banyule Shared Path run through the precinct.

B TRAIL IMPROVEMENT PROJECTS

TRAIL IMPROVEMENT

PROJECT BASE INFORMATION					FILTERS								
ID	**Project Description**	**Status**	**Project identification**	**Significant prerequisites and considerations**	**Location: Trail Name**	**Location:**						**Additional stakeholder (Land owner/ manager)**	**Indicative cost** *S-$0-50k M-$50k-250k L-$250k-1M XL-$1M+*
						Banyule	**Darebin**	**Hume**	**Moreland**	**Nillumbik**	**Whittlesea**		
AitkenBoulevard_01	Provide wayfinding signage along the length of the trail		Audit		Aitken Boulevard Shared Trail			Y					S
AitkenBoulevard_02	Construct new section of trail on the eastern side of Aitken Boulevard from the Aitken Creek to Craigieburn Road		Hume		Aitken Boulevard Shared Trail			Y					M
AitkenBoulevard_03	Construct new section of trail from Brookfield Boulevard to Highlands Shopping Centre	Design is underway	Audit	Surrounding developments	Aitken Boulevard Shared Trail			Y					L
AitkenBoulevard_04	Construct new section of trail from the Yuroke Creek Trail to Somerton Road following duplication of Somerton Road and a safe crossing point being constructed		Audit		Aitken Boulevard Shared Trail			Y					L
AmarooPipeTrack_01	Investigate options for a new trail along the sewer easement from Craigieburn Station heading north (Hume)		Hume	Opportunity for developers to deliver/ fund. Lockerbie PSP Alternative to the Merri Creek Trail in sections of high sensitivity/ construction difficulty	Amaroo Pipe Track			Y				Whittlesea, Mitchell Shire, Yarra Valley Water	L

AmarooPipeTrack_02	Investigate options for a new trail along the sewer easement from Craigieburn Station heading north (Whittlesea)			Opportunity for developers to deliver/ fund. Lockerbie PSP Alternative to the Merri Creek Trail in sections of high sensitivity/ construction difficulty							Y	Hume, Mitchell Shire, Yarra Valley Water	L
BanyuleShared_01	Construct new section of trail from Wattle Drive north to Watsonia Station	Anticipated design included in the NEL Urban Design Strategy	Northern Trails Strategy 2016, Draft Banyule Bicycle Strategy, Banyule Walking Strategy, Audit		Banyule Shared Trail	Y							L
BanyuleShared_02	Construct new section of trail from Watsonia Station north to Grimshaw Street	Anticipated design included in the NEL Urban Design Strategy	Northern Trails Strategy 2016, Draft Baynule Bicycle Strategy, Banyule Walking Strategy, Audit	Proposed off-road walking cycling connection anticipated between Watsonia Station and Grimshaw Street part of NE Link,. See page 36 and 38 of the NEL Urban Design Strategy 2020.	Banyule Shared Trail	Y							L

BanyuleShared_03	Construct new section of the trail from Banksia Street south to the Yarra Trail just north of McArthur Road	Concept design is completed	Northern Trails Strategy 2016, Draft Baynule Bicycle Strategy, Banyule Walking Strategy	NE Link, funding ($100,000) provided to develop a concept design for a sealed bicycle path from Banksia Street to Burke Road North via The Boulevard to connect to the Eastern Freeway. The concept design for these works is to include a grade separated crossing near the intersection of Banksia and Jika/Dora Streets. See agreement dated 30 October 2020. Needs input from VicRoads/Department of Transport.	Banyule Shared Trail	Y						Department of Transport, ParksVic, VicRoads	L
BanyuleShared_04	Realign trail at playground on River Gum Walk to reduce incline		Audit	NE Link, design to consider potential conflicts between playground and shared trail	Banyule Shared Trail	Y							M
BanyuleShared_05	Provide wayfinding signage along the length of the trail		Audit	NE Link	Banyule Shared Trail	Y						Melbourne Water, ParksVic, VicRoads	S
BanyuleShared_06	Provide a grade separated north-south walking and cycling link across Grimshaw Street at the Greensborough Bypass	Anticipated design included in the NEL Urban Design Strategy	Audit	NE Link	Banyule Shared Trail	Y						VicRoads	XL
BlindCreekTrail_01	Advocate and plan for a new section of trail from the rail line in Sunbury east to Jacksons Creek and The Nook/Bicentennial Park	Partial detailed design completed	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Audit, Community Consultation	Jacksons Creek Regional Parkland Plan	Blind Creek Trail			Y				Melbourne Water, Salesians College, Private landowners	L

BlindCreekTrail_02	Provide wayfinding signage along the length of the trail	Partially complete	Audit		Blind Creek Trail			Y				Melbourne Water	S
BlindCreekTrail_03	Investigate the feasibility of realigning the underpass at Riddell Road to cater to all users (cyclists) and improve access and safety		Audit		Blind Creek Trail			Y				Melbourne Water, VicRoads, Major Road Projects	XL
BlindCreekTrail_04	Investigate a pedestrian priority crossing with wayfinding signage at Phillip Drive		Audit		Blind Creek Trail			Y				Melbourne Water, VicRoads	L
BlindCreekTrail_05	Investigate a pedestrian priority crossing at Elizabeth Drive		Audit		Blind Creek Trail			Y				VicRoads	L
BlindCreekTrail_06	Investigate a pedestrian priority crossing with wayfinding signage at Racecourse Road		Audit		Blind Creek Trail			Y				VicRoads	L
BlindCreekTrail_07	In partnership with Salesian College upgrade section of trail at Salesian College Dam		Hume Walking and Cycling Strategy, Audit		Blind Creek Trail			Y				Melbourne Water, Salesian College Sunbury	M
CraigieburnSharedPath_01	Construct new section of trail from the Moonee Ponds Creek Trail to Gaffney Street	Strategic Plan	Northern Trails Strategy 2016, Moreland feedback	Require Train Station building to be reconstructed	Craigieburn Shared Path				Y			VicTrack	M
CraigieburnSharedPath_02	Construct a new section of trail, on the western side of the train line, from Gaffney Street to Bothwell Street including fencing and lighting	Funded for construction	Northern Trails Strategy 2016, Moreland feedback		Craigieburn Shared Path				Y			VicTrack	XL
CraigieburnSharedPath_03	Construct a new section of trail, on the western side of the train line, from Bothwell Street to Devon Road including retaining, fencing and lighting	Design is underway	Northern Trails Strategy 2016, Moreland feedback		Craigieburn Shared Path				Y			VicTrack	L

CraigieburnSharedPath_04	Construct a new section of trail, on the western side of the train line, from Cartwright Street to Glenroy Road including fencing and lighting	Design is underway	Northern Trails Strategy 2016, Moreland feedback	Link into LXRP works at Glenroy Station	Craigieburn Shared Path				Y			VicTrack	L
CraigieburnSharedPath_05	Construct a new section of trail form Glenroy Road to Glenroy Station	Constuction is underway	Northern Trails Strategy 2016, Moreland feedback		Craigieburn Shared Path				Y			VicTrack	M
CraigieburnSharedPath_06	Construct a new section of trail, on the eastern side of the train line, from Glenroy Station to Jacana Station including fencing and lighting	Strategic Plan	Northern Trails Strategy 2016, Moreland feedback	Link into LXRP works at Glenroy Station	Craigieburn Shared Path				Y			VicTrack	L
CraigieburnSharedPath_07	Advocate for a feasibility study for a new continuous shared path from Jacana Station to McConnell Crescent (north of Roxburgh Park Station)	No design undertaken to date	Northern Trails Strategy 2016, Desktop analysis	Feasibility study to be undertaken	Craigieburn Shared Path			Y				VicTrack	XL
CraigieburnSharedPath_08	Widen the existing section of trail from McConnell Crescent to Zambezi Court Reserve				Craigieburn Shared Path			Y				VicTrack	L
CraigieburnSharedPath_09	Further investigate opportunities for a new continuous shared path from Zambezi Court Reserve to Craigieburn Station	No design undertaken to date	Northern Trails Strategy 2016, Desktop analysis	Feasibility study to be undertaken	Craigieburn Shared Path			Y				VicTrack	L
DarebinCreek_01	Construct new section of trail on the western side of the creek from the train underpass east of Epping Station to Greenbrook Drive		Northern Trails Strategy 2016, Draft Baynule Bicycle Strategy, Audit		Darebin Creek Trail						Y	Melbourne Water	M
DarebinCreek_02	Upgrade section of trail between Gona Street and Southern Road	Under construction	Banyule Public Open Space Plan, Audit	All trail works in Banyule along the Darebin Creek anticipated to be complete in 2021.	Darebin Creek Trail	Y						Melbourne Water	M

DarebinCreek_03	Investigate the feasibility of an underpass or bridge crossing Plenty Road intersection to avoid section of trail on Plenty Road footpath		Audit	Opportunity to explore provide an alternative route through La Trobe University if trail is realigned to the east side of the Darebin Creek. LTU have indicated interest in exploring this in their Master Plan	Darebin Creek Trail		Y					Melbourne Water, VicRoads, La Trobe University	XL
DarebinCreek_04	Construct a new section of trail on the eastern side of the Darebin Creek from Dunne Street to Chenies Street including an underpass at Dunne Street and Chenies Street		Audit		Darebin Creek Trail		Y					Melbourne Water, VicRoads	XL
DarebinCreek_05	Investigate the feasibility of an underpass or signalised pedestrian crossing at Settlement Road to improve trail continuity		Audit		Darebin Creek Trail						Y	Melbourne Water, VicRoads	XL
DarebinCreek_06	Construct a new section of trail that follows the creek from the Metropolitan Ring Road through the Darebin Creek Linear Reserve to connect to the new section of trail		Whittlesea Open Space Strategy, Audit	An existing section of trail exists alongside the Metropolitan Ring Road that connects the Darebin Creek Trail and the Metropolitan Ring Road Trail, therefore, this action item is a low priority	Darebin Creek Trail						Y	Melbourne Water, VicRoads	L
DarebinCreek_07	Elevate the section of the Darebin Creek Trail where it passes beneath the Western Ring Road to avoid flooding		Whittlesea		Darebin Creek Trail						Y	Melbourne Water, VicRoads	L

DarebinCreek_08	Investigate the feasibility of an underpass and bridge crossing at McKimmies Road to avoid section of trail on McKimmies Road bridge	No design undertaken to date	Whittlesea Bicycle Plan, Audit		Darebin Creek Trail						Y	Melbourne Water, VicRoads	XL
DarebinCreek_09	Investigate the feasibility of an underpass and bridge crossing at Childs Road to avoid section of trail on Childs Road bridge	Under construction	Audit		Darebin Creek Trail						Y	Melbourne Water, VicRoads, Major Road Projects	XL
DarebinCreek_10	Investigate the feasibility of an underpass and bridge crossing at Findon Road to avoid section of trail on Findon Road	No design undertaken to date	Audit		Darebin Creek Trail						Y	Melbourne Water, VicRoads	XL
DarebinCreek_11	Provide a pedestrian priority crossing at McDonalds Road roundabout	No design undertaken to date	Community consultation	Opportunity to implement when roundabout is signalised	Darebin Creek Trail						Y	Melbourne Water, VicRoads	S
DiamondCreek_01	Construct new section of trail from Wilson Road to Graysharps Road, Hurstbridge.	Under construction	Northern Trails Strategy 2016, Nillumbik Trails Strategy, Nillumbik Open Space Strategy, Audit, Community Consultation	This is funded under the Northern Metropolitan Trails Program as the Diamond Creek Trail Extension - Stage 2	Diamond Creek Trail					Y		Melbourne Water	XL
DiamondCreek_02	Construct new section of trail from Graysharps Road to Fergusons Paddock		Northern Trails Strategy 2016, Nillumbik Trails Strategy, Nillumbik Open Space Strategy, Audit, Community Consultation		Diamond Creek Trail					Y		Melbourne Water	L
DiamondCreek_03	Construct an underpass at Main Hurstbridge Road, Diamond Creek to avoid busy traffic crossing		Audit, Nillumbik Walk, Cycle Ride on the Wild Side		Diamond Creek Trail					Y		Melbourne Water, VicRoads	XL

DiamondCreek_04	Widen trail surface from Allendale Road north to Main Hurstbridge Road		Nillumbik Open Space Strategy, Audit, Nillumbik Walk, Cycle Ride on the Wild Side		Diamond Creek Trail					Y		Melbourne Water	L
DiamondCreek_05	Install a signalised/ pedestrian priority crossing at Allendale Road		Audit		Diamond Creek Trail					Y		Melbourne Water, VicRoads	L
DiamondCreek_06	Maintain/ upgrade sections of bitumen trail surface through Eltham North Reserve, Research Gully, Eltham North Playground, and Edendale Community Farm		Nillumbik Open Space Strategy, Audit		Diamond Creek Trail					Y		Melbourne Water	L
DiamondCreek_07	Realign the section of trail at the Wattletree Road underpass to create a gentler grade and wider trail surface		Audit, Nillumbik Walk, Cycle Ride on the Wild Side		Diamond Creek Trail					Y		Melbourne Water, VicRoads	L
DiamondCreek_08	Construct new section of trail with wayfinding signage around Main Road and Diamond Street, Eltham to fill the gap in the trail and direct users to the continuation of the trail		Audit		Diamond Creek Trail					Y		Melbourne Water	L
DiamondCreek_09	Upgrade surface of existing trail between Susan Street Oval and Ely St, with wayfinding or line marking to create a consistent and legible trail		Audit		Diamond Creek Trail					Y		Melbourne Water	L
DiamondCreek_10	Provide wayfinding signage along the length of the trail		Nillumbik Open Space Strategy, Audit		Diamond Creek Trail					Y		Melbourne Water, VicRoads	M
DiamondCreek_11	Maintain/ upgrade sections of bitumen trail surface through Eltham Bushland Reserve alongside Main Road		Audit		Diamond Creek Trail					Y			L

DiamondCreek_12	Realign/ enhance the section of trail through the Eltham Lower Park.		Nillumbik Walk, Cycle Ride on the Wild Side		Diamond Creek Trail					Y			M
DiamondCreek_13	Realign the sharp bend in the trail between Laurel Hill Drive and Allendale Road		Nillumbik Walk, Cycle Ride on the Wild Side		Diamond Creek Trail					Y			M
EastWestPower_01	Provide wayfinding signage along the length of the trail		Draft Baynule Bicycle Strategy, Audit	AusNet to be consulted on signage within the electrical transmission easement	East West Power Easement Trail	Y	Y				Y	AusNet	S
EastWestPower_02	Construct a section of trail from the Northern Pipe/ St Georges Rd/ Cheddar Road Trail north east along the vacant pipe reserve		Audit, Darebin		East West Power Easement Trail		Y				Y	Melbourne Water	L
EastWestPower_03	Construct a section of trail from the Northern Pipe/ St Georges Rd/ Cheddar Road Trail south east along the vacant pipe reserve to Edwardes Lake Park		Darebin	Would require a new rail crossing north of Ruthven Station - unknown if the LXRP rail elevation will make way for this	East West Power Easement Trail		Y					Melbourne Water	L
EastWestPower_04	Construct a section of trail along Holt Parade to connect to the Darebin Creek Trail (at Valley Road)		Banyule Walking Strategy, Audit	NE Link	East West Power Easement Trail						Y	Melbourne Water	M
EastWestPower_05	Investigate the feasibility of a new section of trail, including a new bridge crossing, from the Darebin Creek Trail, at Holt Parade, around Mount Cooper to connect to the existing section of trail at Snake Gully Drive		Banyule Walking Strategy, Audit	Darebin City Council have commenced plans for a new path network in Bundoora Park.	East West Power Easement Trail		Y				Y		XL

EastWestPower_06	Construct a section of trail from Reedy Rise to Plenty Road including a new pedestrian priority crossing at Plenty Road		Draft Baynule Bicycle Strategy, Banyule Walking Strategy, Audit	Private land ownership	East West Power Easement Trail	Y	Y					Private landowners	XL
EastWestPower_07	Investigate options for providing a new section of trail from Dilkara Avenue to Gleeson Drive		Northern Trails Strategy 2016, Draft Baynule Bicycle Strategy, Audit	NE Link, land acquisition. On-road alternative route is now in place utilising Greenwood Drive and Lea Crescent.	East West Power Easement Trail	Y						Private landowners	L
EastWestPower_08	Construct a section of trail from the existing trail on Morwell Avenue to Watsonia Station	Concept design and community consultation underway	Northern Trails Strategy 2016, Draft Baynule Bicycle Strategy, Banyule Walking Strategy, Audit	NE Link, NELP funding has been provided by design and construction of Watsonia Town Square including trail alignment	East West Power Easement Trail	Y							L
EastWestPower_09	Upgrade existing footbridge over the rail line at Watsonia Station including an underpass/ overpass at Greensborough Road to avoid footpath and multiple road crossings		Draft Baynule Bicycle Strategy, Audit	Upgrade to existing footbridge across railway line at Watsonia station not currently included in the NE Link	East West Power Easement Trail	Y						VicRoads	XL
EastWestPower_10	Construct a new section of trail along Wendover Place and Yallambie Road, along the easement to the Plenty River Trail	Concept design underway. Design and construction of trail between Frensham Rd and Plenty River Trail funded	Northern Trails Strategy 2016, Banyule Walking Strategy, Banyule Public Open Space Plan, Audit	NELP funding ($3M) provided in 2023 for planning, design and construction for the trail between Frensham Road Watsonia to the Plenty River Trail Yallambie. Transmission easement is partially in private ownership so acquisition or deviation of the trail required	East West Power Easement Trail	Y						Private landowners	XL

EdgarsCreekTrail_01	Construct new section of trail from the Merri Creek Trail to Ronald Street on the west bank	No design undertaken to date	Northern Trails Strategy 2016, Audit, community Consultation, Edgars Creek Conservation and Development Plan		Edgars Creek Trail				Y			Melbourne Water	L
EdgarsCreekTrail_02	Construct new section of trail from Ronald Street to Carrington Road. Consider keeping the trail away from the creek and along development frontages	No design undertaken to date	Northern Trails Strategy 2016, Audit, community Consultation, Edgars Creek Conservation and Development Plan		Edgars Creek Trail				Y			Melbourne Water	L
EdgarsCreekTrail_03	Construct new section of trail from Strahalbyn Chase to Contempo Boulevard		Northern Trails Strategy 2016, Whittlesea Open Space Strategy, Audit	To be installed by Developer	Edgars Creek Trail						Y	Melbourne Water	M
EdgarsCreekTrail_04	Investigate a new section of trail along the creek from Carrington Road to Edwardes Lake. Explore the feasibility of a trail between Kia Ora Road and Henty Street on the east bank.		Audit, community Consultation, Edgars Creek Conservation and Development Plan	Requires contruction of action items 01 and 02 to be completed	Edgars Creek Trail		Y					Melbourne Water	L
EdgarsCreekTrail_05	Construct a separate cycling only trail through Edwardes Lake Park		Audit, community Consultation		Edgars Creek Trail		Y					Melbourne Water	L
EdgarsCreekTrail_06	Construct a dedicated shared trail from the public toilets in Edwardes Lake Park, around the car park and over Leamington Street		Audit, community Consultation		Edgars Creek Trail		Y					Melbourne Water	L
EdgarsCreekTrail_07	Investigate the feasibility of an underpass and bridge crossing at Broadhurst Avenue		Audit		Edgars Creek Trail		Y					Melbourne Water, VicRoads	XL

