Department of Transport

GERALDTON 2050 CYCLING STRATEGY

2018

City of Greater Geraldton
a vibrant future

EXECUTIVE SUMMARY

Cities and towns with high levels of cycling enjoy a range of economic, environmental and social benefits. Not only is cycling proven to reduce traffic congestion and improve air quality, it also helps to create more vibrant and welcoming communities. Cycling can facilitate new forms of industry (such as cycle-tourism) and more generally, it enables people to live happier, healthier and more active lives. Fundamentally, increasing cycling mode share is about improving quality of life – something that is critical for attracting and retaining people in regional areas.

The key to increasing cycling mode share is providing infrastructure which is not only safe and convenient, but also competitive against other modes of transport. To achieve this, cycling needs to be prioritised ahead of other modes in appropriate locations and integrated with adjoining land use. If we are serious about reducing car dependency and helping people make better transport choices in Geraldton, these priorities need to be reflected in the way our communities are planned.

Over the past five years, the City of Greater Geraldton (the City) has delivered a number of strategically important cycling projects. Despite this, cycling in some areas remains unappealing due to the network's lack of coverage, connectivity and separation from motorised traffic. This strategy sets out a blueprint for connecting, enhancing and extending Geraldton's cycling network through the development of an interconnected network of off-road shared paths and trails, protected on-road bike lanes and low-stress residential streets. Opportunities to improve on-road safety for road cyclists are also considered in this strategy.

This long-term, aspirational strategy has been developed by the Department of Transport in collaboration with the City of Greater Geraldton. It is accompanied by a short-term action plan that reflects the priorities shared by local and State Government. The plan will help to inform future investment through the Regional Bike Network (RBN) Grants Program, the City's Capital Works Program and potentially other funding sources.

In developing this strategy, extensive consultation has been undertaken with key stakeholders and the local community. The consultation has helped to refine the overarching aims and objectives of the strategy, as well as clarify the community's expectations in terms of where key routes are most needed and the requirements of different user groups.

There are a number of opportunities to create world-class facilities in Geraldton. Major new road projects planned for the region should enable the development of parallel pedestrian and cycling facilities. The development of shared paths and trails alongside some of Geraldton's underutilised river and coastal foreshores provides an opportunity to enhance recreational cycling for local residents while also showcasing these natural assets to visitors and tourists.

In the shorter term, low cost improvements to Geraldton's existing network have the potential to greatly improve cycling amenity and legibility.

This strategy outlines how Geraldton can realise its cycling potential, leading to a healthier, happier and more engaged community.

This strategy sets out a blueprint for connecting, enhancing and extending Geraldton's cycling network through the development of an interconnected network of off-road shared paths and trails, protected on-road bike lanes and low-stress residential streets.

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WHY DO WE WANT MORE PEOPLE CYCLING

TO ENABLE PEOPLE TO ENJOY HEALTHIER AND MORE ACTIVE LIVES

Obesity rates are 10% higher in regional WA compared to Perth. As a result, people living in regional areas are 1.25 times more likely to suffer from cardiovascular disease and 1.4 times more likely to be hospitalised for diabetes.

TO IMPROVE MENTAL HEALTH AND SOCIAL INCLUSION

People who engage in regular exercise experience reduced stress, improved sleeping patterns, improved concentration and a better outlook on life. More people riding and walking provides greater opportunities for incidental interaction on the streets, enhancing a sense of community.

TO HELP FAMILIES SAVE MONEY, AND INCREASE TRANSPORT OPTIONS

Families who have at least one person commuting by bike (instead of car) save on average $8 per day which equates to nearly $2,000 per year. Cycling provides an economic and independent travel option for those who might otherwise have their travel options restricted.

TO IMPROVE THE STRENGTH AND RESILIENCE OF OUR REGIONAL COMMUNITIES

The popularity of outdoor and adventure tourism is increasing all over the world, with cycle-tourism identified as a key growth area . In 2015, almost 3 million people went cycling while on holiday in Australia.

TO REDUCE PRESSURE ON THE PUBLIC PURSE

A study commissioned by the RAC found that the economic, social, health and environmental benefits attributed to cycling infrastructure outweigh their costs incurred by between 3.4 and 5.4 times. In dollar terms, it is estimated that for every kilometre cycled, $1.42 of economic benefits are generated for the community.

TO REDUCE TRANSPORT IMPACTS ON THE ENVIRONMENT

Transport is Australia's third largest source of greenhouse gas emissions, with emissions from transport increasing nearly 60% since 1990, more than any other sector. In Australia, cars are responsible for roughly half of all transport emissions.

1. INTRODUCTION

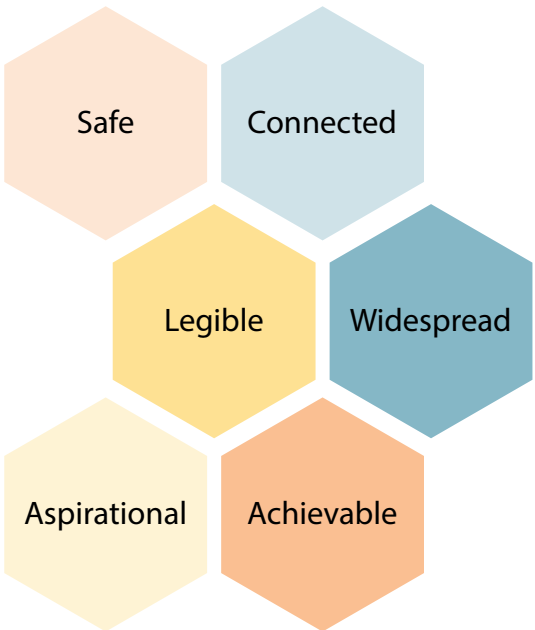
1.1 Guiding principles

This strategy will help achieve the City of Greater Geraldton's vision of creating a prosperous, diverse, vibrant and sustainable community, as outlined in the 2017–2027 Community Strategic Plan.

The aim of this strategy is to create a safe, direct, comfortable and integrated cycling network. The proposed network, which connects people to activity centres and key attractions, has been developed to facilitate cycling for transport, recreation and tourism purposes. Cycling disciplines that are dependent on purpose-built facilities (such as BMX parks, downhill mountain bike trails and velodromes for track cycling) typically perform non-transport related functions, and as such are not considered within this strategy.

The networks proposed in this strategy have been developed based on the following principles:

Safe: Geraldton's 2050 cycling network should be built to a standard which reflects the "8 to 80" design philosophy. People of all ages should be able to cycle safely and confidently to the places they need and want to go to. Unprotected cycling facilities located on busy roads are not considered suitable for vulnerable road users, and will not encourage more people to cycle, more often.



The "8-80" design philosophy is about creating people-orientated towns and cities. It is based on the notion that, if you design a cycle path for example which caters for the needs of an 8 or an 80 year old, it is likely to be suitable for everyone.

Connected: Like a road network, all cycling routes should connect to something at each end (whether that be a destination, or another cycling route).

Widespread: The network should be comprehensive enough for people to safely assume they can get to their destination without encountering hostile traffic conditions. When cycling networks reach a certain level of density it enables families to live comfortably without a second car.

