GLENORCHY CITY COUNCIL

GLENORCHY CYCLING INFRASTRUCTURE PLAN

DRAFT FOR CONSULTATION
OCTOBER 2024

GLENORCHY CITY COUNCIL

Glenorchy Cycling Infrastructure Plan

Glenorchy City Council

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C	9/10/2024	Draft for consultation
D	13/11/2024	Minor revisions to network plan

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EXECUTIVE SUMMARY

This document identifies a vision for a future cycling network to serve residents throughout Glenorchy. The proposed network builds on existing infrastructure and previous plans and identifies routes that will provide safe, connected access for the greatest number of our residents.

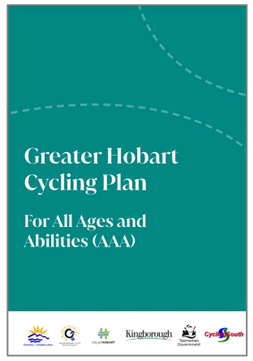
This Cycling Infrastructure Plan (Plan) is structured as follows:

1. The **Introduction** sets the scene and context for the Plan.
2. The **Vision and Objectives** describe what the Plan is intended to achieve.
3. **Why the network is needed** for Glenorchy, including background on each of the objectives.
4. The **Principles** and **Route classifications** to guide the cycle network planning are established.
5. A review of the **Strategic alignment** ensures that the proposed network supports broader plans and strategies of the Tasmanian Government and Glenorchy City Council.
6. The Future Cycling Network presents the **proposed routes** throughout our municipality. This brings together the analysis, previous planning and consultation to create a detailed proposal for the future.

This Plan has been informed by previous work as well as guidance published by the Tasmanian Government. It refers in particular to the Greater Hobart Cycling Plan and the Tasmania Cycling Infrastructure Design Guide. These documents set the high-level directions and requirements that this plan needs to achieve. We're now seeking feedback from the community and stakeholders to refine the plan and progress to a final plan, including prioritised actions for implementation.

Greater Hobart Cycling Plan (2021)

Guides the joint planning and investment to form an interconnected network of cycling paths across Greater Hobart.



Tasmania Cycling Infrastructure Design Guide (2024)

Guidance for Tasmanian councils to design cycling infrastructure suitable for All Ages and Abilities

A list of questions for readers to consider:

- Do you support the objectives identified in the plan?
- Do the routes identified connect to the places you travel to?
- Which five routes do you think are the highest priority to deliver or upgrade?
- Do you have other comments on the Future Cycling Network?

1. INTRODUCTION

Glenorchy City Council is developing a Cycling Infrastructure Plan (Plan) to enable sustainable, accessible and healthy transport in our community. This draft plan outlines a vision and supporting objectives for a cycling network that supports riders of all ages and abilities (AAA). Network planning principles have been applied to analyse our municipality and determine a vision for our future cycling network consistent with previous plans and strategies. The cycling network will provide safe infrastructure to enable active, healthy lifestyles, reduce carbon emissions and enhance the quality of life for our residents.

In the short to medium term, this draft plan will help prepare for significant changes in our community when changes occur with the Northern Suburbs Transit Corridor, and the proposed expansion of ferry services on the River Derwent. Changes include increased medium-density development, the introduction of high-frequency public transport services from the proposed rapid bus service, as well as the new ferry services and terminal at Wilkinsons Point. These projects will influence the way we move around, and will provide a catalyst for positive change to our daily lives. The draft River Derwent Ferry Service Masterplan and Northern Suburbs Transit Corridor Growth Strategy has identified the need for early investment in walking and cycling to prepare and manage this transition. The Future Cycling Network will ensure this investment is coordinated and makes cycling an enjoyable activity for everyone.

Three key themes are identified to shape the future cycling network in Glenorchy:

- provide transport choices for people of all ages and abilities
- ensure streets are safe and comfortable to ride on
- enhance community health with active healthy lives, and better access to fresh food and recreation.

These themes respond directly to our community goals and the Glenorchy City Council Strategic Plan (2023). Importantly, the plan has been informed by previous plans and community feedback gathered through a Social Pinpoint survey conducted in late 2019 as part of the Paths, Tracks and Trails report. This ensures that the Plan is robust and forward-thinking, and reflects the needs and aspirations of the community it serves.

Our aim is now to gather feedback from the community and stakeholder to refine the future network and inform the actions needed to make the vision a reality.

2. VISION AND OBJECTIVES

Our vision for walking, wheeling and riding in Glenorchy is that:

> *"Everyone in our community has the choice to walk, wheel and ride on streets and paths that are safe, connected, attractive and accessible, enabling people to get to the places they want to go, enjoy our natural areas and live happy and healthy lives."*

This vision aligns with our community goals identified in the Strategic Plan 2023 – 2032 and is underpinned by seven objectives and a series of targets to help measure our progress.

THEMES	OBJECTIVES
1. Provide transport choices for people of all ages and abilities *Strategic plan: Making lives better*	1.1. Provide options for people to travel 1.2. Make riding the preferred choice for short trips
2. Ensure streets are safe and comfortable to ride on *Strategic plan: Building image and pride*	2.1. Improve safety for people walking and riding 2.2. Maintain and improve our existing cycling infrastructure 2.3. Deliver walking and cycling infrastructure as part of all transport infrastructure projects where suitable
3. Enhance community health with active healthy lives, and better access to fresh food and recreation *Strategic plan: Support community health and wellbeing, including easy access to fresh food*	3.1. Enable incidental daily exercise (e.g. walk or ride to the shops, public transport stops) 3.2. Provide better/new walking and cycling routes to fresh food/shops

3. WHY MORE WHEELING AND RIDING IN GLENORCHY?

TRANSPORT CHOICE

The City of Glenorchy is home to over 50,000 people. Although only seven kilometres from the Hobart CBD, our municipality has the highest levels of disadvantage in Greater Hobart, with household incomes 28 per cent lower than the City of Hobart local government area (LGA). [1]

The cost of car ownership consumes a large proportion of household spending, including the purchase or leasing costs, and ongoing costs such as petrol, maintenance and insurance. Figure 1 shows that residents of Hobart pay a higher proportion of their household incomes on transport than the national average, and the highest proportion of any capital city in Australia. The amount that households spend on transport in Hobart has accelerated over the last four years from $295/week (15.5% of household income) to $428/week (19.7% of household income).[2]

This particularly entrenches disadvantage in Glenorchy LGA where low-income households have limited transport options other than driving, but also face the cost of running one or more cars. The darker colours in Figure 2 identify areas of the greatest need for improved transport options across Glenorchy.

In addition, around 30% of our residents can't drive because they're too young, too old or living with a disability, while others can't afford a car or don't have a licence. As a result, nearly one in ten households doesn't own a car. These residents have limited access to services, study and employment, and miss out on opportunities to connect and engage with family, friends and community.

Objective 1.1: Provide a range of options for people to travel

Cycling provides a low-cost way to travel and is more accessible to people who may not be able to drive, such as teenagers and children, or households who can't afford a car or second car. Accordingly, a key objective of this plan is to provide safe, accessible and comfortable cycling infrastructure. The aim is to connect people from their homes to key destinations, prioritising areas with the strongest need, as well as improving access to public transport in the local area (for example, riding, scooting or walking to a bus stop).

In 2022, the Tasmanian Government piloted the first statewide e-bike subsidy program in Australia, making it easier and more affordable to purchase an e-bike. A recent study found means tested e-bike subsidies to be more effective than electric car subsidies to reduce carbon emissions[3]. New subsidies should be considered, which prioritise low-income groups including residents in Glenorchy. Combined with a safer and better connected cycling network, this will provide a greater range of affordable and accessible transport options for our residents.

Objective 1.2: Make riding the preferred choice for short trips

More than 8 out of 10 residents drive to work, while only 3% walk or ride to work.[4] Many workers drive very short distances to get to work- in fact, half of Glenorchy's residents drive less than 3 km to access their workplace which could be done within 15 minutes by bike. This represents a significant opportunity to shift many car trips to cycling. In addition, trips to access local destinations such as schools and shops could also be shifted to walking or riding.

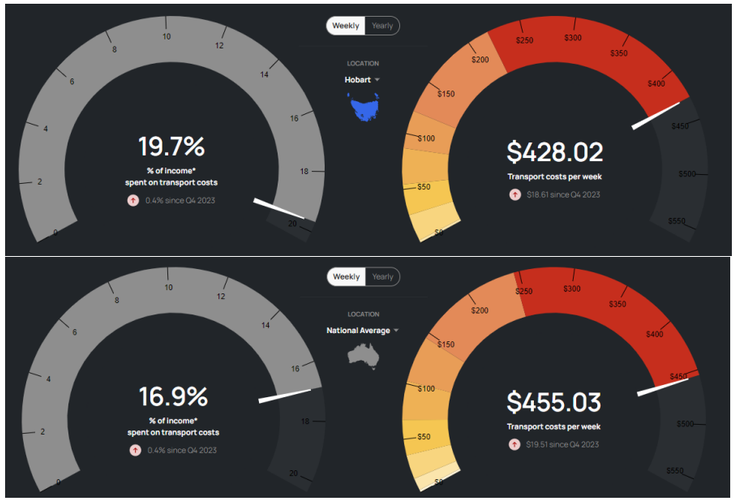


Figure 1: Hobart (top) and National average (bottom) percent of income spent on transport and transport costs per week. Source: Australian Automobile Association (2024)

