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.

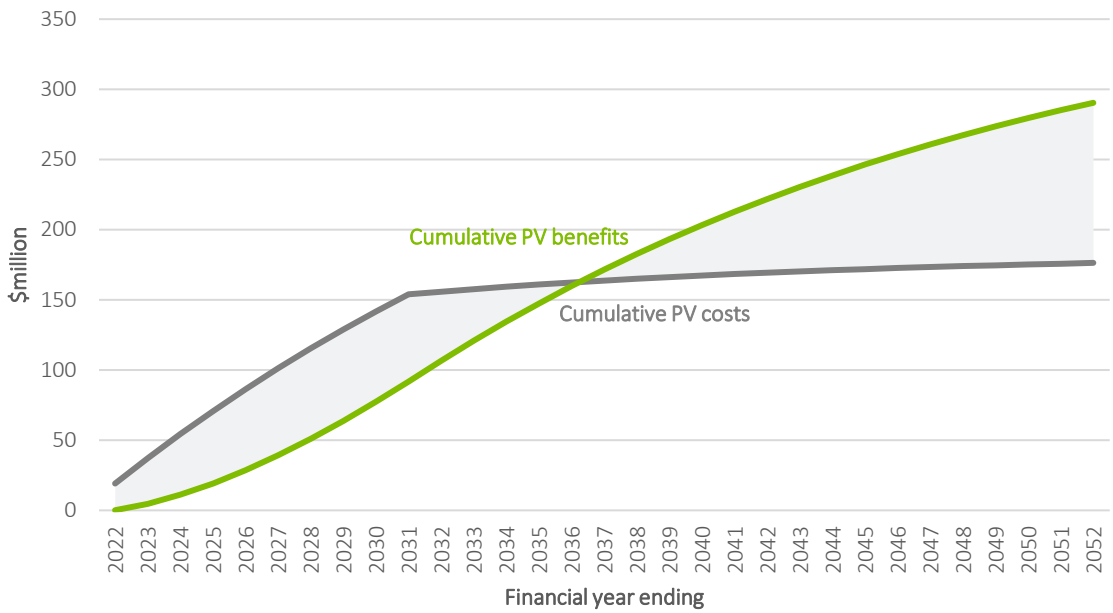
Costs exceed benefits until FY2037, at which point costs increase marginally as per OPEX assumptions, while benefits increase rapidly as users enjoy and gain value from an improved and expanded network. This is illustrated in Figure 1.

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.