Legible: The cycling network needs to be both intuitive and direct. To achieve this, it makes sense to locate major cycling routes parallel to natural land forms such as rivers and coastlines or within major road and rail corridors. Coherent way-finding initiatives are also important in ensuring legibility.

Aspirational: Given the long-term nature of this strategy, several ambitious ideas have been put forward to help position Greater Geraldton as a safe, pleasant and enjoyable region for cycling.

Achievable: For the most part, the proposals put forward in this strategy adopt tried-and-tested planning principals. The case studies chosen provide local and interstate examples of similar projects undertaken in recent years.

1.2 Geraldton in context

Home to approximately 40,000 people, Geraldton is the Mid West region's largest regional centre. The City's economy, which has traditionally been focused around the agriculture, fishing and mining sectors, now includes a diverse range of industries. Geraldton is home to various higher-order services and facilities including the Geraldton Universities Centre, Central Regional TAFE, Geraldton Regional Hospital, Geraldton Regional Airport and the Batavia Coast Maritime Institute.

Geraldton serves as the focal point for various specialist industries servicing the wider Mid West region and in recent years, there has been a concerted effort to promote and grow the region's tourism sector. Attractions such as the Geraldton Regional Art Gallery, HMAS Sydney II Memorial and Historic Greenough River Settlement, as well as the ongoing foreshore redevelopment, are helping to grow Geraldton as a tourist destination.

1.3 The need for a long-term regional cycling strategy

Geraldton's most recent bike plan was released in 2009. Although it has served the region well, many of the projects identified within it have been completed. Other reasons for preparing this strategy include:

- To address key opportunities which may have previously been overlooked, particularly in relation to future land use and transport developments;
- To help guide investment between local and State Government, and in certain circumstances between neighbouring local governments;
- To ensure that the standard of future cycling facilities meets current best-practice;
- To reflect the changing nature and use of bikes (particularly e-bikes); and
- To adopt a consistent approach with other 2050 cycling strategies being developed across regional WA.

Going forward, it is important that this strategy is reviewed on a regular basis to ensure it keeps up with the changing face of Geraldton and reflects future changes to cycling as a mode of transport. A framework outlining how this strategy will be maintained is provided in Section 5.

1.3.1 Expected changes in population and land use

Between 2006 and 2016, the City of Greater Geraldton grew by approximately 4,000 people. Although it is difficult to accurately forecast Geraldton's population growth over the long-term, forecasts outlined in the *City of Greater Geraldton Local Planning Strategy* (2015) estimate the population will grow to between 70,000 and 82,000 people by the year 2050[1].

Although some of this population will be accommodated in Geraldton's existing suburbs (through urban infill), it is likely that many of these people will be accommodated in new greenfield developments on the periphery of the city.

Major employment nodes such as industrial areas and the Geraldton CBD will continue to serve as economic hotspots for the city. Over time, industrial expansion to areas such as Narngulu are likely to accommodate many new jobs.

[1] *Based on the City of Greater Geraldton "low growth scenario" (1.5%) and WA Tomorrow "Band C" (1.9%) population forecasts*

1.3.2 Expected changes in transport

The Department of Transport's *Western Australian Regional Freight Transport Network Plan* (2013) identifies several strategic road priorities throughout the City of Greater Geraldton and the broader Mid West region, which focus on the safe movement of freight and passenger traffic. Within the Geraldton urban area, the Geraldton North-South Highway and the duplication of the North West Coastal Highway between Utakarra Road and Green Street will help alleviate traffic congestion issues, consolidate access points and improve operational efficiency and road safety.

On the outskirts of the city, planning is underway for the Oakajee-Narngulu Infrastructure Corridor (ONIC) and the (related) Dongara-Northampton Coastal Route. Aimed at improving freight access, efficiency and safety, together these major projects will help create an outer freight bypass road around Geraldton linking Narngulu and the existing Geraldton Port with Oakajee. While the two projects are independent of each other, a section of the proposed Dongara to Northampton Coastal Route (between Moonyoonooka and White Peak) is ultimately planned to utilise the same alignment as the road component of the ONIC.

With major transport projects such as these, appropriate consideration must be given to the provision of quality cycling facilities, noting that it can be difficult (and prohibitively expensive) to retrofit them at a later stage. Main Roads Western Australia's (Main Roads) *Policy for Cycling Infrastructure* (2000) outlines State Government policy regarding the provision of cycling infrastructure on or alongside highways and main roads.

Figure 1.1 Major road and rail projects provide important opportunities to establish long-distance and high-quality walking and cycling facilities.

1.3.3 Relationship with other documents

The *2014-2031 Western Australian Bicycle Network (WABN) Plan* identifies the need to review cycling facilities in WA's regional centres. Although many regional local governments have their own local bike plans, it is recognised that there is a need to develop long-term regional strategies which have an aspirational focus and, where appropriate, span across entire regions or sub-regions. Key objectives of this process include improving connections to activity centres and schools, identifying inter-regional routes and harnessing the potential of cycle-tourism.

Funding applications for the development of key strategic projects within these areas can be made through the Regional Bike Network (RBN) Grants Program.

This program makes funds available for the planning, design and construction of cycling infrastructure by local governments in regional WA, with funding matched on a dollar-for-dollar basis with local governments.

Long-term regional bike strategies such as this do not preclude local governments from preparing a local bike plan. While the purpose of this strategy is to provide a blueprint for Geraldton's 2050 cycling network, a local plan may be used to identify short-term priorities such as upgrades to existing infrastructure and maintenance requirements. Local bike plans are also important for outlining strategies around the activation of cycling infrastructure, behaviour change and education.

1.4 Background research and analysis

1.4.1 Document review

In preparing this strategy several documents were reviewed pertaining to land use and transport in the City of Greater Geraldton. Combined with detailed stakeholder engagement, these documents were critical to understanding the current approach to bike planning and where planning and feasibility for certain routes has already been undertaken. A list of these documents is contained in Appendix B.

1.4.2 Mapping of current and future trip attractors

Before commencing the development of the network, all existing and known future trip attractors were mapped. Trip attractors are defined as any place that people could reasonably be expected to need or want to cycle to and include destinations such as schools, shopping centres, recreational facilities, industrial areas, caravan parks and tourist attractions. The identified trip attractors are shown together with the proposed 2050 cycling networks contained in Section 3.

1.4.3 Analysis of crash data

The most recent (2013–2017) five-year crash statistics were obtained from Main Roads' Crash Analysis Reporting System (CARS). Both pedestrian and cyclist crash data was obtained, noting that areas which are dangerous for pedestrians are often also dangerous for cyclists. An analysis of this data is provided in Appendix B.

1.4.4 Analysis of GPS travel data

The GPS mapping tool, Strava Labs, was employed to better understand which parts of Geraldton's road and path networks are most heavily utilised by cyclists. Strava is a website and mobile app used to track athletic activity via GPS and can be used to highlight popular cycling routes in Geraldton and surrounding areas. Despite the usefulness of this information, it should be noted that GPS travel data is typically representative of people who cycle for training or high-intensity recreational purposes. An analysis of this data is contained in Appendix B.