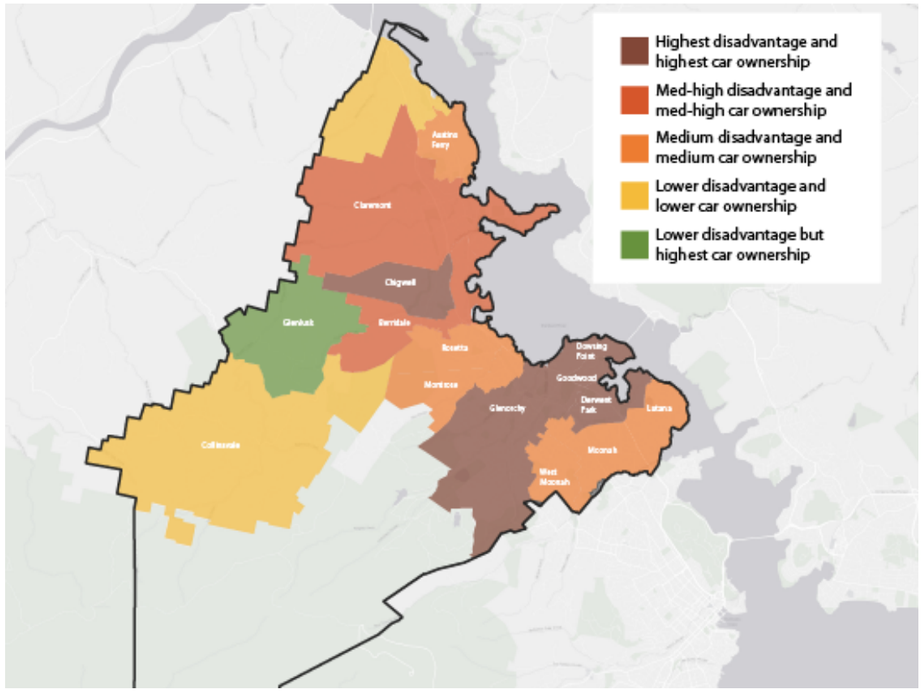


Figure 2: Areas high transport need, based on socio-economic disadvantage and car ownership

[1] McKell Institute (2024), A Better Deal https://mckellinstitute.org.au/wp-content/uploads/2024/02/McKell—A%20Better%20Deal%20(2024).pdf

[2] Australian Automobile Association (2024), Transport Affordability Dashboard https://data.aaa.asn.au/transport-affordability/

[3] University of British Colombia (2024), Cost-Effectiveness of Electric Bicycle Incentives for Greenhouse Gas Mitigation https://reactlab.civil.ubc.ca/saanich-ebike-incentives/

[4] Australian Bureau of Statistics (2021), Census www.abs.gov.au

SAFE AND COMFORTABLE TO RIDE

Our community is highly diverse and comprises people from different backgrounds, cultures and household types, of varying ages and abilities, all with unique movement and access needs. We know that a lot of people don't feel safe or comfortable walking or riding in our community. It's important that we provide the right types of environments that make people feel comfortable to walk and ride. This is referred to All Ages and Abilities (AAA) infrastructure by the Greater Hobart Cycling Plan.

Figure 3 illustrates different types of riders in Tasmania based on their level of confidence. Around 5% are strong and fearless, and will ride in almost any type of road environment. A further 13% are enthused and confident, and will ride where they feel relatively safe to do so, such as on quiet streets. The remaining 37% are interested but concerned – they need to have very safe infrastructure in order to feel secure riding a bike, such as in parks or on fully separated cycleways. This shows that, with the right types of infrastructure, up to 55% of Tasmanians would ride a bike.

Objective 2.1: Improve safety for people walking and riding

For more people to choose to ride, it needs to feel safe for everyone, no matter how experienced they are at riding.

Crash hotspots have been identified throughout the municipality across a 10-year period (2013 – 2023, see Table 1) with further analysis provided in Appendix B. It's important that we address these safety hotspots as we're developing and upgrading our cycling and walking networks.

If the conditions for rider safety and a comfortable riding environment are provided, then much more people are likely to ride a bike, and more often.

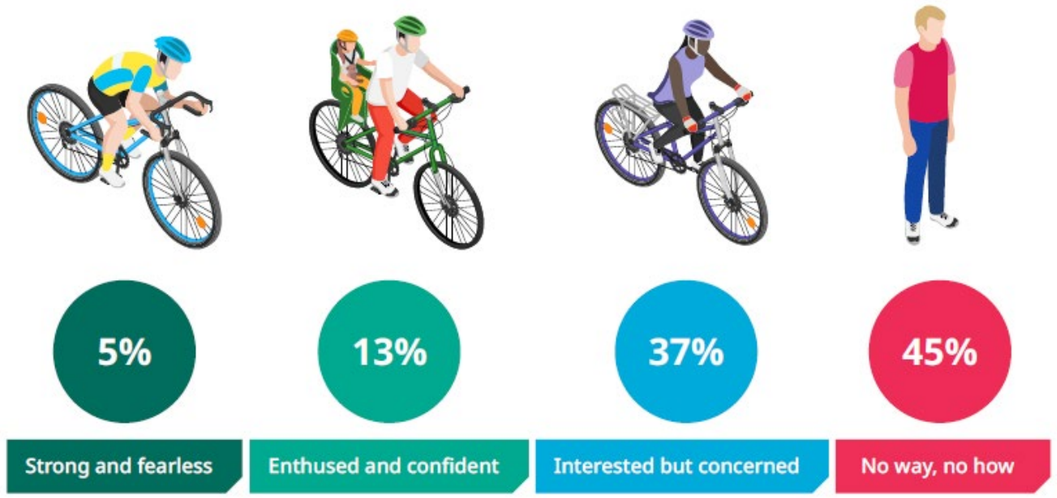


Figure 3: Typologies of riders in Tasmania (Tasmania Cycling Infrastructure Design Guide 2024)

The Tasmania Cycling Infrastructure Design Guide identifies the types of cycling infrastructure that are suitable for less confident riders, and how to design these.

Objective 2.2: Maintain and improve our existing cycling infrastructure

It only takes one bad experience for people to decide that riding isn't for them. It's therefore crucial that cycling routes are easy to follow, well designed, and well maintained to ensure every ride is an enjoyable one.

For example, the Intercity Cycleway, from Claremont to Macquarie Point, is the most popular cycling commuter route in Tasmania, and is designed for AAA riding.

However, a recent survey found that people who currently use the Intercity Cycleway have identified major concerns at most existing road crossings, along the whole length of the cycleway. [5] It is particularly prominent in Moonah where riders have identified difficulty at road crossings every 300 metres (see Figure 4). There is no priority provided for people walking and riding, despite the cycleway being the most important commuter route in Greater Hobart. Overall, this was the second highest priority issue in Tasmania in the 2024 BikeSpot report, after the narrow paths on the Tasman Bridge[3].

In Glenorchy CBD, reported issues on the Intercity Cycleway are prominent at the crossing of Elwick Road where riders are required to cross multiple lanes of traffic at an uncontrolled crossing. In Claremont, there are concerns about the abrupt end of the cycleway that is difficult to access.

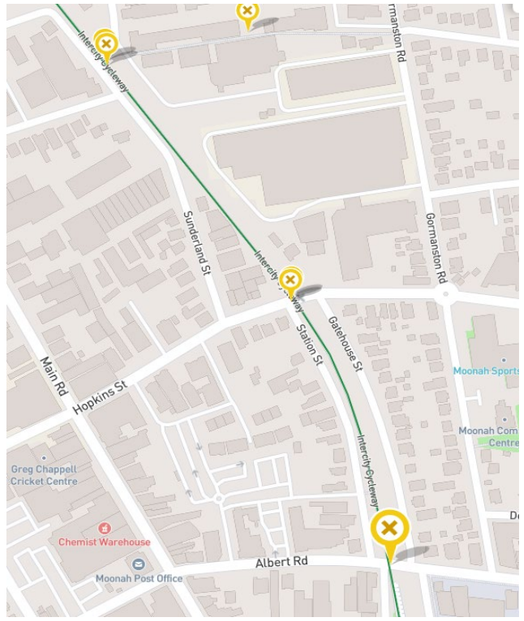


Figure 4: Unsafe crossings in Moonah as reported in BikeSpot 2023

Prioritising people at every crossing of primary cycle routes will significantly reduce the barriers and make walking and cycling more attractive.

Table 1 highlights the top ten crash hot spots in Glenorchy for people walking or riding. It shows that intersections, car parks and roundabouts are the highest risk, and Main Road is the location of six of the top ten hotspots. Further detail on crash analysis completed is provided at Appendix B.

Table 1 Summary of crash hotspots in Glenorchy for people walking and riding

LOCATION	TYPE	LOCATION	TYPE
Brooker Highway (near Lampton Avenue)	Roadside	Claremont Plaza	Car park
Main Road and Hopkins Street	Intersection	Main Road (Glenorchy Plaza)	Roadside
Main Road and Terry/Peltro Streets	Intersection	Northgate Glenorchy	Car park
Eady Street and Cooper Street	Intersection	Main Road and Derwent Park Road	Intersection
Main Road and Hopkins Street	Intersection	Main Road (near Cosgrove High School)	Roadside

[5] BikeSpot (2023) https://bikespot.crowdspot.com.au/place/825931

Objective 2.3: Deliver walking and cycling infrastructure as part of all transport infrastructure projects

Although new cycling infrastructure typically returns at least $5 in benefits for each dollar invested[6], the introduction of new cycling infrastructure can be costly. An effective way to reduce costs is for improvements to be integrated with planned renewal works. To achieve this, we'll seek to identify projects as part of maintenance works.

There are significant opportunities to invest in our cycle network in alignment and in advance of the upcoming major works for the proposed Northern Suburbs Transit Corridor (rapid bus) project and expansion of ferry services on the River Derwent. These projects offer unprecedented opportunities to diversify transport options in Glenorchy and integrate cycling improvements. Active transport improvements are identified as a priority short-term enhancement in the Northern Suburbs Transit Corridor Growth Strategy (2024). We will work closely with the Department of State Growth (DSG) to identify improvements to the cycle network during the planning and design of each project.