EdgarsCreekTrail_08	Construct a section of trail along the creek from Glasgow Avenue to the Metropolitan Ring Road		Northern Trails Strategy 2016, Audit, community Consultation		Edgars Creek Trail		Y					Melbourne Water	XL
EdgarsCreekTrail_10	Construct section of trail between German Lane and Kingsway Drive, Lalor		Whittlesea Bicycle Plan, Audit		Edgars Creek Trail						Y	Melbourne Water	L
EdgarsCreekTrail_11	Construct section of trail along the street from Deveny Road to Cooper Street, Epping		Whittlesea Bicycle Plan, Whittlesea Open Space Strategy, Audit	To be installed by Developer	Edgars Creek Trail						Y	Melbourne Water	L
EdgarsCreekTrail_12	Construct a section of trail along the creek from Jersey Drive to Rockfield Street		Whittlesea Open Space Strategy, Audit	To be installed by Developer	Edgars Creek Trail						Y	Melbourne Water	L
EdgarsCreekTrail_13	Construct section of trail along the creek from Sheba Way to Snowy Place		Audit	To be installed by Developer	Edgars Creek Trail						Y	Melbourne Water	L
EdgarsCreekTrail_14	Provide wayfinding signage along the length of the trail		Audit		Edgars Creek Trail		Y		Y		Y	Melbourne Water, VicRoads	M
EdgarsCreekTrail_9	Upgrade surface of trail between Main Street and Melaleuca Drive	Under construction	Audit	Funded as Edgars Creek Trail - Stage 1 under the Northern Metropolitan Trails Program	Edgars Creek Trail						Y	Melbourne Water	M
GaladaCraigieburn_01	Provide wayfinding signage along the length of the trail		Audit	Upper Merri Creek Parklands	Galada Tamboore Pathway/ Craigieburn Shared Path			Y			Y	VicRoads, Merri Creek Management Committee	S
GaladaCraigieburn_02	Reinstate centre line marking along the trail		Audit	Need to identify who the path asset belongs to	Galada Tamboore Pathway/ Craigieburn Shared Path			Y			Y	VicRoads	S
GreenWedge_01	Construct a new section of trail east from the Diamond Creek Trail at Wattle Glen Station along Watery Gully Creek to existing trail on Watery Gully Road		Nillumbik Walk, Cycle Ride on the Wild Side							Y			XL

GreenWedge_02	Construct a new section of trail from Couties Road to Alma Road		Nillumbik Walk, Cycle Ride on the Wild Side							Y			L
GreenWedge_03	Construct a new section of trail along Long Gully Road from Alma Road to Turnung Road		Nillumbik Walk, Cycle Ride on the Wild Side							Y			L
GreenWedge_04	Construct an extension of the trail from the intersection of Clintons Road and Spanish Gully Road to the Marshalls Road car park within the Kinglake National Park		Nillumbik Walk, Cycle Ride on the Wild Side							Y		ParksVic	XL
GreenWedge_05	Upgrade existing sections of the trail surface to match width and material treatment of new sections		Nillumbik Walk, Cycle Ride on the Wild Side							Y			XL
GreenWedge_06	Provide wayfinding signage along the length of the trail		Nillumbik Walk, Cycle Ride on the Wild Side							Y			M
HendersonsCreek_01	Provide wayfinding signage along the length of the trail		Audit		Hendersons Creek Trail						Y	Melbourne Water, VicRoads	S
HendersonsCreek_02	Provide a signalised/ pedestrian priority crossing over The Lakes Boulevard and Glenorchy Way		Audit		Hendersons Creek Trail						Y	VicRoads	L
HendersonsCreek_03	Upgrade trail surface from Gordons Road to Darius Terrace		Audit		Hendersons Creek Trail						Y		L
HendersonsCreek_04	Construct a section of trail from Darius Terrace to The Lakes Boulevard (at Findon Road) including a bridge crossing to connect to existing trail		Audit		Hendersons Creek Trail						Y	Melbourne Water	M
HendersonsCreek_05	Provide a signalised/ pedestrian priority crossing over The Great Eastern Way		Audit		Hendersons Creek Trail						Y	VicRoads	L

HendersonsCreek_06	Provide a signalised/ pedestrian priority crossing at Findon Road		Audit, community Consultation		Hendersons Creek Trail						Y	VicRoads	L
HendersonsCreek_07	Upgrade trail surface from Findon Road to McDonalds Road	Detailed design is completed	Audit, Northern Trails Strategy 2016		Hendersons Creek Trail						Y	Melbourne Water	L
HendersonsCreek_08	Provide a signalised/ pedestrian priority crossing at McDonalds Road		Audit	Location of Smartbus routes and bus stops to be considered	Hendersons Creek Trail						Y	VicRoads	L
HendersonsCreek_09	Provide a signalised/ pedestrian priority crossing or Underpass at Childs Road to connect to the Darebin Creek Trail	Under construction	Audit		Hendersons Creek Trail						Y	Melbourne Water, VicRoads, Major Road Projects	XL
HurstbridgeRailTrail_01	Construct a new section of trail along the Hurstbridge rail line from the Darebin Creek Trail north to Macleod Station	Functional design is completed for some sections	Northern Trails Strategy 2016, Banyule Bicycle Strategy	Discussions underway between Banyule City Council, VicTrack and Metro Trains. To be installed as part of the 2021/22 Capital Works Program	Hurstbridge Rail Trail	Y						VicTrack	XL
HurstbridgeRailTrail_02	Construct a new section of trail along the Hurstbridge rail line from Macleod Station to Elder Street	Feasibility study underway	Northern Trails Strategy 2016, Banyule Bicycle Strategy	Feasibility study covers section of trail between Greensborough and Montmorency. DOT is currently funded to deliver early works for Greensborough-Eltham section, including Plenty River to Diamond Creek Trail	Hurstbridge Rail Trail	Y						VicTrack	L

HurstbridgeRailTrail_03	Construct a new section of trail along the Hurstbridge rail line from Elder Street to the Plenty River Trail	Feasibility study underway	Desktop analysis, Banyule Bicycle Strategy	Feasibility study covers section of trail between Greensborough and Montmorency. DOT is currently funded to deliver early works for Greensborough-Eltham section, including Plenty River to Diamond Creek Trail	Hurstbridge Rail Trail	Y						VicTrack	XL
HurstbridgeRailTrail_04	Construct a new section of trail along the Hurstbridge rail line from the Plenty River Trail to the Diamond Creek Trail		Desktop analysis, Banyule Bicycle Strategy	Likelihood that this will be partially delivered by LXRP	Hurstbridge Rail Trail	Y				Y		VicTrack	XL
JacksonsCreek_01	Construct new section of trail from Harker Street to Hammersmith Court	Concept design is completed	Hume	Jacksons Creek Regional Parkland Plan	Jacksons Creek Trail			Y				Greater Western Water	L
JacksonsCreek_02	Plan and investigate the staged construction of trails on both sides of the Jacksons Creek with project partners and other landholders in line with the priorities of the Jacksons Creek biik wurrdha Regional Parklands Plan	Parkland Plan is underway - trail will be incrementally constructed as land comes over to the Parklands	Hume	Jacksons Creek Regional Parkland Plan, Alignment feasibility required to assess land acquisition, proposed development, topography, cultural heritage and ecological studies. May be partially covered by the PSP.	Jacksons Creek Trail			Y				Greater Western Water, Parks Vic, Melbourne Water, Wurundjeri Land Council, DELWP	XL
JacksonsCreek_03	Investigate opportunities to construct a new section of trail from Bulla-Diggers Rest Road to Organ Pipes National Park in partnership with Parks Victoria and Brimbank City Council		Hume	Alignment feasibility required to assess land acquisition, proposed development, topography, cultural heritage and ecological studies.	Jacksons Creek Trail			Y				ParksVic	XL

JacksonsCreek_04	Construct a new section of trail from Duncans Lane to Glencoe Reserve along the south side of the creek		Hume	CHMP required	Jacksons Creek Trail			Y				Melbourne Water	L
KinglakeWay_01	Establish a new trail from Hurstbridge to Arthurs Creek		Northern Trails Strategy 2016, Nillumbik Trails Strategy		Kinglake Way Trail					Y		ParksVic	XL
MaroondahAqueduct_01	Construct new section of trail connecting the Plenty River Trail near Lear Court, east along the aqueduct across Diamond Creek Road to the Diamond Creek Trail at Allendale Road.	Concept design, partial detailed design	Northern Trails Strategy 2016, community Consultation	This is a high priority trail for Nillumbik City Council	Maroondah Aqueduct Trail					Y		Melbourne Water, ParksVic	XL
MaroondahAqueduct_02	Extend the Maroondah Aqueduct Trail through to Yarra Glen. Two options have been identified for this extension: Construct a new section of trail from the existing Aqueduct Trail at Calwell Road through to Ashmore Road and on to Yarra Glen; or Construct a new section of trail from the existing Aqueduct Trail at Calwell Road via the Melbourne Water Caretakers trail to Ashmore Road and on to Yarra Glen.	Concept design, partial detailed design	Northern Trails Strategy 2016, community Consultation	This is a high priority trail for Nillumbik City Council	Maroondah Aqueduct Trail					Y		Melbourne Water, ParksVic, VicRoads	XL

MaroondahAqueduct_03	Construct new section of trail from existing Aqueduct Trail at Main Road. New trail to head south east to cross over Bells Hill Road, continuing east then north to meet to Eltham-Yarra Glen Road. Head east along Eltham-Yarra Glen Road, north alongside New Road, then east alongside Donaldson Road. The trail then continues north alongside Eltham-Yarra Glen Road before turning south alongside Henley Road where it will connect with the existing Aqueduct Trail.	Concept design, partial detailed design	Northern Trails Strategy 2016, Nillumbik Trails Strategy, Nillumbik Open Space Strategy, Community Consultation	This is a high priority trail for Nillumbik City Council	Maroondah Aqueduct Trail					Y		Melbourne Water, ParksVic, VicRoads	XL
MaroondahAqueduct_04	Extend the trail west from Godber Road to connect to the Diamond Creek Trail		Nillumbik Open Space Strategy, Audit, community Consultation	This is a high priority trail for Nillumbik City Council	Maroondah Aqueduct Trail					Y		Melbourne Water	M
MaroondahAqueduct_05	Provide wayfinding signage along the length of the trail		Audit	Only a small section of trail is anticipated to run through Banyule (St Helena) This is a high priority trail for Nillumbik City Council	Maroondah Aqueduct Trail	Y				Y		Melbourne Water, ParksVic, VicRoads	M
MaroondahAqueduct_06	Realign section of trail either side of Afton Street to reduce grade		Audit	This is a high priority trail for Nillumbik City Council	Maroondah Aqueduct Trail					Y		Melbourne Water	L

MerriCreekTrail_01	Extend the Merri Creek Trail from the south end of Merri Concourse to Premier Drive	Funded	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Hume Open Space Strategy, Whittlesea Open Space Strategy	Upper Merri Creek Parklands Plan If trail alignment goes through the nature conservation reserve planning assessments and approvals processes will be required to assess potential impacts on natural and cultural heritage values	Merri Creek Trail			Y			Y	Melbourne Water, ParksVic, DELWP, MCMC	L
MerriCreekTrail_02	Partner with Parks Victoria and DELWP to extend the Merri Creek Trail from Merri Concourse (north) to Cooper Street	Project scoped and under investigation	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Hume Open Space Strategy, Whittlesea Open Space Strategy	Upper Merri Creek Parklands Plan If trail alignment goes through the nature conservation reserve planning assessments and approvals processes will be required to assess potential impacts on natural and cultural heritage values. Delivery will be lead by Parks Victoria but could be longer term than originally anticipated	Merri Creek Trail			Y				Melbourne Water, ParksVic, DELWP, MCMC	XL

MerriCreekTrail_03	Advocate for and investigate the staged extension of the Merri Creek Trail from Cooper Street Somerton/Epping north to and along Oherns Road both east and west as part of the Upper Merri Creek Regional Parkland Plan	No design undertaken to date	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Hume Open Space Strategy, Whittlesea Open Space Strategy	Upper Merri Creek Parklands Plan If trail alignment goes through the nature conservation reserve planning assessments and approvals processes will be required to assess potential impacts on natural and cultural heritage values. Connections into the road reserve of O'Herns Road is required on both sides of the creek	Merri Creek Trail			Y			Y	Melbourne Water, ParksVic, DELWP, MCMC, DoT	XL
MerriCreekTrail_04	Advocate for and investigate the staged extension of the Merri Creek Trail from Oherns Road to Craigieburn Road as part of the Upper Merri Creek Regional Parkland Plan	No design undertaken to date	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Hume Open Space Strategy, Whittlesea Open Space Strategy	Upper Merri Creek Parklands Plan If trail alignment goes through the nature conservation reserve planning assessments and approvals processes will be required to assess potential impacts on natural and cultural heritage values	Merri Creek Trail			Y			Y	Melbourne Water, ParksVic, DELWP, MCMC	XL
MerriCreekTrail_05	Advocate for and investigate the extension of the Merri Creek Trail from Craigieburn Road to Summerhill Road as part of the Upper Merri Creek Regional Parkland Plan	No design undertaken to date	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Hume Open Space Strategy, Whittlesea Open Space Strategy	Upper Merri Creek Parklands Plan, Potential future development	Merri Creek Trail			Y			Y	Melbourne Water, ParksVic, DELWP, MCMC	XL

MerriCreekTrail_06	Extend the Merri Creek Trail from Summerhill Road to Donnybrook Road	No design undertaken to date	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Hume Open Space Strategy, Whittlesea Open Space Strategy	Upper Merri Creek Parklands Plan, Potential future development. Parts of this section may be delivered via the Craigieburn North Employment PSP in 5-10 years time	Merri Creek Trail			Y			Y	Melbourne Water, ParksVic, DELWP, MCMC	XL
MerriCreekTrail_07	Extend the Merri Creek Trail from Donnybrook Road to the Northern End of Moxham Drive	Partially complete	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Hume Open Space Strategy, Whittlesea Open Space Strategy, PSP	Upper Merri Creek Parklands Plan, Potential future development	Merri Creek Trail			Y			Y	Melbourne Water, ParksVic, DELWP, MCMC, developers	XL
MerriCreekTrail_08	Complete missing section of trail from the Metropolitan Ring Road to existing section of trail south of Horne Street		Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Hume Open Space Strategy, Audit, Community Consultation	Land ownership and topography and space limitations	Merri Creek Trail			Y				Melbourne Water	L
MerriCreekTrail_09	Provide and upgrade line-marking to ensure continuous white lines indicating trail flow/ direction in high traffic areas		Audit		Merri Creek Trail		Y	Y	Y		Y	Melbourne Water, ParksVic, VicRoads	S
MerriCreekTrail_10	Realign section of trail south of Heidelberg Road to reduce steep grade		Audit		Merri Creek Trail							City of Yarra, Melbourne Water, ParksVic	M
MerriCreekTrail_11	Provide a bridge crossing over the creek near the St Georges Road Bridge	Proposal by Council underway	Audit, Morelabd	City of Moreland has a proposal to deliver this bridge near St Georges Rd	Merri Creek Trail							City of Yarra, Melbourne Water	XL

MerriCreekTrail_12	Relocate and widen trail from Merri Creek Primary School to Sumner Park outside of the flood zone		Audit, community Consultation		Merri Creek Trail				Y			City of Yarra, Melbourne Water	L
MerriCreekTrail_13	Realign and widen trail north and south of Moreland Road		Darebin Cycling Strategy, Merri creek Trail Review, Audit, community consultation	Due to constrained environment, feasibility and alignment options to be explored	Merri Creek Trail		Y					Melbourne Water	M
MerriCreekTrail_14	Modify existing bridge alongside Moreland Road vehicular bridge to better serve pedestrians and cyclists		Audit, community Consultation		Merri Creek Trail				Y			VicRoads	XL
MerriCreekTrail_15	Replace the Harding Street Bridge to cater for shared use	Design is underway	Merri creek Trail Review, Audit, Community consultation		Merri Creek Trail		Y		Y			Melbourne Water	XL
MerriCreekTrail_16	Widen and reduce the steepness of the boardwalk section of trail from Edna Grove to Bell Street and create a new connection at Bell Street	Design is underway	Merri creek Trail Review, Audit, Community consultation		Merri Creek Trail				Y			Melbourne Water	M
MerriCreekTrail_17	Widen and realign path outside of flood zone between Basil Nursing Home and Parker Reserve		Merri creek Trail Review, Audit, Community consultation		Merri Creek Trail				Y			Melbourne Water	M
MerriCreekTrail_18	Construct a new section of trail from Vervale Avenue to the bridge crossing to the north to provide an alternative route with a gentler grade	Currently out for consultation as part of the Fawkner Merri Parklands	Audit		Merri Creek Trail				Y			Melbourne Water	M
MerriCreekTrail_19	Provide wayfinding signage for Fawkner section of the Merri Creek (as per Moreland's Merri Creek Action Plan)	Currently out for consultation as part of the Fawkner Merri Parklands	Audit		Merri Creek Trail		Y		Y			Melbourne Water	S

MerriCreekTrail_20	Provide wayfinding signage along the length of the trail		Audit	Branding and signage for wayfinding and interpretation funded through Upper Merri Creek Parklands Planning	Merri Creek Trail		Y	Y	Y		Y	Melbourne Water, ParksVic, VicRoads	M
MetroRingRdTrail_01	Provide wayfinding signage along the length of the trail		Hume Bicycle Network Plan, Audit		Metropolitan Ring Road Trail	Y		Y	Y	Y	Y	Melbourne Water, VicRoads, Major Road Projects	S
MetroRingRdTrail_02	Investigate the feasibility of realigning the section of trail east of the Moonee Ponds Creek towards Jacana to reduce the incline		Audit	Feasibility study to be undertaken, West Trails Strategy	Metropolitan Ring Road Trail			Y	Y			Melbourne Water, VicRoads	M
MetroRingRdTrail_03	Advocate for an upgrade to the existing overpass at Jacana Station with wayfinding signage to improve connectivity and continuity		Audit	Consider plans by Australian Rail Track Corporation to rebuild the Melbourne – Sydney – Brisbane Freight line to support trains with “double stacked” shipping containers	Metropolitan Ring Road Trail				Y			VicRoads, VicTrack	XL
MetroRingRdTrail_04	Upgrade section of trail between High Street and Dalton Road		Audit		Metropolitan Ring Road Trail						Y	VicRoads	L
MooneePondsCreek_01	Create a trail head at northern end of the trail at Marker Road ensuring alignment is outside federal airport boundary to avoid land access issues		Audit	land ownership	Moonee Ponds Creek Trail			Y				Melbourne Water, Parks Vic, Crown land, Melbourne Airport	L
MooneePondsCreek_02	Upgrade surface and width of trail from Marker Road to and around Willowbrook Reserve to regional trail standard		Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Audit	Cultural Heritage and conservation considerations/constraints with regards to path surfacing and alignment.	Moonee Ponds Creek Trail			Y				Melbourne Water	XL