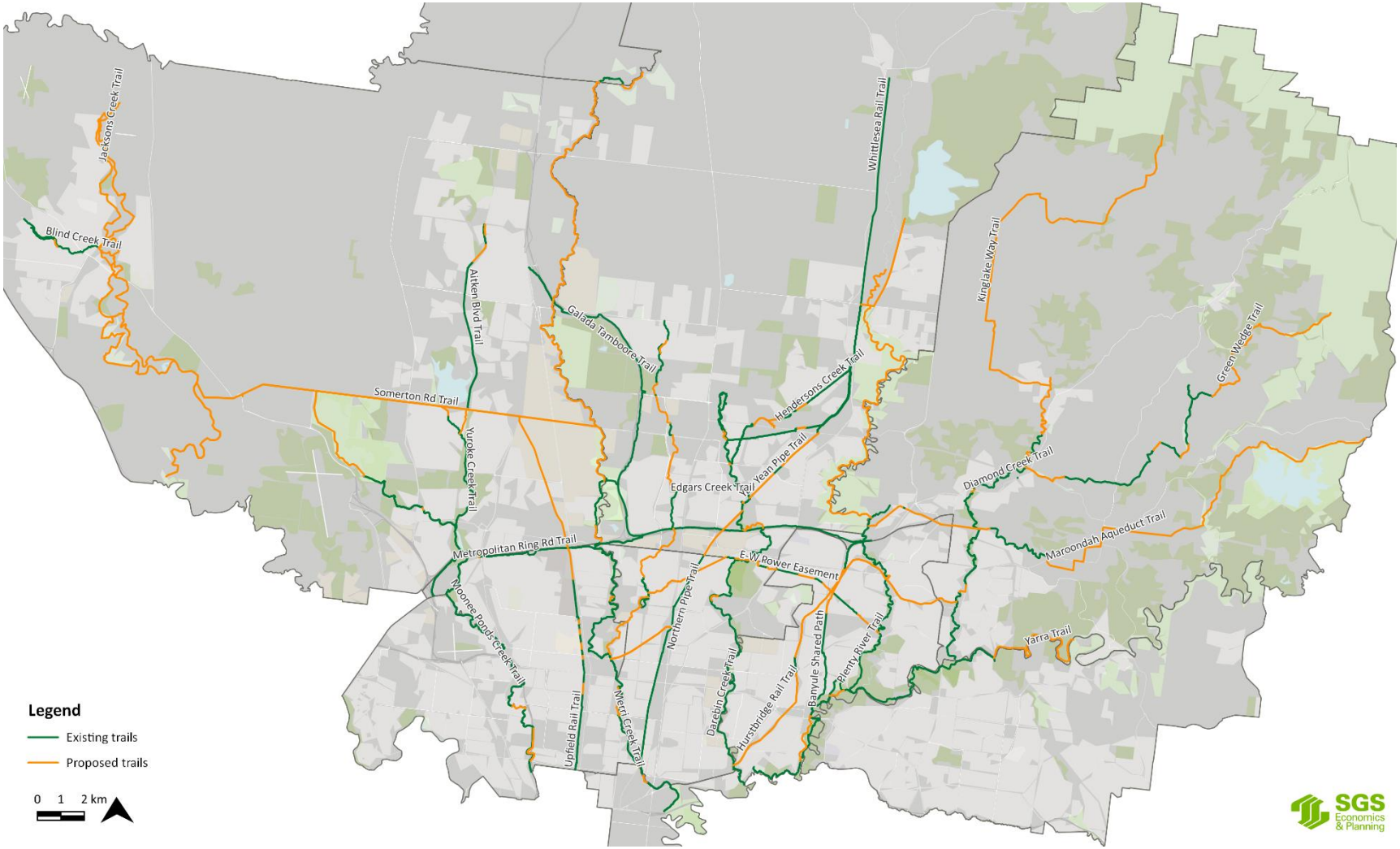
The Northern Regional Trails Strategy was developed in 2016 by the Northern Regional Trails Strategy Collaboration in recognition of the need to plan and deliver appropriate infrastructure to support an increasingly dense urban footprint and population, while providing accessible recreation and active 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

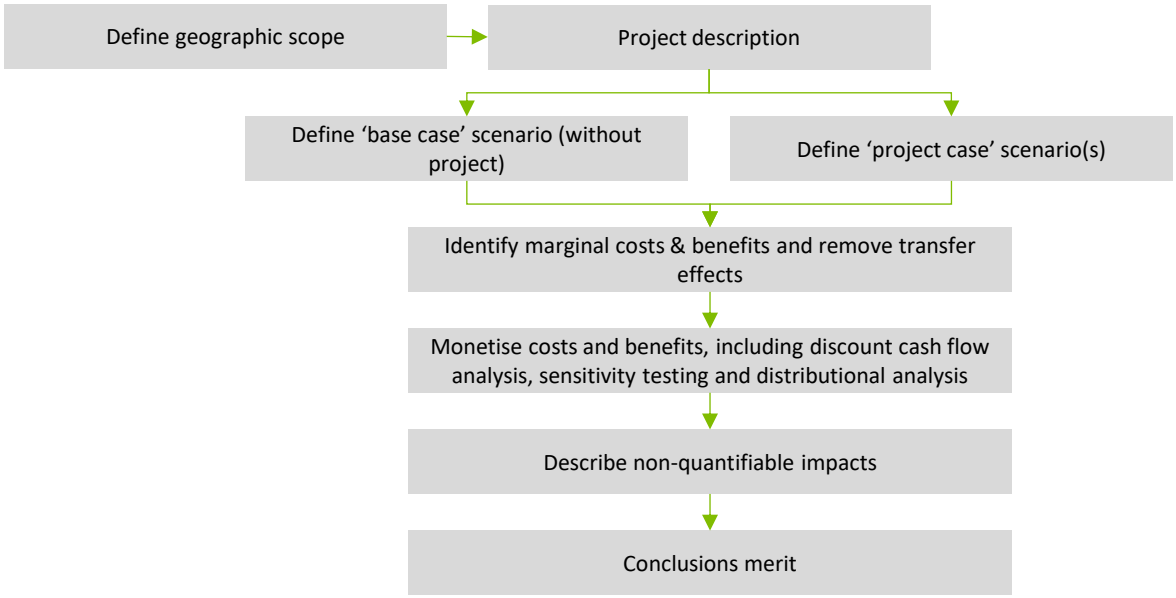
2. Cost-benefit analysis framework

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:

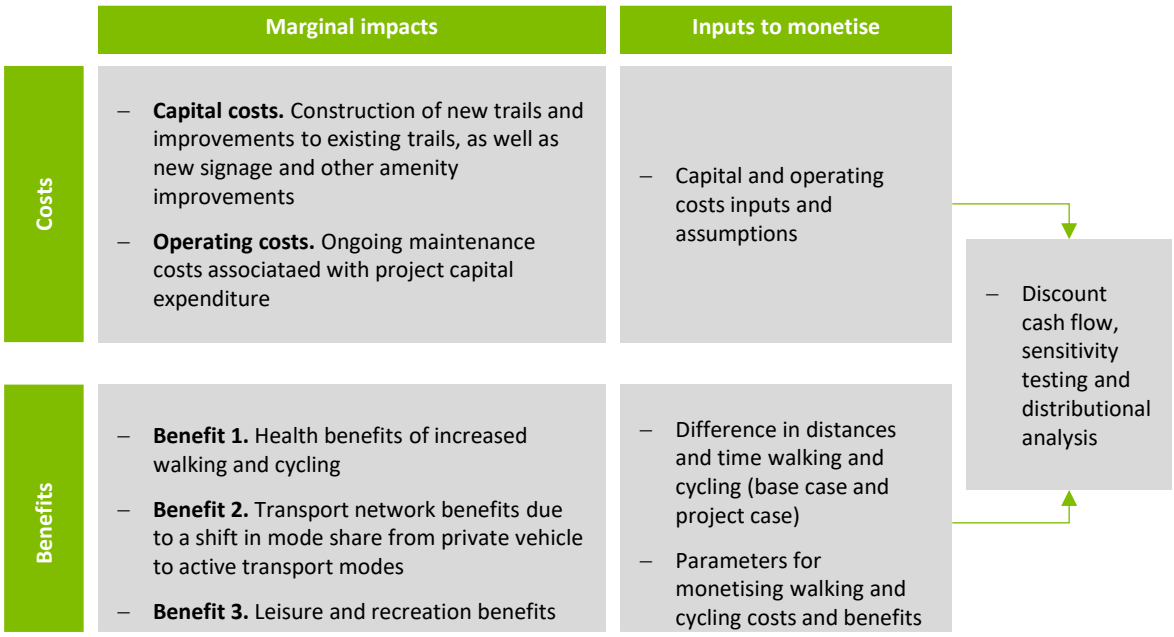
- Net Present Value (NPV) - measures the difference between benefits and costs, while accounting for their varying timing. A project with an NPV greater than zero indicates the PV of benefits exceeds the PV of costs and is considered economically viable.
- Benefit-cost ratio (BCR) - measures the benefits 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