COMMUNITY HEALTH AND ACTIVITY

Glenorchy's community is overrepresented in levels of diabetes, as well as low physical activity, compared to the general population.[7] Many of our residents aren't getting enough daily exercise. Physical inactivity is linked to several health conditions such as heart disease, depression, different types of cancer and type 2 diabetes.[8]

Objective 3.1: Enable incidental daily exercise

When designed well, the built environment supports people to meet their daily physical activity needs by enabling them to integrate walking and cycling into their day-to-day travel. For example, people who use public transport get more exercise and are 3.5 times more likely to be healthy than people who drive. Similarly, people who walk or cycle to work have lower cardiovascular risk and body mass index compared to those who drive to work.[9] To support these outcomes this Plan identifies cycling routes that connect people to public transport nodes and key employment hubs.

Glenorchy has many high-quality recreational facilities such as the world-famous MONA art gallery, and public open spaces including local parks and playgrounds. It has excellent bush walking and mountain bike trails such as Wellington Park, Tolosa Park, Myrtle Forest, the Montrose foreshore, and the River Derwent.

Despite this, good walking and cycling links to these places are missing or in need of improvement. This plan addresses these network gaps and proposes local connections to Glenorchy's facilities so that they can be enjoyed by residents and visitors.

The future cycling network also strongly prioritises safe active travel routes to schools to establish active, healthy travel habits for young people, support independent mobility, and reduce congestion during school pick-up and drop-off times. By prioritising vulnerable user groups, such as children, we'll create the conditions to make Glenorchy safe, accessible and comfortable for the future.

Objective 3.2: Provide more and better walking and cycling routes to fresh food and shops

Glenorchy's Healthy Communities Plan identifies the need to support healthy eating to achieve better health outcomes in our community. Currently, not everyone in Glenorchy has access to healthy and fresh food options.

Figure 5 shows where recreational facilities and fresh food stores are located in our area. The quality of access to these locations by walking and cycling varies, but is often lacking. Accordingly, the actions in this plan prioritise good walking and cycling connections to supermarkets and other smaller retail stores that sell fresh food. This approach supports increased physical activity through incidental exercise and ensures that fresh food can be accessed easily and conveniently by everyone.

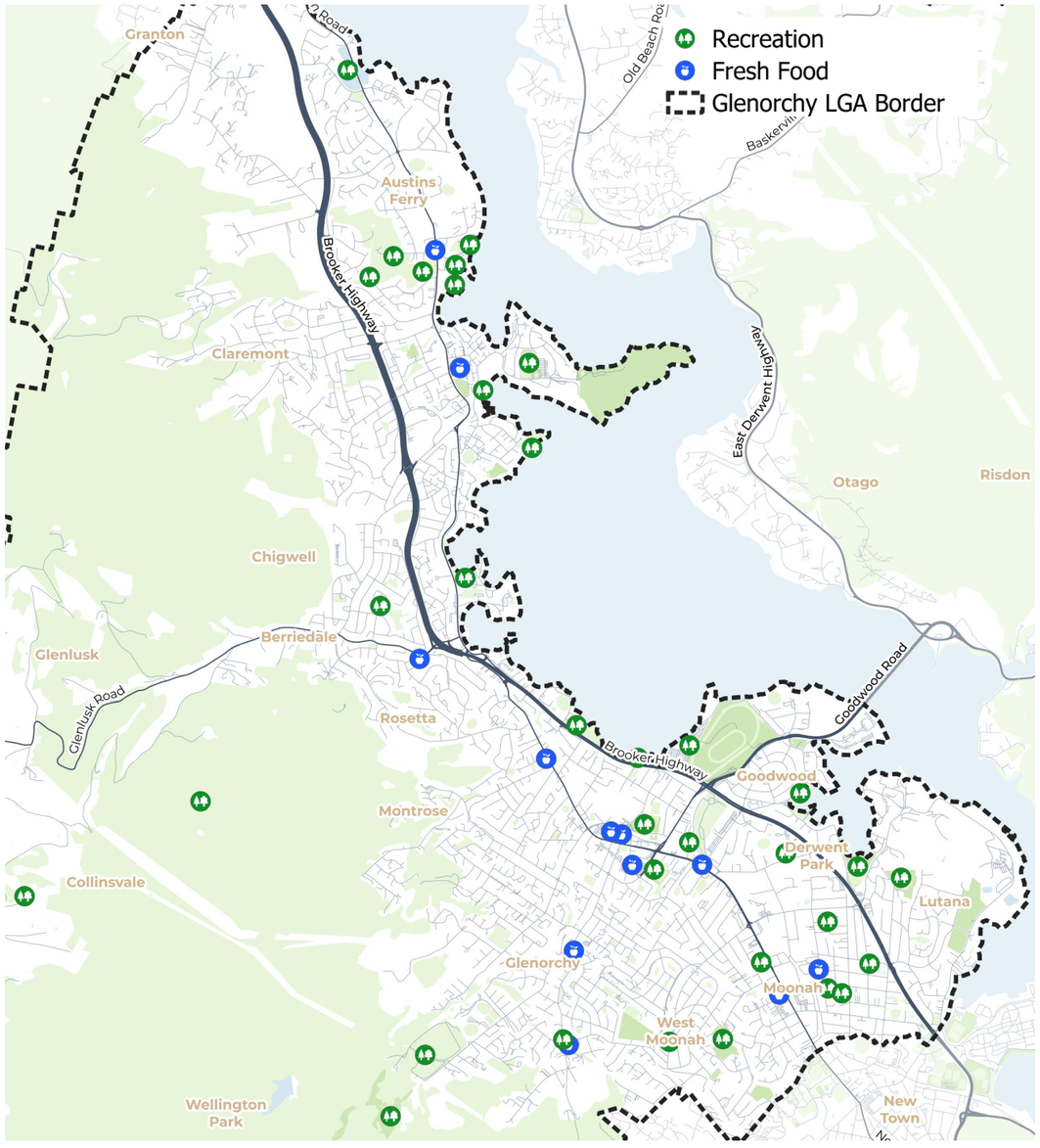


Figure 5 Map showing locations for access to fresh food and recreational facilities in the City of Glenorchy

[6] Queensland Cycling Infrastructure Investment Strategy and Business Case 2016–2026 https://www.tmr.qld.gov.au/travel-and-transport/cycling/cycling-investment-in-queensland

[7] Glenorchy *Healthy Communities Plan 2014 - 2023*.

[8] Stanesby O, Long M, Ball K, et al. Socio-demographic, behavioural and health-related characteristics associated with active commuting in a regional Australian state: Evidence from the 2016 Tasmanian Population Health Survey. Health Promotion Journal. 2020;00:1–12. https://doi.org/10.1002/hpja.428

[9] Sharman MJ, Lyth A, Jose KA, et al. Acceptability and perceived feasibility of strategies to increase public transport use for physical activity gain – A mixed methods study. Health Promotion Journal. 2019;00:1–14. https://doi.org/10.1002/hpja.292

4. CYCLING NETWORK PLANNING

CYCLING NETWORK PRINCIPLES

The Tasmania Cycling Design Guide identifies the following principles to guide the development of AAA networks (Figure 6):

Figure 6: Design principles identified by Tasmania Cycling Design Guide (2024)

These principles guide decisions throughout project development including the planning of a AAA network.

CYCLING NETWORK ROUTE CLASSIFICATIONS

The *Greater Hobart Cycling Plan* commits to providing a network of Primary, Secondary and Neighbourhood routes that are suitable for AAA riding, These classifications are based on the types of destinations that the route connects to, and the key reason for people to ride on that route. The cycling network for Glenorchy comprises four classifications as shown in Figure 7.

PRIMARY ROUTES are the most direct routes connecting between major centres, these trunk routes form the main backbone of the cycling network and are suitable for faster riding.

SECONDARY ROUTES connect to primary routes and provide access to key destinations, including schools, employment areas, shops, local services and facilities as well as notable tourist destinations.

NEIGHBOURHOOD ROUTES allow people to comfortably ride from their homes and connect to at least one higher-order route or a local destination.

RECREATIONAL ROUTES are mostly for recreational riding, such as along the waterfront, and to access scenic locations.

Figure 7: Cycling route classifications for Glenorchy

This Plan doesn't define the specific infrastructure treatments for each route. It recognises that there needs to be flexibility to address the unique opportunities, challenges and constraints along each corridor or segment. Each segment will undergo planning, design and consultation during future stages to identify the preferred treatment for each route that responds to each context.

Figure 8 illustrates the types of infrastructure that the Tasmanian Government deems appropriate to meet the AAA requirement. For example, a primary route may include off-road paths or protected bicycle lanes. A secondary route may include protected bicycle lanes, and a neighbourhood route may include local street bikeways on quiet streets.

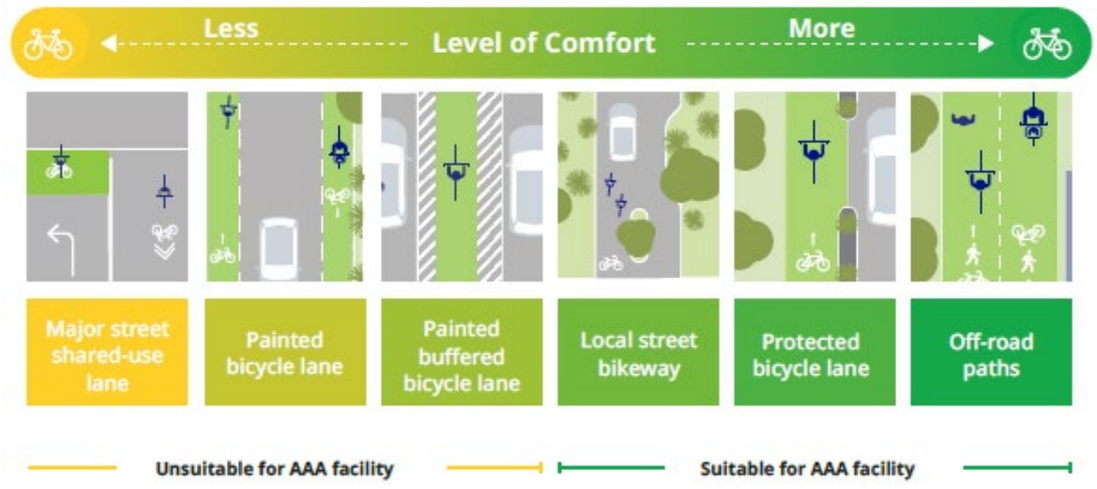


Figure 8: Cycling treatments and level of comfort, Tasmania Cycling Infrastructure Design Guide (2024)

5. STRATEGIC ALIGNMENT

This plan has been developed to align with the Tasmanian Government's and Council's aspirations outlined in other plans and strategies to ensure we are all working towards a common vision for Glenorchy, and to maximise the benefits for our community. The relevant documents are summarised in Table 2 and Table 3.

