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# Boroondara Bicycle Strategy

2022





# Contents

<b>Executive summary</b>	<b>4</b>
<b>Introduction</b>	<b>6</b>
<b>Planning context</b>	<b>10</b>
<b>Bicycle riding in Boroondara today</b>	<b>14</b>
<b>Community inputs</b>	<b>25</b>
<b>Guiding principles</b>	<b>27</b>
<b>Action plan</b>	<b>32</b>
Initiative 1	33
Initiative 2	34
Initiative 3	36
Initiative 4	40
Initiative 5	43
Initiative 6	44
Initiative 7	46
Initiative 8	47

# Executive summary

**As the population of greater Melbourne continues to grow rapidly, sustainable solutions to the movement of people are becoming an increasingly necessary element of preserving and enhancing the quality of life in suburban areas. Bicycle riding is a low-carbon transport option compared to other travel modes, with significant untapped capacity that has the potential to materially contribute to the overarching transport task.**

## **Purpose**

The Boroondara Bicycle Strategy sets a framework to advance bicycle infrastructure and mode share in the City of Boroondara over the next 10 years. The purpose of the Strategy is to:

- Provide direction and set a vision for the aspirational bicycle network.
- Inform future investment in bicycle infrastructure across the municipality.
- Guide a staged implementation of actions to align with priorities.

The Strategy has been developed following extensive community engagement, research and analysis to ensure it is relevant, achievable and meets the needs of the community.

The community benefits of bicycle riding are well established and include:

- Reduced traffic congestion and carbon emissions.
- Increased local connectivity and ability to cater for recreational and commuter trips.
- Improved safety for vulnerable road users, including pedestrians, through a reduction in motor vehicle trips.
- Better health outcomes from physical exercise and lower levels of pollution.

## **What the community said**

Key messages received from the community include:

- Safety, including interaction with other vehicles and pedestrians, is the major concern and barrier to bicycle riding.
- The existing bicycle network is limited and not well connected. It is also poorly maintained and difficult to navigate.
- Riding on off-road and separated bike paths is preferred, mainly due to safety.
- Bicycle riders must compete for space with other modes of transport on congested roads.

## **The off-road path network**

Off-road paths are an extremely valuable part of the bicycle network enabling riders to travel for recreation, commuting and local trips. The Strategy also recognises the importance of maintaining a safe and inclusive environment for other path users and those who visit local parklands including pedestrians, children and pets.

Boroondara's off-road path network is made up of formal and informal links.

Formal shared paths are designated through linemarking or signage, and typically make use of sealed surfaces such as concrete or asphalt. Design standards specify minimum path widths should typically be at least three metres, with scope for widening or separation of busy sections. Bicycle riders



are required to comply with the Road Safety Road Rules, which include giving way to pedestrians and keeping to the left. Examples of formal shared paths in Boroondara include the Gardiners Creek Trail, Main Yarra Trail, Anniversary Trail, and Koonung Trail.

Informal shared paths cater for lower overall levels of usage and are not formally signposted or linemarked. Path widths may be narrower or make use of unsealed gravel surfaces. Council promotes the safe and inclusive use of its paths and open spaces for all members of the community subject to Council's Amenity Local Law. Many informal shared paths run through parklands or open space, cater predominantly for recreation and local trips, and are often used by a higher proportion of pedestrians than bicycle riders. Safety and amenity for all path users can be improved through regular maintenance and path renewal when required as unsealed gravel surfaces. Widening of narrow sections to achieve three metre path widths where possible to comply with standards for recreational paths and the use of composite edging treatments which help to prevent path washout after heavy rain events would also be relevant.

The Strategy intends to deliver benefits not just for bicycle riders, but also for pedestrians and all community members through upgrades such as renewal of existing sub-standard paths, formalisation of unmade path links, lighting upgrades and safer road crossings. Increasing bicycle ridership would also deliver additional community-wide benefits through the proportional reduction in private vehicle use.

### **Our vision**

The 2022 Boroondara Bicycle Strategy will deliver an integrated bicycle network which is safe, connected, protected, efficient and appealing to users of all ages and abilities. The bicycle network will include off-road paths and on-road links providing access to a range of destinations and making bicycle riding a feasible and attractive option for all residents, workers and visitors.

### **Realising the vision**

The Strategy is underpinned by four guiding principles:

- A complete and connected bicycle network
- A safe bicycle riding experience
- Integrated supporting facilities and amenities
- Awareness and education

The Strategy recommends a series of prioritised actions based on these guiding principles which will assist Council in achieving the vision.

# Introduction

## Purpose

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The purpose of the Strategy is to:

- Provide direction and set a vision for the aspirational bicycle network.
- Inform future investment in bicycle infrastructure across the municipality.
- Guide a staged implementation of actions to align with priorities.

## Process

The Strategy was developed through a collaborative process.

### Issues and opportunities

Analysis of the existing issues and identification of opportunities to address them



### Vision development

Vision statement to guide the overall goals of the future bicycle network



### Community engagement

Consultation to ensure the Strategy aligns with the needs of the community



### Action plan

Prioritised actions to deliver on the vision



### **Planning in the context of the COVID-19 pandemic**

The coronavirus has significantly impacted how we move around our cities and communities. Worldwide, physical distancing measures and lockdown restrictions have been imposed to hinder the spread of the coronavirus, drastically reducing travel demands. Importantly, this reduction is not only a consequence of government-imposed restrictions, which have reduced people's ability to travel. Individual reactions to the pandemic have also resulted in a reduced willingness to travel.

This situation has seen active transport modes, in particular bicycle riding, become a more attractive transport option. This presents challenges and opportunities in terms of facilitating these new travel patterns which reflect the latent, underlying demand for bicycle riding not previously supported by investment in infrastructure.

While the question remains as to whether this change in travel behaviour and patterns will be permanent or temporary, it is critical that the role of bicycles in addressing the transport challenges within the City of Boroondara is carefully considered through the implementation of the actions in this Bicycle Strategy.





# Vision

The 2022 Boroondara Bicycle Strategy will deliver an integrated bicycle network which is safe, connected, protected, efficient and appealing to users of all ages and abilities. The bicycle network will include off-road paths and on-road links providing access to a range of destinations and making bicycle riding a feasible and attractive option for all residents, workers and visitors.

# Planning context

## The Strategy is supported by various State and Local Government plans and policies.

### State policy and strategic alignment

There are a number of Victorian Government plans, strategies and frameworks in place that guide transport investment by local governments. The key documents relevant to this Strategy are noted below.

#### Transport Integration Act 2010

The Transport Integration Act is Victoria's principal transport statute and sets out principles to guide the planning and management of the transport system. The Act provides a mandate for government departments to share common goals of an efficient, integrated and sustainable transport network.

#### Victorian Cycling Strategy 2018-2028



The Victorian Cycling Strategy 2018-2028 was developed by Transport for Victoria, with a vision to increase the number, frequency and diversity of Victorians cycling for transport by investing in a safer, lower-stress, better-connected network, and by prioritising Strategic Cycling Corridors (SCCs) to help make cycling a more inclusive experience. The document sets out the high-level strategic basis for Victorian Government funding commitments in the cycling network.

The strategy addresses a focus on making cycling a more inclusive experience, which includes encouraging children to cycle to school. There is also a focus on better integration of cycling and public transport, which is a particularly important consideration in the Boroondara area given the strong public transport connectivity in the form of buses, trams and trains.

The Victorian Cycling Strategy identifies the need to work with local Councils to deliver bicycle infrastructure improvements. The 2022 Boroondara Bicycle Strategy is consistent with the goals outlined in the Victorian Cycling Strategy, acknowledging initiatives of state strategic importance (e.g. Strategic Cycling Corridors), as well as recognizing the municipal and local-level gaps in Boroondara's bicycle network and providing an action plan to deliver improvements across the entire network.

## Movement and Place Framework



The Department of Transport's Movement and Place Framework represents a new approach to network planning, recognising that roads and streets serve not only a transport function but can also serve as destinations in their own right. As part of this, movement classifications for each mode have been defined and assigned on the network, to guide the broad aspirational movement function of a transport link in relation to its place function. Although the framework predominantly focuses on assessment of roads and streets, its cycling classifications have been developed to include both on and off-road links. For bicycle routes there are eight classifications:

### Cycling classifications

**C1** Primary routes

**C2** Main routes

**C3** Municipal routes

**C4** Neighbourhood and local links

### Specialised cycling classifications

**CD** Direct cycling routes

**CH** High traffic stress routes

**CT** Training routes

**CR** Recreational routes

Walking routes are also considered in the Movement and Place Framework with varying classifications for links of differing priority and strategic importance.

## Local plans and policies

### Boroondara Bicycle Strategy 2008

The 2008 Boroondara Bicycle Strategy is the preceding 10-year strategy. The overall goal was to increase the number of people using Boroondara's bicycle network and facilities. The strategy provided a list of recommended actions to drive the development, improvement and expansion of the bicycle network, recognising the needs of different types of users and focused on three guiding principles:

- **Physical and social infrastructure** – referring to the development of a bicycle network which provides both comprehensive and high-quality physical infrastructure. This can be achieved through legible, direct and accessible paths, attention to maintenance of existing paths/facilities, and reallocation of road space.
- **Safety** – focusing on improving the safety of the network, reducing the number and severity of crashes.
- **Continued development** – entailing the consideration of the long-term implications of each recommended action.



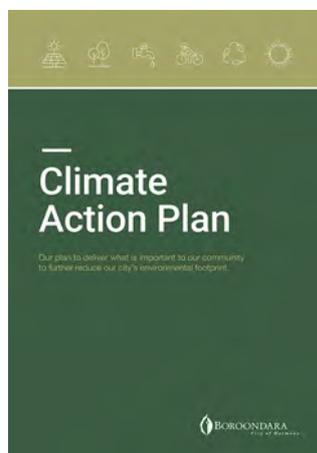
### Boroondara Community Plan 2021-2031

The Boroondara Community Plan addresses a series of approaches to prioritise development of the community and infrastructure.

The Community Plan sets the long-term strategic direction for Boroondara and incorporates the 10-year Community Vision, Council Plan 2021-25 and the Municipal Public Health and Wellbeing Plan 2021-25. Strategies that directly address bicycle riding are included within Theme 5 'Getting Around Boroondara' and include road safety, road congestion and sustainability.

The Boroondara Council Plan addresses the short-term implications of the Boroondara Community Plan 2021-2031. The Council Plan addresses the need for more bicycle infrastructure and the improvement of existing infrastructure.

Community consultation to refresh the Boroondara Community Plan has been completed in 2021. The valuable feedback received from the community confirmed that there is strong interest in more safe, protected and connected bicycle infrastructure across the municipality.

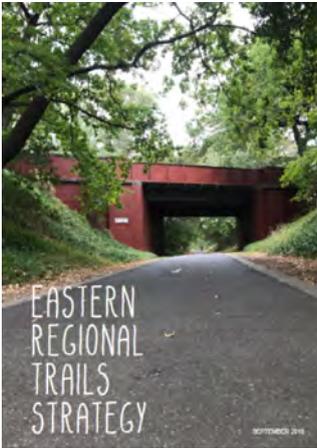


### Boroondara Climate Action Plan and Implementation Plan 2021-23

The Boroondara Climate Action Plan (CAP) provides a framework for Council to plan and deliver actions to reduce harmful emissions from Council's operations, facilitate the reduction of community emissions by the community and preserve and protect natural assets to meet the challenges of a changing climate. This will help guide Council's climate related actions into the next decade and deliver wide ranging social and environmental benefits for the community.

The CAP Implementation Plan 2021/22 and 2022/23 defines the highest priority actions for implementation over the first two years.