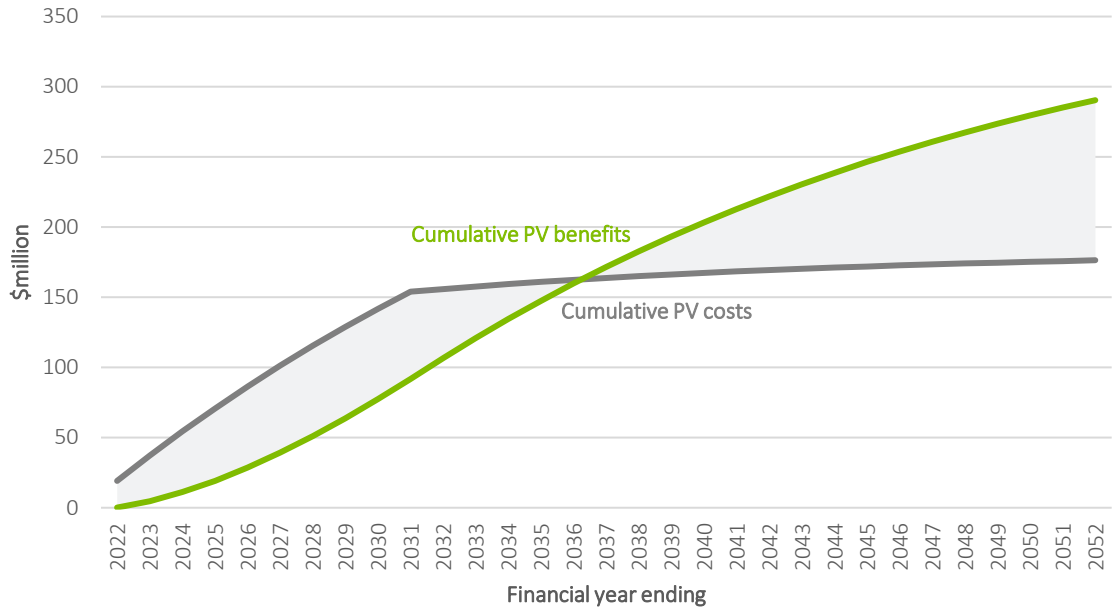
Source: SGS, 2021

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

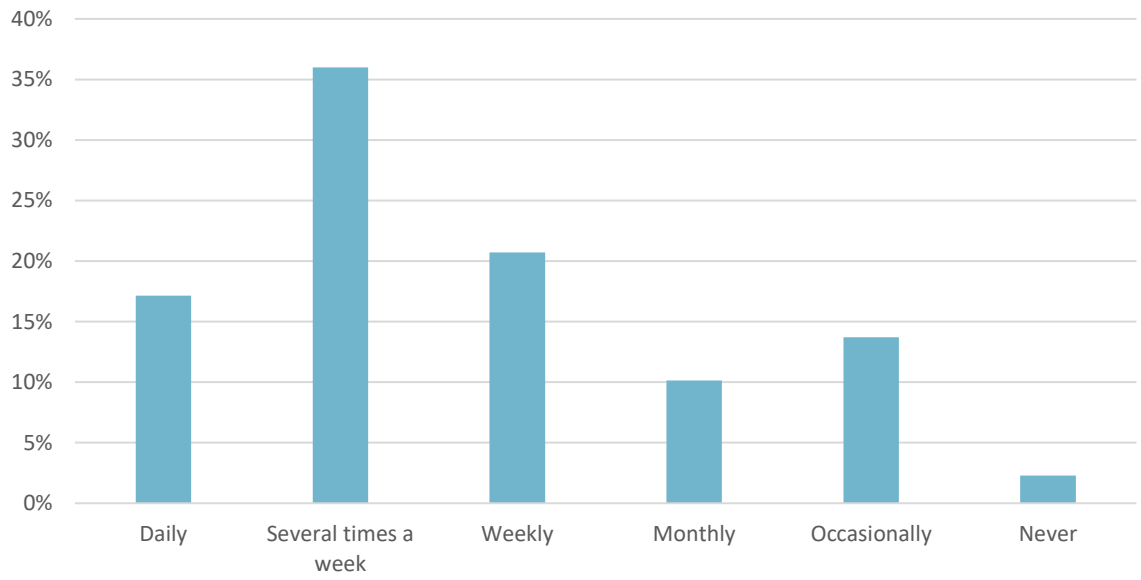
Appendix B: Key survey results

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.