The Greater Hobart Cycling Plan 2021 (GHCP) previously identified the core cycling routes between town centres in Glenorchy (see Figure 9). This existing policy and vision for the cycling network has set the key directions for the proposed Future Cycling Network outlined in Section 6 of this document.

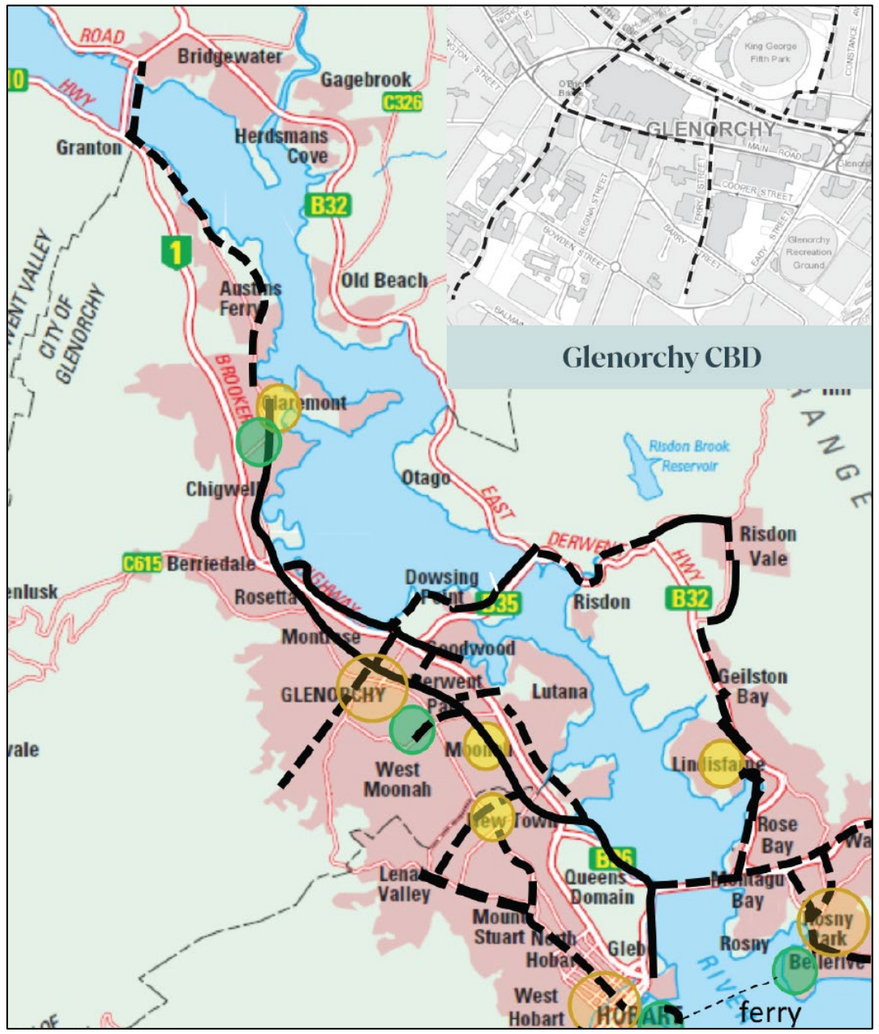


Figure 9: Key cycling routes in the Greater Hobart Cycling Plan (2021)

Large scale projects that are identified by the GHCP include the Bridgewater Bridge (under construction), Intercity Cycleway extension (Claremont to Granton), Lutana Zinc Link, Brooker Hwy – Strathaven Dr to Cornelian Bay (DSG), the Humphreys Rivulet path, and connection to the Bowen Bridge at Dowsing Point. These will form important parts of the Future Cycling Network (see Section 6).

In 2024, the Northern Suburbs Transit Corridor Growth Strategy was released by Department of State Growth, with the aim of encouraging residential development along the corridor. To support this, it will provide rapid bus services so that residents can travel more easily by public transport. The strategy is focused on the first stage of the corridor - a four-kilometre stretch between Glenorchy CBD and New Town (shown in purple in Figure 10). The map shows the five- to ten-minute walking catchments (approximately 400-800 metres) shown in pink, where people will be able to walk or ride to the rapid bus stops and to the town centres along the route. Investment in new active transport links is identified as a priority action, which aligns with this plan.

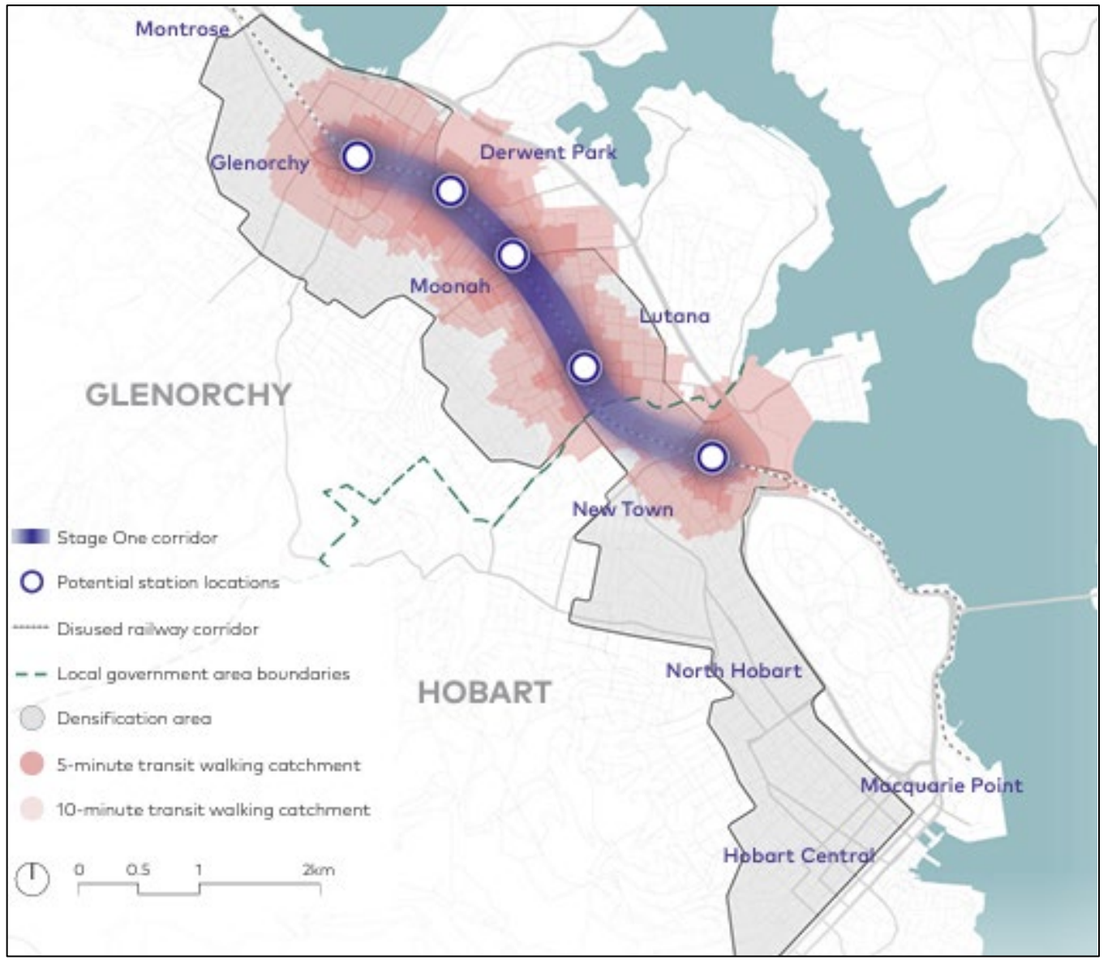
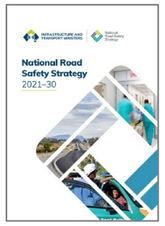


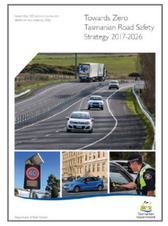
Figure 10 Map showing location of potential new rapid bus stations in Moonah and Glenorchy, Northern Suburbs Transit Corridor Growth Strategy (2024)

Table 2: Relevant national and state planning and policy documents



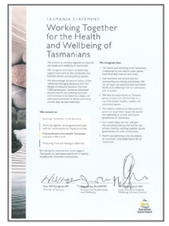
National Road Safety Strategy 2021-2030

Aims to achieve Vision Zero by 2050 with interim targets of reducing facilities by 50% and serious injuries by 30% at 2030.



Towards Zero – Tasmanian Road Safety Strategy 2017-2026

Adopts the Safe System approach to improve road safety on Tasmania's roads, supporting the national targets.

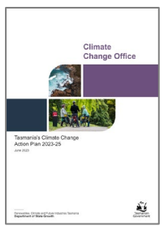


The Tasmanian Statement 2019

The Tasmanian Government's commitment to collaborate on long term solutions to improve the health and wellbeing of Tasmanian's.

Healthy Tasmania Five-Year Strategic Plan 2022-2026

Makes a commitment to build infrastructure that makes walking, cycling, accessibility and public transport a safe and viable alternative to driving.