1.4.5 Review of existing cycling network

In some areas, Geraldton's cycling network remains unappealing due to a lack of coverage, consistency and separation from motorised traffic. The City's existing cycling infrastructure typically consists of shared paths of varying quality and a small number of sporadic, unprotected bike lanes. In many cases these remain poorly connected to the wider network as illustrated in Figure 1.2 below.

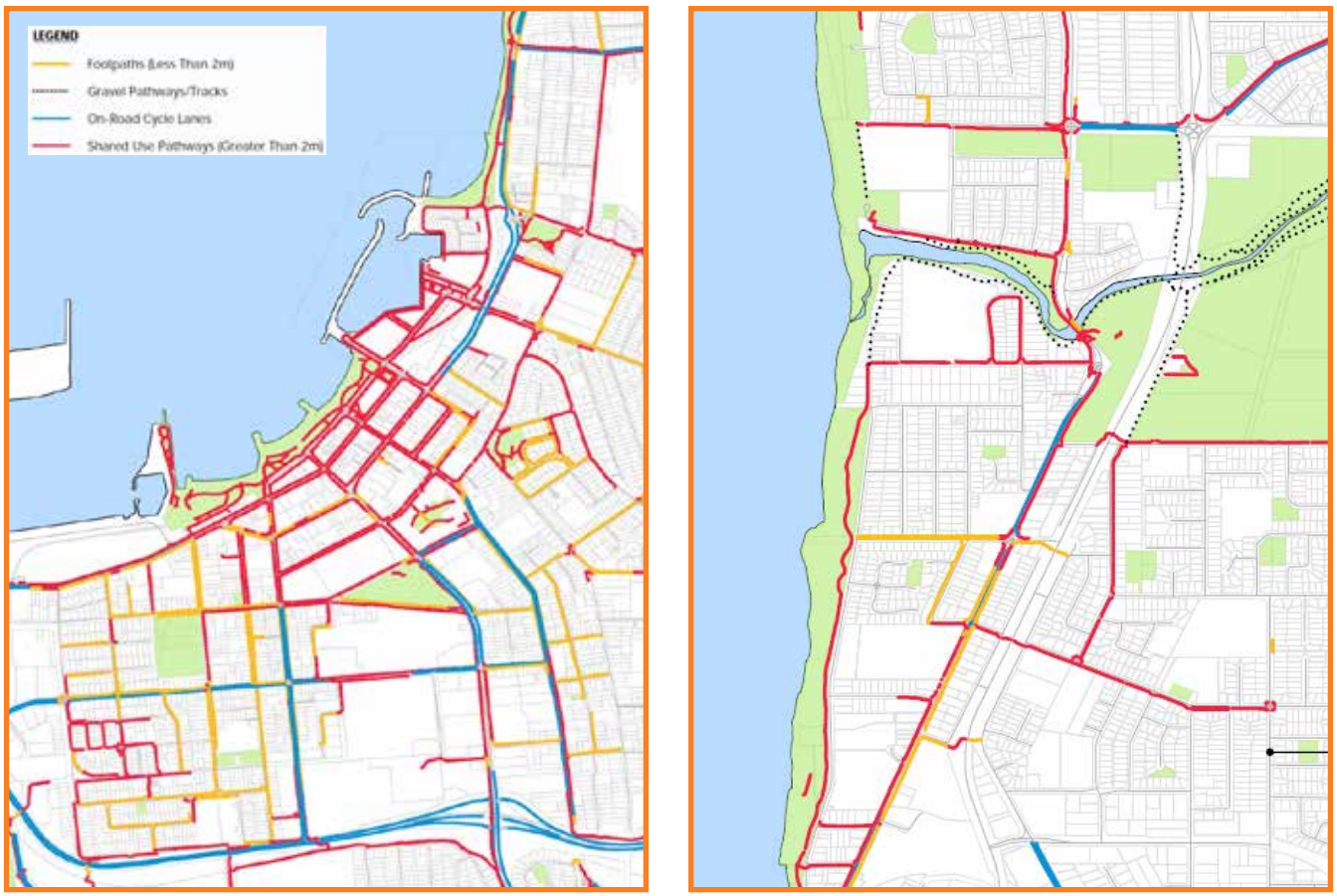


Figure 1.2 The legibility of Geraldton's existing cycling network is compromised by its lack of connectivity and frequent changes between on-road and off-road infrastructure.

1.4.6 Community consultation

Consultation with the local community was central to the development of this long-term cycling strategy. The objectives of the consultation were to:

- Help refine the overarching aims and objectives of the strategy;
- Gain an understanding of the community's expectations when it comes to cycling infrastructure, as well as the needs of different user groups;
- Reveal the major issues and missing links associated with Geraldton's existing cycling network;
- Provide the community with an opportunity to share their ideas; and
- Seek local buy-in and ongoing community support for the strategy.

The consultation was carried out in three distinct phases. Phase 1 consisted of an online survey aimed at better understanding the demographics and current travel patterns of Geraldton's existing cycling community. Phase 2 was undertaken shortly after the survey and involved an informal drop-in session which allowed community members to voice their specific ideas and aspirations for cycling. Phase 3 consisted of a formal comment period on the draft strategy.

1.4.7 Stakeholder consultation

This strategy has been developed by the Department of Transport in partnership with the City of Greater Geraldton. Consultation was undertaken with various stakeholders, including:

- Department of Local Government, Sport and Cultural Industries
- Mid West Sports Federation
- Mid West Development Commission
- Main Roads
- Road Safety Commission
- WestCycle

Input has also been provided from the WA Trails Reference Group and WABN Implementation Reference Group both of which include additional stakeholders and interest groups.

2. REGIONAL ROUTE HIERARCHY

A hierarchy comprising five types of cycling route has been used to illustrate Geraldton's 2050 cycling network. This hierarchy will be adopted for all future cycling strategies in WA. An important aspect of the hierarchy is that unlike many traditional cycling infrastructure plans, routes are defined primarily by function, rather than their built form. The key differences between the five types of route are explained in Sections 2.1 to 2.5, with additional detail provided in Appendix A.

2.1 Primary routes

Primary routes form the backbone of Geraldton's 2050 cycling network. Thought of as freeways for bikes, primary routes afford cyclists with safe and (generally) uninterrupted journeys. Unlike secondary routes, primary routes should be completely separated from motorised traffic. Due to this, major road and rail corridors, and river and ocean foreshores tend to be the most practical locations for these types of facilities.

In terms of built form, primary routes predominantly consist of high-quality shared paths at least 3.0 m in width. To ensure high levels of rideability and legibility, red asphalt is usually the preferred surface treatment. An important consideration on shared paths is managing safety and etiquette between different users.

Shared path parallel to a major road

Shared path parallel to active railway

Shared path along river foreshore

Shared path along coastal foreshore

Figure 2.1 Primary routes form the backbone of urban cycling networks and allow cyclists to safely undertake long, uninterrupted journeys.

2.2 Secondary routes

Secondary routes are typically located within urban or built-up environments. The aim of these routes is to provide users with access to and from important trip attractors such as major shopping centres, industrial areas, as well as education, health and sporting precincts.