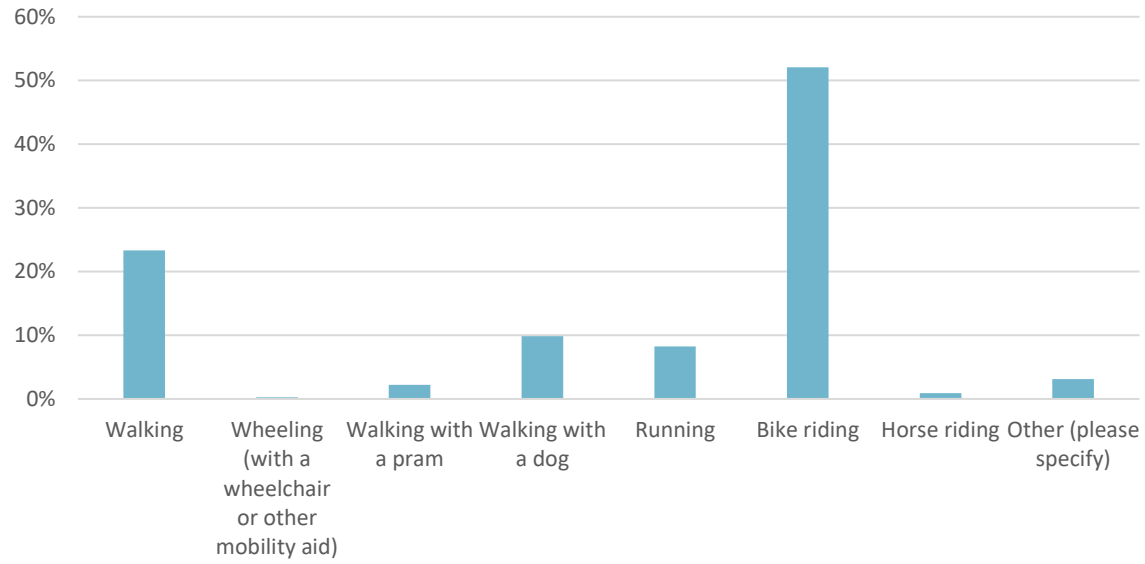
FIGURE 6: RESPONSES TO: HOW OFTEN DO YOU CURRENTLY USE THE REGIONAL TRAILS IN NORTHERN MELBOURNE?



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.

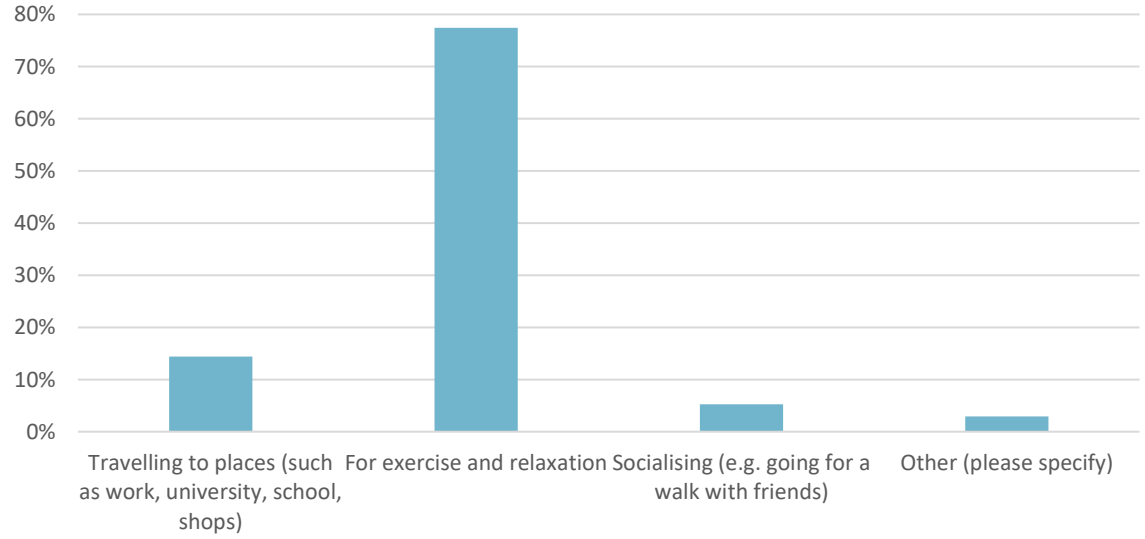
FIGURE 7: RESPONSES TO: HOW DO YOU MOST OFTEN USE THE REGIONAL TRAILS IN NORTHERN MELBOURNE?



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?