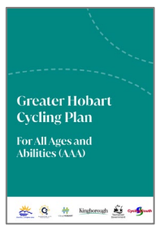


Tasmanian Climate Change Action Plan 2023-2025

Includes an action to work with local government to improve walking and cycling and micromobility infrastructure and facilities.

Tasmanian 2030 Visitor Economy Strategy

Supports the growth of climate conscious travel, sustainable tourism practices and to planning and investment in infrastructure.



Greater Hobart Cycling Plan (2021)

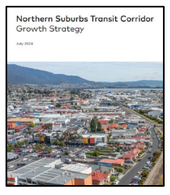
Guides the joint planning and investment to form an interconnected network of cycling paths across Greater Hobart.

Keeping Hobart Moving (draft – 2023)

Outlines a program of projects to deliver a transport system that creates a safe, accessible, people-focused and future-ready city.

30-Year Greater Hobart Plan, 2022

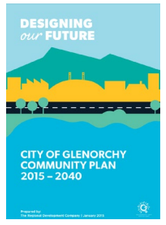
Guides the development of transport, housing and employment into the long term.



Northern Suburbs Transit Corridor Growth Strategy, 2024

Establishes a vision for the corridor. Includes short term actions to improve walking and cycling as part of the long-term transformation.

Table 3: Relevant local planning and policy documents



Glenorchy Community Plan 2015-2040

The aspirational vision for City of Glenorchy to 2040, underpinned by 5 community goals.

Glenorchy Strategic Plan 2023-2032

Outlines how Council will carry out its activities to meet the community goals.

Glenorchy Annual Plan 2023/24-2026/27

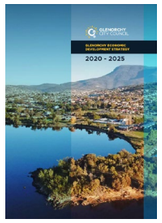
Outlines actions that Council will deliver each year and are funded through the budget.

Glenorchy Community Strategy 2021-2030

Articulates Council's approach to delivering on the community goal of 'making lives better'.

The Greater Glenorchy Plan (2021)

Identifies strategic objectives, urban design principles and a high-level precinct plan for the major activity centres.



Glenorchy Economic Development Strategy 2020 – 2025

Sets a goal to create a strong local economy in Glenorchy and more employment opportunities into the future.

Glenorchy Access Action Plan 2016-2021

Guides Council in improving opportunities for people with disability to enable them to participate as equal members of the community.

Glenorchy Paths, Tracks and Trails Report (2020)

Identifies walking and cycling projects, including large-scale projects which have not been funded to date.

6. GLENORCHY'S FUTURE CYCLING NETWORK

Figure 11 identifies the proposed network of cycling routes to make cycling safer and more accessible for everyone in our community. Each proposed route is described, and classified, in Table 4.

How we prepared the cycling network plan

To create the proposed network plan, we applied the Cycling Network Principles from Chapter 4 to the Glenorchy local government area. We used existing infrastructure and drew from previous plans, including the Greater Hobart Cycling Plan in Figure 9.

Our planning was guided by spatial analysis, focusing on making cycling an attractive option for 'Interested but Concerned' riders – that is, people of all ages and abilities (AAA). This means ensuring that the proposed cycling network offers safe and comfortable routes from where people live (origins) to where they need to go (destinations). A key goal is to connect as many residents as possible, with a particular focus on providing safe routes to schools. More details on our origin-destination analysis methodology can be found in Appendix A.

Route classification

We classified each proposed route using the cycling route classifications in Figure 7 to ensure each route's function is clearly defined. This classification will guide the design of future projects to meet specific needs.

Key routes by classification type

- **Primary Routes**: The Intercity Cycleway will serve as the primary route, offering direct connectivity through Glenorchy, from Moonah in the south to Austins Ferry in the north, and linking to Clarence via the Bowen Bridge.
- **Secondary Routes**: These routes provide essential east-west connections, linking Glenorchy and Moonah town centres, and connecting key areas such as Tolosa Park, Lenah Valley, Rosetta, Chigwell, Derwent Park, Cornelian Bay, and Montrose foreshore. Major destinations like MyState Bank Arena and MONA will also be accessible. Secondary routes will also provide direct access to all schools in Glenorchy, promoting safe cycling for students and families.
- **Neighbourhood routes:** This fine-grained network of local routes connect residential areas to the primary and secondary routes, so residents have a door-to-door connection for their everyday travel within Glenorchy.
- **Recreational routes:** Recreational routes provide a leisurely and scenic walking and riding experience. They can be journeys within themselves and/or link major tourist destinations. These routes often serve many people walking so need suitable width and relaxed riding speeds.

This planned network aims to make cycling a safe, convenient and enjoyable option for all residents, including children and teenagers.