A number of actions relating to bicycles and active transport have been identified within the CAP, with the development and release of the Bicycle Strategy listed as a policy action in the implementation plan.



### Eastern Regional Trails Strategy 2018

The Eastern Regional Trails Strategy was developed by seven eastern metropolitan Councils of Melbourne (Boroondara, Knox, Manningham, Maroondah, Monash, Whitehorse and Yarra Ranges) along with the Victorian Government.

The strategy documents a planning framework and action plan to establish a high-quality network of integrated and connected shared trails sensitively linking communities, destinations and a diverse range of urban and natural environments.

The Boroondara Bicycle Strategy is relevant to the Eastern Trails study as it outlines the needs, facilities and recommendations required to improve the bicycle network in the municipality, including a number of specific actions to complete gaps and upgrade existing sections of the off-road shared path network.



### Boroondara Open Space Strategy

The Boroondara Open Space Strategy describes the ways we manage our network of public open spaces and includes the following principles:

- **Connected** – The open space network and other public land provides recreational, habitat corridors and sustainable commuter transport corridors and links that improve accessibility along with recreational and environmental values of open space
- **Shared** – The open space network will continue to embrace a variety of values and uses encouraging respect and consideration of all in sharing the space.

The Open Space Strategy also includes a municipal-wide recommendation to improve pedestrian and cycle access to open space to reduce reliance on vehicle use as the means of transport to reach open space.

# Bicycle riding in Boroondara today

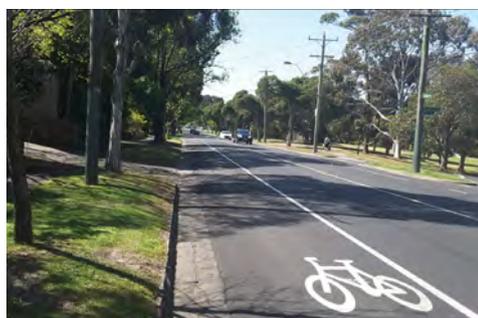
An analysis of the existing bicycle network and travel patterns was undertaken to understand and identify key focus areas to guide the development of the Strategy.

## Existing On-Road Network

The on-road bicycle network is generally made up of 1.5-metre lanes or wide kerbside lanes, shared with or adjacent to parking and traffic along roads with a speed limit of 40 km/h or higher. Suburbs closer to the CBD, including Hawthorn and Kew, consist of a higher proportion of on-road bicycle infrastructure along main roads. Apart from localised improvements at traffic treatments, there is currently only a total of 1km of protected on-road bicycle infrastructure in the municipality, located along Yarra Boulevard in Kew.

- *Top Right: A **dedicated bicycle lane** adjacent to parallel parking. This type of infrastructure provides dedicated road space for bicycle riders, however risks of car dooring remain and there is no physical protection from motor vehicles. These lanes often also end abruptly at intersections, making them only suitable for experienced or confident riders.*
- *Second Right: A **shared bicycle lane** whereby parked vehicles occupy the lane and riders are typically forced to encroach into the traffic lane to navigate around them.*
- *Third Right: A **wide kerbside lane** with intermittent dashed linemarking denoting an informal bike lane. Parallel parking is typically permitted along the kerb line, which bicycle riders would need to navigate around. This type of infrastructure provides no dedicated road space for bicycles and offers no physical protection from motor vehicles, making it unappealing for most riders.*
- *Bottom Right: A **typical local street** with parallel parking generally allowed on both sides. Traffic volumes and speed can be managed to make this a safer environment for bicycle riders.*

An overview of the existing on-road bicycle lanes across the municipality is provided in Figure 1.



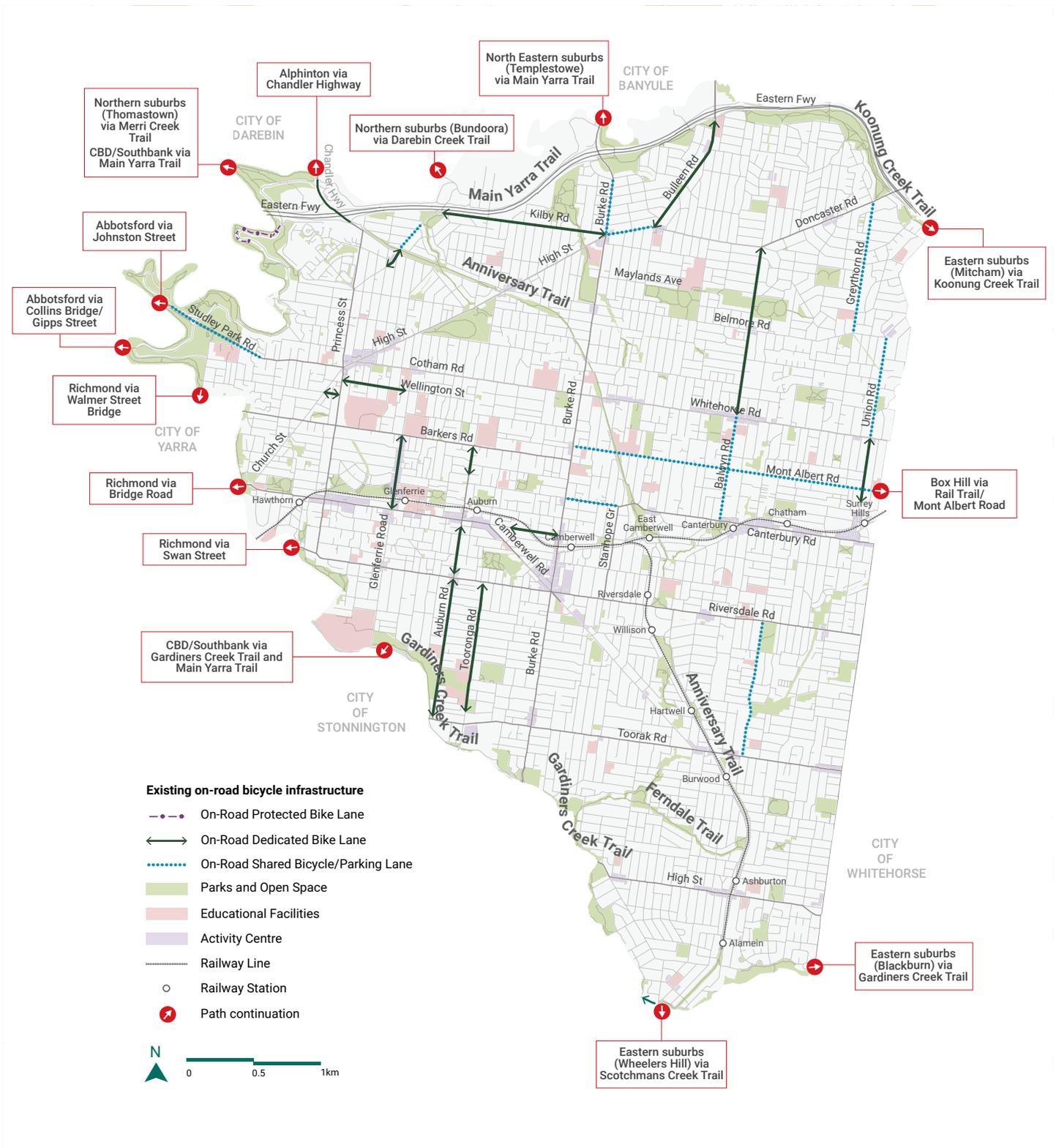


Figure 1 Existing on-road bicycle infrastructure

## Existing Off-Road Network

Off-road bicycle infrastructure primarily consists of a network of formal shared paths that extends for 37 km. Examples include the Anniversary Outer Circle Trail, Koonung Trail, Main Yarra Trail and the Gardiners Creek Trail which generally tend to run parallel to historic railway lines and other geographical features such as rivers and creeks. The east west trails are highly used for commuting during morning and afternoon weekday peak periods with recreational use between these periods. On the weekends, these trails are predominantly used for recreation purposes by pedestrians, dog walkers, joggers and cyclists. Formal shared paths are designated through linemarking or signage, and typically make use of sealed surfaces such as concrete or asphalt. Design standards specify minimum path widths should generally be at least three metres, with scope for widening or separation of busy sections.

There are also a total of 75 km of informal shared paths which cater for lower overall levels of usage and are not formally signposted or linemarked. Many informal shared paths run through parklands or open space, cater predominantly for recreation and local trips, and are often used by a higher proportion of pedestrians than bicycle riders. These paths are typically unsealed involving a gravel surface.

- *Top Right: A **formal shared path** for bicycle riders and pedestrians. These paths are typically line-marked and generally provide a width of 3m, however conflicts can occur between path users particularly as the paths are heavily utilised.*
- *Bottom Right: An **informal shared path** typically found in parks and gardens and suitable for lower levels of overall use. Informal paths cater for recreation and local trips and are often used by a higher proportion of pedestrians, so maintaining a safe shared environment with a good level of access for pedestrians is important. These paths are often narrower and typically involve gravel unsealed surfaces. Unsealed surfaces can result in safety and maintenance issues after heavy rain. Regular maintenance, renewal if required (as unsealed surfaces) and the use of edge treatments can address these issues. Localised use of a sealed surface such as exposed concrete aggregate to address high levels of maintenance for paths on significant grades characterised by washouts may also be suitable for short sections whilst maintaining a natural or unsealed appearance.*

The key limitation of the existing bicycle network is the lack of connectivity and safe, protected routes to cater for the travel needs of the entire municipality. While safe off-road paths exist and are highly utilised, there are very few connecting on-road links and these links generally only cater for experienced or confident riders as they typically do not offer any protection from vehicular traffic. This results in only a relatively small proportion of the overall travel demand being met by the existing fragmented network, with many residents unable to access safe bicycle facilities unless they reside in close proximity to an off-road path. Even so, the off-road path network does not reach many key destinations and activity centres, further discouraging bicycle riding as a travel option.

A significant opportunity exists to increase bicycle mode share through the creation of a safe and connected bicycle network spanning the entire municipality. This would make bicycle riding a viable travel option for more trip types, and encourage higher levels of participation particularly among women and children who are currently underrepresented in bicycle ridership across the community.

An overview of the existing off-road path network is provided in Figure 2. The map includes key informal path routes which provide for local access and recreation. There are a number of additional informal path links which circulate or meander through individual parks, gardens and reserves and are therefore not highlighted on the map.