MooneePondsCreek_03	Upgrade surface and width of trail from Willowbrook Reserve to Westmeadows Reserve to regional trail standard		Hume Bicycle Network Plan, Hume Walking and Cycling Strategy, Audit	Cultural Heritage and conservation considerations/constraints with regards to path surfacing and alignment.	Moonee Ponds Creek Trail			Y				Melbourne Water	L
MooneePondsCreek_04	Construct a new section of trail from Marker Road to Living Legends/ Woodlands Historic Park		Hume Walking and Cycling Strategy	Private land ownership	Moonee Ponds Creek Trail			Y				Melbourne Water, ParksVic, Private landowners	XL
MooneePondsCreek_05	Upgrade existing trail from Living Legends/ Woodlands Historic connecting to Somerton Road Woodlands entrance		Hume Walking and Cycling Strategy	Trails to Woodlands Park are proposed as regional trail standard - trails within the park fall outside the scope of this study. Alignment to be confirmed	Moonee Ponds Creek Trail			Y				Melbourne Water, ParksVic, Private landowners	L
MooneePondsCreek_06	Provide wayfinding signage along the length of the trail include at crossing points, connections to other trails and where appropriate to direct users to optimal trail route where alternatives occur		Audit	Further audit required. Mix of M80 signage and HCC wayfinding installed in 2017	Moonee Ponds Creek Trail			Y	Y			Melbourne Water, ParksVic, The City of Moonee Valley, VicRoads	M
MooneePondsCreek_07	Upgrade surface of trail from the rail line south to the Essendon Baseball Club		Audit		Moonee Ponds Creek Trail				Y			Melbourne Water, The City of Moonee Valley	L
MooneePondsCreek_08	Explore a shared use trail connection between Primrose Street and Vanberg Road	In Moonee Valley. Will need to be delivered by them.	Moreland Open Space Strategy, Audit	Community consultation	Moonee Ponds Creek Trail				Y			Melbourne Water, The City of Moonee Valley	L
MooneePondsCreek_09	Upgrade trail surface from Boeing Reserve, Strathmore, to Brunswick Road to improve safety and cross grade		Community consultation		Moonee Ponds Creek Trail				Y			Melbourne Water, The City of Moonee Valley, VicRoads	XL

MooneePondsCreek_10	Resurface trail connection from Gladstone Park down the hill to main trail		Hume		Moonee Ponds Creek Trail			Y				Melbourne Water	L
MooneePondsCreek_11	Construct a new section of trail from Union Street to the Hope Street pedestrian bridge. Consider a new bridge using former off ramp to Denzil Don Reserve to Victoria St as an alternative if required		Moreland feedback		Moonee Ponds Creek Trail				Y			Melbourne Water	L
NorthernPipeTrail_01	Extend the Northern Pipe/ St Georges Rd/ Cheddar Road Trail north to the Metropolitan Ring Road	Concept Design	Audit, community Consultation	DOT has intent to upgrade roundabouts along Dalton Rd, which will assist path in this section.	Northern Pipe/ St Georges Rd/ Cheddar Road Trail						Y	VicRoads	L
NorthernPipeTrail_02	Improve access at the St Georges Rd/Merri Parade/ Charles St intersection to connect the Merri Creek Trail to the Northern Pipe Trail and create a direct access point to and from the trail with pedestrian and cyclist priority		Darebin Cycling Strategy, Audit	Due to complexity of action item, feasibility and alignment options to be explored	Northern Pipe/ St Georges Rd/ Cheddar Road Trail		Y					VicRoads	M
NorthernPipeTrail_03	Widen and resurface the section of trail between Clarke Street and Arthurton Road to align with newly constructed sections of trail		Darebin Cycling Strategy, Audit		Northern Pipe/ St Georges Rd/ Cheddar Road Trail		Y					VicRoads	L
NorthernPipeTrail_04	Advocate for trail alignment alongside the train line from Garden Street to Cheddar Road to replace section of trail on the footpath		Audit		Northern Pipe/ St Georges Rd/ Cheddar Road Trail		Y					VicRoads, VicTrack, Melbourne Water	XL

NorthernPipeTrail_05	Widen trail surface in the Cheddar Road central median from High Street to Hickford Street		Audit		Northern Pipe/ St Georges Rd/ Cheddar Road Trail		Y					VicRoads	L
NorthernPipeTrail_06	Investigate a new section of trail from High Street (near the Melbourne Water Reservoirs) along the vacant pipe reserve to the Merri Creek Trail at Murray Road. Existing road crossings to be considered.		Darebin	This section of vacant pipe reserve has 19 road crossings, which would likely make it unfeasible to construct or unattractive to users.	Northern Pipe/ St Georges Rd/ Cheddar Road Trail		Y					Melbourne Water	XL
PlentyRiver_01	Extend trail east to Mclaughlans Lane		Audit		Plenty River Trail					Y		Melbourne Water, ParksVic	M
PlentyRiver_02	Upgrade and widen section of trail from Punkerri Circuit to Booyan Crescent		Audit	Indicative trail alignment only. Refer to Parks Victoria's Plenty Gorge River Trail design	Plenty River Trail					Y		Melbourne Water, ParksVic	L
PlentyRiver_03	Realign section of trail to reduce grade and provide an underpass at Booyan Crescent		Audit		Plenty River Trail					Y		Melbourne Water, ParksVic	XL
PlentyRiver_04	Widen section of trail under the Greensborough Bypass	Initial review of trail undertaken	Banyule Walking Strategy, Audit	CHMP and planning permits are required	Plenty River Trail	Y				Y		Melbourne Water, ParksVic, VicRoads	M
PlentyRiver_05	Upgrade and widen section of trail at Main Street		Banyule Public Open Space Plan, Banyule Public Open Space Plan, Audit		Plenty River Trail	Y						Melbourne Water	M
PlentyRiver_06	Improve wayfinding signage at Poulter Reserve to direct users to the wider trail network west of the reserve		Audit		Plenty River Trail	Y						Melbourne Water	S
PlentyRiver_07	Construct a new section of trail at Bicton Street		Audit	Difficult to deliver as there is no spare road reserve. Consider on road trail	Plenty River Trail	Y						Melbourne Water	M

PlentyRiver_08	Upgrade and widen section of trail with wayfinding signage at Montmorency Park		Banyule Public Open Space Plan, Banyule Public Open Space Plan, Audit, Community Consultation		Plenty River Trail	Y						Melbourne Water	M
PlentyRiver_09	Upgrade surface and realign trail to reduce grade south of Old Lower Plenty Road and through Banyule Flats		Draft Banyule Bicycle Strategy, Banyule Public Open Space Plan, Banyule Public Open Space Plan, Audit		Plenty River Trail	Y						Melbourne Water	L
PlentyRiver_10	Improve wayfinding signage along the length of the trail		Audit		Plenty River Trail	Y				Y	Y	Melbourne Water, ParksVic, VicRoads	M
PlentyRiver_11	Upgrade pedestrian bridges on the Plenty River Trail where required and improve sight lines where appropriate		Banyule Public Open Space Plan	This is very high priority to Banyule City Council	Plenty River Trail	Y				Y	Y	Melbourne Water, ParksVic, VicRoads	XL
PlentyRiver_12	Investigate the feasibility of realigning the Plenty River Trail to the eastern bank of the Plenty River between George Court and Para Road in order to avoid the steep grade on the west bank		Banyule Public Open Space Plan	Consider realigning trail to the opposite side of the river south of the Hurstbridge Rail like if feasible. Note that this would require land acquisition.	Plenty River Trail	Y						Melbourne Water	M
PlentyRiver_13	Construct a new section of trail along the creek through The Plenty Gorge Parklands to Bridge Inn Road	Funded	Nillumbik Open Space Strategy, Whittlesea Open Space Strategy, Community consultation	Indicative trail alignment only. Refer to Parks Victoria's Plenty Gorge River Trail design. Opportunity to align with Melbourne Water's exploration of recreation opportunities at Yan Yean.	Plenty River Trail					Y	Y	Melbourne Water, ParksVic	XL

PlentyRiver_14	Extend the trail from Bridge Inn Road north to Hazel Glen Drive	Funded	Nillumbik Open Space Strategy, Whittlesea Open Space Strategy, Community consultation	Indicative trail alignment only. Refer to Parks Victoria's Plenty Gorge River Trail design. Opportunity to align with Melbourne Water's exploration of recreation opportunities at Yan Yean.	Plenty River Trail					Y	Y	Melbourne Water	L
SomertonRoad_01	Advocate for the construction of a new trail along Somerton Road from Jacksons Creek to the Merri Creek Trail		Hume	Somerton Road duplication. Bulla reserve might prefer a new Consider alternative alignment at Bulla via Green St and the Moonee Ponds Creek Trail instead of the potential Bulla Bypass	Somerton Road Trail			Y				Major Road Projects Victoria, ParksVic	XL
UpfieldRail_01	Construct new section of trail from Box Forest Road north to Metropolitan Ring Road	Under construction	Northern Trails Strategy 2016, Audit, community Consultation	DOT is funded to deliver this	Upfield Rail Trail				Y			VicRoads, VicTrack, Department of Transport	L
UpfieldRail_02	Advocate to Department of Transport to construct a new section of trail from the Metropolitan Ring Road to Somerton Road		Hume Walking and Cycling Strategy, Community consultation	Not currently supported as a priority for DoT. Some sections existing, planned or designed: Maygar Grey Box Woodland Reserve section, including a section connecting to Northcorp Blvd is being designed as part of a subdivision application	Upfield Rail Trail			Y				VicRoads, VicTrack, Developer	XL
UpfieldRail_03	Create a signalised pedestrian crossing over the road and train line at Boundary Road		Audit		Upfield Rail Trail				Y			VicRoads, VicTrack	L

UpfieldRail_04	Construct an off-road shared path along Bain Avenue	Concept design is completed	Audit, community Consultation	Level Crossing Removal Project Merlynston Car Park for Commuters	Upfield Rail Trail				Y				M
UpfieldRail_05	Widen section of trail between Plaisted Street and Shorts Road	Concept design is completed	Audit	Level Crossing Removal Project Merlynston Car Park for Commuters	Upfield Rail Trail				Y			VicTrack	M
UpfieldRail_06	Construct an off-road shared path along Ararat Avenue		Audit, community Consultation		Upfield Rail Trail				Y				M
UpfieldRail_07	Provide a signalised/ pedestrian priority crossing over Bakers Road		Audit		Upfield Rail Trail				Y			VicRoads	L
UpfieldRail_08	Construct an off-road shared path along Renown Street		Audit, community Consultation		Upfield Rail Trail				Y				M
UpfieldRail_09	Construct an off-road shared path along Batman Avenue	Currently being designed as a shared zone	Audit, community Consultation	Consultation to occur to gage public support for shared zone	Upfield Rail Trail				Y				M
UpfieldRail_10	Upgrade and widen trail from Victoria Street to Jewell Station	Designed/ partially constructed	Audit, community Consultation		Upfield Rail Trail				Y			VicTrack	L
UpfieldRail_11	Provide a signalised/ pedestrian priority crossing over Albert Street		Audit		Upfield Rail Trail				Y			VicRoads	L
UpfieldRail_12	Consider long term feasibility of separated cycle path between Park Street and Tinning Street		DoT feedback		Upfield Rail Trail				Y				XL
UpfieldRail_13	Create a signalised pedestrian crossing over the road and train line at Box Forest Road		Moreland feedback		Upfield Rail Trail				Y			VicRoads, VicTrack	L
UpfieldRail_14	Create a signalised pedestrian crossing over the road and train line at O'Hea Street		Moreland feedback		Upfield Rail Trail				Y			VicRoads, VicTrack	L

UpfieldRail_15	Create a signalised pedestrian crossing over the road and train line at Albion Street		Moreland feedback		Upfield Rail Trail				Y			VicRoads, VicTrack	L
UpfieldRail_16	Create a signalised pedestrian crossing over the road and train line at Victoria Street		Moreland feedback		Upfield Rail Trail				Y			VicRoads, VicTrack	L
WhittleseaShared_01	Construct a new trail from Mernda Station to Whittlesea. Ensure there is provision for horse riders on parts of the trail	No design undertaken to date	Northern Trails Strategy 2016, Whittlesea Rail Trail Master Plan Review, Audit, Community consultation	Due to public sentiment, possibility to consider trail alignment along Plenty Road for parts of the trail as an alternative.	Whittlesea Rail Trail						Y		XL
WhittleseaShared_02	Provide a pedestrian priority crossing at the Lakes Boulevard		Audit		Whittlesea Rail Trail						Y	VicRoads	L
WhittleseaShared_03	Provide wayfinding signage along the length of the trail		Whittlesea Rail Trail Master Plan Review, Audit		Whittlesea Rail Trail						Y	VicRoads, VicTrack	S
YanYeanPipeTrack_01	Y	No design undertaken to date	Northern Trails Strategy 2016, Whittlesea City Council		Yan Yean Pipe Track						Y		L
YanYeanPipeTrack_02	Construct a new section of trail from the Darebin Creek Trail to Childs Road	Funded	Northern Trails Strategy 2016, Whittlesea City Council	Funded under the Northern Metropolitan Trails Program	Yan Yean Pipe Track						Y		XL
YanYeanPipeTrack_03	Construct a new section of trail from Childs Road to McDonalds Road and the Plenty Valley Activity Centre	No design undertaken to date	Northern Trails Strategy 2016, Whittlesea City Council		Yan Yean Pipe Track						Y		XL
YanYeanPipeTrack_04	Construct a new section of trail from Bridge Inn Road to the Yan Yean Reservoir and creating a connection to the Plenty River Trail	No design undertaken to date	Whittlesea City Council	Melbourne Water looking to align with councils on exploration of recreation opportunities at Yan Yean.	Yan Yean Pipe Track						Y	Melbourne Water	XL

YarraTrail_01	Construct a bridge crossing over the Yarra River to Banksia Park at the eastern end of Yarra Street, Heidelberg	Design is underway	Northern Trails Strategy 2016, Draft Banyule Bicycle Strategy	NE Link. Manningham City Council have received funding to deliver this. Ongoing management of asset to be considered	Yarra Trail	Y						Melbourne Water, ParksVic, Manningham City Council	XL
YarraTrail_02	Undertake improvements to the Main Yarra Trail at Banyule Flats	Detailed design is completed	Northern Trails Strategy 2016, Draft Banyule Bicycle Strategy, Banyule Walking Strategy, Banyule Public Open Space Plan, Audit	NE Link, concerns and issues around CHMP and community support to be further resolved	Yarra Trail	Y						Melbourne Water	L
YarraTrail_03	Realign the section of trail at the Banksia Street underpass to create a gentler grade and wider trail surface		Draft Banyule Bicycle Strategy, Banyule Walking Strategy, Audit	NE Link, concept design (funded by NELP) to be developed for a sealed bicycle path from Banksia Street to Burke Road North via The Boulevard to connect to the Eastern Freeway including a grade separated crossing near the intersection of Banksia and Jika/Dora Streets	Yarra Trail	Y						Melbourne Water, ParksVic	M
YarraTrail_04	Upgrade surface and width of existing trail from Banksia Street to Yarra Street		Audit	This will need approval from Parks Victoria and the Department of Transport	Yarra Trail	Y						Melbourne Water, ParksVic	M
YarraTrail_05	Upgrade surface and width of existing trail from junction with Plenty River Trail to Fitzsimmons Lane Reserve		Audit, community Consultation		Yarra Trail	Y						Melbourne Water, ParksVic	XL

YarraTrail_06	Provide wayfinding signage along the length of the trail		Draft Banyule Bicycle Strategy, Audit		Yarra Trail	Y				Y		City of Manningham, City of Boroondara, Melbourne Water, ParksVic	M
YarraTrail_07	Construct shared use trail from the Mullum Mullum Creek Trail to the Warrandyte State Park		Audit	Trail alignment to be developed in consultation with relevant stakeholders with an emphasis on environmental and cultural heritage protection	Yarra Trail					Y		City of Manningham, Melbourne Water, ParksVic	XL
YarraTrail_08	Construct a bridge crossing over the Yarra River to Birrarrung Park		Northern Trails Strategy 2016	Coordinate with Manningham Council and the Eastern Regional Trails Strategy.	Yarra Trail	Y						City of Manningham, Melbourne Water, ParksVic	XL
YarraTrail_09	Construct a bridge crossing over the Yarra River to Bulleen Park		Northern Trails Strategy 2016	This section of trail is part of the Strategic Cycling Corridor (SCC) Coordinate with Manningham Council and the Eastern Regional Trails Strategy. Ongoing management of asset to be considered	Yarra Trail	Y						City of Manningham, Melbourne Water, ParksVic	XL

YurokeCreek_01	Partner with Melbourne Water and MRPV to plan and construct new section of trail along the Melbourne Water Pipe Track from Greenvale Reservoir Park south to the existing section of the Yuroke Creek Trail, including a safe crossing option for Somerton Road	No design undertaken to date	Northern Trails Strategy 2016, Hume Bicycle Network Plan, Audit	Not feasible until safe crossing point at Somerton Road is constructed as part of Somerton Road duplication Melbourne Water not previously supportive of additional connections adjacent to the reservoir. Greenvale Reservoir Park has been closed to public for approximately two years due to lack of funding to improve basic facilities (ParksVic).	Yuroke Creek Trail			Y				Melbourne Water, ParksVic	L
YurokeCreek_02	Provide wayfinding signage along the length of the trail		Audit		Yuroke Creek Trail			Y				Melbourne Water, ParksVic, VicRoads	S
YurokeCreek_03	Investigate the provision of a pedestrian priority crossing at Dimboola Road, remove bicycle chicanes from either side and improve the path intersection treatment		Audit		Yuroke Creek Trail			Y				VicRoads	S
YurokeCreek_04	Provide a pedestrian priority crossing at Somerton Road to connect trail to Greenvale Reservoir	No design undertaken to date	Audit	To be undertaken as part of future Somerton Road duplication	Yuroke Creek Trail			Y				VicRoads, Major Road Projects Victoria	S
YurokeCreek_05	Undertake a staged upgrade of the trail to a regional standard width with line marking	No design undertaken to date	Hume		Yuroke Creek Trail			Y				VicRoads, Major Road Projects Victoria	XL

C COST BENEFIT ANALYSIS

Northern Regional Trails CBA – Final Report

Prepared for Fitzgerald Frisby Landscape Architecture on behalf of the Northern Regional Trails Strategy Collaboration (Banyule, Darebin, Hume, Moreland, Nillumbik & Whittlesea)

28 February 2022

SGS Economics & Planning

Certified B Corporation

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Executive summary

The Northern Regional Trails upgrade project is assessed to establish the merit of the project. SGS modelled the social, economic and environmental costs and benefits. It shows the project is expected to generate a net present value of around $114 million and a benefit cost ratio of 1.6. This indicates that benefits directly attributable to the project will be around 1.6 times that of the investment.