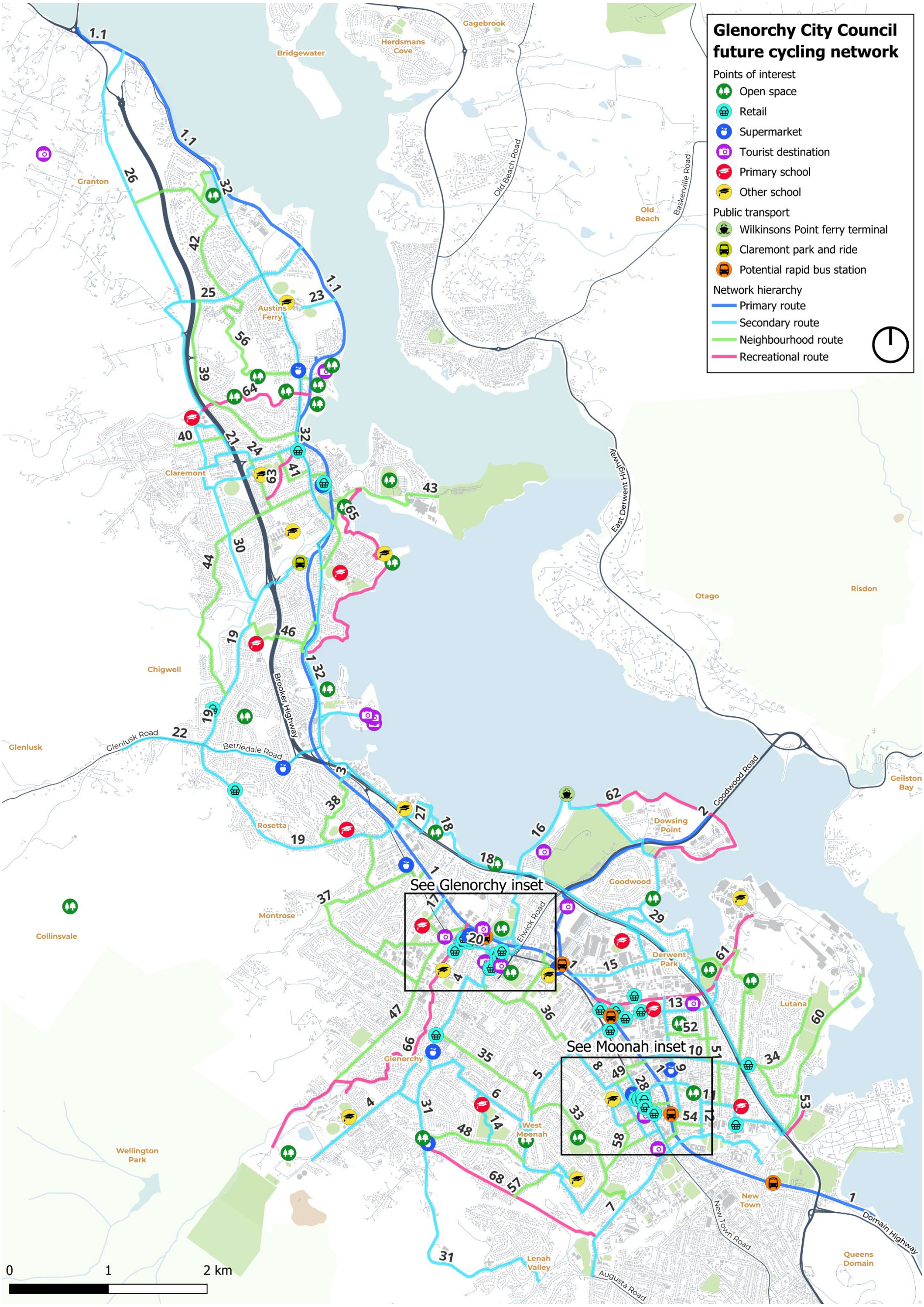


Figure 11: Draft Glenorchy Future Cycling Network – proposal for consultation

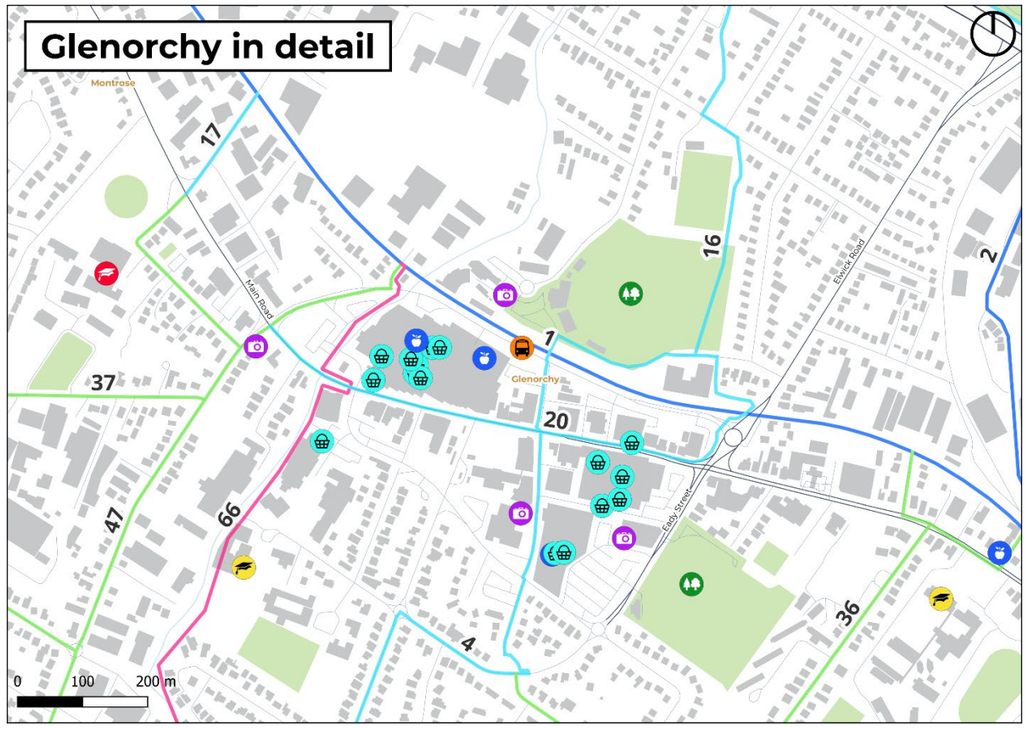


Table 4: Draft Glenorchy Cycling Network – projects for consultation

ROUTE #	ROUTE NAME	CLASSIFICATION	DESCRIPTION	LENGTH KM
1	Intercity Cycleway (existing)	Primary	Intercity Cycleway between Brooker Highway (Queens Domain) and Merley Road	12.05
1.1	Intercity Cycleway (extension)	Primary	Intercity Cycleway between Merley Road (Austins Ferry) and Midland Highway Bridge	4.81
2	Goodwood Bridge path	Primary	Off road path between Intercity Cycleway (Derwent Park) to Bowen Bridge via Goodwood Road	2.66
3	Driscoll Street Connector	Secondary	Off road path between Intercity Cycleway (Rosetta) and Strathaven Drive	0.2
4	Tolosa Street	Secondary	Via Terry Street and Tolosa Street from the Intercity Cycleway (Glenorchy) to Tolosa Park	3.25
5	Springfield Avenue	Secondary	Springfield Avenue and Sawyer Avenue between Intercity Cycleway (Moonah), Hilliard Christian School and Highfield Street	3.34
6	Springfield Gardens	Secondary	Ashbourne Grove and Stapleton Street between Cooinda Park and Barossa Road	1.45
7	Creek Road	Secondary	Via Creek Road from the Intercity Cycleway (Moonah) to Augusta Road	1.96
8	Charles Street	Secondary	Charles Street between Springfield Avenue and Florence Street	1.39
9	Gormanston Road	Secondary	Gormanston Road from Albert Road to Zinc Link via Moonah Primary School	1.17
10	Bayswater Road	Secondary	Bayswater Road between Intercity Cycleway (Moonah) and Brooker Highway (Lutana)	1.01
11	Hopkins Street	Secondary	Hopkins Street, Garden Road and Albert Road from Walch Avenue to Brooker Highway (Lutana)	2.38
12	New Town Rivulet Path	Secondary	An off-road path between Garden Road and Risdon Road, to Central Avenue (Moonah)	1.2
13	Derwent Park Road	Secondary	Derwent Park Road between Intercity Cycleway (Derwent Park) and Prince Wales Bay Soccer Grounds	1.26
14	Bacon Path	Secondary	Off-road Path between Devines Road and Ashbourne Grove via Jim Bacon Memorial Reserve	0.68
15	Lampton Avenue	Secondary	Via Lampton Avenue and Elmsleigh Road from thghe Intercity Cycleway (Derwent Park) to Gepp Parade and Giblins Reserve	2

ROUTE #	ROUTE NAME	CLASSIFICATION	DESCRIPTION	LENGTH KM
16	Barossa Creek Trail	Secondary	Off-road path from Intercity Cycleway (Glenorchy) to Goodwood Road via Wilkinsons Point	3.24
17	Grove Road	Secondary	Grove Road from Intercity Cycleway (Glenorchy) to Main Road	0.19
18	Foreshore Path	Secondary	Brooker Hwy and off-road path from Rison Road (Lutana) to Strathaven Drive	8.46
19	Rosetta Link	Secondary	Follows Marys Hope Road and Claremont Link Road from Intercity Cycleway (Rosetta) to Intercity Cycleway (Claremont) via Claremont Park and Ride	5.02
20	Glenorchy Main Road	Secondary	Main Road (Glenorchy) from Chapel Street to Intercity Cycleway (Glenorchy)	0.82
21	Austins Ferry School Link	Secondary	Broadie Street between Euston Street and Austins Ferry Primary School	0.55
22	Berriedale Road	Secondary	Berriedale Road from Intercity Cycleway (Berriedale) to Richards Road	2.07
23	St Virgils College Track	Secondary	Off-road path between Intercity Cycleway (Austins Ferry) and St Virgil's College	0.33
24	Abbotsfield Road	Secondary	Abbotsfield Road from Intercity Cycleway (Austins Ferry) to Russell Road via Euston Street	1.66
25	Arncliffe Link	Secondary	Via Brooker Highway and Arncliffe Road from Austins Ferry Primary School to the Intercity Cycleway (Austins Ferry)	2.82
26	Granton Link	Secondary	Off-road path connecting to Black Snake Road from Upper Hilton Road to the Intercity Cycleway (Granton)	2.75
27	Montrose Bay Link	Secondary	Via an off-road path and Foreshore Road from Intercity Cycleway (Rosetta), Foreshore Path to Montrose Bay High School	0.71
28	Moonah Main Road	Secondary	Main Road (Moonah) from Creek Road to Hopkins Street	0.87
29	Prince Wales Bay Link	Secondary	Via Gepp Parade and Howard Road from Zinc Link to Goodwood Road	2
30	West Link	Secondary	Off-road path between Claremont Link Road, Austins Ferry Primary School and Wyndham Road	2.54
31	Kalang Avenue	Secondary	Via Kalang Avenue and Barossa Road from Tolosa Street to Lenah Valley Road	3.72
32	Main Road	Secondary	Main Road from Strathaven Drive to Goulds Lagoon Sanctuary via Mona	7.37

ROUTE #	ROUTE NAME	CLASSIFICATION	DESCRIPTION	LENGTH KM
33	Walch Way	Neighbourhood	Via Highfield Street and Eleventh Avenue from Creek Road to Springfield Road	1.75
34	Lutana Woodlands Link	Neighbourhood	Via Bowen Road and Ashbolt Crescent from Garden Road to Zinc Link and New Town Golf Course	2.99
35	Tenth Avenue	Neighbourhood	Via Tenth Avenue and Vieste Drive from Springfield Avenue to Tolosa Street	1.25
36	Leonard Avenue	Neighbourhood	Windsor Street and Leonard Avenue from Intercity Cycleway (Glenorchy) to Springfield Avenue	2.08
37	Pitcairn Street	Neighbourhood	Via Pitcairn Street and Montrose Road from Intercity Cycleway (Rosetta) to Mary's Hope Road and Chapel Street	3.82
38	Jacques Creek Trail	Neighbourhood	Via off-road path and Redcliff Crescent from Intercity Cycleway (Rosetta) to Mary's Hope Road	0.91
39	Hilton Road	Neighbourhood	Hilton Road from Intercity Cycleway (Claremont) to Arncliffe Road	2.13
40	Colston Street	Neighbourhood	Colston Street from Birnam Street to Bradfield Street	0.49
41	Westfield Connector	Neighbourhood	Via Bilton Street and Rosbar Street from Intercity Cycleway (Claremont) to Abbotsfield Road	0.77
42	Goulds Lagoon Link	Neighbourhood	Jacques Road, Hestercombe Road and off-road path from Arncliffe Road to Main Road (Granton) and Brooker Highway (Granton)	2.38
43	Cadbury Trail	Neighbourhood	Off-road path from Intercity Cycleway (Claremont) to Claremont Golf Club	1.29
44	Branscombe Link	Neighbourhood	Via Bondar Street, Branscombe Road and Box Hill Road from Allunga Road to Main Road (Claremont)	2.84
45	Wyndham Road	Neighbourhood	Wyndham Road from Box Hill Road to Abbotsfield Road	0.54
46	Berriedale Connector	Neighbourhood	Jimbirn Street and off-road path from Intercity Cycleway (Berriedale) to Allunga Road	1.11
47	Chapel Street	Neighbourhood	Chapel Street from Maitland Street to Intercity Cycleway (Glenorchy) and Main Road (Glenorchy)	2.49
48	Devines Road	Neighbourhood	Devines Road from Springfield Avenue to Barossa Road	1.11
49	Fleet Connector	Neighbourhood	Fleet Street and Amy Street from Intercity Cycleway (Moonah) to Charles Street	0.44
50	Moonah Car Park	Neighbourhood	Path from Intercity Cycleway (Moonah) to Main Road (Moonah)	0.26