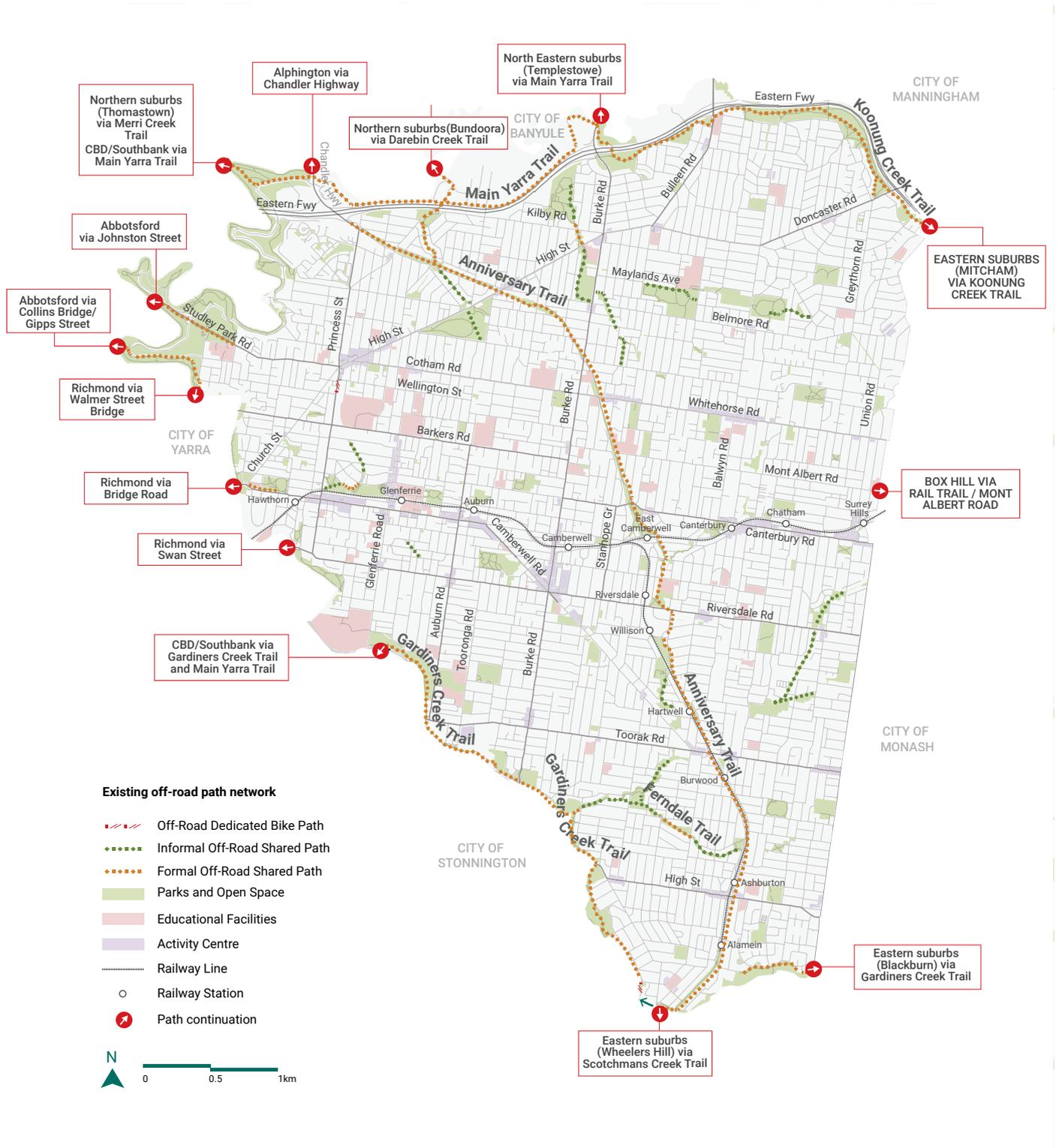


Figure 2 Existing off-road path network

## Emerging Technologies: e-Bikes and e-Scooters

The use of electrically assisted bikes and scooters is rapidly increasing across the Melbourne metropolitan area due to their ability to provide affordable, convenient transport for a diverse range of users and trip types. The use of e-bikes, e-scooters and other wheeled recreational devices is primarily governed through the Victorian Road Safety Road Rules 2017 with restrictions related to power output and travel speeds to maintain a safe environment for all road and path users.

E-bikes have similar performance characteristics to pedal powered bicycles and so the same road rules apply. In order to be considered an e-bicycle (and not a motorcycle), electric motors must have a maximum rated power of 250 watts with power-assistance progressively reducing and cutting off completely once a top speed of 25 km/h is reached. The rider must also be required to pedal to access the battery power.

All e-scooters with a power output of greater than 200 watts or capable of speeds greater than 10 km/h cannot be legally used on a road or any road related areas including footpaths, shared paths or public areas (unless it meets the standards for registration and is registered). Most newer model e-scooters exceed these thresholds and do not meet the standards for registration, and therefore cannot be used on Victorian public roads or footpaths at this time; they can only legally be ridden on private property. Penalties for riding an illegal device in a public area are enforceable by Victoria Police.

Victoria is currently undertaking a controlled trial of higher-powered e-scooters available for hire in several local government areas (City of Melbourne, City of Yarra, City of Port Phillip and City of Ballarat). These e-scooters can achieve speeds of 20 km/h and can only be used on bicycle lanes, shared paths and lower speed roads (up to 50 km/h) within the trial area only.

The City of Boroondara promotes the safe and inclusive use of its trails, shared paths and open space for all members of the community subject to Council's Amenity Local Law 2019-2029 which specifies that a person must not endanger or be likely to endanger a person's health, life, property or an animal while on Council-managed land. This means that riding a bicycle, an e-bicycle or e-scooter is currently permitted on shared paths if it is compliant with the Road Safety Road Rules, operated at low speeds and under full control of the user.

For formal shared paths such as the Gardiners Creek Trail, Main Yarra Trail, Anniversary Trail and Koonung Trail, cyclists are also required to comply with the Road Safety Road Rules, specifically Rules 251 and 253 whereby the rider of a bicycle riding on a footpath, separated path or shared path must give way to pedestrians, keep to the left and must not cause a hazard by moving into the path of a pedestrian. To reinforce the regulations, statutory shared use path pavement markings and signage beside the path are in place to highlight the shared use of the paths in addition to other key behavioural messages. Enforcement of all moving violations is the responsibility of the Victoria Police.

**E-bike sales in Australia are up around 800%** in the past five years, with around 50,000 sold during the 2019/20 financial year despite widespread shortages of stock due to the COVID-19 pandemic.

In Australia, regulations specify a **maximum motor power of 250 watts** and maximum assisted speed of 25 km/h. E-bike riders are required to travel at safe speeds in accordance with Council's Amenity Local Law so as to not endanger other members of the community.

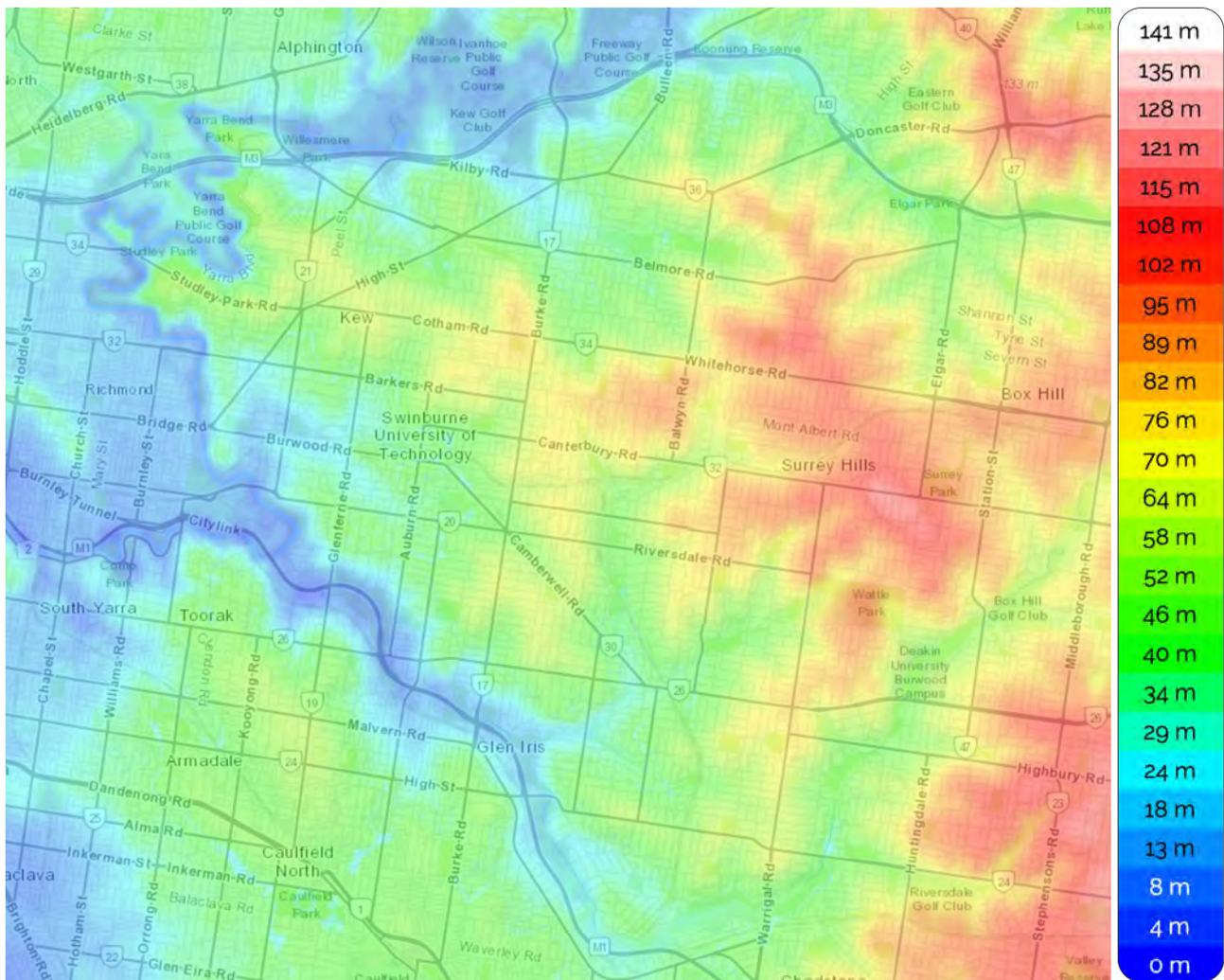


**Most e-bikes weigh between 20 and 45kg**, with battery ranges up to 150km on a single charge.

E-bikes facilitate more frequent bicycle trips and trips of greater distance compared to conventional bicycles. Studies around the world have shown that **approximately 40-50% of e-bike trips replace a journey that otherwise would have been undertaken by car.**

While the availability and quality of bicycle infrastructure is a key influencing factor for bicycle riding participation, the natural topography of the land can also directly influence travel patterns. Bicycle routes that are generally flat or with gentle undulations are traditionally considered better suited for high rates of bicycle riding activity, particularly among older riders and those carrying cargo. However, the recent surge

in availability of electrically assisted bikes is providing an increasingly affordable option for people of all fitness levels, particularly those seeking a less demanding ride. Electric bicycles (or e-bikes) have also gained popularity through the rise of food delivery services such as Uber Eats due to their ease of use and low running costs.



**Figure 3** Elevation Map for the City of Boroondara

A map showing land elevation across Boroondara is provided at Figure 3. Changes in colour indicate areas where travel routes are likely to feature steeper inclines. The topography across Boroondara is gently undulating in most areas with eastern suburbs such as Canterbury, Mont Albert and Surrey Hills situated at a higher natural level compared to surrounding areas to the north, south and west.

## Demand

Bicycle count surveys<sup>2</sup> indicate that Gardiners Creek Trail, crossing the City in the south, is the most popular bicycle route in the City, with the top three counts recorded along this trail. The highest count was recorded near the Monash Freeway underpass in Hawthorn, with 798 bicycle riders counted within a 2-hour morning peak period in 2021. Main Yarra Trail is the second most popular route, with 419 bicycle riders recorded near Walmer Street in Kew.

It is noted that there was a drop in weekday bicycle user volumes in the City of approximately 20 percent from 2020 to 2021 across the same sites surveyed in both years. As the counts were recorded on a Tuesday, this is likely attributed to the lower number of people commuting to work since the start of the COVID-19 pandemic and a general shift towards working from home.