SGS Economics and Planning was engaged by Fitzgerald Frisby Landscape Architecture (FFLA) on behalf of the Northern Regional Trails Strategy Collaboration to undertake cost-benefit analysis (CBA) to assess the merit of expanding the Northern Regional Trail Network. The purpose of this report is to inform due diligence and investment decision making processes by the Northern Regional Trails Strategy Collaboration local government areas (LGAs).

The CBA considers the project case; 10-year staged expansion of the Northern Regional Trails Network, against a counterfactual base case, whereby no additional capital works are undertaken. Only the incremental change between the project case and base case scenario was modelled as a benefit/cost. That is, the change that is directly generated by project case. The assessment has modelled a 30-year benefit period, and standard economic outputs were calculated using a seven per cent discount rate.

The study area – comprising the LGAs of Banyule, Darebin, Hume, Moreland, Nillumbik and Whittlesea – stretches from the inner-city suburbs of Brunswick, Northcote, Alphington and Ivanhoe to the outer areas of Craigieburn and Sunbury, and to the Kinglake National Park and rural and interface communities of Whittlesea and St Andrews.

Incremental costs of the project case

Project capital expenditure (CAPEX) data was provided to SGS by FFLA. CAPEX has been evenly allocated across the 10-year construction rollout period within the CBA model (from FY2023 to FY2032). Project operating expenditure (OPEX) has been assumed at two per cent of CAPEX per year. OPEX ramps up in line with CAPEX over a 10-year period. Undiscounted and present value (PV) CAPEX and OPEX values are shown in Table 1.

TABLE 1: CAPITAL AND OPERATING COSTS

Cost type	Undiscounted value ($m)	Present value (7% discount rate) ($m)
CAPEX	$189.8	$142.6
OPEX	$96.8	$33.6
Total	**$286.6**	**$176.2**

No other costs were identified and quantified.

Incremental monetised benefits of the project case

Three benefits have been monetised within the CBA. These are:

- **Benefit 1.** Health benefits of increased walking and cycling
- **Benefit 2.** Transport network benefits due to a shift in mode share from private vehicle to active transport modes
- **Benefit 3.** Leisure and recreation benefits associated with increased use of the trail network.

Realisation of these benefits is underpinned by an increase in trail demand associated with the project; in particular, an increase in the distance and time that people walk and/or cycle. Demand forecasts undertaken as part of the analysis indicate that use of the Northern Regional Trail Network will increase by around 33 per cent once the entire planned network is delivered. Around two thirds of this uplift would be associated with existing users using the trail more frequently, and one third of the uplift is associated with new users.

Undiscounted and PV incremental project benefits are shown in Table 2. Health benefits associated with increased walking and cycling has been modelled to generate the largest share of benefits.

TABLE 2: PROJECT BENEFITS

Benefit component	Undiscounted value ($m)	PV (7% discount rate) ($m)	% of total benefits (PV) ($m)
PV of health benefit	$541.7	$180.2	62%
PV of transport network benefits	$34.9	$11.6	4%
PV of leisure and recreation benefits	$296.5	$98.6	34%
Total	**$873.2**	**$290.5**	**100%**

Economic appraisal of the project case

Under a seven per cent discount rate, the project results in a net present value (NPV) of around $114 million and a benefit cost ratio (BCR) of 1.6. This means that for each $1 invested, a welfare gain of $1.6 is realised, refer to Table 3.

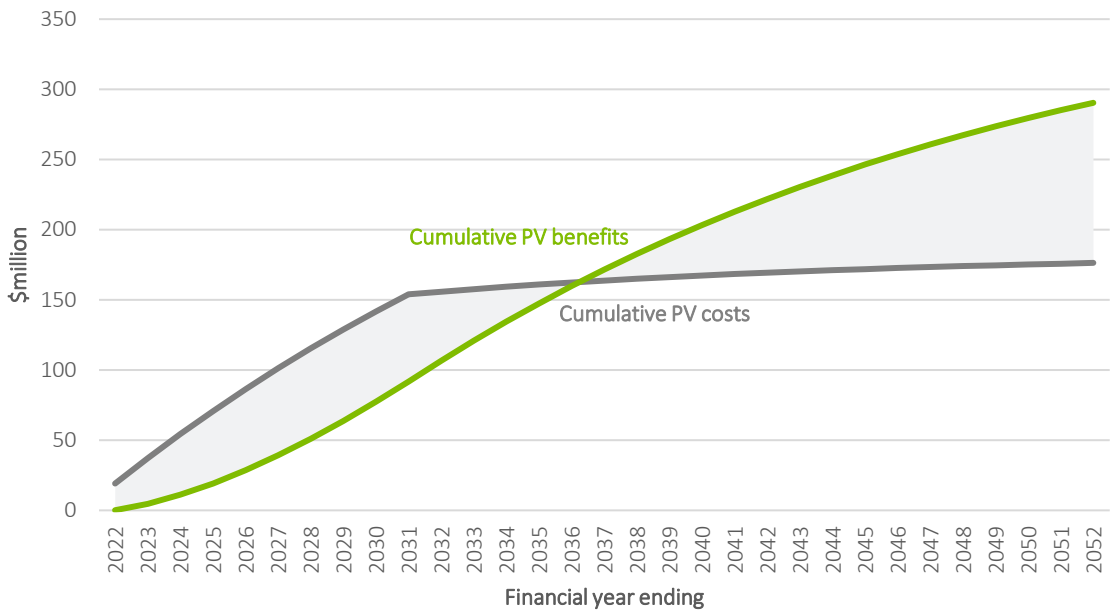
Costs exceed benefits until FY2037, at which point costs increase marginally as per OPEX assumptions, while benefits increase rapidly as users enjoy and gain value from an improved and expanded network. This is illustrated in Figure 1.

TABLE 3: CBA STANDARD OUTPUTS

Cost component	Project case
Total PV cost ($m)	$176.2
Total PV benefit ($m)	$290.5
NPV (benefits minus costs) ($m)	$114.2
BCR	1.6

Source: SGS, 2021

FIGURE 1: CUMULATIVE NPV



Source: SGS, 2021

Conclusion

The analysis indicates that the Northern Regional Trails Network project is economically warranted with consideration of monetised benefits. The case is strengthened when non-monetised benefits are considered. In particular, the upgrade and expansion of the Northern Regional Trails network has potential to lead to increased economic value added derived from additional tourism expenditure, stimulate local businesses, and enhance community cohesion and education opportunities.

1. Introduction

SGS Economics and Planning was engaged by Fitzgerald Frisby Landscape Architecture on behalf of the Northern Regional Trails Strategy Collaboration to undertake cost-benefit analysis to assess the economic merit of expanding the Northern Regional Trail Network. This report contributed to the formulation of the Northern Regional Trails Strategy Review and Update report, which provides an actionable set of recommendations to inform staged investment in expansion of the Northern Regional Trails Network.

1.1 Project background and context

The northern region of Melbourne, encompassing the local government areas of Banyule, Darebin, Hume, Moreland, Nillumbik and Whittlesea, is approximately 1,590 square kilometres and includes a mix of urban, suburban and rural areas. It stretches from the inner-city suburbs of Brunswick, Northcote, Alphington and Ivanhoe to the outer areas of Craigieburn and Sunbury, and to the Kinglake National Park and rural and interface communities of Whittlesea and St Andrews. It is a diverse region, featuring Melbourne's Tullamarine Airport, arts and cultural precincts, the National Employment and Innovation Cluster in La Trobe and new growth communities within the northern peri-urban area.

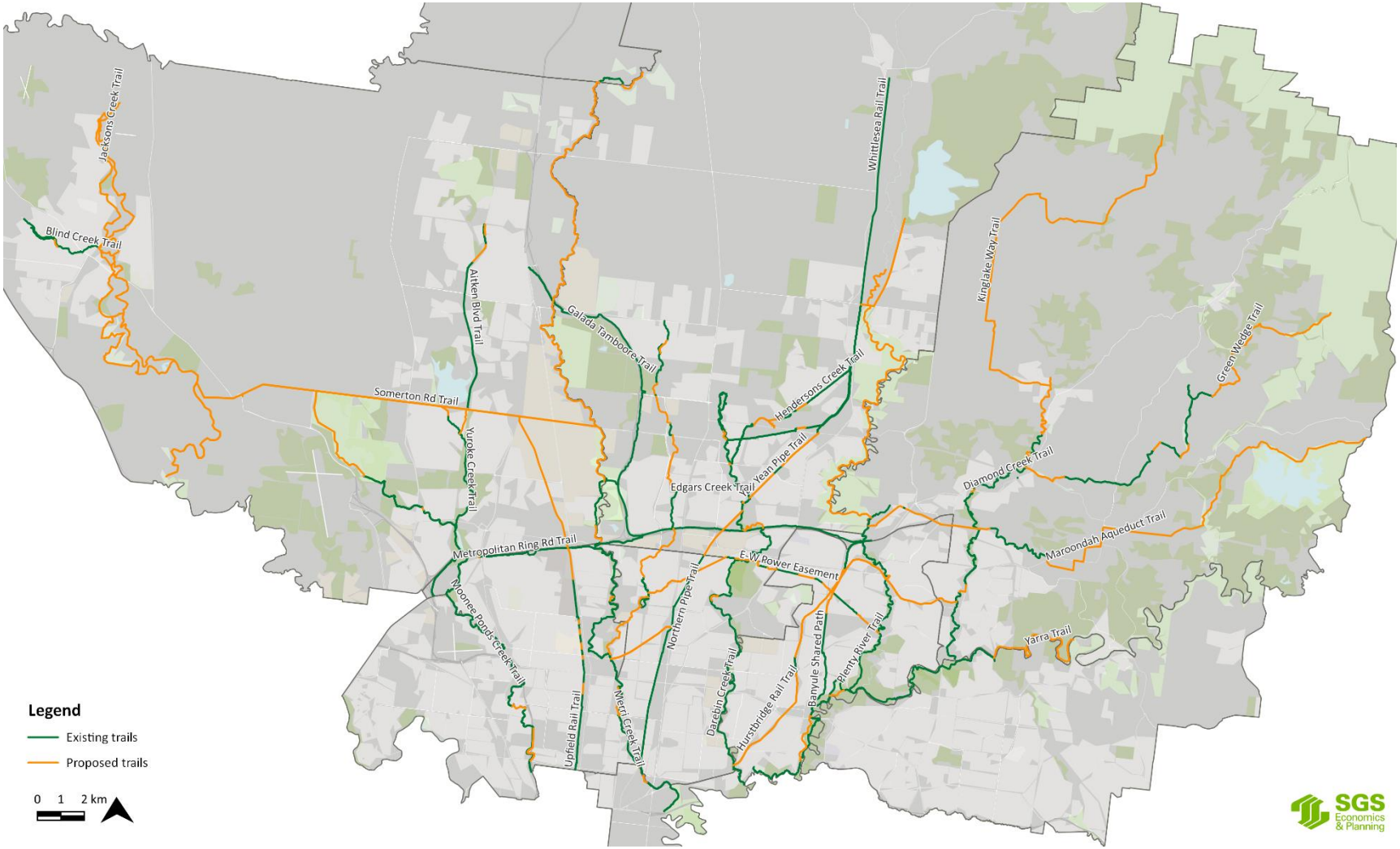
The Northern Regional Trails Strategy was developed in 2016 by the Northern Regional Trails Strategy Collaboration in recognition of the need to plan and deliver appropriate infrastructure to support an increasingly dense urban footprint and population, while providing accessible recreation and active travel opportunities and economic benefits to the communities in Melbourne's north. The 2016 strategy has successfully assisted in securing around $11 million of State Government funding in the last three years to deliver key priorities identified in the strategy. It has also assisted in focusing individual council budget allocations into the planning and delivery of priority trail projects.

In 2020, the Northern Regional Trails Strategy Collaboration appointed Fitzgerald Frisby Landscape Architecture (FFLA) to lead development of the Northern Regional Trails Strategy Review and Update report which considers changes to the network over the previous four to five years, as well as changes to trail demand and council priorities. Realigning the Northern Regional Trails Strategy has the potential to serve a wider population of commuters and recreational users, providing for enhanced health, transport network functionality, and recreation benefits.

Figure 2 shows the existing trail network in green and the proposed extensions in orange. Within inner and middle suburban areas, the strategy focusses on closing gaps to deliver a more integrated network, while in outer suburban areas the strategy focusses on network extensions. The existing network contains around 241 kilometres of trail, and the proposed trail extensions will increase this by 68 per cent, to around 406 kilometres.[1]

[1] GIS analysis undertaken by SGS, based on the network shown in Figure 1

FIGURE 2: MAP OF EXISTING AND PROPOSED TRAIL NETWORK



Source: SGS, 2021

Cycling and walking are important to the broader economic and environmental context in Australia. In 2020, the industry output of the Australian cycling economy was estimated at $6.3 billion, generating $3.4 billion as direct value add, and indirectly a further $5.1 billion in value add. Here in Victoria, the economic contribution is $1.93 billion in direct output and nearly 11,000 jobs, increasing to $5.23 billion and over 20,000 jobs when including indirect contributions.[2]

Another recent study places the economic cost to the community of maintaining our current approach to road transport at $865 billion resulting from air pollution, greenhouse gas emissions, noise, and water pollution.[3] Whether one considers the direct and indirect personal health benefits, the transport benefits, the environmental benefits, the economic benefits, the impact of a greater share of the population using active transport for work or for fun is significant. An extended and better integrated and connected trails network is key to this, as "growing cycling engagement and participation relies heavily on the built environment".[4]

1.2 Report structure

The remainder of this report is structured as follows:

- Section 2 sets out the cost-benefit analysis framework
- Section 3 sets out model parameters that were provided by FFLA, sourced from Australian standard economic appraisal guidelines, and developed by SGS through desktop analysis and research
- Section 4 presents the results and findings of the economic appraisal
- Section 5 summarises the analysis and concludes the report

[2] We Ride Australia (2020), The Australian Cycling Economy, Ernst & Young

[3] Australian Conservation Foundation (2021), Local community benefit of zero emission vehicles in Australia, Deloitte Access Economics Pty Ltd

[4] We Ride Australia (2020), The Australian Cycling Economy, Ernst & Young, p. 3

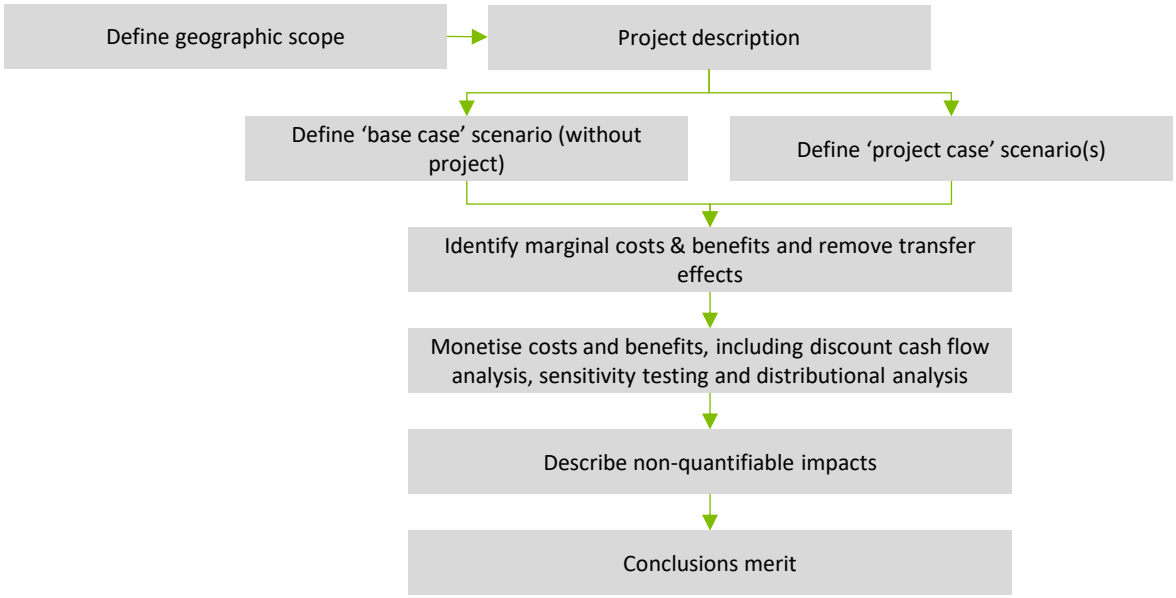
2. Cost-benefit analysis framework

2.1 Overview

Cost-benefit analysis (CBA) provides a framework for assessing projects from the perspective of society as a whole. It considers all impacts on community welfare, whether priced or unpriced in a market. CBA is an effective tool to assess the merit of proposed projects, investment decisions, or management approaches.

The general methodology of CBA is shown in Figure 3.

FIGURE 3: DIAGRAM OF CBA METHODOLOGY (GENERAL)



Source: SGS, 2021

Notes for Figure 3:

- Marginal costs and benefits – CBA is forward looking in scope, and it only models the incremental change between the 'base case' and 'project case' scenario. That is, the change that is directly generated through a particular investment or intervention
- Transfer effects – if a project merely transfers a benefit from one area or group of people to another, there is no net gain or loss. These effects have no bearing on the overall efficiency of resource allocation
- Monetising costs and benefits – not all effects will be traded, and there may not be direct evidence about the value of costs and benefits
- Discount cash flow analysis – a benefit promised in the future generally has a lower value than the same benefit delivered today. Future effects must be expressed in 'present value terms' (PV) to enable direct comparison.

2.2 Quantitative costs and benefits

SGS's analysis takes a high-level approach in that it considers the network as a whole and does not capture discrete current use and future demand on individual trails, or indeed on trails and cycling paths that connect in adjacent local government areas, such as City of Yarra or City of Melbourne. As such, the outputs show the likely social, economic and environmental return on investment within an approximate order of magnitude. Sensitivity testing is conducted to illustrate other potential outcomes.