ROUTE #	ROUTE NAME	CLASSIFICATION	DESCRIPTION	LENGTH KM
51	Maple Link	Neighbourhood	Via Maple Avenue and Fletcher Avenue from Derwent Park Road to Garden Road	0.96
52	Clifford Street	Neighbourhood	Clifford Street from Gormanston Road to Fletcher Avenue	0.54
53	Lennox Avenue	Neighbourhood	Off-road path and Lennox Avenue from Ashbolt Crescent to Brooker Highway (Lutana)	0.97
54	Gatehouse Street	Neighbourhood	Gatehouse Street from Main Road (New Town) to Albert Road and Central Avenue	0.64
55	Prince Wales Trail	Neighbourhood	Off-road path from Derwent Park Road to Gepp Parade via Prince of Wales Reserve	0.33
56	Poimena Trail	Neighbourhood	Off-road path from Intercity Cycleway (Austins Ferry) to Arncliffe Road	1.98
57	Ripley Road	Neighbourhood	Ripley Road from Hill Climb Trail to Springfield Avenue	0.44
58	Albert Road	Neighbourhood	Albert Road from Intercity Cycleway (Moonah) to Highfield Road via Charles Street	1.43
59	Cadbury Road	Neighbourhood	Cadbury Road from Main Road (Claremont) to Box Hill Road via Claremont Foreshore Reserve	0.87
60	Risdon Road	Neighbourhood	Risdon Road from Lennox Avenue to Risdon Wharf Industrial Area	1.45
61	Zinc Link	Recreational	Zinc Link off-road path from Intercity Cycleway (Moonah) to Bender Drive	2.08
62	Dowsing Point Trail	Recreational	Off-road path along the foreshore from Howard Road to Wilkinsons Point	2.65
63	Westfield Path	Recreational	Off-road path from Main Road (Claremont) to Wyndham Road	0.68
64	Roseneath Rivulet Path	Recreational	Off-road path following the rivulet from Intercity Cycleway to Brooker Highway (Austins Ferry)	1.3
65	Claremont Foreshore Path	Recreational	Off-road path along the foreshore from Intercity Cycleway (Berridale) to Cadbury Road	3.06
66	Humphreys Rivulet Trail	Recreational	Off-road path following the rivulet between Intercity Cycleway (Glenorchy) and Tolosa Park	3.81
67	Marine Esplanade	Recreational	Along Marine Esplanade from Brooker Hwy (Lutana) to New Town Bay	0.41
68	Hill Climb Trail	Recreational	Off-road path from Creek Road to Barossa Road	2.01

APPENDIX A

CYCLING NETWORK ACCESSIBILITY ANALYSIS

To create the cycling network plan in Figure 11 and Figure 12, we used the following steps and inputs in preparing a computer generated network plan:

1. Create a list of **destination features** to be used as the destinations for the origin/destination routing algorithm. These include Tourist destinations, Schools, Fresh food (supermarkets), Retail and Open space facilities.
2. Update the Glenorchy **population** data, based on Census information. These are used as origins to understand approximately where residents start their trip.
3. Download the entire **street network** for Glenorchy including roads, cycle paths, footpaths and other tracks. Then to each path attach additional information such as grade (steepness) and road classification (a proxy for traffic speed and volume).
4. **Prioritise** the different types of possible paths based on weightings to determine the most appropriate route. **Weightings** are described in Table 5 below. Note that tertiary streets were weighted more highly than residential streets to achieve directness recommendations consistent with the route classification principles (see Section 4).
5. To ensure that the model identifies a safe path to the local primary school, a path is routed from residents within each **primary school catchment** to the school. Some refinements are made to keep the network legible.
6. Route a path from ALL **origins** to ALL **destinations** minimising a custom 'weight' metric that prioritises (in this order) Pleasant or existing cycle facilities, low grade (steepness) and low traffic speed (assumed according to road classification).
7. Remove ALL links not involved in one of these **shortest paths**.
8. For each link – calculate the number of **potential trips** to each destination. This calculation assumes that if AAA infrastructure is provided, all residents could choose to cycle if they wanted to. Demographic factors such as age and rider confidence do not weight the potential number of trips. Destination types that have more instances will attract higher flows so to counteract this, flows are normalised by dividing by the number of instances of that destination type.
9. Links are then simplified according to the **most frequently used** segments, but prioritising keeping connections to (in order of importance) Schools > Tourist features > Open space > Fresh food >Retail.
10. Finally, disconnected links or dead ends are **removed** so that the final output is coherent and logical.
11. The computer-generated links are **reviewed and refined** by Council, to inform the proposed network and project prioritisation.

Note this is a computer-generated network based on the data in Table 5 and seeks to provide balanced access to where people currently live. It does not consider the engineering challenges associated with the routes identified, nor the likelihood of different people choosing to cycle.

Table 5: Destinations, data sources and weightings

FACTORS	DATA SOURCE	DESCRIPTION	WEIGHTING
Destinations			
Primary schools	The LIST	Primary school catchment polygons are used to filter residential origins and route those residents to their local primary schools. Childcare destinations are not considered.	**Very high**
Other schools	Council supplied data	All other schools	**High**
Retail	Google Places	Limited to clothing stores, bike shops, book shops, convenience stores, department stores, florists and large shopping malls.	**Low**
Fresh food	Google Places	Supermarkets	**Low**
Tourist attraction	The LIST	Tourist and cultural features	**Medium**
Open Space	Google Places / The List	Parks, sport complexes (Playgrounds not specifically identified)	**Medium**
Origins			
Residents	ABS Mesh Blocks (Census 2021)	Centre points of each block are used as the origin for all residents of that area	Where more residents are carried by a link, the stronger the 'importance' rating, as per legend
Employment	The List	Not used as part of the algorithm. These areas are identified on the map and are usually well-connected due to clusters of destinations (see above).	NA
Outside the LGA		Origins or destinations outside of LGA are not included.	NA
Routing			
Topography	ELVIS open data, sources DEM data from Geoscience Australia	Grade added to all links. Normalised grade z-score (abs) used in weight metric for the routing algorithm	**Medium-high**
Road classification	Open Street Maps (OSM)	Cycleway Path Tertiary Residential Secondary	**Very high** (0.01) **High** (0.05) **Very high** (0.01) **High** (0.5) **Low** (5)

FACTORS	DATA SOURCE	DESCRIPTION	WEIGHTING
		Primary	**Very low** (10)
Speed	OSM data	Inferred only from road classification (as such, low accuracy)	NA
Traffic volume	OSM data	Inferred only from road classification (as such, low accuracy)	NA
Footpaths	OSM data	Identified as 'Path' classification	NA
Existing cycling infrastructure	OSM data	Identified as 'Cycle path' classification	NA
Legibility	Not considered	Not directly considered as suitable results achieved using the classification weighting method	NA
Level of Cycling Stress	Not considered	To be considered in individual project development and improved with new safer infrastructure	NA
Crash statistics	Not considered	To be considered in individual project development and improved with new safer infrastructure	NA

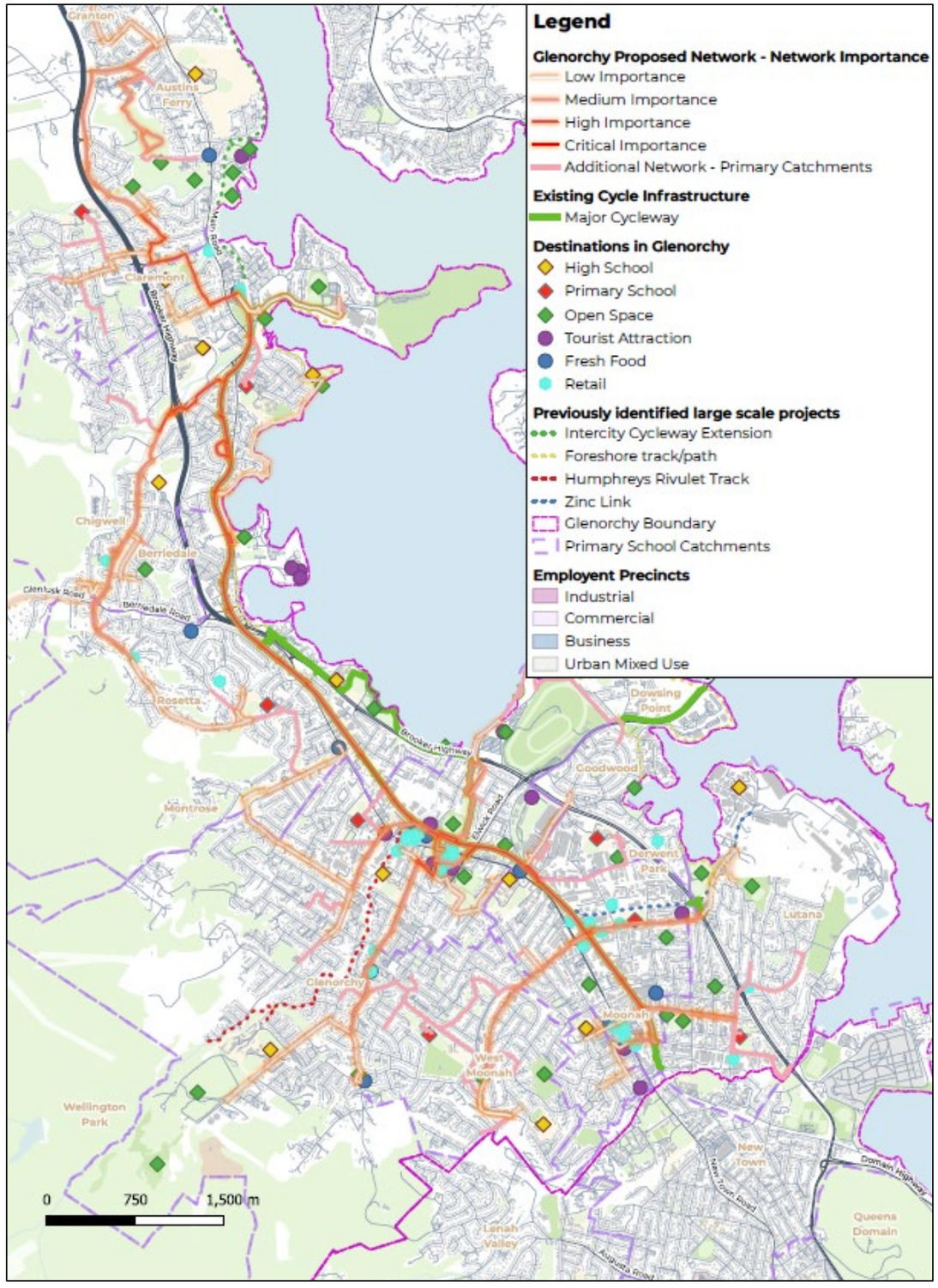


Figure 12: catchments and key destinations

APPENDIX B

CRASH HOTSPOT ANALYSIS

Crash hotspots have been identified throughout the municipality across a 10-year period (2013 – 2023) as per and summarised in Table 6. The analysis shows crashes involving pedestrians and cyclists as this provides a more robust dataset of incidents, and also identify integrated improvements for people walking. This crash data is collected from reports when police are required to attend, and as such near misses as well as many pedestrian and bike incidents are underreported. As such, it is important to compliment crash statistics with feedback about places that people feel unsafe.