In most cases, secondary routes are located adjacent to busy urban streets and take the form of protected on-road bike lanes. Going forward, it is important that the design of all new cycling infrastructure (including secondary routes) incorporates the "8 to 80" design philosophy. To ensure that on-road cycling infrastructure is safe and attractive to such a wide range of users, separation in the form of kerbed medians is desirable to minimise the interaction between cyclists and vehicular traffic – particularly on busier roads.

Where this is not possible softer measures such as painted hatching, mountable plastic kerbing or flexible bollards can be considered, however these treatments are normally only acceptable in low speed environments. In some cases, off-road shared paths are the best option for secondary routes.

Unlike primary routes, secondary routes do not necessarily provide users with uninterrupted journeys. Due to this, it is important that appropriate consideration is given to the design of secondary routes at all intersecting roads, but particularly those controlled by either traffic signals or roundabouts. Where possible, priority should be given to the cycling route at intersecting minor roads and driveways.

Fully protected bi-directional bike lane

Bi-directional bike lane separated with bollards

Bike lane separated with mountable plastic kerbing

Shared path with priority over intersecting driveways

Figure 2.2 Secondary routes are typically found in busy, built-up environments, and can consist of either on-road or off-road cycling infrastructure.

2.3 Local routes

The objective of local routes is to collect cycling traffic from local residential areas and distribute it to the secondary and primary networks. Local routes are also used by cyclists to access a range of lower-order destinations such as local shops and parks. The look and feel of these types of route is distinctively different from primary and secondary routes and may include:

- 30 km/h safe active streets which adopt "self-explaining street" and "filtered permeability" urban design principles (refer to Section 4.5 for additional information);
- very quiet suburban streets, communicated using sharrows and other signage and way finding;
- sections of shared path (normally linking two or more quiet streets together); or
- on-road bike lanes (but only on quiet roads with low traffic volumes and where posted speed limits are less than or equal to 50 km/h).

In many cases, a local route may consist of a combination of two or more types of treatment. Where this is the case, the transition from one type of facility to another needs to be carefully considered.

30 km/h safe active street

Residential street with sharrows

Shared path linking two quiet streets together

One-way slow point with bicycle-bypass facilities[3]

Figure 2.3 Local routes are typically used to connect residential areas with higher-order cycling facilities.

[2]*Sharrows are shared-lane markings to assist cyclists in road positioning and to alert motorists to the likely presence of cyclists*

[3]*Image courtesy of Malcolm Daff*

2.4 Tourist trails

Tourist trails are long-distance, predominantly unsealed trails which are typically used to connect towns to each other. Unlike downhill mountain bike trails, tourist trails are non-technical in design. While there will be some level of crossover, tourist trails provide users with a more passive cycling experience. In some cases, tourist trails cater for other types of user including bush walkers, trail runners, horse-riders and motorbike-riders. On such trails, it is essential that paths are managed appropriately to ensure the safety and satisfaction of all user groups.

In terms of their built form, tourist trails should ideally be wide enough to allow two people to ride side-by-side. As they are often located in remote locations, it is important that extensive way-finding signage is used to direct users to, from and along the route.

Tourist trails are often constructed along the alignments of disused or closed railways; commonly referred to as rail trails. Other potential corridors for tourist trails include watercourses (such as rivers, drains and irrigation channels), utility corridors (such as electricity, gas or water supply), as well as fire breaks and other tracks through forested areas including nature reserves and national parks.

Depending on land ownership, the planning, design, construction and maintenance of tourist trails is typically led by local government or the Department of Biodiversity, Conservation and Attractions. Funding is usually sought through the Department of Local Government, Sport and Cultural Industries or Lotterywest. Other government agencies such as Department of Transport and Tourism WA can assist in the planning, design and promotion of these facilities.

Trail along river foreshore

Trail along closed railway

Trail within utility corridor

Trail along firebreak adjacent to property boundary

Figure 2.4 Unsealed, tourist trails are important in areas where higher standard facilities cannot be justified or where they would spoil the natural environment.

2.5 Road cycling routes

Cycling is one of the most popular forms of recreation in Western Australia, ranking third for males and fifth for females. There are two broad types of recreational cyclist in WA – leisure cyclists and sports cyclists. While investment has traditionally been directed towards providing infrastructure which supports leisure cycling, there is an emerging need to provide road cycling routes which cater for the needs and aspirations of people cycling long distances for training, sport or recreational purposes. For this user group, distances of 100 km or more are achievable. This type of cycling, which is often undertaken by groups or clubs, is commonly carried out on rural and semi-rural roads as a way of minimising the number of disruptions as well as interactions with pedestrians and lower speed cyclists.

Around WA there is a growing need to review the key routes being used by these types of cyclists in order to improve their safety and user-experience. Solutions may include shoulder widening, pull-off bays, advisory signage, and electronic flashing warning signage which detects when groups of cyclists are using certain sections of road. A detailed assessment is required in partnership with cycling bodies and groups to determine appropriate locations and preferred safety measures.

Further supporting the safety of road cyclists in WA is the introduction of safe passing legislation. From 30 November 2017, a driver of a motor vehicle must pass a bicycle travelling in the same direction at a safe distance (1 m on roads with a posted speed limit of ≤60 km/h and 1.5 m on roads >60 km/h.). While legislation for passing safely has always existed in WA, these amendments to the *Road Traffic Code 2000* clarify the minimum distance a driver is required to keep between their vehicle and a bicycle when overtaking. The results of the two-year trial will be evaluated by the Road Safety Commission in 2020.

Sport cyclists in Geraldton (Wild West Bike Tour)

Advisory signage (Geraldton)

Advisory signage (Victoria)

Dynamic flashing warning lights (Victoria)

Figure 2.5 Road cycling routes are predominantly used by people riding for training, sport or recreational purposes over longer distances and consist of advisory measures (such as signage and electronic flashing warning lights).

3. PROPOSED NETWORK

This strategy covers the Geraldton urban area, stretching from Cape Burney in the south to Drummonds Cove in the north.

3.1 Geraldton urban area

Figure 3.1 provides an overview of the proposed 2050 cycling network for the Geraldton urban area. Key features include:

- A series of primary routes parallel to various key transport corridors and natural features, including:
  - The Indian Ocean foreshore, extending north from the Chapman River up to Drummond Cove;
  - Brand Highway, linking the southern terminus of the existing coastal path to Cape Burney;
  - The future inner bypass, notionally referred to as the Geraldton North-South Highway;
  - Chapman Road (north of Bosley Street) to Drummond Cove;
  - Verita Road;
  - The Geraldton-Mount Magnet; and potentially
  - The former rail corridor, extending from Chapman Road to the Geraldton-Mount Magnet Road (refer to Section 4.4.1 outlining the City of Greater Geraldton's current position on this proposal).
- A series of unsealed trails along both the Greenough and Chapman Rivers, with the potential for short sealed sections in the most popular areas or in those containing permanent water.
- A road cycling route comprising of Rudds Gully Road, Moonyoonooka-Narngulu Road, Moonyoonooka-Narra Tarra Road, Narra Tarra Road and Chapman Valley Road.
- Three potential inter-regional routes, which include:
  - An unsealed rail trail linking Geraldton to Northampton via the now closed Geraldton-Galena railway line;
  - An unsealed rail trail linking Geraldton with the various small settlements located within the Shire of Chapman Valley (including Nanson, Nabawa and South Yuna) via the now closed Wokarina - Yuna railway line; and
  - An unsealed trail linking Cape Burney to the Greenough Historical Settlement and onwards towards Dongara.