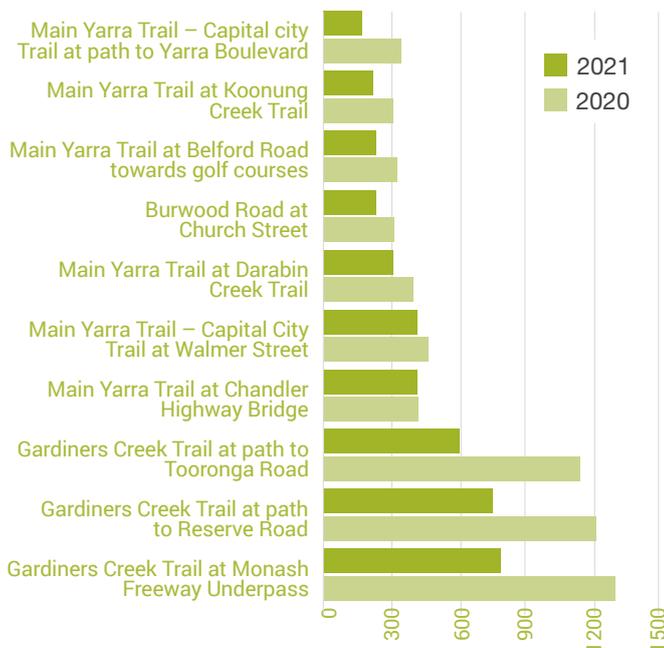
Off-road routes are significantly more utilised than on-road routes, with the higher counts generally coinciding with the various trails around the City. In 2021, the average weekday AM peak (7am-9am) count recorded along off-road routes was 271 bicycle riders, while the average count recorded along on-road routes was 63 bicycle riders. The highest on-road count was recorded at Burwood Road near Church Street with 233 bicycle riders counted, which represents only about 30 percent of the highest

off-road count (798 bicycle riders along Gardiners Creek Trail). While formal shared paths are used by high numbers of commuters on weekdays, their usage reverts to a recreational focus on weekends with high numbers of pedestrians, dog walkers and recreational riders.

Utilisation of off-road paths is higher as these facilities are well-recognised by the community as safe routes where there is a very low risk of injury due to the lack of interaction with motor vehicles. Lower numbers of bicycle riders cycling on the road does not necessarily mean there is a low demand for these routes; rather, this is a consequence of the unprotected facilities and poor perceptions of safety whereby bicycle riders are forced to compete for road space with much larger, faster and heavier vehicles. As such the existing on-road network effectively only caters for confident or advanced-level cyclists, which are a very small minority of the overall potential demographic of bicycle users.

Separate counts<sup>3</sup> were undertaken on a Sunday in November 2020 which found that weekend off-road path usage was up 89% compared to 2019 counts. This significant increase in recreational travel is again likely due to the impact of the pandemic as well as increased rates of dog ownership following changes to Victoria's tenancy laws.

**Top Weekday Bicycle Counts (7am-9am) – 2020/2021**



**Top Weekend Bicycle Counts (9am-1pm) – 2019/2020**



2 Based on the Super Tuesday Counts, an annual bicycle count survey coordinated by Bicycle Network. Surveys were undertaken within a 2-hour AM period (7-9am) at over 40 sites in the City of Boroondara. In 2021, the survey was undertaken on Tuesday 2 March 2021 and in 2020 on Tuesday 3 March 2020 (with 3 sites surveyed on Thursday 19 March 2020). All survey days occurred outside of Melbourne's lockdowns.

3 Based on the Super Sunday Counts, an annual bicycle count survey coordinated by Bicycle Network. Surveys were undertaken within a 4-hour period (9am-1pm) at 11 sites in the City of Boroondara. In 2020, the survey was undertaken on Sunday 8 November and in 2019 on Sunday 10 November. All survey days occurred outside of Melbourne's lockdowns.



## Bicycle riding participation

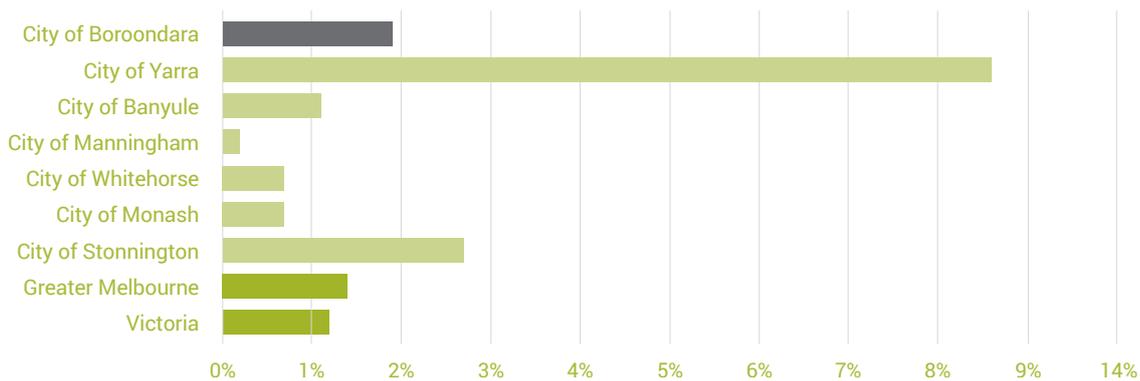
Bicycle count surveys<sup>4</sup> indicate that women represented 16 percent of bike riders across the City in 2021, which is lower than the average female ridership across Victoria of 27 percent and the Australia-wide average of 25 percent.

The cycle to work mode share<sup>5</sup> for the City is 1.9 percent, which is higher than most of the adjacent municipalities as well as the Greater Melbourne average of 1.4 percent. The City of Yarra is a clear leader in regards to the cycle to work mode share at 8.6 percent. Whilst this level of mode share can be attributed to a range of factors, it demonstrates what can be achieved within a Victorian context, particularly

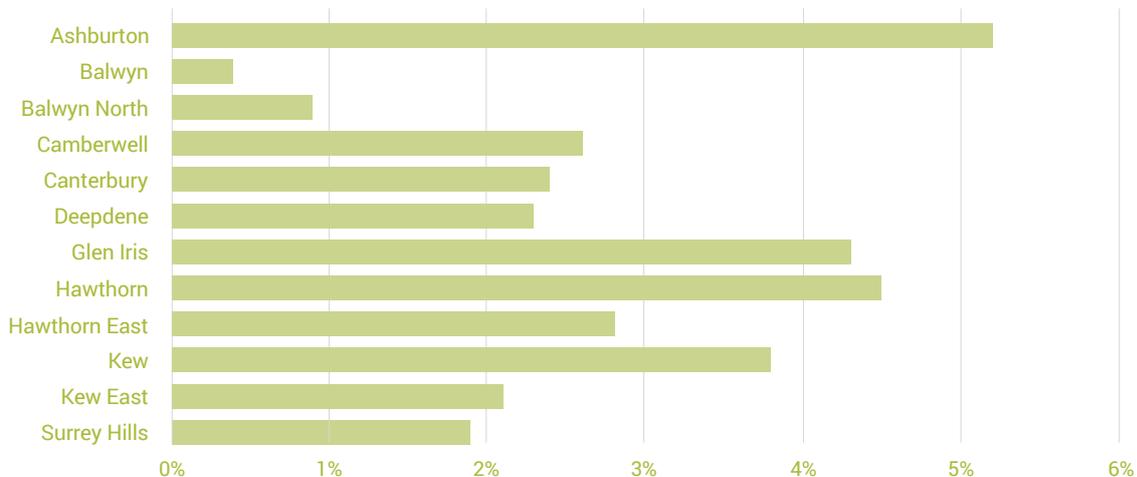
in the inner metropolitan Melbourne area. Within the City's boundaries, the suburb of Ashburton has the highest cycle mode share at 5.2 percent, with the lowest in Balwyn at 0.4 percent.

Across all trip types originating in Boroondara (including education, shopping, recreation etc.) around 1.4% are undertaken by bicycle, compared to 65.9% by private vehicle. The average distance travelled per trip was similar across these mode types, at 6.4km for bicycle riders and 7.1km for private vehicles<sup>6</sup>. This indicates significant opportunity to improve bicycle riding participation through a mode shift away from private vehicle use."

**Cycle to work mode share (by Council)**



**Cycle to work mode share (by suburb)**



4 Based on Super Tuesday counts coordinated by Bicycle Network

5 2016 Method of Travel to Work (ABS Census – i.d profile)

6 Victorian Integrated Survey of Travel & Activity (VISTA) 2018

## Safety

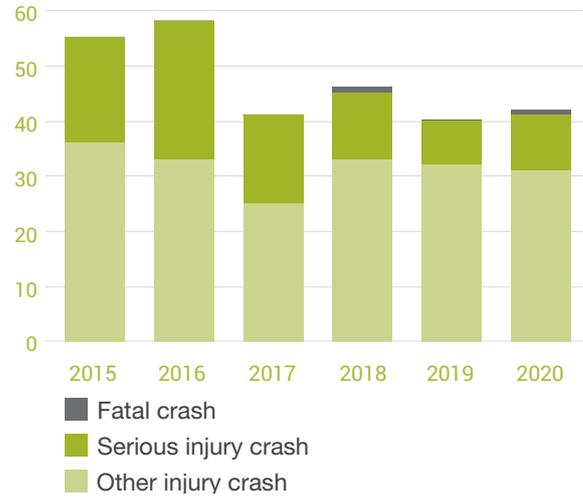
In recent years, there has been a general downward trend in the number of reported crashes involving bicycles. From 2015 to 2020, there were a total of 269 casualty crashes involving bicycles reported to the police throughout Boroondara, including one fatality in 2018 and one in 2020. The number of crashes declined by approximately 24% over the 6-year period, from 55 in 2015 to 42 in 2020. Further analysis of the data shows that around two-thirds of crashes occur at intersections.

All crashes were recorded on state-managed or Council-managed roads; Reports of injury crashes are rarely received on off-road paths, however there are a number of common risk factors that can affect safety including path width, lighting, surface quality, linemarking and signage. The interaction between pedestrians, dogs and cyclists on busy shared paths can also lead to near-misses and poor perceptions of safety. Off-road paths running through or near dog-off leash parks can also result in potential safety issues with dogs moving in an unpredictable manner near path users.

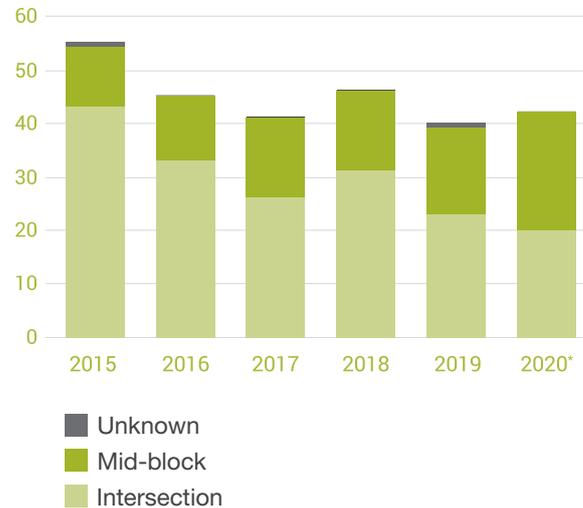
In 2020 there were 42 crashes involving bicycles which is similar to previous years despite the effects of the COVID-19 pandemic, including social distancing restrictions which led to lower numbers of both commuter cyclists and motorists across the road network. There was a notable shift toward recreational use of bicycles during the year.

It is important to note that crashes involving bicycles are likely to be underreported, particularly where an incident occurs with other path users or pedestrians. There is also a lack of data surrounding the frequency of near-misses, although this is largely consistent with the broader road network where these types of events are not able to be accurately and consistently recorded.