Within this report, CBA findings are presented through two key economic indicators:

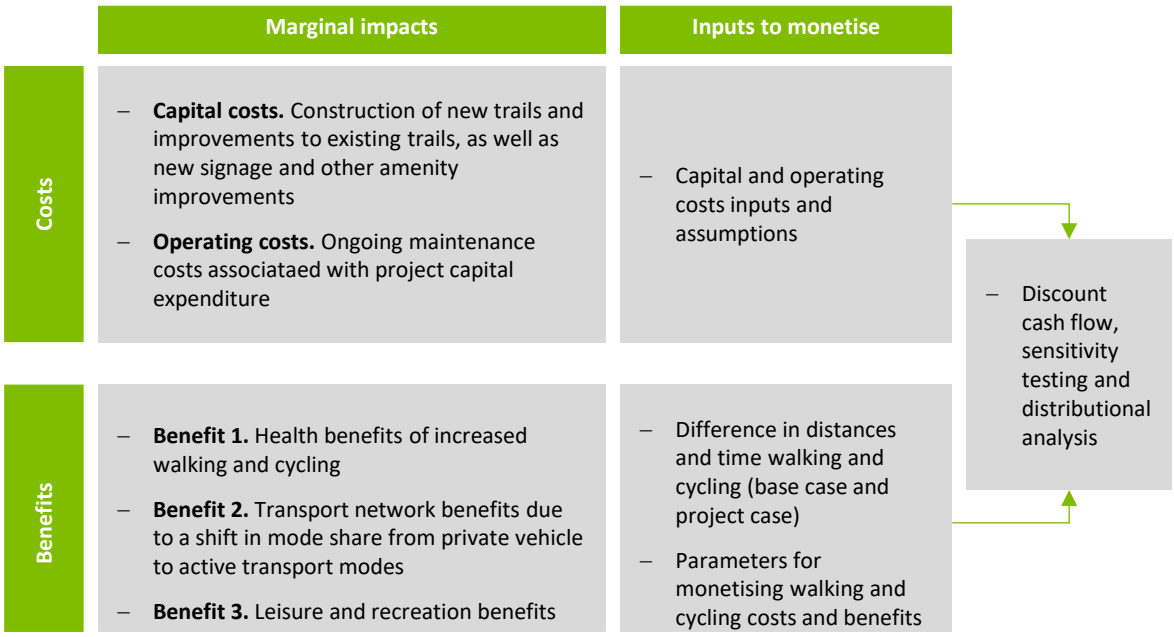
- Net Present Value (NPV) - measures the difference between benefits and costs, while accounting for their varying timing. A project with an NPV greater than zero indicates the PV of benefits exceeds the PV of costs and is considered economically viable.
- Benefit-cost ratio (BCR) - measures the benefits received per dollar of project costs and is used to indicate value for money. BCR is calculated by dividing the PV of all benefits with the PV of all costs (including recurring maintenance). A project with a BCR greater than one means the PV of benefits exceeds the PV of costs and is considered economically viable.

As shown in Figure 3, a project is considered against a counterfactual, or 'base case' scenario. The base case and project case scenarios are defined below:

- Base Case. The base case reflects a business-as-usual scenario; whereby no additional capital works are undertaken to extend or improve the Northern Regional Trails Network.
- Project Case. As shown in Figure 2, the project case involves extending and filling gaps in the existing network. This will enable the Northern Regional Trails Network to cater to more people and/or create a more pleasant and safer trail environment.

Costs and benefits modelled for the Northern Regional Trails Upgrade project are listed in Figure 4.

FIGURE 4: DIAGRAM OF CBA METHODOLOGY (NORTHERN REGIONAL TRAILS UPGRADE PROJECT)



Source: SGS, 2021

Sensitivity testing

This assessment depends on a range of assumptions, both in terms of financial parameters, such as discount rates and cost estimates, as well as demand assumptions and benefit parameters.

The following sensitivity analysis has been undertaken to test potential impacts on economic viability should certain assumptions not eventuate:

- A discount rate of seven per cent will be used as the basis of the assessment, with sensitivity testing conducted with discount rates of 4 and 10 per cent
- Capital expenditure (CAPEX) estimate +/-20 per cent
- Benefits +/-20 per cent
- Optimistic case/pessimistic case scenarios i.e. +20 per cent benefits and -20 per cent costs; -20 per cent benefits and +20 per cent costs

2.3 Qualitative benefits

Other benefits discussed qualitatively within this report include:

- Economic value added derived from additional tourism expenditure
- Stimulation and growth of local businesses
- Increased community use and enjoyment, including from improved social capital and cohesion, and enhanced education outcomes
- Environmental benefit derived from any mode shift from private vehicles to active transport.

3. Modelling parameters

3.1 General appraisal parameters

All costs and benefits are subject to general economic and timing appraisal parameters. These general parameters are shown in Table 4.

TABLE 4: GENERAL APPRAISAL PARAMETERS

Parameter	Value	Comment
Discount rate	7%	Default rate for evaluation (sensitivity tests 4% and 10%)
Appraisal period	30 years of benefits	Standard recommended appraisal period (AustRoads and Infrastructure Australia)
Base year	FY2022	Year zero of project evaluation and cost estimate pricing.
Construction starts	FY2023	First year of construction
Project construction period	10 years	Assumes project works are rolled out over a 10-year period
Benefits ramp up period	10 years	Assumes benefits are delivered incrementally in line with construction. 100% of benefits are delivered only in the first year following the 10-year construction period

Source: SGS, 2021

3.2 Capital and operating cost parameters

Project CAPEX data was provided to SGS by FFLA. A summary of this data is provided in Appendix A. SGS did not undertake a review of CAPEX data.

The undiscounted capital cost of all works sums to $189,795,000. CAPEX has been evenly allocated across the 10-year construction rollout period within the CBA model (from FY2023 to FY2032).

Project operating expenditure (OPEX) has not been modelled in detail. OPEX costs have been assumed at two per cent of CAPEX per year. OPEX ramps up in line with CAPEX over a 10-year period.

3.3 Demand forecast parameters

As outlined in Figure 4, three benefits were monetised via the Northern Regional Trails Upgrade CBA. The benefits are:

1. Health benefits of increased walking and cycling
2. Transport network benefits due to a shift in mode share from private vehicle to active transport modes
3. Leisure and recreation benefits

Realisation of these benefits is underpinned by an increase in trail demand associated with the project; in particular, an increase in the distance and time that people walk and/or cycle. As a starting point for modelling these benefits, SGS has, therefore, undertaken demand forecasting to understand:

- The distance, in kilometres, that people walk and cycle each year in the base case and project case
- The time, in hours, that people walk and cycle each year in the base case and project case

Increased trail usage stems from two user groups:

- Increased use from **existing users** of the Northern Regional Trails network, due to improved connections and amenity
- **New users** of the Northern Regional Trails network, whose use is facilitated by improved connections associated with an expended network and/or improved amenity.

The steps undertaken to forecast demand for these user groups are summarised in Table 5, and detailed further below.

TABLE 5: DEMAND FORECASTING METHOD

Step	Overview
1. Model population within proximity of existing and future trail network	This was undertaken via geographic information system (GIS) analysis.
2. Review survey data	Survey data was analysed to understand: – Cycling and pedestrian mode share/split – User issues with the current network, and how use may change if issues are addressed
3. Review/model existing users of the Northern Regional Trails network	Survey and trail count data was reviewed. This included data provided by Councils and publicly available data (e.g. Bicycle Network Super Tuesday and Super Sunday data, as well as VicRoads and State Government data).
4. Research and develop assumptions relating to cycling and walking time and average walking and cycling speeds	The hours and kilometres that an average user cycles and walks was calculated
5. Model walking and cycling distance and time	Using the findings from steps 1-4, model the distance (in kilometres) and time (in hours) that people walk and cycle by year in the base case and project case

Source: SGS, 2021

Step 1. Model population within proximity of existing and future trail network

GIS analysis was undertaken to determine the population that is currently and forecast to be within 400 metres of the existing and future Northern Regional Trails network. 400 metres was chosen as the buffer distance as this is within a moderate paced five-minute walk and is deemed to be conveniently accessible. This buffer distance aligns with Victorian transport planning practice[5], as well the Victorian Planning Authority regarding open space provision. While this approach and use of this buffer distance does have limitations – in particular, SGS recognises that many people within the 400 metre buffer may never use the trails, and many beyond the distance may – it is suitable in light of limited count data and lack of other suitable data. This is a conservative approach to estimating existing and future users.

Small Area Land Use Project (SALUP) data, prepared by SGS for the Victorian Government, was used to model population growth over the project timeframe.

Outputs of the analysis is shown in Table 6.

TABLE 6: POPULATION WITHIN 400 METRES OF CURRENT AND FUTURE TRAIL NETWORK

Area	2021	2031	2041	2051
Population within 400 metres of existing trail network	373,728	431,722	489,386	555,823
Population within 400 metres of existing and future trail network	455,604	531,493	609,849	695,760
Proportionate population increase within 400 metres of future trail network	21.9%	23.1%	24.6%	25.2%

Source: SGS, 2021

Trail use in the base case and project cases has been modelled to increase in line with population within the 400 metre catchment of the relevant trails network. Although this is an imperfect forecast (not all people within the catchment may use the trails, and others outside the catchment may use the trails), it is considered an appropriate representation of how trail use may change over the appraisal period, all other things being equal.

The population within 400 metres of the existing and future trail network is around 22 to 25 per cent greater than the population that is currently and forecast to be within 400 metres of the existing network only. This suggests that network extensions, without works to fill in small network gaps and amenity improvements, would be likely to generate around a 22 to 25 per cent increase in trail use, assuming the new trails provide similar amenity and connections as existing trails.

Step 2. Review survey data

In addition to changes to trail demand associated with population growth, trail demand will increase if the project case capital works lead to improved connections and/or enhanced network amenity.

[5] For example, provision of car parking differs within 400 metres of the Principal Public Transport Network. Similarly, the Victorian Transport Guidelines for Land Use and Development recommend that dwellings should be within 400 metres of a bus route, as this distance is deemed convenient.

A survey was conducted to understand the community's current use of the trail network as well as their views on how it can be improved to encourage further use. A total of 923 responses were received with the vast majority (91 per cent) being residents of Northern Metropolitan Melbourne. Relevant survey data and SGS analysis of data is provided in Appendix B.

Survey findings that have informed the demand forecasts are detailed in Table 7.

TABLE 7: DEMAND PARAMETERS INFORMED BY SURVEY DATA

Parameter	Value	Comment
Trail use uplift for existing users due to network improvements	12.15% increase	This value was sourced from survey data, however, SGS has applied a significant reduction. Survey findings indicate that existing users would, on average, use the trail network around 53% more if a range of improvements were made. The improvements were comprehensive and included things such as delivery of cafes and community facilities along the trails, safety campaigns, more toilets along the trails, separation of pedestrian paths from cycling paths, and others. These elements, and many others, have not been included/costed within the Northern Regional Trails Strategy (at least not across the full network). Therefore, adoption of the full 53% uplift indicated by survey participants would overestimate impacts. SGS has instead applied an uplift of 12.15%, which is 23% of the 53%. This assumes that three of the core interventions are delivered across the network: more trails, improved connectivity between trails and improved connectivity to destinations. The adoption of this proportion reflects that not all treatments that may lead to increased participation will be delivered but it is known that approximately 23% of indicated behaviour change is likely to occur as part of the Northern Regional Trails project.
Proportion of trail users that walk or undertake a comparative exercise (including running)	47.9%	These values were sourced from survey data. Understanding the mode split on the trail network is necessary to appropriately monetise the benefits associated with each mode.
Proportion of trail users that cycle	52.1%	

Source: SGS, 2021

Step 3. Review/model existing users of the Northern Regional Trails network

Data for the existing trail network was difficult to source, and available data was often incomplete. Available data for the Northern Regional Trails network may not be representative of the entire network due to the following reasons:

- Trail count data is often only undertaken at a single point, and it may omit users who access other parts of the trail
- Bicycle Network Super Tuesday and Super Sunday cyclist counts only capture around two and three hours of the day, respectively
- Count data is often only collected on a single day, and does not account for weekly and seasonal trail use patterns

Due to the above limitations, SGS has taken an alternative approach and assumed that 2.5 per cent of residents within 400 metres of the existing trail network (373,728 people, as per Table 6) use the trails each day. The assumed 2.5 per cent equates to 9,343 users across the entire Northern Regional Trails network each day, or around 3.4 million users each year (see details in Table 8).

TABLE 8: ESTIMATE OF ANNUAL TRAIL USE (EXISTING)

Parameter	Value	Comment
Annual use of the existing trail network per year (2021)	3,410,268 trips per year	This is a daily value of 9,343, multiplied by 365 days (days in year)

Source: SGS, 2021

The use of 2.5 per cent can be considered a conservative estimate, based on the following factors:

- The Capital City Trail, one of Melbourne's most used trails, accommodates more than one million users each year.[6] The Northern Regional Trails Network consists of more than 20 trails, albeit none with uses as heavily as the Capital City Trail, or that connects the same destinations through a highly populated corridor.
- Around six per cent of Melbournians walk or cycle to work each day, and 19 per cent walk or cycle for weekday recreational use/trips.[7] Adoption of these values would over state benefits significantly, as most of these trips are likely to use the road network and footpaths.
- On Census date in 2016, around 8,700 residents within the study area LGAs cycled to work, and 6,800 walked to work. This sums to around 15,500 active transport commuters on a given day within the study area, many of which would use the trails network.
- According to the 2019 AustRoads cycling Participation Survey, around 12 per cent of Melbournians cycled at least once over a one-week period.
- There are around 20 trails as part of the current Northern Regional Trails network[8], and count data across four of those trails sums to around 3,800 users per day:
    - Diamond Creek Trail – daily count: 663 pedestrians and cyclists.[9] This was an average count across two count points, which collected data throughout a 12-month period)
    - Upfield Rail Trail (along the rail line from Parkville to Gowrie) – daily count: 2,096 pedestrians and cyclists.[10] This was an average count across three count points, taken on 5 February 2019 (a Tuesday). This may overstate average daily benefit due to relative warm weather in February
    - Merri Creek Trail and Moonee Ponds daily cyclist count: 626 and 411 cyclists, respectively (this does not capture pedestrians).[11]

[6] Streets Alive Yarra website, accessed February 2022

[7] Department of Transport, Victorian Cycling Strategy 2018-2028

[8] The survey conducted as part of the project lists 19 trails

[9] Count data provided by Nillumbuk Shire, 2021

[10] Count data sourced from City of Moreland website: Upfield Corridor Study, accessed 2021

[11] Count data sourced from The Age: Car parks out, footpaths and cycling lanes in as city prepares for post-COVID commuters, accessed 2021

It is expected that daily use on the remaining trails would elevate network use above the assumed daily volume of 9,343 users per day.

Step 4. Develop assumptions relating to cycling and walking time and average walking and cycling speeds

There was limited data for the time that people spend walking and cycling, and the distance they travel. SGS has, therefore, developed the assumptions outlined in Table 9.

TABLE 9: TRAVEL TIME AND DISTANCE PARAMETERS

Parameter	Value	Comment
Average time walked per person recreationally (base case and project case)	25 minutes	This is based on ABS Physical Activity report.
Average time walked per person commuting (base case and project case)	65 minutes	This is based on ABS commuting to work average walking distance of 5.4 kilometres (two way) considering an average travel time of 5 kilometres per hour
Average time cycled per person recreationally (base case and project case)	27 minutes	This is based on data from the Victorian Integrated Survey of Travel and Activity (VISTA)
Average time cycled per person commuting (base case and project case)	32 minutes	This is based on ABS commuting to work average cycling distance of 11 kilometres, considering an average travel time of 20 kilometres per hour
Average distance walked per person recreationally (base case and project case)	2.1 kilometres	This is based on ABS Physical Activity report which indicates 25 minutes of recreationally walking at an average walking pace of 5 kilometres per hour.
Average distance walked per person commuting (base case and project case)	5.4 kilometres	This is based on ABS commuting to work average walking distance.
Average distance cycled per person recreationally (base case and project case)	9 kilometres	This is based on VISTA recreationally cycling time at an average pace of 20 kilometres per hour.
Average distance cycled per person commuting (base case and project case)	11 kilometres	This is based on ABS commuting to work average cycling distance.

Step 5. Model walking and cycling distance and time

Based on parameters outlined in step 1 through to step 4, the distance and time that people spend walking and cycling on the Northern Regional Trails network in the base case and project case was modelled. Refer to Table 10 for distance data and Table 11 for time data. It has been assumed that the increased use in the project case is a true increase, and not associated with any transfer effects.

TABLE 10: ESTIMATE OF TOTAL KILOMETRES WALKED AND CYCLED ANNUALLY

Mode	Scenario	2021	2031	2041	2051
Walking	Base case	4,138,214	4,780,369	5,418,871	6,154,514
	Project case (existing users existing users due to improvements)	4,641,007	5,361,184	6,077,264	6,902,288
	Project case (new trail use)	1,016,748	1,251,187	1,529,147	1,784,351
	Project case (total)	5,657,754	6,612,372	7,606,411	8,686,639
	Incremental difference (project case minus base case)	1,519,541	1,832,002	2,187,539	2,532,124
Cycling	Base case	16,414,571	18,961,736	21,494,406	24,412,397
	Project case (increased trail use from existing users due to improvements)	18,408,942	21,265,587	24,105,977	27,378,503
	Project case (new trail use)	4,033,015	4,962,940	6,065,488	7,077,776
	Project case (total)	22,441,957	26,228,526	30,171,465	34,456,279
	Incremental difference (project case minus base case)	6,027,385	7,266,791	8,677,058	10,043,882

Source: SGS, 2021

TABLE 11: ESTIMATE OF HOURS WALKED AND CYCLED ANNUALLY

Mode	Scenario	2021	2031	2041	2051
Walking	Base case	827,643	956,074	1,083,774	1,230,903
	Project case (increased trail use from existing users due to improvements)	928,201	1,072,237	1,215,453	1,380,458
	Project case (new trail use)	203,350	250,237	305,829	356,870
	Project case (total)	1,131,551	1,322,474	1,521,282	1,737,328
	Incremental difference (project case minus base case)	303,908	366,400	437,508	506,425
Cycling	Base case	820,729	948,087	1,074,720	1,220,620
	Project case (increased trail use from existing users due to improvements)	920,447	1,063,279	1,205,299	1,368,925
	Project case (new trail use)	201,651	248,147	303,274	353,889
	Project case (total)	1,122,098	1,311,426	1,508,573	1,722,814
	Incremental difference (project case minus base case)	301,369	363,340	433,853	502,194

Source: SGS, 2021

3.4 Benefit parameters

Economic valuation parameters for the benefits have been sourced from Australian Transport Assessment and Planning (ATAP) documentation and survey data.

Benefit 1. Health benefits of walking and cycling

The 2007-2008 National Health Survey identified that physical inactivity is related to chronic health conditions including ischaemic heart disease, stroke, Type 2 diabetes, kidney disease, osteoarthritis, osteoporosis, colorectal cancer and depression. Active travellers, including walkers and cyclists, tend to be healthier than people who are relatively inactive or sedentary and suffer less from medical conditions that reduce their life expectancy. Healthy individuals place less demand on the health system for diagnosis, surgery and recovery.

The types of health-related benefits attributable to active travel which have been quantified as part of the CBA are:[12]

- Morbidity and mortality benefits: people who are active get sick less often and have a longer life expectancy than people who are inactive
- Reduction in health system costs: active people are less likely to need medical and hospital care.

Improved mental health is recognised as a positive impact associated with active travel, however, this benefit is not quantified within the CBA.

As outlined earlier in the report, the project case is expected to lead to greater use of the Northern Regional Trail network, though increased use from existing users and attraction of new users. This will lead to increased kilometres walked and cycled, thus generating important health benefits for the community.

Health benefit parameters are outlined in Table 12.

[12] ATAP M4 Active Travel, 2016

TABLE 12: HEALTH BENEFIT PARAMETERS

Parameter	Value	Comment
Kilometres walked and cycled per year	As per demand forecasts. Refer to Table 10	
Health benefit of one kilometre walked	$3.26	These values are derived from ATAP M4 Active Travel document. Data is from FY2013, and has been indexed to the current financial year using consumer price index (CPI) data sourced from the Reserve Bank of Australia (RBA).
Health benefit of one kilometre cycled	$1.65	

Source: SGS, 2021; ATAP M4 Active Travel, 2016

Benefit 2. Transport network benefits

Active travel initiatives, such as the Northern Regional Trail Upgrade project, have the potential to lead to a mode shift from private vehicle to active travel modes. Closing gaps in the inner and middle-ring suburban areas of Melbourne would improve the speed and safety at which people may be able to travel between their place of residence and their place of work via active modes.