These inter-regional routes extend beyond the scope and boundaries of this strategy. Further investigation is required in collaboration with the neighbouring Shires of Irwin, Northampton and Chapman Valley.

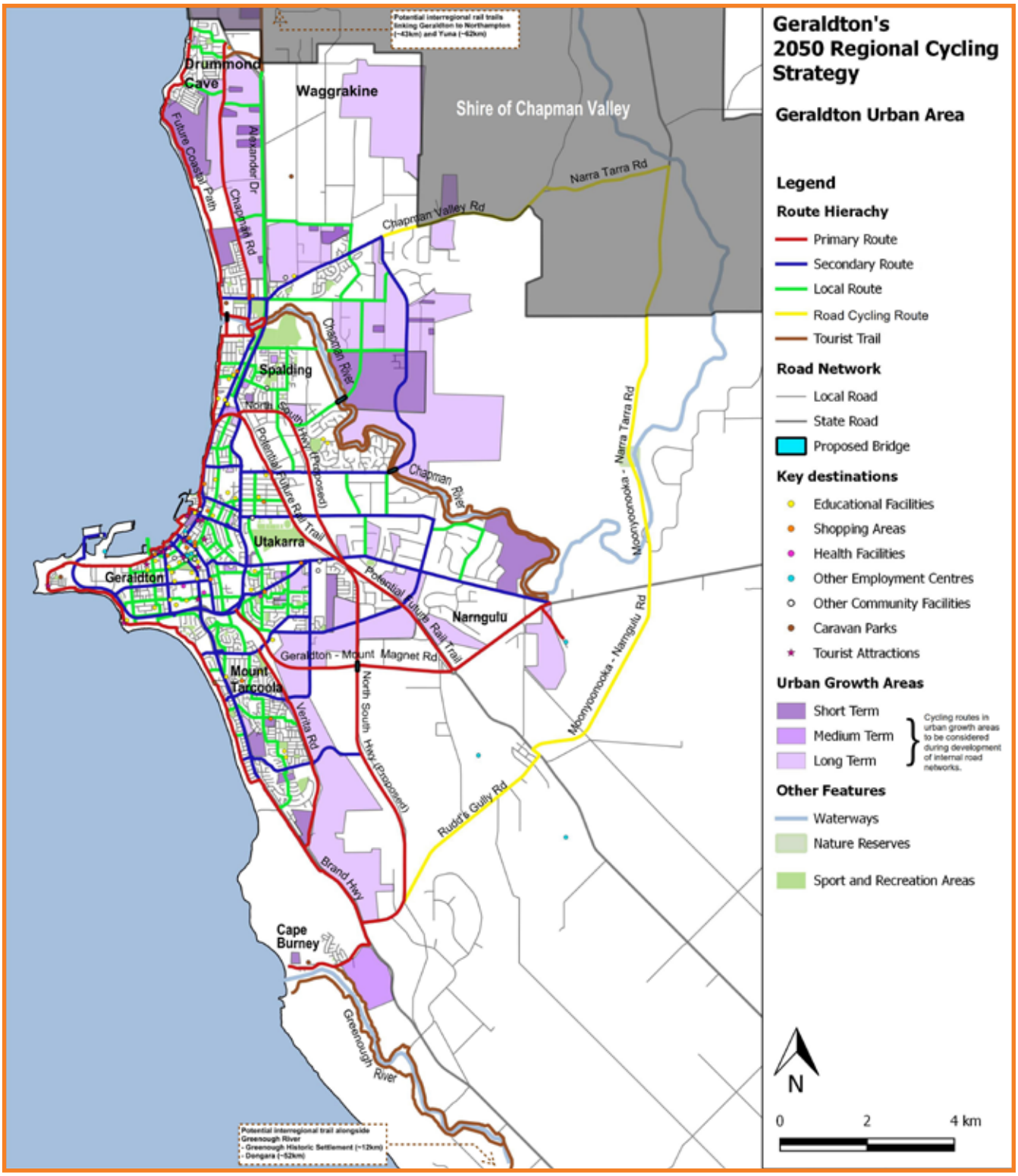


Figure 3.1 Proposed 2050 cycling network for Geraldton's urban area.

3.2 Inner Geraldton

Figure 3.2 provides an overview of the proposed 2050 cycling network for the inner Geraldton area. Key features include:

- A series of secondary routes which run along various major urban roads including:
  - Durlacher Street;
  - Cathedral Avenue/Brand Highway (as far south as Glendinning Road);
  - Chapman Road (between the Geraldton CBD and Bosley Street);
  - Johnston Street/Eastward Road;
  - Eighth Street;
  - Fitzgerald Street;
  - Shenton Street;
  - Utakarra Road;
  - Place Road;
  - Bayly Street;
  - Olive Street/Highbury Street;
  - Ackland Street/Abraham Street;
  - Columbus Boulevard/Meru Tip Road; and
  - Chapman Valley Road.
- Various local routes linking residential areas to higher-order facilities.
- Zig-zags connecting Olive Street to Highbury Street (in Mount Tarcoola) as well as the two sections of Bayly Street (in Wonthella) enabling people to more easily transverse Geraldton's steep central ridgeline by bike (refer to Section 4.3.3).