Crashes involving bicycles (by severity)



Crashes involving bicycles (by location type)



7 Crash statistics for January 2015 to December 2020 from VicRoads CrashStats database.

## Pedestrians and Path Users

While off-road paths provide a safer environment for bicycle users, it is important to consider the safety of all path users including pedestrians. Busy shared paths can lead to conflicts between path users and a perceived lack of safety particularly for more vulnerable members of the community. Pedestrians have right-of-way on formal shared paths, with users of personal mobility devices including bicycles required to travel at an appropriate speed and give way to pedestrians. While most riders travel safely, managing the speeds of all path users is challenging and largely limited to signage, linemarking and education as conventional on-road speed management treatments involving horizontal and vertical deflection would affect rider stability and are therefore not suitable. Path separation to provide separate facilities for pedestrians and bicycle riders is the most effective approach to managing these conflicts.

Bicycle riders above the age of 12 years are prohibited from riding on conventional footpaths in line with the current Victorian Road Safety Road Rules.

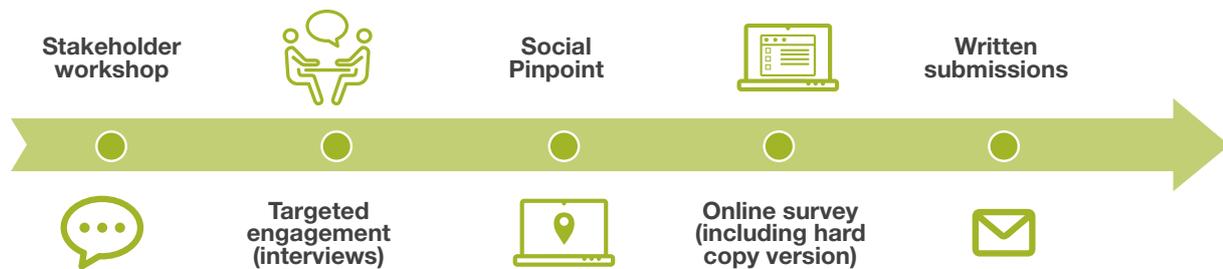


# Community inputs

Consultation was undertaken with the community and key stakeholders to ensure the Strategy serves the needs of the community.

## Process

Feedback from the community, key local organisations and professional stakeholders was obtained through multiple methods to inform the Strategy. Feedback was obtained prior to the development of the draft Strategy to identify issues and opportunities, as well as a later phase seeking community and stakeholder feedback on the draft Strategy.



## What we heard

Some key feedback from the consultation process are highlighted in Figure 3.

*"Safety is my principal concern with riding a bike in Boroondara. I would use a bike as an alternative to a car and encourage my children to ride if it was safer."*

*"We are at a vitally important crossroads in the development of cycling in Boroondara."*

*"Remove on street parking on arterial roads. Turn that into space for walking and riding."*

*"Residents of central Boroondara will benefit enormously from a safe separated bicycle route leading directly to Melbourne."*

*"Bicycle lanes need to be more consistent. It is no use having a bike lane if it regularly disappears."*

*"As a regular pedestrian on the current network of off-road shared paths, the presence on these paths of speeding commuting cyclists is clearly discouraging the use of these paths by local residents who just want to take a relaxing walk or gentle bike ride without being intimidated by aggressive cyclists."*

*"The Boroondara Bicycle Strategy needs to develop direct, continuous and safe low stress routes that would be attractive to the 'interested but concerned' cyclists, and accessible to all potential cyclists in Boroondara."*

*"While most cyclists are careful and courteous to pedestrians, there is a noticeable level of aggression and high speed amongst some cyclists and electric scooters that makes shared pathways dangerous at times."*

*"Electronic cycles and scooters are quicker, silent and dangerous weaving through pedestrians."*

Figure 3 Key feedback from consultation process

## Outcomes



### Safety

Safety is the major concern. The community reported often feeling unsafe or stressed, particularly when riding on-road and having to compete with cars and trams. Safety was identified as the main barrier to riding more often.



### Bicycle network

Stakeholders and the community share the view that the bicycle network does not allow for safe and efficient riding within and through Boroondara. It is considered by many as poorly maintained and difficult to navigate.



### Natural environment

Preserving all aspects of the natural environment including trees, waterways and animals is vital to the community. There was a strong preference for retaining unsealed gravel paths in favour of sealed concrete or asphalt surfaces.



### Strategy integration

Stakeholders and bicycle user groups are keen to ensure the strategy is integrated with other transport plans, including those from surrounding local government areas, and state-wide bicycle plans and networks. The need to align with the Integrated Transport Strategy and Open Space Strategy was raised as a key outcome, particularly to ensure pedestrians are considered along with other users of roads, paths and open space.



### Pedestrian safety

Interaction between bicycle riders and pedestrians is a key concern. Safety issues were raised regarding high travel speeds, rude or irresponsible behaviour and risks for vulnerable path users including pedestrians, elderly and impaired community members, children and dogs.



### Connectivity

The lack of connectivity of the bicycle network is a major issue. This includes the connectivity of bike paths with Strategic Cycling Corridors and public transport. Hawthorn, Kew and Camberwell had the greatest number of areas identified as unsafe, mostly located around on-road bike paths and gaps in off-road trails.



### Emerging technologies

The rising popularity of e-bikes and e-scooters was a key concern with perceptions that users were able to travel significantly faster than those riding unassisted devices. Measures to enforce and manage travel speeds on off-road paths were commonly requested to improve safety.



### Infrequent bicycle riders

While infrequent bicycle riders made up a relatively small proportion of respondents, their priorities and concerns largely align with more confident riders. As expected, they are less likely to ride on the road or in proximity to traffic.



### Bicycle riders

The community overwhelmingly identified feeling safer on off-road or separated bike paths. However other path users including pedestrians generally expressed a strong desire for more relaxed, leisurely experiences on off-road paths, and reported feeling unsafe or uncomfortable sharing paths with bicycle riders. There was significant community interest in avoiding additional bicycle traffic particularly on informal paths in highly valued reserves and parklands, which serve a more leisure and relaxation-based function.



### Congestion

Congestion and competition between cars, trams, buses and bikes for limited road space was highlighted as an area of significant concern. Together these create an aggressive and dangerous environment for bicycle riders, with parked vehicles in bike lanes being a major issue. Congestion between varying types of path users on busy shared paths was also raised as a key issue.



### Community consultation process

Many community members expressed a keen interest in more detailed consultation being undertaken for certain actions outlined in the Strategy. Some respondents felt that the consultation process was too broad and endorsement of the Strategy would preclude detailed input from the local community and the ability to consider alternative options.

# Guiding principles

The Strategy is underpinned by four guiding principles, developed to align with the vision and in response to community feedback.

Connected and complete bicycle network

Safe bicycle riding experience

Integrated supporting facilities and amenities

Awareness and education

## Connected and complete cycling network

Key to increasing bicycle riding participation and mode share is by enabling the community to see it as a feasible and attractive transport option that meets their transport needs. One component to achieving this is through a connected and complete bicycle network, which includes the following key elements and characteristics:

- **Links to key destinations** – The network provides convenient access to destinations, including activity centres, train stations, commercial areas, and health and education precincts. Connections to these destinations enable people to ride a bicycle to meet their everyday tasks, e.g. commuting for work or education, attending appointments, shopping and running errands.
- **Integrated with the broader transport network** – The network enables bicycle riding to play its role as part of the wider transport network and as part of a longer trip. While a 6-12km cycle from the municipality to the Melbourne CBD may not be feasible for all, a short bicycle trip connecting with railway stations and other public transport modes could be an attractive option, provided the bicycle network is well integrated with the broader transport network.
- **Reaches all parts of the City** – The network is broad-reaching and extends to all parts of the City.
- **Integrated with surrounding municipalities** – The Boroondara network links with the bicycle network in neighbouring municipalities to provide continuous bicycle routes that are safe and protected.

- **Direct with minimal detours** – The network allows competitive bicycle journey times compared to alternative transport options. Bicycle routes take advantage of safe alignment options and seek to minimise steep grades wherever possible.

An aspirational connected and complete bicycle network has been developed for the City (Figures 5 and 6). The network consists of three types of corridors:

- **Strategic Cycling Corridors (SCCs)** – State-significant corridors which focus on bicycle riding for transport and act as the main arterials of the bicycle network, joining up important destinations of State significance. SCCs are referred to as C1 and C2 classifications in the Department of Transport's Movement and Place Framework.
- **Municipal Routes** – Corridors providing connections to key destinations within the City. Municipal Routes are referred to as C3 classifications in the Department of Transport's Movement and Place Framework.
- **Neighbourhood and Local Links** – Connections to support access to local facilities and other land uses. Neighbourhood and Local Links are referred to as C4 classifications in the Department of Transport's Movement and Place Framework."