The highest concentrations of crashes were recorded along Main Road, in the Glenorchy and Moonah town centres, with most crashes occurring at intersections. Intersections that prioritise private vehicle movements, particularly in highly pedestrianised environments such as town centres, can be uncomfortable and unsafe for people traveling by foot or bicycle. The introduction of advanced starts and shorter signal cycle times to reduce waiting can improve safety for people walking and riding.

Another crash hotspot was identified at the roundabout on Elwick Road/King George V Avenue. This area has very poor amenity for people walking and cycling, with no crossing facilities for people walking or cycling across the northern or eastern legs of the roundabout.

Figure 13 Difficult and dangerous road crossing for people walking and riding across Elwick Road (source: Google Maps)

Overall, there were five fatal crashes and twenty serious crashes where someone walking was hit by a driver. Most of the serious crashes occurred along Main Road and the Brooker Highway. Both roads carry significant vehicle volumes travelling at speeds that are unsafe for pedestrian and riders. The likelihood of death when struck be a vehicle at 50km/h is 90 per cent, reducing to 10% at 30km/h. A speed limit of 30km/h is international best practice where people riding will share the street with motor vehicles and there are opportunities to provide safer, slower street in Glenorchy.

Car parking areas were also highlighted in the crash data hotspots. By improving access to retail by bicycle, the exposure to vehicles in car parks will reduce.

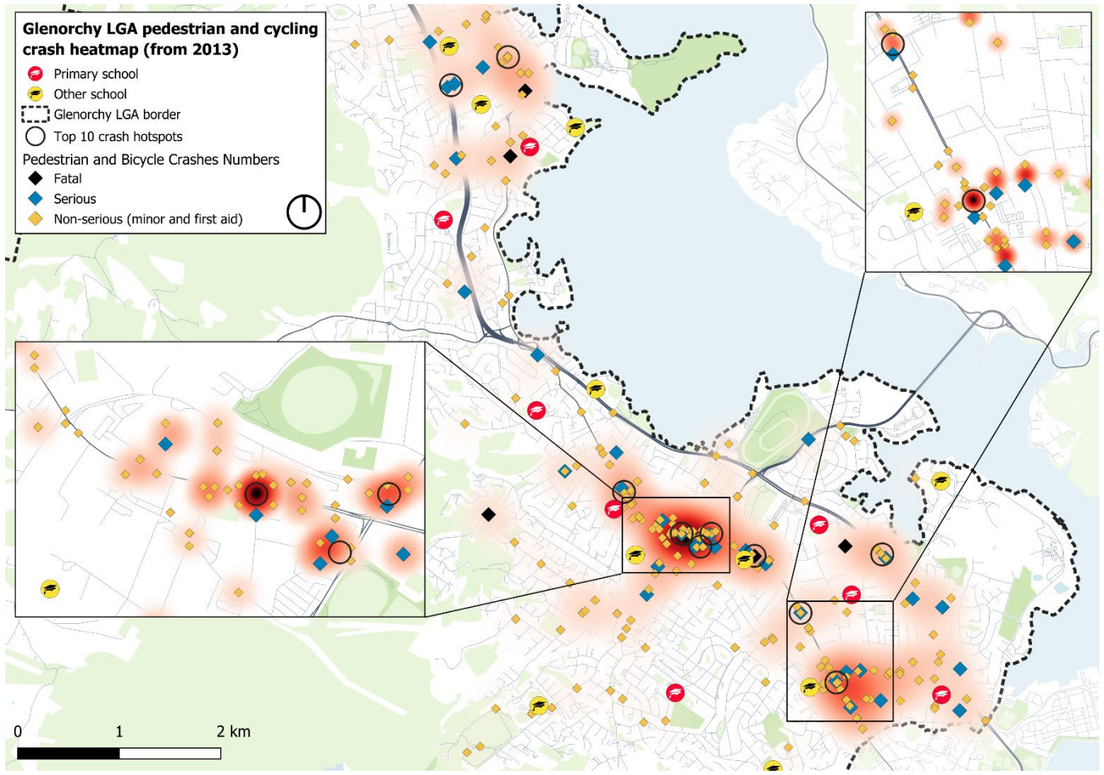


Figure 14 Heatmap showing the locations of reported crashes involving a pedestrian in the City of Glenorchy between 2013 – 2023 (see inset for Moonah and Glenorchy bel

Table 6: Crash hotspots in Glenorchy for riders and pedestrians

#	LOCATION	TYPE	CRASH ID	MODE	DATE	TIME	SEVERITY	CRASH DESCRIPTION
1	Brooker Highway (near Lampton Avenue)	Roadside	1975629	Bicycle	04/11/2016	Daylight	Minor	147 – Emerging from driveway or lane
			49678088	Pedestrian	22/11/2019	Daylight	Serious	100 – Near side
			49887021	Pedestrian	05/03/2019	Daylight	Minor	100 – Near side
			51531888	Bicycle	25/01/2022	Daylight	Minor	147 – Emerging from

#	LOCATION	TYPE	CRASH ID	MODE	DATE	TIME	SEVERITY	CRASH DESCRIPTION
								driveway or lane
2	Main Road and Hopkins Street	Intersection	1307110	Pedestrian	14/01/2016	Daylight	Minor	109 – Other pedestrian
			1451387	Pedestrian	27/02/2016	Daylight	First aid	109 – Other pedestrian
			49660683	Pedestrian	07/11/2018	Daylight	First aid	109 – Other pedestrian
			51650138	Bicycle	13/04/2022	Unknown	Serious	163 – Vehicle door
			52471671	Pedestrian	31/07/2024	Dawn/Dusk	Minor	100 – Near side
3	Main Road and Terry/Peltro Streets	Intersection	58369	Pedestrian	13/06/2013	Daylight	Serious	100 – Near side
			49635446	Pedestrian	12/10/2018	Daylight	Minor	100 – Near side
			50599726	Bicycle	03/03/2020	Daylight	Minor	132 – Vehicles in same lane/right rear
			51021128	Pedestrian	30/03/2021	Daylight	Minor	100 – Near side
			51210978	Pedestrian	07/06/2021	Daylight	First aid	102 – Far side
			51335226	Pedestrian	01/08/2021	Daylight	Minor	100 – Near side
4	Eady Street and Cooper Street	Intersection	288,312	Bicycle	05/05/2014	Daylight	Serious	139 - Other same direction (including vehicle rolling backwards)
			551,792	Pedestrian	14/04/2015	Daylight	Minor	109 – Other pedestrian
			2,068,615	Pedestrian	12/07/2017	Daylight	Minor	106 – On median/foot path
			49,577,655	Pedestrian	5/09/2018	Daylight	First aid	107 – Driveway
			51,199,920	Pedestrian	21/05/2021	Darkness (with street light)	Serious	109 – Other pedestrian
5	Box Hill Road and Narillan Street	Intersection	2039864	Pedestrian	03/05/2017	Darkness (without street light)	Serious	102 - Far side
			52540426	Bicycle	06/10/2024	Daylight	Serious	199 - Unknown
6	Claremont Plaza	Car park	49839932	Bicycle	04/02/2019	Daylight	First aid	149 - Other maneuvering
			50,585,726	Pedestrian	24/11/2019	Daylight	Minor	109 – Other pedestrian
			50,750,891	Pedestrian	7/08/2020	Daylight	Minor	109 – Other pedestrian
			52307312	Pedestrian	09/03/2024	Daylight	Minor	109 – Other pedestrian
7	Main Road (near Cosgrove High School)	Roadside	464810	Pedestrian	13/12/2014	Daylight	First aid	109 - Other pedestrian
			51717750	Pedestrian	03/07/2022	Darkness (with street light)	Serious	100 - Near side
			51767840	Pedestrian	19/09/2022	Daylight	Serious	100 - Near side

#	LOCATION	TYPE	CRASH ID	MODE	DATE	TIME	SEVERITY	CRASH DESCRIPTION
			52333957	Pedestrian	05/04/2024	Daylight	Fatal	107 - Driveway
8	Main Road (near Glenorchy Primary School)	Roadside	30170831	Pedestrian	06/03/2013	Daylight	Minor	109 - Other pedestrian
			332069	Bicycle	30/06/2014	Daylight	Serious	121 - Right through
			1352930	Pedestrian	29/01/2016	Daylight	Minor	109 - Other pedestrian
			2073664	Pedestrian	26/07/2017	Daylight	First aid	109 - Other pedestrian
			2077404	Bicycle	04/08/2017	Daylight	Minor	121 - Right through
9		Intersection	405,121	Pedestrian	30/09/2014	Daylight	First aid	102 – Far side

#	LOCATION	TYPE	CRASH ID	MODE	DATE	TIME	SEVERITY	CRASH DESCRIPTION
	Main Road and Derwent Park Road		50,406,707	Pedestrian	16/12/2019	Daylight	Serious	100 – Near side
			51,026,028	Pedestrian	8/04/2021	Daylight	Minor	102 – Far side
10	Elwick Road and King George V Avenue	Roundabout	329503	Bicycle	27/06/2014	Dawn/Dusk	Serious	110 - Cross traffic
			458048	Bicycle	08/12/2014	Daylight	Minor	110 - Cross traffic
			50,014,150	Pedestrian	23/05/2019	Daylight	Minor	100 – Near side
			51,620,857	Pedestrian	17/03/2022	Daylight	Minor	109 – Other pedestrian
			51899401	Bicycle	15/02/2023	Daylight	Minor	110 - Cross traffic