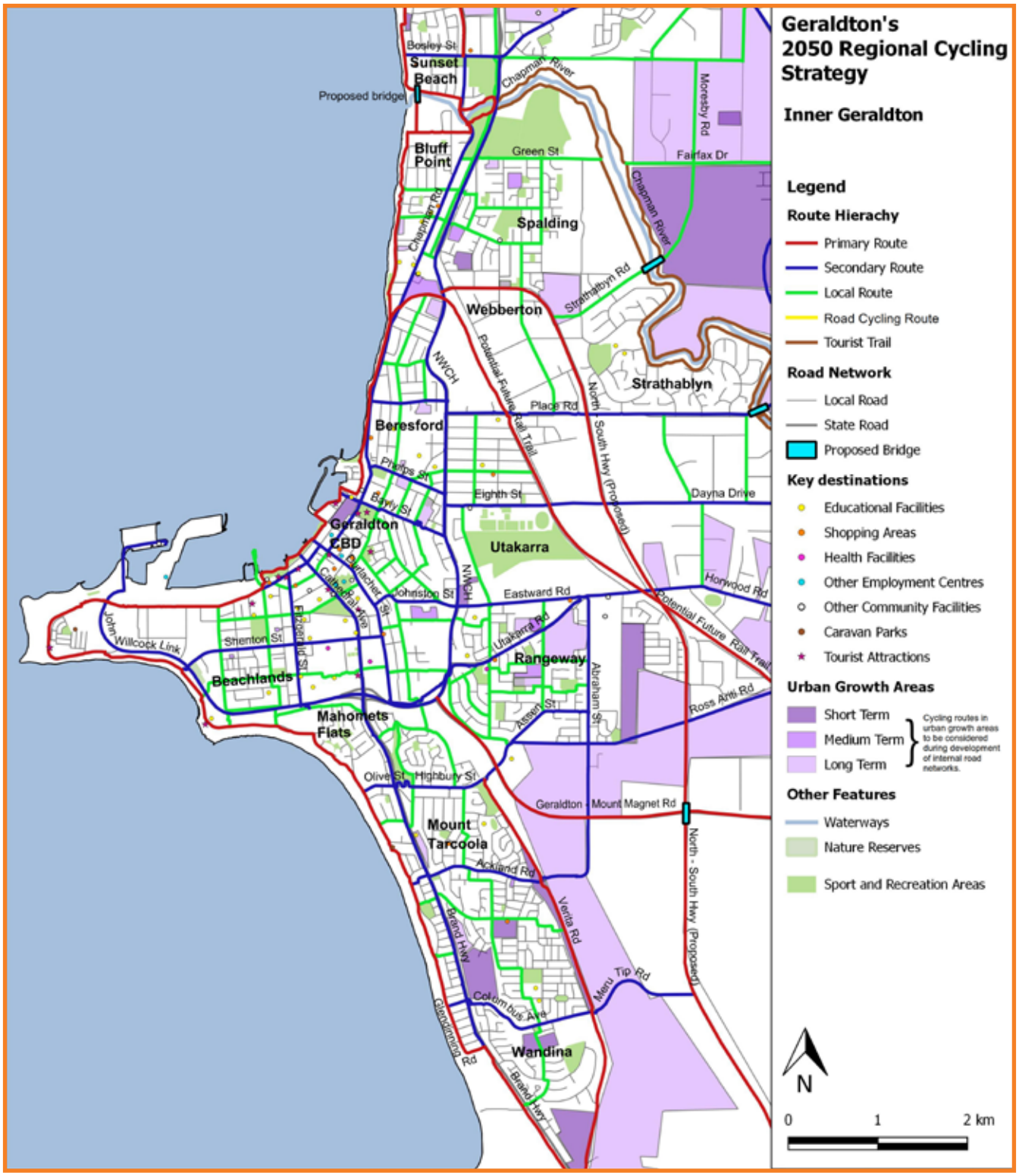


Figure 3.2 Proposed 2050 cycling network for inner Geraldton.

4. THE WAY FORWARD

This section outlines the way forward for Geraldton through the identification of key themes and opportunities for cycling in the City. Case studies are used to illustrate where similar outcomes have been achieved elsewhere.

4.1 Creating a world-class coastal cycling route

Cycling routes which follow coastlines nearly always achieve high levels of ridership. In addition to providing users with favourable views and amenity, coastal routes are generally located away from motorised traffic, have few intersecting roads and driveways, and possess relatively gentle topography.

For regional cities such as Geraldton, coastal cycling routes have the potential to showcase some of the area's best natural landscapes while also forming important recreational assets for the local community.

There are two key opportunities to enhance and extend some of the City's most popular cycling routes:

- Extending the northern coastal route from Sunset Beach to Drummond Cove (refer to section 4.1.1); and
- Extending the southern coastal from Tarcoola Beach to Cape Burney (refer to section 4.1.2)

Both concepts are well supported by the community, as evidenced by the comments received during the community consultation process (refer to Appendix C).

Figure 4.1 A high-quality and fully-continuous shared path along Geraldton's coastline would perform recreational, commuting and tourism functions.

4.1.1 Opportunity: Linking Sunset Beach to Drummond Cove

Currently, there is no safe way to cycle between Geraldton's contiguous urban area and Drummond Cove.

In terms of off-road cycling, the existing coastal path terminates at the northern end of Outrigger Esplanade whereas the shared path alongside Chapman Road terminates at Sail Boulevard (both in Sunset Beach). For on-road cyclists, Chapman Road's existing (unprotected) on-road bike lanes terminate at Hallet Place (just south of Chapman River). North of Bosley Street, the narrow shoulders and 90 km/h speed limit along Chapman Road make cycling along this corridor unfeasible for most people.

Although there is an alternative route along Alexander Drive this road tends to be located too far east to be attractive for cyclists. It also involves a substantial hill climb along Macedonia Avenue.

There is a need (and considerable community support) to develop a high-quality cycling route between Sunset Beach and Drummond Cove which caters to cyclists of all ages and abilities. This could be achieved by extending the existing shared path along Chapman Road's western verge or developing a coastal shared path which takes in some of the coastal vistas between the two suburbs (subject to investigations and future land development).

4.1.2 Opportunity: Linking Tarcoola Beach to Cape Burney

This strategy highlights the need to extend the existing southern coastal path south from Glendenning Road in Tarcoola Beach to Greenough River Road at Cape Burney. In addition to providing an important recreational facility for the City's residents and visitors, it would also allow those people living in Cape Burney to commute safely to and from various employment, shopping and educational facilities located in Geraldton. Such a facility would also alleviate the need for less confident cyclists to use Brand Highway which is a known blackspot.

Options for developing an all-ages cycling route between Tarcoola Beach and Cape Burney include:

- Establishing a shared path through the chain of public open spaces extending from near Verita Road to the river mouth; and
- Establishing a shared path along Brand Highway's western verge, linking Glendinning Road to Greenough River Road.

For both opportunities, careful consideration needs to be given to potential environmental, aboriginal heritage and land tenure constraints. It should also be noted that some sections involve steep gradients which may prove challenging to overcome.

Figure 4.2 Chapman Road's narrow shoulders and 90 km/h speed limit makes cycling along this corridor unattractive for most people.

Figure 4.3 Currently the only way to cycle between Cape Burney and Geraldton is along Brand Highway.

4.1.3 CASE STUDY:
BUSSELTON - DUNSBOROUGH SHARED PATH

A good example of a coastal cycling route in regional WA is the Geographe Bay Shared Path linking Busselton and Dunsborough. The 31 km facility provides a safe route for pedestrians and cyclists, parallel to Bussell Highway and Caves Road. The path has been progressively developed by the City of Busselton over many years with the final section being completed in 2014. Key to its completion were the construction of several small bridges including those over the Buayanyup Drain and Toby's Inlet.

While popular with locals, the shared path also supports the local tourism sector by linking resorts, caravan parks and camping grounds to nearby attractions including shops, cafes and the popular Busselton Jetty precinct.

The shared path is also used as part of community events including the Busselton Half Ironman, Ironman WA, the Geographe Bay Pedal and the Spring Running Festival, which collectively inject over $20 million into the local economy each year.

While newer sections of the path have been built to a high standard (red asphalt and at least 3.0 m in width), there are many older narrow sections which the City of Busselton intend to progressively upgrade over time.

Figure 4.4 Although well-utilised by locals, the coastal shared path linking Busselton and Dunsborough is particularly popular with visitors during tourist season.

4.1.4 CASE STUDY:
JURIEN BAY - CERVANTES SHARED PATH

In early 2017, a new 3.9 km section of shared path opened between Booka Valley and the mouth of Hill River south of Jurien Bay. The facility, which is currently 14.2 km long, is part of a greater plan to link Jurien Bay to Cervantes with a high-quality walking and cycling facility, known as the Turquoise Way Trail.