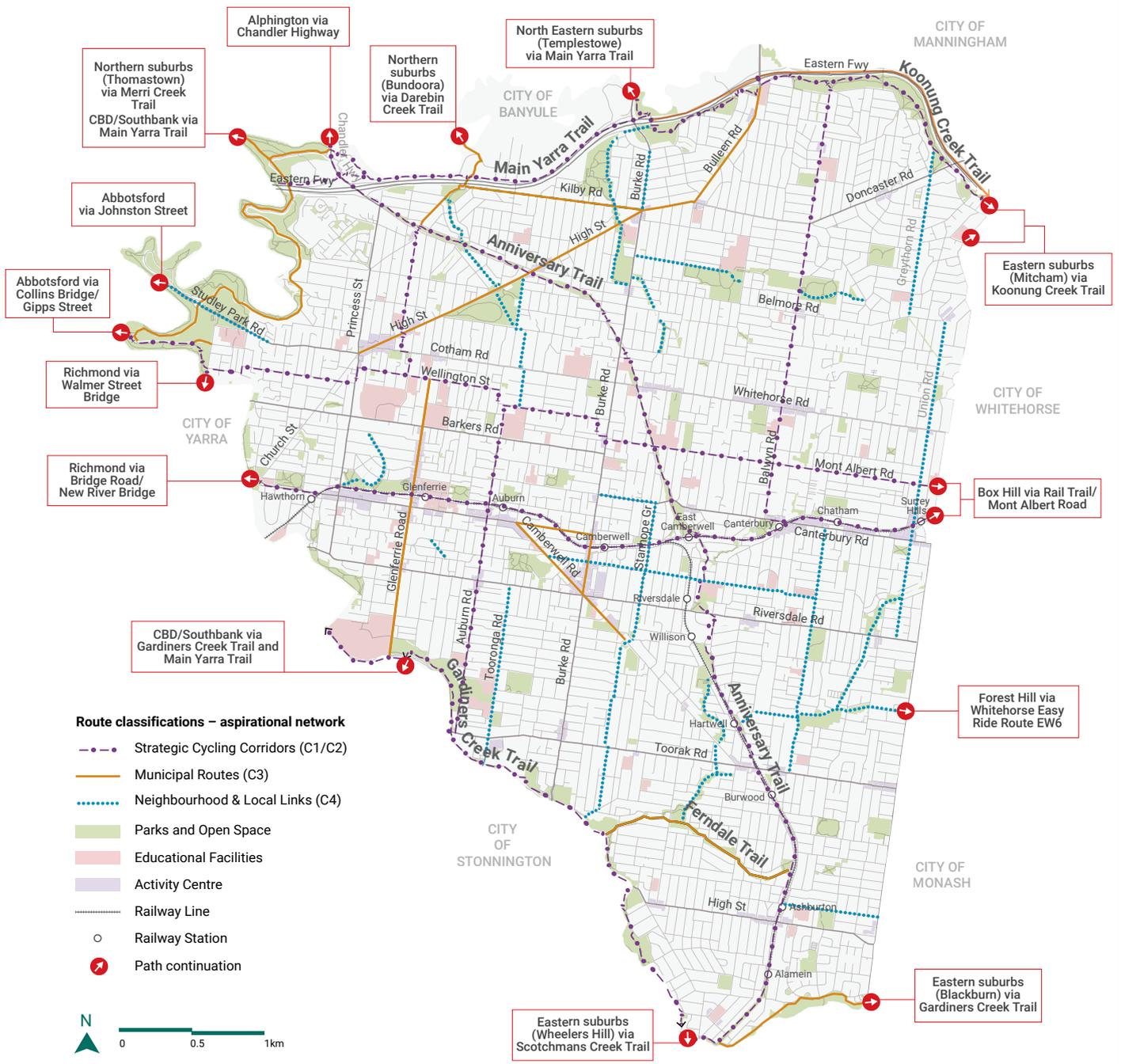


Figure 5 Route classifications – aspirational bicycle network

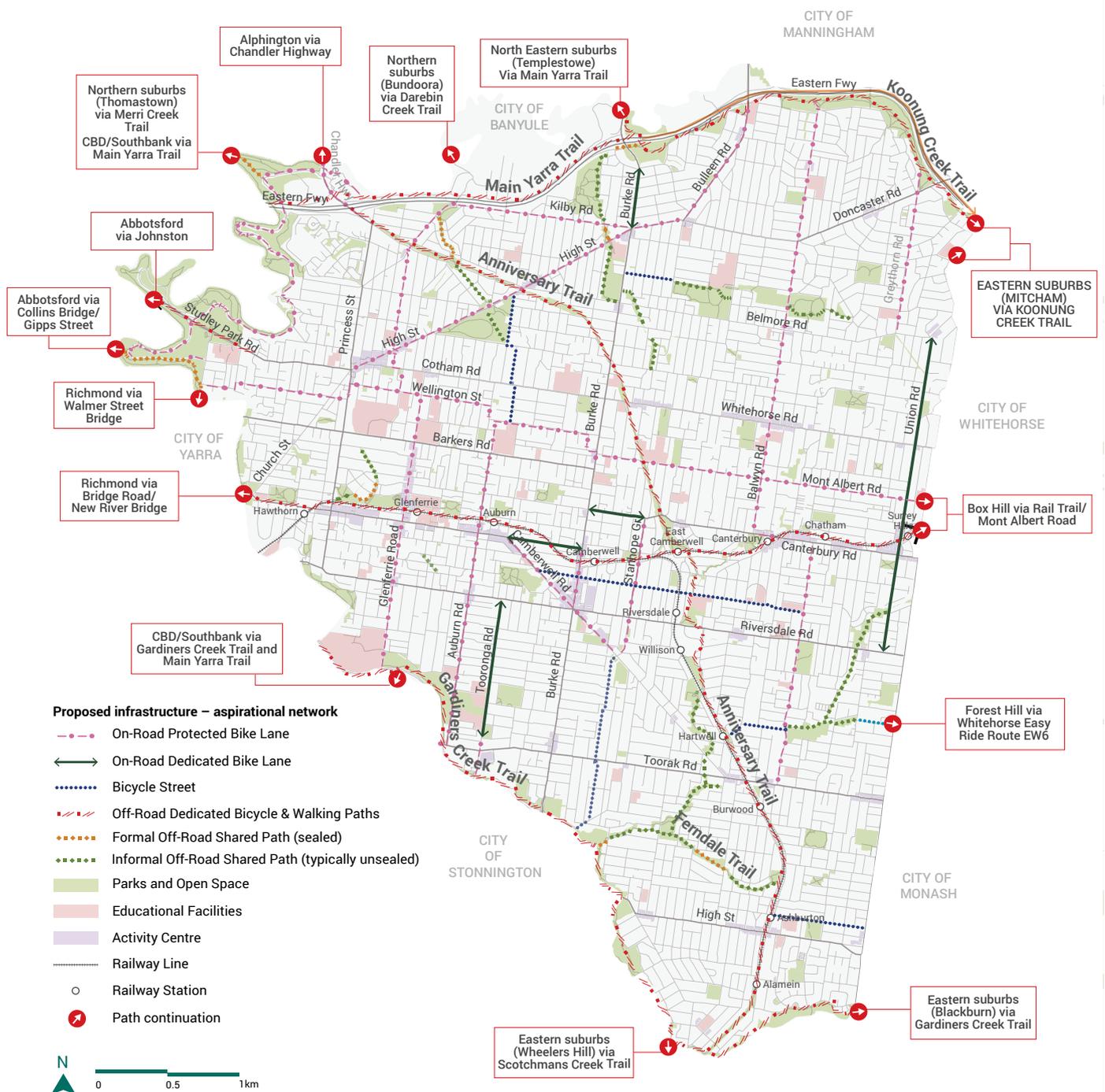


Figure 6 Proposed infrastructure - aspirational bicycle network

## Safe bicycle riding experience

A key component to increasing bicycle riding participation and mode share is through development of a bicycle network that provides a safe riding environment. This makes the activity more accessible to the broader population, noting that high female ridership is often considered a good indicator of a safe riding environment. A safe environment can be achieved through various types of infrastructure selected to suit the road environment or off-road paths.

A recent survey of residents living in the City of Boroondara found that 78 percent of respondents were interested in riding more, but concerned about the potential safety risks<sup>8</sup>. Whilst generally willing to ride on off-road paths, busy traffic corridors without barrier separated facilities deter them from riding more often. These riders generally remain within safe environments such as low volume residential streets and off-road paths. For this category of riders, the perceived safety of the riding environment is as important as the actual safety and design of infrastructure. The provision of off-road paths or protected on-road infrastructure is noted as having the biggest potential to substantially increase bicycle riding participation across the municipality.

Shared off-road paths can result in conflicts between different types of users and poor perceptions of safety and amenity for pedestrians. For busy formal shared paths, providing separate facilities for bicycle riders is the most suitable option to address these issues. A safer shared environment can be promoted on informal shared paths through improved maintenance and renewal of unsealed gravel surfaces to encourage lower travel speeds and better cater for recreational use.

Better on-road infrastructure can improve safety and encourage bicycle trips with fewer potential conflicts between riders, pedestrians, children and dogs compared to shared paths.

## Integrated supporting facilities and amenities

Bike parking, bike repair stations, water fountains, seats and end-of-trip facilities are important complementary infrastructure, along with route information and wayfinding which help to direct people to the most suitable facilities. When integrated with the bicycle network at key destinations and at strategic locations along key routes, these facilities and amenities help to support and attract people to use the network.

## Awareness and education

In addition to the physical infrastructure, non-infrastructure actions can be effective to encourage a change in travel choice, particularly among the 'interested but concerned' group. Initiatives and programs can be targeted to different groups and tailored to particular needs or concerns of groups or individuals, providing encouragement and support for the travel behaviour change.

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<sup>8</sup> Provision of protected cycling infrastructure has the potential to substantially increase cycling participation, VicHealth and Monash University survey, 2020



# Action plan

## The Strategy recommends a series of initiatives and actions to support improvements to physical infrastructure and provide a connected, safe network for the City of Boroondara.

The action plan to deliver the Strategy is outlined and illustrated in the following pages. The actions include a combination of new actions and previously recommended actions carried over from the 2008 strategy. While many projects from the 2008 strategy have been delivered, those which had not been completed have been reviewed in the current context and where they are still considered relevant, have been included in this strategy to be undertaken as a high priority.

The actions will be investigated and implemented in 2-year stages with the highest priority actions and those carried over from the previous Bicycle Strategy in Stage 1. An Implementation Plan will be developed for each stage (i.e. every 2 years) to ensure we progressively deliver on the Strategy's vision over the next 10 years:

- Stage 1: FY 2022/23 and 2023/24
- Stage 2: FY 2024/25 and 2025/26
- Stage 3: FY 2026/27 and 2027/28
- Stage 4: FY 2028/29 and 2029/30
- Stage 5: FY 2030/31 and 2031/32

The Implementation Plan contains additional detail for each of the initiatives and actions, including high level cost estimates, delivery mechanisms and identification of key stakeholders for each project.

The delivery of all actions will be subject to relevant stakeholder approvals as well as community engagement to ensure a quality outcome considering the needs of the immediate and wider community is delivered.

Any actions involving major changes (e.g. new path links or significant upgrades to existing paths in parks and reserves, protected bike lanes resulting in significant parking loss, or the implementation of numerous treatments including lower speed limits to create 'bicycle streets' on local roads) would also be presented to Council for consideration.

# Initiative 1

## Advocate to and work with the State Government (Department of Transport) to develop the Strategic Cycling Corridor network within Boroondara.

Strategic Cycling Corridors (SCC) represent the main routes of the Principal Bicycle Network (PBN) and are the most important routes for bike riding for transport, linking up important destinations of metropolitan or state significance such as the CBD, national employment and innovation clusters and major activity centres. Under the Department of Transport's Movement and Place Framework, SCCs are classified as C1 or C2 routes and intended to be developed to a level that is safe and appealing for riders of all ages and abilities.

SCCs have complex governance arrangements, with planning, implementation and maintenance responsibilities separated across landowners, asset owners and asset managers. A collaborative approach with the Department of Transport and other key stakeholders is therefore required to develop the SCCs within Boroondara and achieve good outcomes.

For off-road sections of the SCC network, separate paths for pedestrians and bicycle riders is the preferred option to minimise potential conflict and enhance safety. A number of design options exist for providing separate path facilities. The preferred option would involve completely separate paths with distinct alignments. Dependant on site conditions, physical delineation between path users can also be provided – e.g. pedestrian and bicycle paths separated by a vegetation strip, or paths provided at different levels with kerb separation. Separate bicycle and pedestrian paths designated through only linemarking and/or different pavement materials would be the least preferred option and pursued only where site constraints prevent alternative design options. Site-specific investigations and community consultation will be required to arrive at the most suitable design for each section.

- **Connected and complete bicycle network**
- **Safe bicycle riding experience**
- **Integrated supporting facilities and amenities**
- **Awareness and education**

### Initiative 1 Actions:

- 1.1** Work with the State Government to deliver the Box Hill to Hawthorn SCC along the Belgrave/Lilydale rail corridor.
- 1.2** Work with the State Government to deliver the Kew to Highett SCC via the Anniversary Outer Circle Trail.
- 1.3** Work with the State Government to deliver the Dandenong to Cremorne SCC via the Gardiners Creek Trail.
- 1.4** Work with the State Government and neighbouring Councils to deliver the Ringwood to Collingwood SCC along the Main Yarra Trail and Koonung Creek Trail as part of the North East Link Project.
- 1.5** Work with the State Government to deliver the Surrey Hills to Richmond SCC via Mont Albert Road.
- 1.6** Work with the State Government to deliver the Kew to Hawthorn East SCC via Auburn Road.
- 1.7** Work with the State Government to deliver the Canterbury to Balwyn North SCC via Balwyn Road.
- 1.8** Work with the State Government to deliver the Kew Junction to Anniversary Outer Circle Trail SCC.

Further detail is provided in the Bicycle Strategy Implementation Plan.

# Initiative 2

## Create a high-quality off-road shared path network by upgrading existing paths in line with current standards and providing new links.

Boroondara's 75 kilometres of informal off road paths and 37 kilometres of formal shared paths are the most popular bicycle routes in the City, used by both recreational and commuter cyclists.

Most bicycle riders feel safer and prefer using off-road paths; however pedestrian safety is a key concern on shared paths, with many existing routes containing narrow pinch-points with a risk of conflict between people walking and riding. High-quality shared paths are an important component of a connected and safe network providing a riding experience that is appealing for all ages and abilities.

Separate paths for pedestrians and bicycle riders should be provided on high volume routes such as the Gardiners Creek Trail, Main Yarra Trail, Koonung Trail and Anniversary / Outer Circle Trail. Opportunities should be investigated into progressively separating all these high volume routes into the future to accommodate growing demand.