This benefit is only applicable to the proportion of users that use the trail network as a means to get from one place to another. That is, the benefit is not applicable to recreational users.

Transport network benefit parameters are detailed in Table 13.

TABLE 13: TRANSPORT NETWORK BENEFIT PARAMETERS

Parameter	Value	Comment
Kilometres walked and cycled per year	As per demand forecasts. Refer to Table 10	
Proportion of commuter trail users	14.39%	This value was sourced from survey data (see Appendix B). While the proportion is expected to change slightly in the project case, 14.39% has been adopted and is considered suitable for the analysis. While the figure is likely to be high for the users in the northern part of the region, it is considered low for the more urbanised parts of the region closer to the CBD.
Value of one kilometre travelled	$0.66	This is derived from ATAP M4 Active Travel document. It comprises decongestion, savings in car user costs, parking saving costs, air pollution reduction, noise reduction and greenhouse gas reduction. Data is from FY2010, and has been indexed to the current financial year using CPI data sourced from the RBA.

Source: SGS, 2021

Benefit 3. Leisure and recreation benefits

The utility derived from using the trails presents a benefit to users of the trail. In terms of the benefit provided to the regional community, this can be calculated through summing the utility derived from all local users of a trail.

As access to the trails are free of charge, the utility provided to resident users has been quantified using the Travel Cost Method (TCM). Under the TCM, the time taken to travel to and from the trail, as well as the time using the trail, are used to place a value on the benefit derived. SGS has modelled the leisure and recreation benefits using an adapted version of the TCM where only the time spent using the trail has been used to model the benefit. This is conservative, as it excludes additional travel time associated with accessing the trails. Additionally, the TCM has only been modelled for the recreation proportion of trail users, and it excludes those who commute. This is also a conservative approach, as commuters are also likely to place a recreation benefit on their commute, rather than viewing their trip purely a means of transport.

Leisure and recreation benefit parameters are detailed in Table 14.

TABLE 14: LEISURE AND RECREATION BENEFIT PARAMETERS

Parameter	Value	Comment
Hours walked and cycled per year	As per demand forecasts. Refer to Table 11.	
Proportion of recreation trail users	85.6%	This value was sourced from survey data
Value of leisure time (per hour)	$17.32	This is derived from ATAP PV2 Road Parameter Values document. Private travel time was valued at 40% of seasonally adjusted full time average weekly earnings. The parameter value within the ATAP document is $14.99 and is from FY2013. This has been indexed to a current financial year value using wage price index (WPI) data sourced from the Australian Bureau of Statistics (ABS)

Source: SGS, 2021

4. Cost-benefit analysis results

4.1 Capital and operating costs

There is no CAPEX in the base case as the existing network is retained in its current state. CAPEX in the project case sums to $95,911,000 and has been evenly allocated across a 10-year construction period. The PV of CAPEX in the project case is around $72 million.

OPEX has been assumed to be the same for the elements of the base case that are retained in the project case. Incremental OPEX in the project case has been assumed at two per cent of CAPEX per year. The PV of OPEX in the project case is around $17 million.

Refer to Table 15.

TABLE 15: PRESENT VALUE OF COSTS (7% DISCOUNT RATE)

Cost component	Base case	Project case
CAPEX ($m)	$0	$142.6
OPEX ($m)	$0	$33.6
Total ($m)	**$0**	**$176.3**

Source: SGS, 2021

4.2 Quantitative benefits

The quantified present value of benefits associated with the Northern Regional Trails project is outlined in Table 16.

TABLE 16: PRESENT VALUE OF BENEFITS (7% DISCOUNT RATE)

Benefit component	Project case	Proportion of total benefits
PV of health benefit ($m)	$180.2	62%
PV of transport network benefits ($m)	$11.6	4%
PV of leisure and recreation benefits ($m)	$98.6	32%
Total ($m)	**$290.5**	**100%**

Source: SGS, 2021

These benefits stem from a 33 per cent uplift in trail use, compared to the base case. Around two thirds of this uplift stems from increased use by existing users, while one third is due to new users.

The 33 per cent uplift in use has been modelled to be a direct result of amenity and network connectivity improvements, as well as extending the entire trail network by around 68 per cent. The growth in use by new users has been modelled in line with the population that is within 400 metres of the existing and future network, rather than the degree to which the network is extended. That is, much of the trail network extensions will service lower density areas than the existing network.

Health benefits generate the greatest share of benefits, at just over 60 per cent of total benefits.

4.3 Economic appraisal of results

Standard outputs

Under a seven per cent discount rate, the project results in a net present value (NPV) of around -$1.99 million and a benefit cost ratio (BCR) of 1.6. This means that for each $1 invested, $1.60 of benefits is generated, indicating that the Northern Regional Trails Upgrade project constitutes an economically warranted investment.

The NPV of $114 million is for a 30-year appraisal period and translates to an average annual net benefit of around $3.8 million. For the 2051 population within 400 metres of the existing and future trail network, this equates to net present welfare benefit of around $5.5 per person per year over the 30-year period.[13]

Refer to Table 17 for standard CBA outputs.

TABLE 17: CBA STANDARD OUTPUTS

Cost component	Project case
Total PV cost ($m)	$176.6
Total PV benefit ($m)	$290.5
NPV ($m)	$114.2
BCR ($m)	1.6

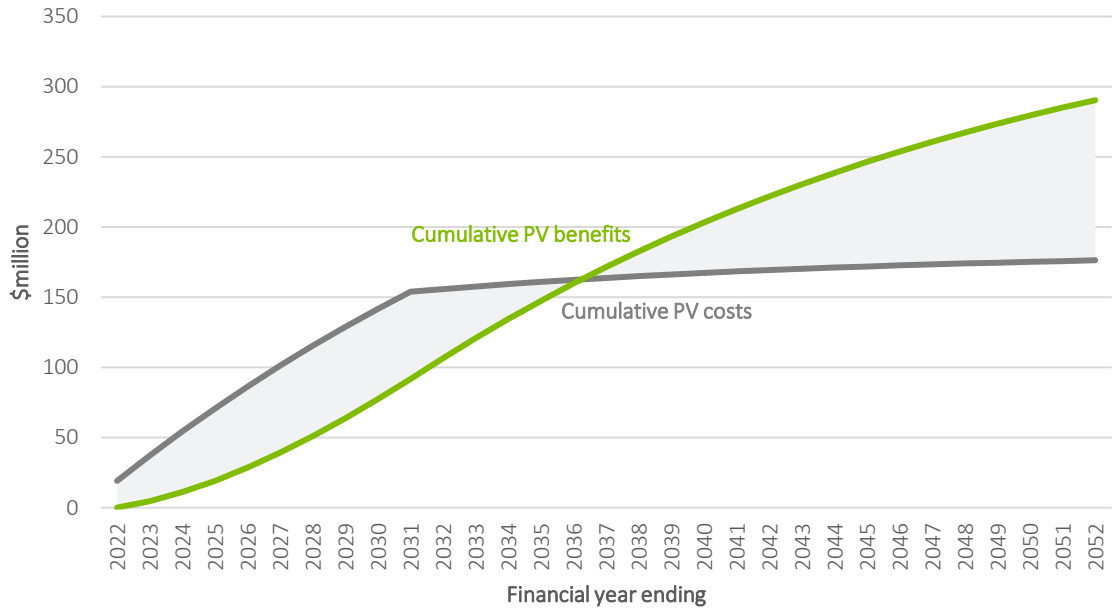
Source: SGS, 2021

As previously detailed within this report, the CAPEX has been modelled to be evenly distributed across a 10-year period. Benefits ramp up accordingly. The cumulative PV of costs and benefits is shown in Figure 5.

[13] This is not an exact value as the benefits are not evenly distributed across the appraisal period, and the 2051 population is not reflective of population throughout the entire appraisal period. The $6 per year has been modelled to illustrate order of magnitude annual benefits for members of the community who may use the network.

Costs exceed benefits until approximately FY2037, at which point costs increase marginally as per OPEX assumptions, while benefits increase rapidly as users enjoy and gain value from an improved and expanded network.

FIGURE 5: CUMULATIVE NPV



Source: SGS, 2021

Sensitivity testing

Standard outputs are based on CAPEX data provided by FFLA, demand forecasts, survey data, assumptions made by SGS about annual OPEX and current trail use, benefit parameters, and financial parameters. There is uncertainty with all parameters used and sensitivity testing has been undertaken to assess how the economic viability of the project may change should certain parameters and assumptions not hold true throughout the period.

The sensitivity tests undertaken are detailed below:

- Discount rates of 4 and 10 per cent (standard testing used a discount rate of seven per cent)
- Capital expenditure (CAPEX) estimate +/-20 per cent
- Benefits +/-20 per cent
- Optimistic/pessimistic case scenarios i.e. +20 per cent benefits and -20 per cent costs; -20 per cent benefits and +20 per cent costs

Sensitivity test outputs are shown in Table 18. All outputs generate positive BCRs, with the pessimistic case scenario resulting in a BCR of 1.1, and the optimistic case scenario resulting in a BCR of 2.5. It is important to note that the sensitivity tests undertaken do not illustrate the bounds of possible outcomes. In particular, project costs and benefits may vary by greater than 20 per cent of what was modelled as part of standard outputs.

TABLE 18: CBA SENSITIVITY TESTING OUTPUTS

Sensitivity test	NPV ($m)	BCR
Varying discount rate		
4%	235.1	2.1
10%	48.5	1.3
Varying benefits		
+20%	172.2	2.0
-20%	56.1	1.3
Varying costs		
+20%	78.9	1.4
-20%	149.4	2.1
Optimistic/pessimistic case scenarios		
Optimistic case (+20% benefits & -20% costs)	207.5	2.5
Pessimistic case (-20% benefits & +20% costs)	20.8	1.1

Source: SGS, 2021

4.4 Qualitative benefits

The Northern Regional Trails Upgrade project is likely to generate a range of wider socio-economic benefits that have not been included in the CBA, due in part to difficulty in monetising these benefits. While these benefits are discussed qualitatively only, their impact may have real economic value to community members and visitors to the northern region. Application of CBA techniques or development of assumptions to assess these benefits within the CBA would strengthen the economic merit of investing in the Northern Regional Trails Upgrade project.

Qualitative benefits include, but are not limited to:

- Economic value added derived from additional tourism expenditure
- Stimulation and growth of local businesses
- Increased community use and enjoyment, including from improved social capital and cohesion, improved heritage and historical outcomes, and enhanced education outcomes

These benefits are described further below.

Economic value derived from additional tourism expenditure

Some trail projects have potential to facilitate an increase in visitors and the economic yield that the surrounding area receives from tourism. Within Victoria, these trails are generally iconic regional trails, such as old rail trails or trails within Victoria's high environmental amenity areas.

Increased economic value added derived from additional tourism expenditure is generally only a monetisable benefit when the additional tourism expenditure is from interstate or international visitors, as Victorian expenditure would be viewed as a transfer effect; i.e. it would offset spending elsewhere in Victoria.

Upgrading the Northern Regional Trails network is unlikely to generate significant additional tourism to Victoria, however, there may be some minor benefits from interstate and international visitors who may spend more money in Victoria due to the trails, either due to spending greater money each day, or extending their stay beyond what they otherwise would have without the project.

Not upgrading the Northern Regional Trail Network would mean that Victoria, and in particular the northern LGAs of Melbourne, would miss out on an opportunity to attract more visitors and to capitalise on the growth of tourism to the State.

Stimulation and growth of local businesses

An increase in people walking and cycling can attract a larger pool of customers to businesses. Combine this with the fact that people who walk and cycle spend more overall than those who drive[14], and this can lead to increased business confidence and increased investment in the areas serviced by the trail network. Further opportunities for businesses can include bike hire sales and servicing, pop up cafes and other mobile food and beverage businesses.

Improved cycling and walking facilities can support locations that vie for tourism activity[15] which may benefit the more regional areas of the trail network, while the more built-up areas of the metropolitan area will benefit from the higher spend and increased foot traffic that accompanies improvements to active transport infrastructure and amenity.

Increased community use and enjoyment

Improved social capital and cohesion

An improved trail network can support anchor points for the northern LGAs of Melbourne, creating an enhanced sense of community pride. Having more social interactions along the pathway would also aid in social cohesion, with connections developed on the pathway being reinforced as time goes on.

[14] Transport for London (2018) walking & cycling - the economic benefits; Lee and March (2010), Recognising the economic role of bikes - sharing parking in Lygon Street, Carlton, *Australian Planner*, vol 47, no. 2, pp. 85-93; Angelopoulos S., Boymal J, de Silva A., (2019) Economic benefits of 20-minute neighbourhoods, RMIT Placemaking Economics Group, Melbourne

[15] Town of Gawler (2019), Visitor Economy + Cycle Tourism Situation Analysis, Tourism e-school.

Enhanced education outcomes

Walking and cycling paths present a unique opportunity for education. People of all ages can learn more about nature, culture or history. They can give people a sense of place and an understanding of the enormity of past events and an understanding of what is at stake if the environment is not properly cared for.

The increased awareness of immersion in nature leads to more respect for the environment, and a desire to protect it, across a wide range of cohorts.

5. Conclusion

The Northern Regional Trails Network serves a valuable function for the surrounding community and its continued development is important to capitalise on the benefits of walking and cycling, particularly in response to an increasingly dense urban footprint and population. An expanded trail network can provide accessible recreation, active travel opportunities, and economic benefits not only to the communities in Melbourne's north, but to a wider population of commuters and recreational users.

While the economic impact of cycling and walking is repeatedly and widely demonstrated both across Australia and around the world, the cost benefit analysis for this network program is shown to offer potentially significant gains to Melbourne's population. Through a combination of health benefits, transport network benefits, and leisure and recreation benefits, the benefit-cost score delivers a BCR of 1.6, offering 1.6 times the economic payout over time than the costs.

This is significant for a number of reasons. First, assumptions about future demand are conservative. It seems very likely that demand for walking and cycling will continue to increase.

Second, there are a host of additional economic, social, health, and environmental benefits to society and individuals resulting from an increase in walking and cycling that have not been monetised within the CBA, such as increased tourism, the stimulation and growth of local businesses, the increased social capital and cohesion of the local community and increased educational outcomes. Beyond these benefits, there are further significant financial savings to individuals and society from improved mental and physical health[16], improvements to workplace productivity[17], and a range of further environmental benefits.[18]

[16] Garrard J. (2009), Active Transport: Adults – An overview of recent evidence, VicHealth; Claris S & Scopelliti D (2016), Cities Alive – Towards a walking world, Arup

[17] Leyden 2003; Claris S & Scopelliti D (2016), Cities Alive – Towards a walking world, Arup

[18] Massink R, Zuidgeest M, Rijnsburger J, Sarmiento O, & van Maarseveen M (2011), The Climate Value of Cycling, *Natural Resources Forum*, vol. 35

Appendix A: Project capital costs

Project Description	Location: Trail Name	Cost estimate
Provide wayfinding signage along the length of the trail	Aitken Boulevard Shared Trail	$50,000
Construct new section of trail on the eastern side of Aitken Boulevard from the Aitken Creek to Craigieburn Road	Aitken Boulevard Shared Trail	$215,000
Construct new section of trail from Brookfield Boulevard to Highlands Shopping Centre	Aitken Boulevard Shared Trail	$315,000
Construct new section of trail from the Yuroke Creek Trail to Somerton Road following duplication of Somerton Road and a safe crossing point being constructed	Aitken Boulevard Shared Trail	$430,000
Construct new section of trail from Wattle Drive north to Watsonia Station	Banyule Shared Trail	$250,000
Construct new section of trail from Watsonia Station north to Grimshaw Street	Banyule Shared Trail	$335,000
Construct new section of the trail from Banksia Street south to the Yarra Trail just north of McArthur Road	Banyule Shared Trail	$660,000
Realign trail at playground on River Gum Walk to reduce incline	Banyule Shared Trail	$75,000
Provide wayfinding signage along the length of the trail	Banyule Shared Trail	$50,000
Provide a grade separated north-south walking and cycling link across Grimshaw Street at the Greensborough Bypass	Banyule Shared Trail	$1,700,000
Plan for a new section of trail from the rail line in Sunbury east to Jacksons Creek and The Nook/Bicentennial Park	Blind Creek Trail	$310,000
Provide wayfinding signage along the length of the trail	Blind Creek Trail	$50,000
Investigate the feasibility of realigning the underpass at Riddell Road to cater to all users (cyclists) and improve access and safety	Blind Creek Trail	$1,700,000
Investigate a pedestrian priority crossing with wayfinding signage at Phillip Drive	Blind Creek Trail	$450,000
Investigate a pedestrian priority crossing at Elizabeth Drive	Blind Creek Trail	$450,000
Investigate a pedestrian priority crossing with wayfinding signage at Racecourse Road	Blind Creek Trail	$450,000
Upgrade section of trail at lake adjacent to Salesian College Sunbury	Blind Creek Trail	$110,000
Construct new section of trail on the western side of the creek from the train underpass east of Epping Station to Greenbrook Drive	Darebin Creek Trail	$150,000
Upgrade section of trail between Gona Street and Southern Road	Darebin Creek Trail	$200,000
Investigate the feasibility of an underpass or bridge crossing Plenty Road intersection to avoid section of trail on Plenty Road footpath	Darebin Creek Trail	$1,700,000
Construct a new section of trail on the eastern side of the Darebin Creek from Dunne Street to Chenies Street including an underpass at Dunne Street and Chenies Street	Darebin Creek Trail	$1,900,000
Investigate the feasibility of an underpass or signalised pedestrian crossing at Settlement Road to improve trail continuity	Darebin Creek Trail	$1,700,000
Construct a new section of trail that follows the creek from the Metropolitan Ring Road through the Darebin Creek Linear Reserve to connect to the new section of trail	Darebin Creek Trail	$510,000
Elevate the section of the Darebin Creek Trail where it passes beneath the Western Ring Road to avoid flooding	Darebin Creek Trail	$250,000
Investigate the feasibility of an underpass and bridge crossing at McKimmies Road to avoid section of trail on McKimmies Road bridge	Darebin Creek Trail	$1,700,000