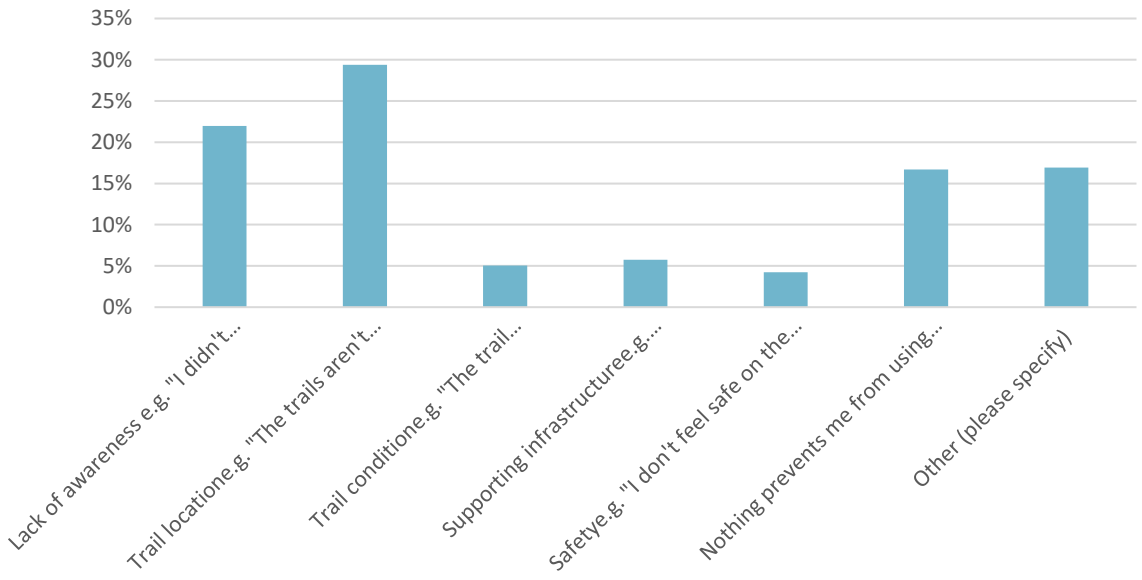


Source: Survey results provided to SGS by FFLA, 2021

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%).

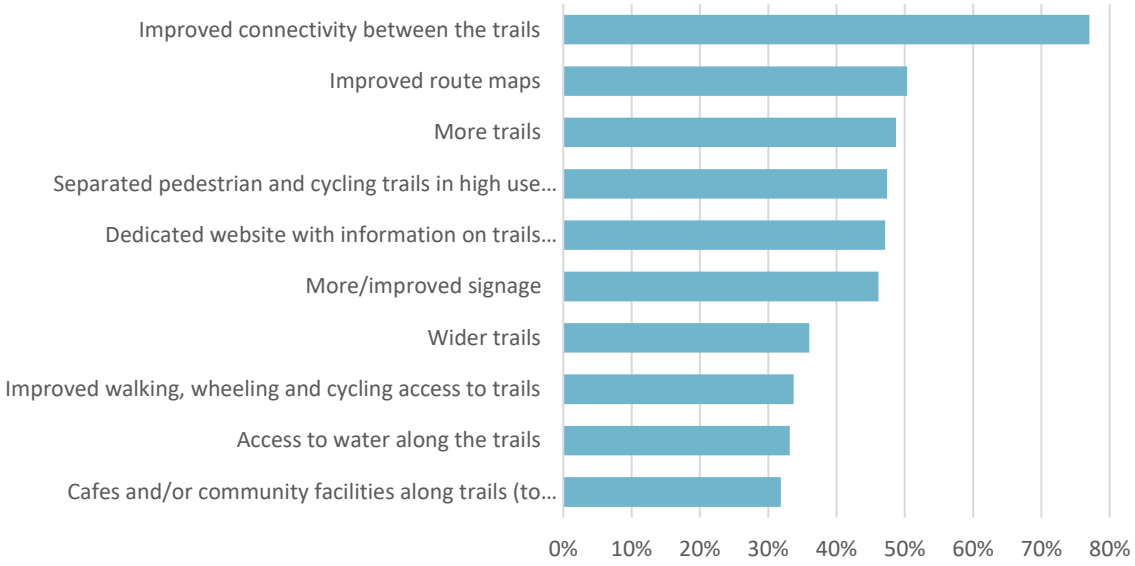
FIGURE 9: RESPONSES TO: WHAT IS THE MAIN REASON PREVENTING YOU FROM USING THE REGIONAL TRAILS MORE?



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