Other shared path upgrades to be investigated and considered include:

- Widening shared paths to a minimum width of 3 metres (where path separation is not feasible or identified as a longer-term objective)
- Lighting, where appropriate
- Surface treatments
- Drainage improvements
- Kerb ramps
- Installation of user amenities such as water fountains and seating.

Informal shared paths provide access to local facilities and are typically unsealed gravel. The emphasis for these types of paths is maintenance and renewal, where required. Many informal paths vary in width between 1 metre and 4 metres (or higher), however recreational paths should be a consistent 3 metres wide.

Opportunities for informal shared paths include:

- Maintenance and renewal of unsealed gravel surface where required.
- Composite edging to prevent path washout in heavy rain events.
- Reconstruction of paths to achieve consistent 3 metre width.

- **Connected and complete bicycle network**
- **Safe bicycle riding experience**
- **Integrated supporting facilities and amenities**
- **Awareness and education**

### Initiative 2 Actions:

- 2.1** Provide new off-road path links to expand the network and improve local access to safe bicycle routes.
- 2.2** Upgrade the existing formal and informal off-road path network with suitable treatments to improve safety, address maintenance issues and encourage walking and bicycle riding.
- 2.3** Install supporting infrastructure to improve path accessibility and monitor usage patterns.
- 2.4** Promote a safe shared environment for all path users and progressively deliver safety upgrades to maintain high quality facilities.
- 2.5** Provide safer road crossings including path priority where suitable.

Further detail is provided in the Bicycle Strategy Implementation Plan.

## Potential Infrastructure Upgrades

### Informal Shared Paths

Informal shared paths cater for lower overall levels of usage and are not formally signposted or linemarked. Informal shared paths are typically unsealed gravel paths and vary in width from very narrow at 1m to larger widths at 4m or above, with common widths between 2-4m. Many informal shared paths run through parklands or open space, cater predominantly for recreation and local trips, and are often used by a higher proportion of pedestrians. Safety and amenity for all path users can be improved through regular maintenance and path renewal (gravel) where appropriate, widening of narrow sections to achieve three metre path widths, and composite edging treatments which help to prevent path washout after heavy rain events.



**Narrow unsealed path susceptible to safety and drainage issues**



**3m wide path with unsealed gravel surface and potential for composite edging where required**

### Formal Shared Paths

Formal shared paths are designated through linemarking or signage, and typically make use of sealed surfaces such as concrete or asphalt. Design standards specify minimum path widths should typically be at least three metres, and paths which carry high volumes of pedestrians and bicycle riders can be upgraded through measures such as path separation, widening and lighting. Examples of formal shared paths in Boroondara include the Gardiners Creek Trail, Main Yarra Trail, Anniversary Trail, and Koonung Trail.



**Formal shared path with potential for conflict between bicycle riders and pedestrians**



**Separate paths for bicycle riders and pedestrians on busy routes**

# Initiative 3

## Improve bicycle safety along main roads and intersections through the implementation of on-road cycle infrastructure treatments which respond to the existing road corridor environment.

Main roads are higher-volume traffic routes that provide direct connections between key destinations and municipal links.

There are three categories as defined below:

- State-managed roads, typically arterial multi-lane and with 60 km/h speed limits.
- Council-managed major roads, typically single lane with 50 or 60 km/h speed limits.
- Council-managed collector roads, typically single lane with 50 km/h speed limits.

Safety for those riding on these types of roads can be greatly improved through the provision of upgraded infrastructure, both on-road and at intersections. The level of infrastructure to be provided depends on the road environment. As risk factors increase including vehicle speeds, provision of car parking and number of traffic lanes, the level of infrastructure required to address these issues generally increases. In addition, gaps at intersections and crossings create unsafe and indirect bicycle routes and do not support a safe riding experience. Currently 57 percent of the incidents involving bicycle riders in the City of Boroondara occur at intersections.

On-road treatments vary in terms of the level of safety and protection provided for bicycle riders, from line marking to physical kerb protection. Investigations will be required on a site by site basis to determine the best on-road bicycle infrastructure treatment, including at intersections. However, physical separation between motor vehicles and bicycle riders should be explored as a priority for all main roads given the higher traffic volumes and vehicle speeds. Barrier kerbing offers the highest level of protection for bicycle riders as it physically prevents motor vehicles from encroaching into the bike lane. However this type

of treatment effectively narrows the remaining road width and may restrict access in some situations. Mountable kerb options can be explored as an alternative where access requirements dictate (including for emergency service vehicles).

Suitable treatments may include:

- Barrier separation kerbing (preferred)
- Mountable separation kerbing eg. low profile yellow coloured rubber kerbing
- Vibra-line
- Painted bike lanes
- Green pavement
- Signage
- Linemarking

Approval from the Department of Transport will also be required for any actions affecting state-managed roads.

- Connected and complete bicycle network**
- Safe bicycle riding experience**
- Integrated supporting facilities and amenities**
- Awareness and education**

### **Initiative 3 Actions:**

- 3.1** Develop concepts and advocate to the State Government for bicycle safety improvements on Department of Transport managed roads across the municipality.
- 3.2** Develop concepts and advocate to the State Government for on-road bicycle lanes (including physical separation where feasible) and safer intersection treatments for bicycle riders along select Department of Transport managed roads. Consider strategic removal or banning of car parking along the corridor to improve safety, particularly at crests and/or during peak travel times.
- 3.3** Provide bicycle safety improvements on Council managed major and collector roads across the municipality.
- 3.4** Upgrade existing on road bicycle lanes (including physical separation where feasible) and provide safer intersection treatments for bicycle riders along select Council-managed major and collector roads. Consider strategic removal or banning of car parking along the corridor to improve safety, particularly at crests and/or during peak travel times.

Further detail is provided in the Bicycle Strategy Implementation Plan.

## Potential Infrastructure Upgrades

### Protected Bicycle Lanes and Safer Intersections

Physical protection for bicycle riders is the preferred option for main roads, which typically carry high traffic volumes and have speed limits of 50 km/h or above – as these factors result in higher exposure risk and travel speed differential between bicycles and motor vehicles.

Safety at signalised intersections can be greatly improved by providing clearly marked bicycle lanes adjoining both the approach and departure sides. This can be supplemented with physical protection where site constraints allow.

For unsignalised intersections, safety can be improved through traffic treatments which provide priority for bicycle riders, control vehicle speeds or improve driver visibility and awareness. Examples include use of physical separation treatments (kerbing or flexible bollards) on approach and departure sides including isolated removal of car parking to provide improved delineation and dedicated road space for bicycle riders.

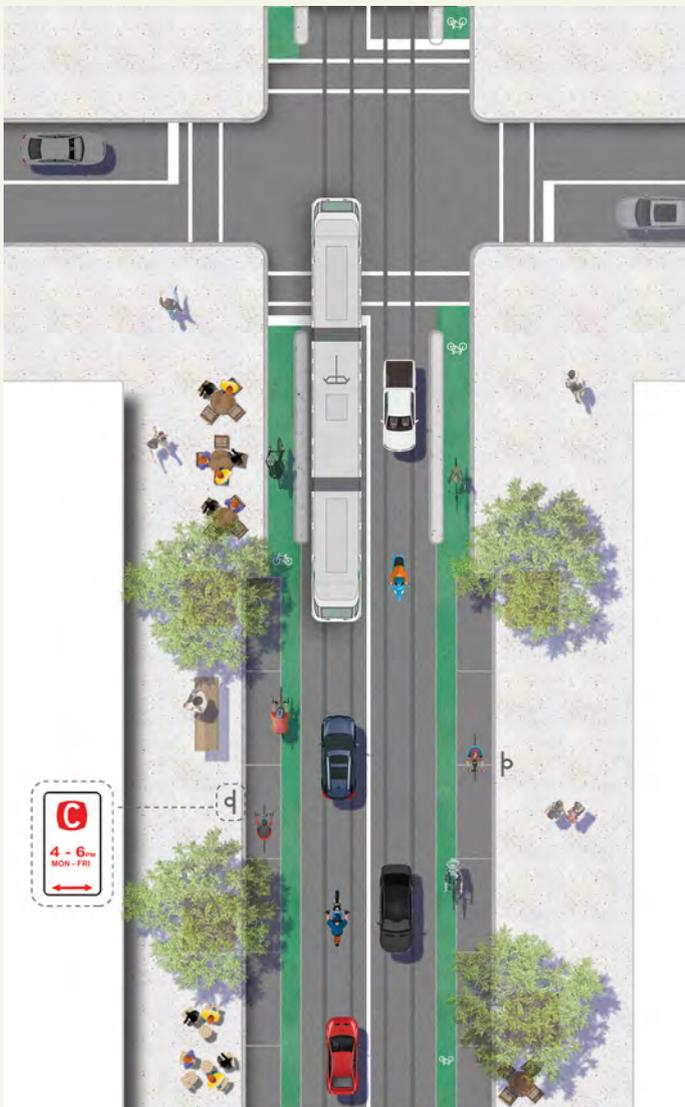


*Example of protected bicycle lane treatment on approach to an intersection in Collingwood, Victoria.*

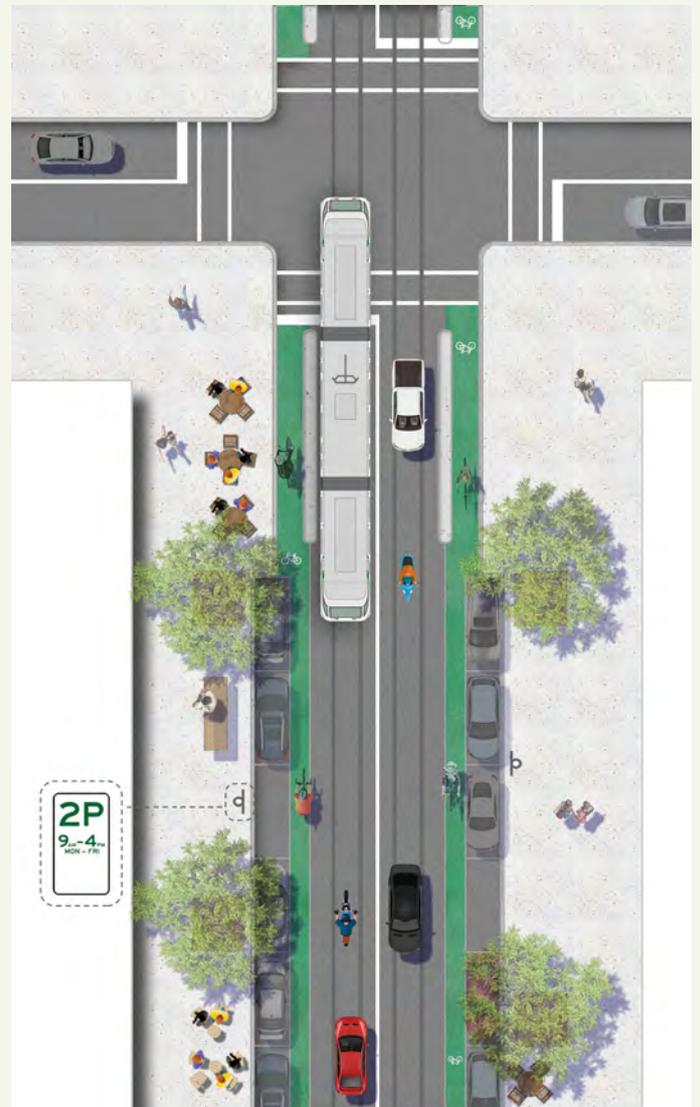
## Managing On-Street Parking

Options exist to retain parking during off-peak travel periods, while providing additional road space for bicycle riders during peak travel times. While this option does not provide full barrier protection for bicycle riders, it may be suitable in areas where full removal of on-street car parking or installation of protected bicycle lanes is not achievable.