The path is aimed at providing the town with a new venue to host formal run, bike and swim events, with the potential to attract national and international sporting events.

Source: *https://trailswa.com.au/trails/turquoise-way-walk-trail/gallery*

Figure 4.5 The Shire of Dandaragan is progressively developing a shared path linking the coastal communities of Cervantes and Jurien Bay.

4.2 Making better use of the city's rivers

Like coastal shared paths, cycling routes which follow river foreshores tend to attain high levels of ridership. Routes along rivers are generally peaceful, flat and safe (due to being located away from roads). Although popular with recreational users, cycling routes which follow rivers can also make popular commuting routes to work or school. In Geraldton, there are significant opportunities to enhance cycling routes alongside both the Chapman and Greenough Rivers.

4.2.1 Opportunity: Making better use of the Chapman River

The Chapman River Regional Park, located approximately 6 km northeast of Geraldton's CBD, is an important recreational area for the City's residents. The park is already home to a network of walking and mountain biking trails, which could be capitalised on by better catering for cyclists of all ages and experience levels.

Downstream of North West Coastal Highway there is the potential to:

- Provide high-quality shared paths on both sides of the river (noting that land on the south side is privately owned); and
- Construct a footbridge in the vicinity of Nazareth House, facilitating a 2.5 km long walking and cycling loop around the section of river containing permanent water subject to negotiations with private land owners (shown in Figure 4.6 below).

Figure 4.6 The provision of a walking and cycling bridge near Nazareth House would enable the development of a high-quality walking and cycling loop around the Chapman River between Spalding Park and the river mouth.

Upstream of North West Coastal Highway, there is potential to:

- Formalise the existing single-track mountain bike trails to create an 11 km long blue level circuit, as identified in the *2016 Chapman River Mountain Bike Master Plan*; and
- Upgrade the existing access tracks at the top of each embankment to a standard which supports long-distance (but non-technical) side-by-side cycling (refer to Figure 4.7 and Figure 4.8). In addition to providing improved access for emergency services and conservation personnel, upgrading these tracks will also provide an important recreational asset for any future urban development which takes place on the eastern side of the river.

In developing these routes careful consideration needs to be given to constraints including land tenure, environmental sensitivity, as well as Aboriginal and European heritage.

Figure 4.7 Upstream of North West Coastal Highway, there exists an opportunity to upgrade the service tracks located at the top of each embankment to high-quality (but unsealed) trail standard capable of supporting non-technical walking and cycling.

Figure 4.8 Proposed primary routes and trails alongside the Chapman River.

4.2.2 Opportunity: Making better use of the Greenough River

The Greenough River mouth, located near Cape Burney already hosts an 11 km long walking and cycling trail extending from the river mouth to Devlin Pool Road. In order for the area to reach its full potential it proposed that the sandy tracks either side of the river (as shown in Figure 4.9 below) are upgraded to support all-weather cycling.

Other potential opportunities for the Greenough River include:

- Providing a short sealed section alongside Greenough River Road, creating a link back to Geraldton via a future shared path adjacent to Brand Highway; and
- A long-term proposal to extend the Greenough River trails upstream to the Historic Greenough Settlement, providing a link to a future Geraldton-Dongara inter-regional cycling route near the S-Bend.

Again, careful consideration needs to be given to potential constraints such as land tenure, environmental sensitivity, as well as Aboriginal and European heritage.

Figure 4.9 Formalising or weather proofing some of the sandy tracks alongside the Greenough River would help transform the area into one of Geraldton's best walking and cycling destinations.

4.2.3 CASE STUDY:
THE SWAN - CANNING RIVERPARK'S SHARED PATH NETWORK

In recent decades, a network of high-quality walking and cycling paths has been progressively developed alongside Perth's Swan and Canning river foreshores. In addition to being a well-utilised recreational asset, these paths also form a key component of Perth's transport network, particularly during the morning and afternoon peak periods.

Although not yet complete, there is a long-term plan to provide a continuous network of high-quality walking and cycling paths alongside both sides of the Swan and Canning rivers. In situations where there are significant engineering, environment or heritage constraints, solutions may be found in innovative treatments such as boardwalks and floating pontoons.

Figure 4.10 Large regional centres such as Bunbury should strive to develop riverfront cycling routes which provide a similar level of service to those in Perth.

Source:
https://www.bartvanbueren.com/architectureprojects

Source:
https://www.cityofparramatta.nsw.gov.au/cycling

Figure 4.11 Boardwalks and floating pontoons can be used to link up riverside pathways in locations where property boundaries go down to the high-water mark or in particularly environmentally sensitive areas.

4.3 Connecting Geraldton's residents to places of education and employment

Despite Geraldton's low-density land use, the footprint of the City remains relatively small. The vast majority of suburbs, including those on the outskirts of the City are less than 15 km to the CBD – a distance which is achievable by bike. As Geraldton's population grows, it is imperative that activity centres such as shopping centres, schools and industrial areas are connected with safe, direct and legible cycling facilities.

Often the most practical and direct way to connect activity centres is along major urban roads. Secondary routes (as defined in Section 2.2) are typically located within these corridors and can take the form of either on-road (protected) bike lanes or off-road shared paths. In both cases, it is critical that they are of a standard which reflects the "8 to 80" design philosophy.

Figure 4.12 When providing cycling facilities along urban arterials it is important they are built to a standard which reflects the "8 to 80" design philosophy.

4.3.1 Opportunity: Enhancing the safety of Geraldton's existing on-road bike lanes

Unprotected bike lanes already exist along many arterial roads in Geraldton, including:

- Durlacher Street (between Maitland Street and Currell Way);
- Cathedral Avenue (between Maitland Street and Shenton Street);
- Fitzgerald Street (between Sandford Street and John Wilcock Link);
- Shenton Street (between John Willcock Link and Durlacher Street); and
- Chapman Road (between Forrest Street and Davis Street and between Mitchell Street and Crowtherton Street)

Unfortunately many of Geraldton's existing on-road bike lanes tend to be unappealing because of their width, separation from motorised traffic and continuity (particularly at signalised intersections and roundabouts) as highlighted in Figure 4.12. It is recommended that these facilities are enhanced to reflect the "8 to 80" design philosophy.

Opportunities which can facilitate the upgrading, extension or enhancement of on-road bike lanes include road resurfacing, verge landscaping and tree renewal projects, as well as major utility upgrades.

Figure 4.13 Geraldton's existing on-road bike lanes are unprotected and many terminate near intersections, which is arguably where they are needed most.

4.3.2 CASE STUDY: SCARBOROUGH BEACH ROAD AS A SECONDARY CYCLING ROUTE

Research shows that the biggest barrier preventing more people from cycling is safety. Major cities around the world – including New York, Vancouver and London – with larger populations, greater density and complex traffic issues, are now establishing dedicated and separated bike lanes in order to encourage more people to use bicycles for transport.

In 2015, the City of Vincent progressed with the installation of protected bike lanes along Scarborough Beach Road in Mount Hawthorn – a key arterial road connecting the Mount Hawthorn and North Perth activity centres. The project was aimed at making the corridor safer and more pleasant for all road users, while simultaneously improving the visual and social amenity of this important corridor.