Project Description	Location: Trail Name	Cost estimate
Investigate the feasibility of an underpass and bridge crossing at Childs Road to avoid section of trail on Childs Road bridge	Darebin Creek Trail	$1,700,000
Investigate the feasibility of an underpass and bridge crossing at Findon Road to avoid section of trail on Findon Road	Darebin Creek Trail	$1,700,000
Provide a pedestrian priority crossing at McDonalds Road roundabout	Darebin Creek Trail	$50,000
Construct new section of trail from Wilson Road to Graysharps Road, Hurstbridge.	Diamond Creek Trail	$1,650,000
Construct new section of trail from Graysharps Road to Fergusons Paddock	Diamond Creek Trail	$450,000
Construct an underpass at Main Hurstbridge Road, Diamond Creek to avoid busy traffic crossing	Diamond Creek Trail	$1,700,000
Widen trail surface from Allendale Road north to Main Hurstbridge Road	Diamond Creek Trail	$850,000
Install a signalised/ pedestrian priority crossing at Allendale Road	Diamond Creek Trail	$450,000
Maintain/ upgrade sections of bitumen trail surface through Eltham North Reserve, Research Gully, Eltham North Playground, and Edendale Community Farm	Diamond Creek Trail	$550,000
Realign the section of trail at the Wattletree Road underpass to create a gentler grade and wider trail surface	Diamond Creek Trail	$270,000
Construct new section of trail with wayfinding signage around Main Road and Diamond Street, Eltham to fill the gap in the trail and direct users to the continuation of the trail	Diamond Creek Trail	$600,000
Upgrade surface of existing trail between Susan Street Oval and Ely St, with wayfinding or line marking to create a consistent and legible trail	Diamond Creek Trail	$290,000
Provide wayfinding signage along the length of the trail	Diamond Creek Trail	$75,000
Maintain/ upgrade sections of bitumen trail surface through Eltham Bushland Reserve alongside Main Road	Diamond Creek Trail	$260,000
Realign/ enhance the section of trail through the Eltham Lower Park.	Diamond Creek Trail	$245,000
Realign/ enhance the existing underpass beneath Gastons Rd	Diamond Creek Trail	$270,000
Realign the sharp bend in the trail between Laurel Hill Drive and Allendale Road	Diamond Creek Trail	$120,000
Provide wayfinding signage along the length of the trail	East West Power Easement Trail	$50,000
Construct a section of trail from the Northern Pipe/ St Georges Rd/ Cheddar Road Trail north west along the vacant pipe reserve	East West Power Easement Trail	$865,000
Construct a section of trail from the Northern Pipe/ St Georges Rd/ Cheddar Road Trail south east along the vacant pipe reserve to Edwardes Lake Park	East West Power Easement Trail	$750,000
Construct a section of trail along Holt Parade to connect to the Darebin Creek Trail (at Valley Road)	East West Power Easement Trail	$100,000
Investigate the feasibility of a new section of trail, including a new bridge crossing, from the Darebin Creek Trail, at Holt Parade, around Mount Cooper to connect to the existing section of trail at Snake Gully Drive	East West Power Easement Trail	$1,900,000
Construct a section of trail from Reedy Rise to Plenty Road including a new pedestrian priority crossing at Plenty Road	East West Power Easement Trail	$1,100,000
Investigate options for providing a new section of trail from Dilkara Avenue to Gleeson Drive	East West Power Easement Trail	$300,000
Construct a section of trail from the existing trail on Morwell Avenue to Watsonia Station	East West Power Easement Trail	$600,000

Project Description	Location: Trail Name	Cost estimate
Upgrade existing footbridge over the rail line at Watsonia Station including an underpass/ overpass at Greensborough Road to avoid footpath and multiple road crossings	East West Power Easement Trail	$1,700,000
Construct a new section of trail along Wendover Place and Yallambie Road, along the easement to the Plenty River Trail	East West Power Easement Trail	$3,000,000
Construct new section of trail from the Merri Creek Trail to Ronald Street on the west bank	Edgars Creek Trail	$250,000
Construct new section of trail from Ronald Street to Carrington Road. Consider keeping the trail away from the creek and along development frontages	Edgars Creek Trail	$520,000
Construct new section of trail from Strahalbyn Chase to Contempo Boulevard	Edgars Creek Trail	$160,000
Construct a new section of trail along the creek from Carrington Road to Edwardes Lake. Explore the feasibility of a trail between Kia Ora Road and Henty Street on the east bank.	Edgars Creek Trail	$830,000
Construct a separate cycling only trail through Edwardes Lake Park	Edgars Creek Trail	$270,000
Construct a dedicated shared trail from the public toilets in Edwardes Lake Park, around the car park and over Leamington Street	Edgars Creek Trail	$575,000
Investigate the feasibility of an underpass and bridge crossing at Broadhurst Avenue	Edgars Creek Trail	$1,700,000
Construct a section of trail along the creek from Glasgow Avenue to the Metropolitan Ring Road	Edgars Creek Trail	$4,600,000
Upgrade surface of trail between Main Street and Melaleuca Drive	Edgars Creek Trail	$145,000
Construct section of trail between German Lane and Kingsway Drive, Lalor	Edgars Creek Trail	$360,000
Construct section of trail along the street from Deveny Road to Cooper Street, Epping	Edgars Creek Trail	$360,000
Construct a section of trail along the creek from Jersey Drive to Rockfield Street	Edgars Creek Trail	$600,000
Construct section of trail along the creek from Sheba Way to Snowy Place	Edgars Creek Trail	$685,000
Provide wayfinding signage along the length of the trail	Edgars Creek Trail	$75,000
Provide wayfinding signage along the length of the trail	Galada Tamboore Pathway/ Craigieburn Shared Path	$50,000
Reinstate centre line marking along the trail	Galada Tamboore Pathway/ Craigieburn Shared Path	$50,000
Construct a new section of trail east from the Diamond Creek Trail at Wattle Glen Station along Watery Gully Creek to existing trail on Watery Gully Road		$2,200,000
Construct a new section of trail from Couties Road to Alma Road		$720,000
Construct a new section of trail along Long Gully Road from Alma Road to Turnung Road		$260,000
Construct an extension of the trail from the intersection of Clintons Road and Spanish Gully Road to the Marshalls Road car park within the Kinglake National Park		$2,000,000
Upgrade existing sections of to match width and material treatment of new sections		$3,600,000

Project Description	Location: Trail Name	Cost estimate
Provide wayfinding signage along the length of the trail		$75,000
Provide wayfinding signage along the length of the trail	Hendersons Creek Trail	$50,000
Provide a signalised/ pedestrian priority crossing over The Lakes Boulevard and Glenorchy Way	Hendersons Creek Trail	$450,000
Upgrade trail surface from Gordons Road to Darius Terrace	Hendersons Creek Trail	$350,000
Construct a section of trail from Darius Terrace to The Lakes Boulevard (at Findon Road) including a bridge crossing to connect to existing trail	Hendersons Creek Trail	$180,000
Provide a signalised/ pedestrian priority crossing over The Great Eastern Way	Hendersons Creek Trail	$450,000
Provide a signalised/ pedestrian priority crossing at Findon Road	Hendersons Creek Trail	$450,000
Upgrade trail surface from Findon Road to McDonalds Road	Hendersons Creek Trail	$470,000
Provide a signalised/ pedestrian priority crossing at McDonalds Road	Hendersons Creek Trail	$450,000
Provide a signalised/ pedestrian priority crossing or Underpass at Childs Road to connect to the Darebin Creek Trail	Hendersons Creek Trail	$1,700,000
Construct a new section of trail along the Hurstbridge rail line from the Darebin Creek Trail north to Rosanna Station	Hurstbridge Rail Trail	$1,800,000
Construct a new section of trail along the Hurstbridge rail line north of Davies Street to Ruthven Street	Hurstbridge Rail Trail	$250,000
Construct a new section of trail along McNamara Street from Ruthven Street to Macleod Station	Hurstbridge Rail Trail	$180,000
Construct a new section of trail along the Hurstbridge rail line from Macleod Station to Elder Street	Hurstbridge Rail Trail	$850,000
Construct a new section of trail along the Hurstbridge rail line from Elder Street to the Plenty River Trail	Hurstbridge Rail Trail	$1,300,000
Construct a new section of trail along the Hurstbridge rail line from the Plenty River Trail to the Diamond Creek Trail	Hurstbridge Rail Trail	$1,300,000
Construct new section of trail from Harker Street to Hammersmith Court	Jacksons Creek Trail	$580,000
Construct a new section of trail on both sides of the Jacksons Creek Corridor from Childs Road south to Bulla Diggers Rest Road	Jacksons Creek Trail	$22,000,000
Construct a new section of trail Bulla Diggers Rest Road to Organ Pipes National Park	Jacksons Creek Trail	$4,200,000
Establish a new trail from Hurstbridge to Arthurs Creek	Kinglake Way Trail	$7,500,000
Construct new section of trail connecting the Plenty River Trail near Lear Court, east along the aqueduct across Diamond Creek Road to the Diamond Creek Trail at Allendale Road.	Maroondah Aqueduct Trail	$1,800,000
Extend the Maroondah Aqueduct Trail through to Yarra Glen. Two options have been identified for this extension: i. Construct a new section of trail from the existing Aqueduct Trail at Calwell Road through to Ashmore Road and on to Yarra Glen; or ii. Construct a new section of trail from the existing Aqueduct Trail at Calwell Road via the Melbourne Water Caretakers trail to Ashmore Road and on to Yarra Glen.	Maroondah Aqueduct Trail	$3,600,000
Construct new section of trail from existing Aqueduct Trail at Main Road. New trail to head south east to cross over Bells Hill Road, continuing east then north to meet to Eltham-Yarra Glen Road. Head east along Eltham-Yarra Glen Road, north alongside New Road, then east alongside Donaldson Road. The trail then continues north alongside Eltham-Yarra Glen Road before turning south alongside Henley Road where it will connect with the existing Aqueduct Trail.	Maroondah Aqueduct Trail	$3,250,000
Extend the trail west from Godber Road to connect to the Diamond Creek Trail	Maroondah Aqueduct Trail	$165,000

Project Description	Location: Trail Name	Cost estimate
Provide wayfinding signage along the length of the trail	Maroondah Aqueduct Trail	$75,000
Realign section of trail either side of Afton Street to reduce grade	Maroondah Aqueduct Trail	$475,000
Extend the Merri Creek Trail from the south end of Merri Concourse to Premier Drive	Merri Creek Trail	$360,000
Extend the Merri Creek Trail from Premier Drive to Cooper Street	Merri Creek Trail	$2,500,000
Extend the Merri Creek Trail from Cooper Street Epping to Oherns Road	Merri Creek Trail	$1,500,000
Extend the Merri Creek Trail from Oherns Road to Craigieburn Road	Merri Creek Trail	$3,700,000
Extend the Merri Creek Trail from Craigieburn Road to Summerhill Road	Merri Creek Trail	$1,900,000
Extend the Merri Creek Trail from Summerhill Road to Donnybrook Road	Merri Creek Trail	$3,700,000
Extend the Merri Creek Trail from Donnybrook Road to the Northern End of Moxham Drive	Merri Creek Trail	$955,000
Complete section of trail from the Metropolitan Ring Road to existing section of trail south of Horne Street	Merri Creek Trail	$415,000
Provide and upgrade line-marking to ensure continuous white lines indicating trail flow/ direction in high traffic areas	Merri Creek Trail	$50,000
Realign section of trail south of Heidelberg Road to reduce steep grade	Merri Creek Trail	$200,000
Provide a bridge crossing over the creek near the St Georges Road Bridge	Merri Creek Trail	$1,700,000
Relocate and widen trail from Merri Creek Primary School to Sumner Park outside of the flood zone	Merri Creek Trail	$540,000
Realign and widen trail north and south of Moreland Road	Merri Creek Trail	$200,000
Modify existing bridge alongside Moreland Road vehicular bridge to better serve pedestrians and cyclists	Merri Creek Trail	$1,700,000
Replace the Harding Street Bridge to cater for shared use	Merri Creek Trail	$1,700,000
Widen and reduce the steepness of the boardwalk section of trail from Edna Grove to Bell Street and create a new connection at Bell Street	Merri Creek Trail	$180,000
Widen and realign path outside of flood zone between Basil Nursing Home and Parker Reserve	Merri Creek Trail	$240,000
Construct a new section of trail from Vervale Avenue to the bridge crossing to the north to provide an alternative route with a gentler grade	Merri Creek Trail	$110,000
Provide wayfinding signage for Fawkner section of the Merri Creek (as per Moreland's Merri Creek Action Plan)	Merri Creek Trail	$50,000
Provide wayfinding signage along the length of the trail	Merri Creek Trail	$75,000
Provide wayfinding signage along the length of the trail	Metropolitan Ring Road Trail	$50,000
Investigate the feasibility of realigning the section of trail east of the Moonee Ponds Creek towards Jacana to reduce the incline	Metropolitan Ring Road Trail	$240,000
Advocate for an upgrade to the existing overpass at overpass at Jacana Station with wayfinding signage to improve connectivity and continuity	Metropolitan Ring Road Trail	$170,000
Upgrade section of trail between High Street and Dalton Road	Metropolitan Ring Road Trail	$510,000
Create a trail head at northern end of the trail at Marker Road ensuring alignment is outside federal airport boundary to avoid land access issues	Moonee Ponds Creek Trail	$600,000

Project Description	Location: Trail Name	Cost estimate
Upgrade surface and width of trail from Marker Road to and around Willowbrook Reserve to regional trail standard	Moonee Ponds Creek Trail	$1,260,000
Upgrade surface and width of trail from Willowbrook Reserve to Westmeadows Reserve to regional trail standard	Moonee Ponds Creek Trail	$720,000
Construct a new section of trail from Marker Road to Living Legends/ Woodlands Historic Park	Moonee Ponds Creek Trail	$2,000,000
Construct a new section of trail from Living Legends/ Woodlands Historic connecting to Somerton Road Woodlands entrance	Moonee Ponds Creek Trail	$600,000
Provide wayfinding signage along the length of the trail include at crossing points, connections to other trails and where appropriate to direct users to optimal trail route where alternatives occur	Moonee Ponds Creek Trail	$75,000
Upgrade surface of trail from the rail line south to the Essendon Baseball Club	Moonee Ponds Creek Trail	$360,000
Construct section of new trail between Primrose Street and Vanberg Road	Moonee Ponds Creek Trail	$360,000
Upgrade trail surface from Boeing Reserve, Strathmore, to Brunswick Road to improve safety and cross grade	Moonee Ponds Creek Trail	$3,600,000
Resurface trail connection from Gladstone Park down the hill to main trail	Moonee Ponds Creek Trail	$360,000
Construct a new section of trail from Union Street to the Hope Street pedestrian bridge. Consider a new bridge using former off ramp to Denzil Don Reserve to Victoria St as an alternative if required	Moonee Ponds Creek Trail	$540,000
Extend the Northern Pipe/ St Georges Rd/ Cheddar Road Trail north to the Metropolitan Ring Road	Northern Pipe/ St Georges Rd/ Cheddar Road Trail	$820,000
Improve access at the St Georges Rd/Merri Parade/ Charles St intersection to connect the Merri Creek Trail to the Northern Pipe Trail and create a direct access point to and from the trail with pedestrian and cyclist priority	Northern Pipe/ St Georges Rd/ Cheddar Road Trail	$400,000
Widen and resurface the section of trail between Clarke Street and Arthurton Road to align with newly constructed sections of trail	Northern Pipe/ St Georges Rd/ Cheddar Road Trail	$310,000
Advocate for trail alignment alongside the train line from Garden Street to Cheddar Road to replace section of trail on the footpath	Northern Pipe/ St Georges Rd/ Cheddar Road Trail	$760,000
Widen trail surface in the Cheddar Road central median from High Street to Hickford Street	Northern Pipe/ St Georges Rd/ Cheddar Road Trail	$540,000
Construct a new section of trail from High Street (near the Melbourne Water Reservoirs) along the vacant pipe reserve to the Merri Creek Trail at Murray Road	Northern Pipe/ St Georges Rd/ Cheddar Road Trail	$2,600,000
Extend trail east to Mclaughlans Lane	Plenty River Trail	$220,000
Upgrade and widen section of trail from Punkerri Circuit to Booyan Crescent	Plenty River Trail	$650,000
Realign section of trail to reduce grade and provide an underpass at Booyan Crescent	Plenty River Trail	$1,700,000
Widen section of trail under the Greensborough Bypass	Plenty River Trail	$250,000
Upgrade and widen section of trail at Main Street	Plenty River Trail	$250,000
Provide wayfinding signage at Poulter Reserve to direct users to the wider trail on the western side	Plenty River Trail	$50,000

Project Description	Location: Trail Name	Cost estimate
Construct a new section of trail at Bicton Street	Plenty River Trail	$150,000
Upgrade and widen section of trail with wayfinding signage at Montmorency Park	Plenty River Trail	$220,000
	Plenty River Trail	$900,000
Provide wayfinding signage along the length of the trail	Plenty River Trail	$75,000
Upgrade pedestrian bridges on the Plenty River Trail where required and improve sight lines where appropriate	Plenty River Trail	$1,700,000
Investigate the feasibility of realigning the Plenty River Trail to the eastern bank of the Plenty River between George Court and Para Road in order to avoid the steep grade on the west bank	Plenty River Trail	$165,000
Construct a new section of trail along the creek through The Plenty Gorge Parklands to Bridge Inn Road	Plenty River Trail	$1,800,000
Extend the trail from Bridge Inn Road north to Hazel Glen Drive	Plenty River Trail	$900,000
Advocate for the construction of a new trail along Somerton Road from Jacksons Creek to the Merri Creek Trail	Somerton Road Trail	$1,500,000
Construct new section of trail from Box Forest Road north to Metropolitan Ring Road	Upfield Rail Trail	$510,000
Advocate to Department of Transport to construct a new section of trail from the Metropolitan Ring Road to Upfield Station	Upfield Rail Trail	$1,500,000
Create a signalised pedestrian crossing over the road and train line at Boundary Road	Upfield Rail Trail	$400,000
Construct an off-road shared path along Bain Avenue	Upfield Rail Trail	$125,000
Widen section of trail between Plaisted Street and Shorts Road	Upfield Rail Trail	$150,000
Construct an off-road shared path along Ararat Avenue	Upfield Rail Trail	$125,000
Provide a signalised/ pedestrian priority crossing over Bakers Road	Upfield Rail Trail	$400,000
Construct an off-road shared path along Renown Street	Upfield Rail Trail	$160,000
Construct an off-road shared path along Batman Avenue	Upfield Rail Trail	$125,000
Upgrade and widen trail from Victoria Street to Jewell Station	Upfield Rail Trail	$360,000
Provide a signalised/ pedestrian priority crossing over Albert Street	Upfield Rail Trail	$400,000
Consider long term feasibility of separated cycle path between Park Street and Tinning Street		$1,600,000
Create a signalised pedestrian crossing over the road and train line at Box Forest Road	Upfield Rail Trail	$400,000
Create a signalised pedestrian crossing over the road and train line at O'Hea Street	Upfield Rail Trail	$400,000
Create a signalised pedestrian crossing over the road and train line at Albion Street	Upfield Rail Trail	$400,000
Create a signalised pedestrian crossing over the road and train line at Victoria Street	Upfield Rail Trail	$400,000
Construct a new trail from Mernda Station to Whittlesea. Ensure there is provision to horse riders on parts of the trail.	Whittlesea Shared Trail	$3,600,000
Provide a pedestrian priority crossing at the Lakes Boulevard	Whittlesea Shared Trail	$400,000