The diagrams shown are illustrative only and site-specific proposals will be subject to investigation, consultation, Council endorsement and stakeholder approvals (noting the Department of Transport is the Coordinating Road Authority for main roads while Council is responsible for local roads).



*Parking banned during peak travel periods to provide wide bicycle lanes*



*Parking retained during off-peak travel periods*

# Initiative 4

## Create a supporting network of safe bicycle streets which encourages bicycle access and supports local trips by bicycle.

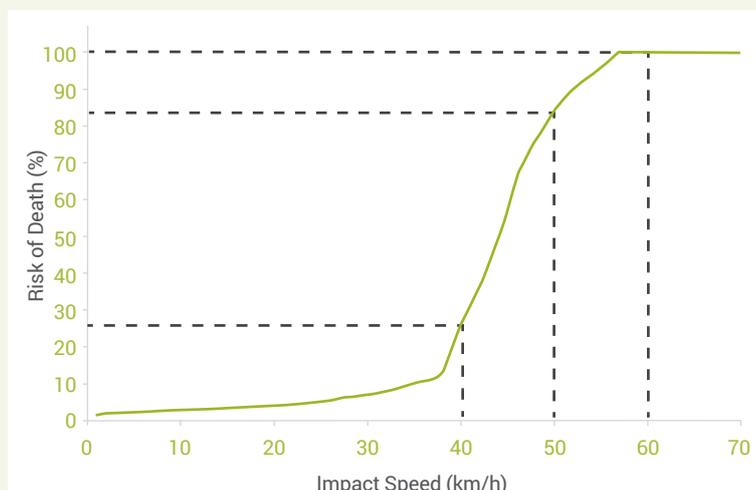
Many residential streets with low traffic volumes offer the basic components of a safe bicycle riding environment. These streets can be enhanced with design measures to create bicycle boulevards, including reducing posted speed limits to 30 or 40 km/h, traffic calming, raised intersections and coloured road markings including advisory bike lanes. Safe bicycle streets can be used to link other safe facilities such as off-road paths, to create a safe bicycle network.

Speed management in shared environments such as local streets is important due to the exponential relationship between vehicle travel speeds and the risk of a fatality or serious injury for vulnerable road users, including bicycle riders. For example, research indicates that risk of a pedestrian fatality increases rapidly from around 10% at vehicle impact speeds of 35 km/h, to almost 100% at speeds above 55 km/h. Speed limit reductions along local roads are proposed for nominated streets that provide strategic links to key destinations such as activity centres, shopping strips, community facilities, schools, as well as links to the on-road or off-road bicycle network. The implementation of lower speed limits in nominated streets would also be subject to Council approval.

Lower impact treatments such as shared lane markings, or 'sharrows' can also provide a range of benefits for bicycle riding on local roads when installed appropriately. These benefits are complimentary to other treatments and this type of treatment can be effective in reinforcing the presence and legitimacy of bicycle traffic, influencing the positioning of bicycle traffic at key conflict points including adjacent to parked cars, and providing directional and wayfinding guidance. This type of treatment would be installed at targeted, suitable routes where it would be expected to provide notable benefits including for access and wayfinding to local facilities, off-road path links and key destinations.

Investigations will be required to determine the degree of treatment required, including any major road crossing intersection treatments, as well as the suitability of the route including current general traffic volumes. A targeted approach will be undertaken with treatments to be introduced along specific roads which contribute to the broader bicycle network.

### Risk of pedestrian death as a function of vehicle impact speed



Source: Curtin Monash Accident Research Centre  
<https://www.nrsp.org.au/resources/fact-sheet-6-improving-pedestrian-safety/>

- **Connected and complete bicycle network**
- **Safe bicycle riding experience**
- **Integrated supporting facilities and amenities**
- **Awareness and education**

## Initiative 4: Potential Infrastructure Upgrades

### Safe Bicycle Streets

Safety for bicycle riders on local streets can be enhanced through treatments that promote slower motor vehicle speeds and improve driver visibility and awareness of bicycle activity.

#### Initiative 4 Actions:

- 4.1** Establish principles and develop concept designs for local road treatments to improve bicycle safety in different road environments.
- 4.2** Implement suitable treatments to create safe bicycle streets along select local roads which contribute to the broader bicycle network. Advocate to the Department of Transport for speed limit reductions to 30 or 40 km/h along these streets.
- 4.3** Install sharrows (shared lane markings) along targeted informal bicycle routes identified in Boroondara's TravelSmart map that provide access and wayfinding to off-road path links, local facilities and key destinations.

Further detail is provided in the Bicycle Strategy Implementation Plan.





# Initiative 5

## Improve management of paths used by both pedestrians and bicycle riders in formal gardens across the municipality

There are several formal gardens in the City that have paths which are used by both bicycle riders and people walking, including vulnerable path users such as the elderly or young children. These paths are sometimes used by bicycle riders travelling at speed, creating high-risk conflict areas. It is noted that many of these gardens are located near SCCs and that completion of SCCs may help reduce the risk of high speed cyclists using the paths; however further measures should be considered to reduce the risk.

- **Connected and complete bicycle network**
- **Safe bicycle riding experience**
- **Integrated supporting facilities and amenities**
- **Awareness and education**

### Initiative 5 Actions:

- 5.1** Develop a community education campaign around the use of paths within formal gardens, including promoting a low-speed shared space with pedestrian priority.
- 5.2** Provide protected on-road bicycle route options in the vicinity of formal gardens to offer convenient and safe alternative routes to bicycle riders.
- 5.3** Investigate the banning of cyclists through formal gardens where suitable alternative on road links exist, including Alexandra Gardens (Kew) and Read Gardens (Camberwell).

Further detail is provided in the Bicycle Strategy Implementation Plan.

# Initiative 6

## Provide improved quality and quantity of bike parking and end-of-trip facilities.

High quality, abundant, secure and well-located bike parking and end-of-trip facilities play a significant role in contributing to the overall attractiveness of bicycle riding. Facilities generally include bike parking as a minimum can extend to bike repair stations, water fountains, and showers and lockers, with the types of facilities to be provided varying depending on the location and users. Various types of bike parking should also be considered to accommodate non-standard bikes (e.g. cargo bikes and electric bikes).

Integrating facilities with the public transport network supports longer commuting trips and commuters tend to favour sheltered and secure bike parking. However, Surrey Hills Station is currently the only train station within the City that provides a Parkiteer cage.

For destinations such as workplaces or educational institutions, it would be beneficial to provide facilities for staff or students within a 'bike hub', with separate facilities provided for visitors. Consideration should also be made to provide e-bike charging facilities at some locations.

In addition to facility provision in public areas, the Boroondara Planning Scheme includes a strategy to support developments to provide high quality bicycle parking and end-of-trip facilities. Bike parking and supporting facilities are to be positioned at suitable locations following site-specific investigations, and in accordance with relevant standards and guidelines.

- **Connected and complete bicycle network**
- **Safe bicycle riding experience**
- **Integrated supporting facilities and amenities**
- **Awareness and education**



### **Initiative 6 Actions:**

- 6.1** Undertake a review of existing bike repair stations and water fountains and provide additional facilities at strategic areas across the municipality.
  
- 6.2** Advocate for improved quality and quantity of bike parking at all train stations, including potential removal of a few car parking bays to provide a Parkiteer cage at Hawthorn, Camberwell, East Camberwell, Canterbury, Riversdale, Burwood and Ashburton Stations. Provide or advocate for additional Parkiteer cages at other strategic locations including transport hubs.
  
- 6.3** Undertake a review of existing bike parking facilities and implement an action plan to deliver high quality bike parking at key locations.

Further detail is provided in the Bicycle Strategy Implementation Plan.

# Initiative 7

## Provide high quality wayfinding.

Effective wayfinding can enhance the safety, amenity and efficiency of the entire transport network. It can take many forms, such as maps, signage, pavement markings or stickers and when used and placed appropriately can be effective in helping pedestrians and bicycle riders reach their destinations via the most suitable route for their needs.

Along bicycle routes, clear and consistent wayfinding with information on route names, direction and distance to key destinations help to assist users with identifying routes. For the 'interested but concerned' group and other target groups, wayfinding can also help to overcome any perceptions of long distances and provide confidence in their journey. Wayfinding can also be used to complement behaviour change programs.

Wayfinding forms also an important part of integrating bicycles with the public transport network and helps to promote multi-modal trips. It can help to increase awareness of nearby destinations such as local businesses or activity centres which are easy to access by bicycle.

- **Connected and complete bicycle network**
- **Safe bicycle riding experience**
- **Integrated supporting facilities and amenities**
- **Awareness and education**

### Initiative 7 Actions:

- 7.1** Develop and implement a new wayfinding strategy that reviews existing on and off-road wayfinding signs and delivers an easy to navigate bicycle and walking network. Include supporting information to allow path users to select appropriate routes for their needs, including route names, direction and distance to key destinations, including local amenities and facilities.

Further detail is provided in the Bicycle Strategy Implementation Plan.

# Initiative 8

## Continue to run and support promotional and educational programs aimed at encouraging people to ride bicycles through raising awareness of the benefits and developing safe riding skills.

Promotional activities or events, and educational programs can help support an increased bicycle mode share, helping to promote the benefits, dispel misconceptions and create a cultural shift around bicycle riding. These can help to educate and increase awareness, providing the information, resources and community support required to encourage people to ride bicycles, and can target those who do not consider riding to be a practical transport mode.

The City, in collaboration with other organisations, currently runs various promotion and educational workshops and programs. It is proposed to continue these initiatives and broaden the target audience of the programs, in particular targeting under-represented groups in the bicycle riding population including women, students (secondary and tertiary), the culturally and linguistically diverse (CALD) population and parents of school-aged children.

In addition to promotional programs, education programs help to identify safe bicycle routes that cater for all users, encourage safe riding behaviour and educate on bicycle skills to build confidence levels. This could focus particularly on how to navigate areas of potential user conflict, such as passing pedestrians on shared use paths, riding on-road in shared street environments or transitioning between different types of facilities.

The timing of the implementation of programs is also key to their effectiveness and programs should ideally build upon the change in travel behaviour that has been observed during the COVID-19 pandemic.

- Connected and complete bicycle network**
- Safe bicycle riding experience**
- Integrated supporting facilities and amenities**
- Awareness and education**

### Initiative 8 Actions:

- 8.1** Update the current Boroondara TravelSmart map and distribute to raise awareness of safe, attractive bike routes and to help riders to plan journeys by bike.
- 8.2** Continue to run bicycle promotional and behaviour change programs for children including travel plans for primary and high schools and Safe Routes to School initiatives.
- 8.3** Work in partnership with tertiary institutes to develop a promotional and behaviour change program targeting students and staff.
- 8.4** Work in partnership with local organisations to develop travel plans and Ride to Work Day initiatives.
- 8.5** Continue to run safe bicycle riding educational training and skills programs or workshops.
- 8.6** Continue to support and promote sustainable transport initiatives with Council staff.
- 8.7** Work in partnership with local bicycle shops to promote responsible riding at the point of sale for e-bike purchases, including increased awareness of the Road Safety Road Rules. Develop a flyer outlining key messages with links to other Council-run courses and initiatives.

Further detail is provided in the Bicycle Strategy Implementation Plan.

For more information on the Borroondara Bicycle Strategy:

 [www.borroondara.vic.gov.au/bicycle-strategy](http://www.borroondara.vic.gov.au/bicycle-strategy)

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