Project Description	Location: Trail Name	Cost estimate
Provide wayfinding signage along the length of the trail	Whittlesea Shared Trail	$50,000
Construct a new section of trail from The Metropolitan Ring Road Trail and the Northern Pipe/ Cheddar Road Trail to the Darebin Creek Trail	Yan Yean Pipe Track	$540,000
Construct a new section of trail from the Darebin Creek Trail to Childs Road	Yan Yean Pipe Track	$1,600,000
Construct a new section of trail from Childs Road to McDonalds Road and the Plenty Valley Activity Centre	Yan Yean Pipe Track	$1,300,000
Construct a new section of trail from Bridge Inn Road to the Yan Yean Reservoir and creating a connection to the Plenty River Trail	Yan Yean Pipe Track	$170,000
Construct a bridge crossing over the Yarra River to Banksia Park at the eastern end of Yarra Street, Heidelberg	Yarra Trail	$1,700,000
Undertake improvements to the Main Yarra Trail at Banyule Flats	Yarra Trail	$360,000
Realign the section of trail at the Banksia Street underpass to create a gentler grade and wider trail surface	Yarra Trail	$150,000
Upgrade surface and width of existing trail from Banksia Street to Yarra Street	Yarra Trail	$240,000
Upgrade surface and width of existing trail from junction with Plenty River Trail to Fitzsimmons Lane Reserve	Yarra Trail	$2,200,000
Provide wayfinding signage along the length of the trail	Yarra Trail	$75,000
Construct shared use trail from the Mullum Mullum Creek Trail to the Warrandyte State Park	Yarra Trail	$2,400,000
Construct a bridge crossing over the Yarra River to Birrarrung Park	Yarra Trail	$1,700,000
Construct a bridge crossing over the Yarra River to Bulleen Park	Yarra Trail	$1,700,000
Construct new section of trail along the Melbourne Water Pipe Track from Greenvale Reservoir Park south to the existing section of the Yuroke Creek Trail	Yuroke Creek Trail	$660,000
Provide wayfinding signage along the length of the trail	Yuroke Creek Trail	$50,000
Investigate the provision of a pedestrian priority crossing at Dimboola Road and remove bicycle chicanes from either side. And improve the path intersection treatment	Yuroke Creek Trail	$400,000
Provide a pedestrian priority crossing at Somerton Road to connect trail to Greenvale Reservoir	Yuroke Creek Trail	$400,000
Undertake a staged upgrade of the trail to a regional standard width with line marking	Yuroke Creek Trail	$2,200,000
TOTAL		**$189,795,000**

Source: FFLA, 2021

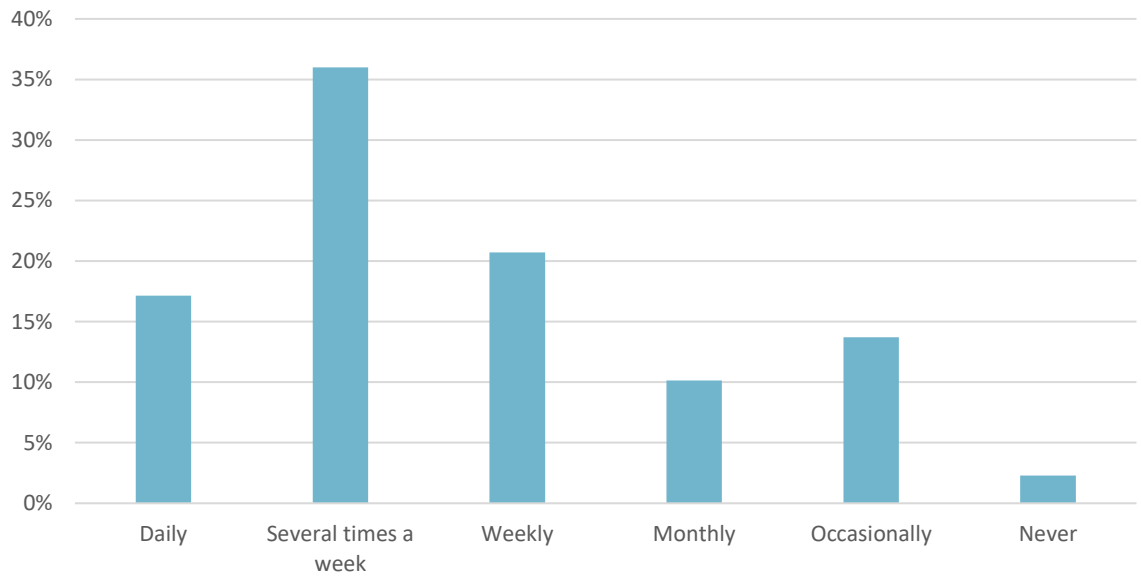
Appendix B: Key survey results

A survey was conducted to understand the community's current use of the trail network as well as their views on how it can be improved to encourage further use. There was a total of 923 responses, the vast majority of which (91%) were residents of Northern Metropolitan Melbourne.

Current use

Most survey respondents use the regional trails at least weekly (74%). 36% of respondents use the trails several times a week and 17% use them daily. The Merri Creek Trail was identified as having the most regular use, with 14% of respondents using the trail daily or several times a week. The next most used trails were Darebin Creek Trail and Yarra Trail with 9.5% and 7.5% respectively.

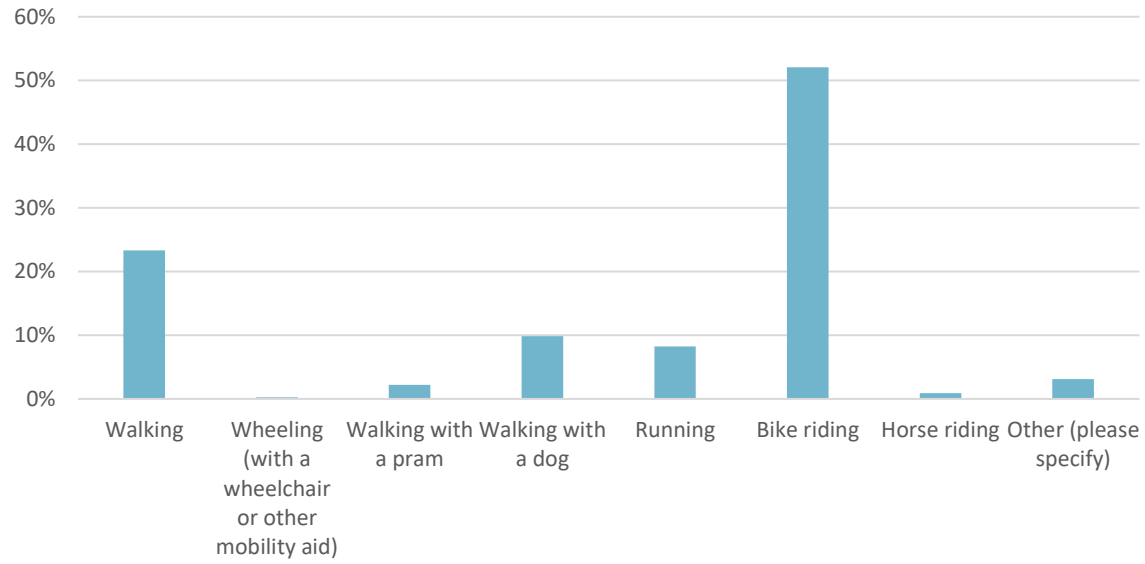
FIGURE 6: RESPONSES TO: HOW OFTEN DO YOU CURRENTLY USE THE REGIONAL TRAILS IN NORTHERN MELBOURNE?



Source: Survey results provided to SGS by FFLA, 2021

Approximately half of survey respondents predominantly use the existing trail network for bike riding (52%), followed by walking (23%). The distribution of other mode shares such as running is relatively even.

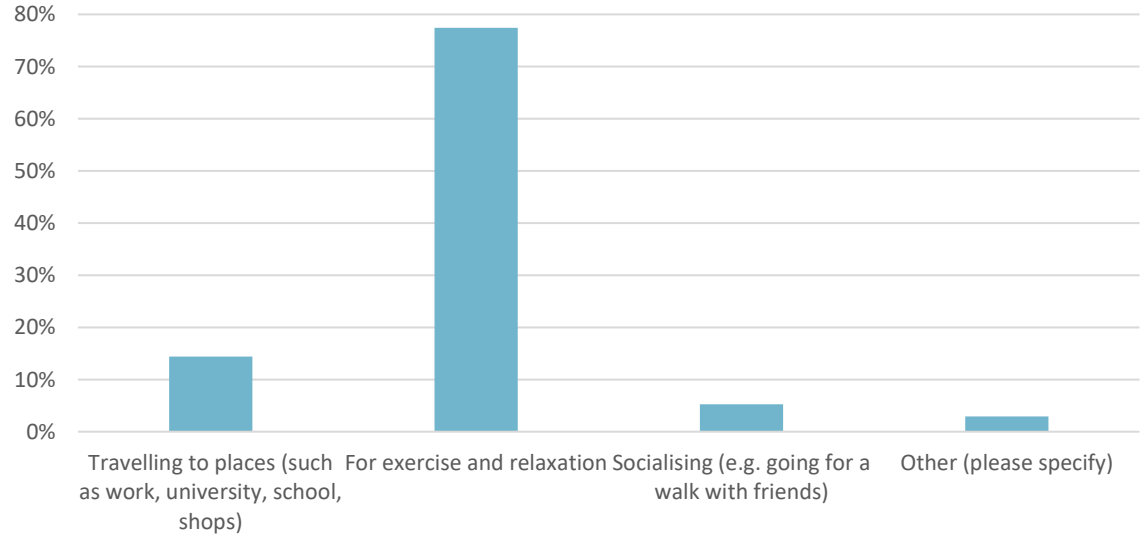
FIGURE 7: RESPONSES TO: HOW DO YOU MOST OFTEN USE THE REGIONAL TRAILS IN NORTHERN MELBOURNE?



Source: Survey results provided to SGS by FFLA, 2021

The most common driver of use of the regional trails is for exercise and relaxation with an overwhleming 77.5%. Use of trails as a means of travel from point A to point B accounts for 14% of use among survery respondents.

FIGURE 8: RESPONSES TO: WHY DO YOU MOST OFTEN USE REGIONAL TRAILS IN NORTHERN MELBOURNE?

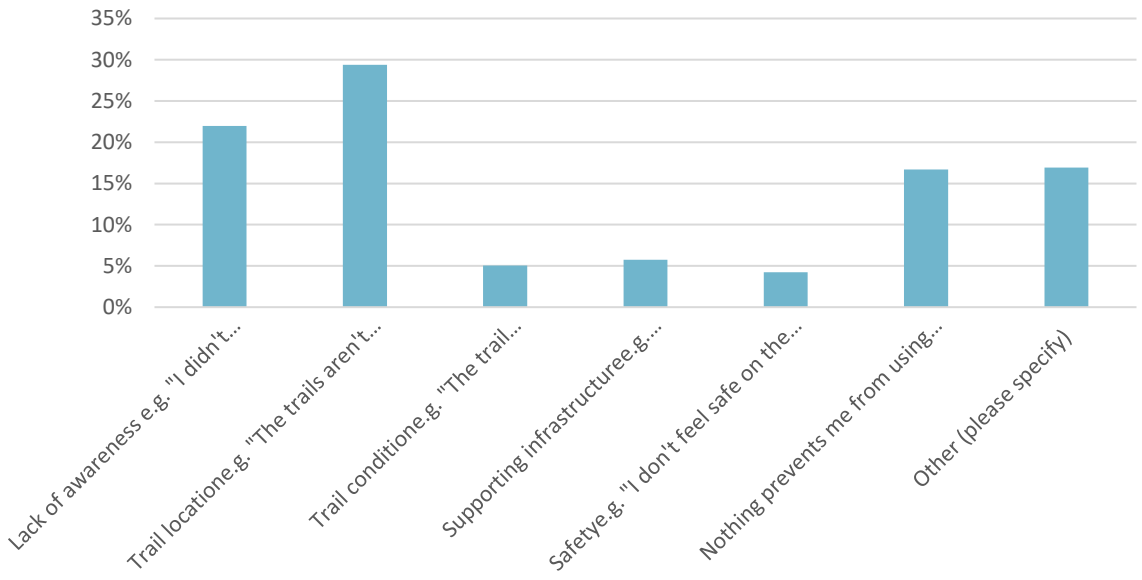


Source: Survey results provided to SGS by FFLA, 2021

Improvements

Nearly a third of respondents (29%) noted that the current location of trails prevents them from using the network more. This is likely contributing to why the trails are predominantly used for exercise and recreation rather than as a transport route. The other most common factor preventing further use is a lack of awareness about the trails (22%).

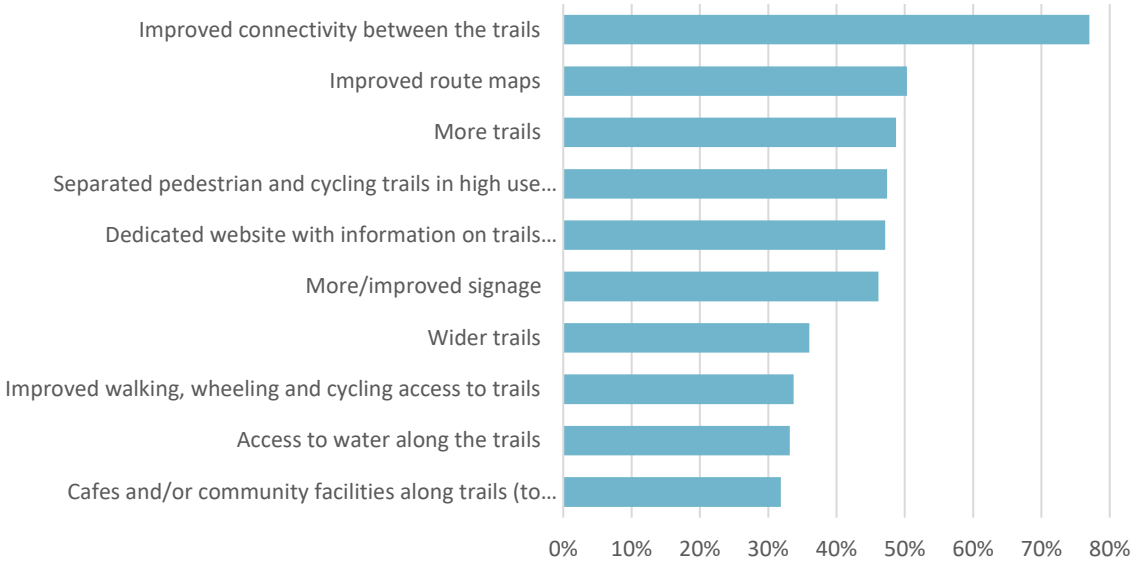
FIGURE 9: RESPONSES TO: WHAT IS THE MAIN REASON PREVENTING YOU FROM USING THE REGIONAL TRAILS MORE?



Source: Survey results provided to SGS by FFLA, 2021

Survey results indicate that increasing usage of trails is mostly dependent on physical changes to the trail network or improving information at varying capacities. The most common improvement identified was increasing the connectivity of the trail network, with support from 77% of respondents. Other desired physical changes to the network included adding more trails (49%), separating pedestrian and cycling trails in high use areas (47%), and widening trails (36%). Multiple improvements to information regarding the trails were also listed as having potential to increase usage. These included improved route maps (50%), a website dedicated to the trails and better marketing (47%), and more signage throughout the network (46%).

FIGURE 10: RESPONSES TO: WHICH OF THE FOLLOWING COULD INCREASE YOUR USAGE OF THE TRAILS? (TICK ALL THAT APPLY) (GRAPH SHOWS TOP 10 RESPONSES ONLY)



Source: Survey results provided to SGS by FFLA, 2021

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D LGA ENDORSEMENT RESOLUTIONS

The table below outlines the resolutions from each of the Councils endorsement of the Northern Trails Strategy.

Banyule

Resolution (CO2023/23)

That Council:

1. Adopt the draft Northern Trails 2022, Northern Trails Strategy Review and Update and the regional advocacy opportunities it presents in the Northern Region. subject to the following changes:
   a. Re prioritise the Main Yarra Trail actions by moving Action Number 4 (Upgrade surface of existing trail from Banksia to Yarra Street) to Action Number 1 (Bridge across the Yarra River) and;
   b. Substitute Action 9 (Bridge across the Yarra River) with Upgrade Surface of Existing Trail from Banksia to Yarra Street Action in the Top 10 Banyule Priority Trail Improvements.
2. Actively seek external grants and funding opportunities to assist with further delivery, whilst preparing necessary plans and permits for trail projects to expedite this grants process where opportunities arise.

Moved: Cr Tom Melican
Seconded: Cr Mark Di Pasquale

Darebin

Council Resolution (Minute No. 22-130)

That Council:

1. Adopts the Northern Regional Trails Strategy included at Attachment A.
2. Notes the Darebin priority trails identified in the Strategy.
3. Thanks the community for providing valuable feedback to the process of developing the Northern Regional Trails Strategy.
4. Requests the CEO to increase Councils advocacy to ensure the State Government provides additional funding to implement the strategy.

Moved: Cr S Newton
Seconded: Cr S Rennie

Hume

Report No. 7.7 (Council Meeting 27th February 2023)

That Council:

1. Endorses the Northern Trails 2022 – Northern Regional Trails Strategy Review and Update.
2. Notes the twelve regional trails located in Hume, including the ten priority trails projects identified in the Strategy

Moved: Cr Naim Kurt,
Seconded: Cr Karen Sherry

Merri-bek

Resolution (Item No. 7.3 D23/12091)

That Council:

1. Endorses the Northern Regional Trails Strategy 2022 as at Attachment 1.
2. Supports efforts by the Northern Councils Alliance to pursue initiatives in the strategy with the State Government.

Moved: Cr Riley
Seconded: Cr Tapinos

Nillumbik

Council Resolution (CM.031/24)

That Council:

1. Endorses the Northern Regional Trails Strategy 2022 (Attachment 1), and makes the following changes to Attachment 1:
   a. replaces the illustration on page 51 to show two alternative trail options:
      i. the Maroondah Aqueduct Trail to follow the southern alignment (Calwell Rd through Ashmore Rd to Yarra Glen) below Sugarloaf Reservoir instead of the current illustration showing the trail to the northern alignment above the Sugarloaf reservoir; and
      ii. the Maroondah Aqueduct Trail to follow the southern alignment (Calwell Rd via the Melbourne Water Caretakers trail to Ashmore Rd on to Yarra Glen) below Sugarloaf reservoir instead of the current illustration showing the trail to the northern alignment above the Sugarloaf reservoir.
   b. removes any reference to Warrandyte Kinglake road on page 51.
   c. updates the priority actions on page 51 to reflect the southern alignment of the two options listed in point 1a) i and ii).
   d. change the wording to priority action 8 on page 39 to remove the words “from along the Main Road” to “around”.
2. Notes any future trail construction within Nillumbik is to consider land use zones with specific reference to the special use zones.

Moved: Cr Karen Egan
Seconded: Cr Natalie Duffy

Whittlesea

Council Resolution

That Council adopt the recommendation for the Northern Trails 2022 Strategy.

Moved: Administrator Christian Zahra
Seconded: Chairperson Lydia Wilson