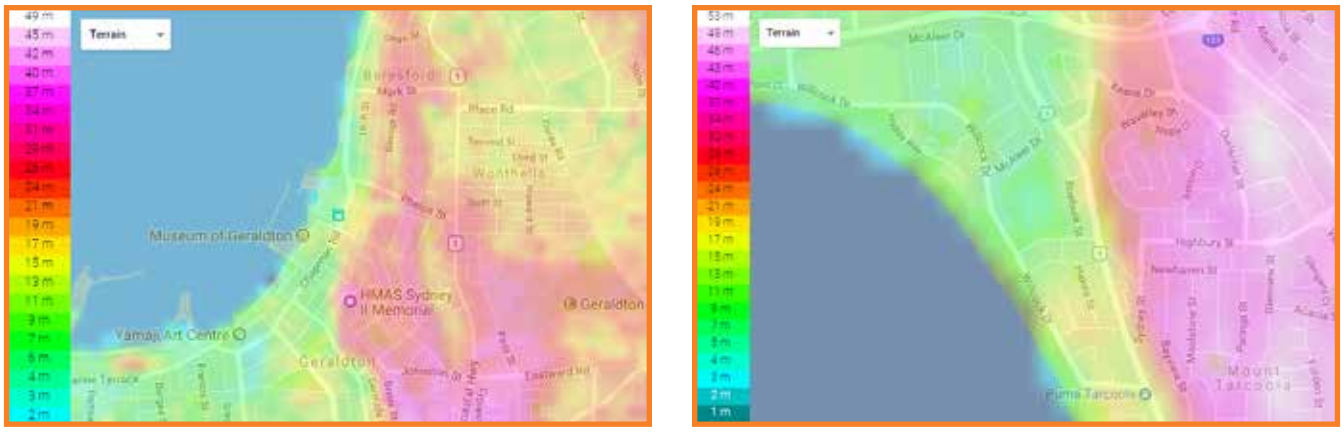
The project involved the reallocation of two traffic lanes (one in each direction) between Fairfield and Charles streets in order to accommodate protected bicycle lanes, which are separated from traffic by kerbed median planting treatments. In addition, green pavement markings and head-start boxes were provided at signalised intersections. In order make sufficient space available a number of parking bays were embayed through reallocating verge space. The creation of medians allowed for the planting of over 100 street trees, with deciduous trees chosen in order to help cool the streetscape in summer while providing access to sunlight in winter.

Figure 4.14 Protected bike lanes (such as these on Scarborough Beach Road) play an important role in enabling more people to cycle for non-recreational purposes.

4.3.3 Opportunity: Using zig-zags to overcome steep gradients

As highlighted in Figure 4.15 below, there is a steep north-south ridge line separating Geraldton's eastern and western suburbs (including the Geraldton CBD). The ridge line, which extends from Mount Tarcoola in the south to Bluff Point in the north was identified as being a barrier to east-west cycling movements by many people during the community consultation process.

For people living in areas such as Wonthella, Rangeway, Utakarra and Strathalbyn, the ridge line makes cycling to and from Geraldton's CBD unattractive. For people living in southern coastal suburbs, such as Mount Tarcoola and Wandina, the steep hill located immediately east of Brand Highway makes cycling to and from their local beach difficult.



Source: http://en-au.topographic-map.com

Figure 4.15 Topographical maps of Geraldton highlighting the central north-south ridge line.

There are a number of opportunities to provide zig-zag type structures (similar to that shown in Figure 4.16) to help people overcome these steep gradients.

Two potential locations identified include Bayly Street in Wonthella and Highbury Street in Mount Tarcoola (refer to Figure 4.17 and Figure 4.18).

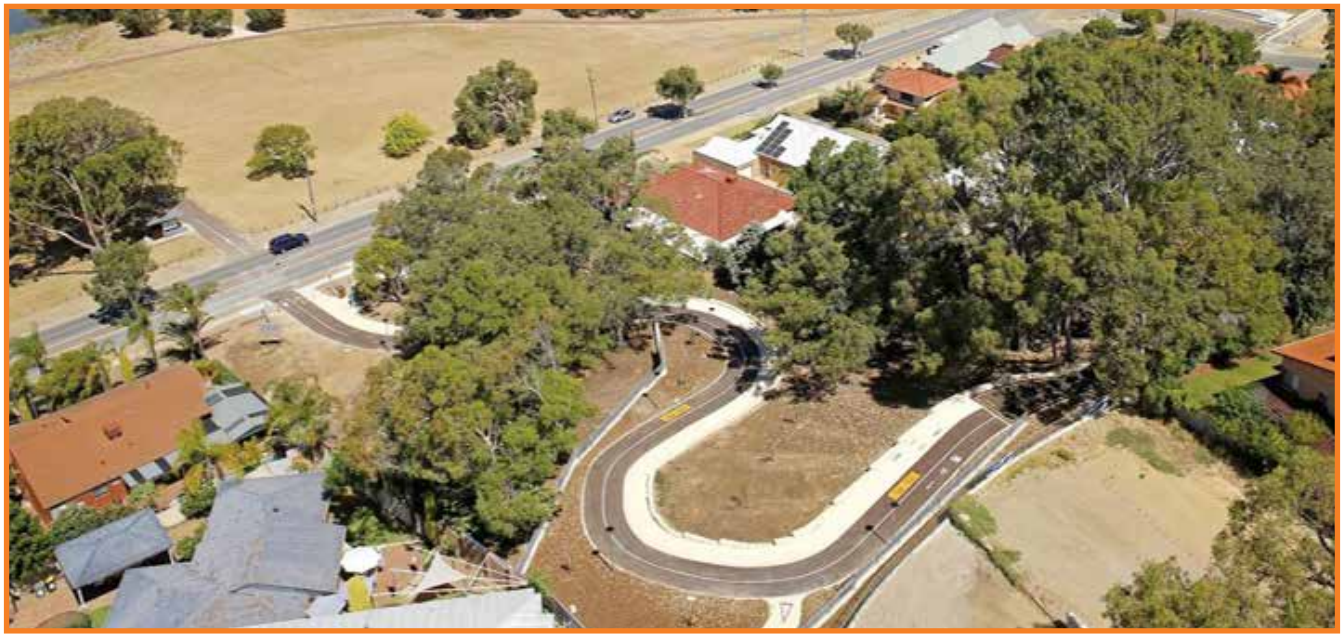


Figure 4.16 Zig-zags positioned in appropriate locations could be used to help cyclists overcome Geraldton's steep gradients.

Figure 4.17 Proposed zig-zag connecting the two sections of Bayly Street (Wonthella)

Figure 4.18 Proposed zig-zag linking Olive Street to Highbury Street (Mount Tarcoola)

4.3.4 CASE STUDY: THE EMERGENCE OF E-BIKE TECHNOLOGY

Until recently, cycling has relied solely on human power. This has limited the distance and type of terrain most people are prepared to make on bicycle, especially when commuting to work or school. E-bikes, or power-assisted bicycles, are fitted with small electric motors which provide mechanical assistance when pedalling. Under Australian road regulations, bikes sold for on-road use are limited to 250 watts, which enables them to travel at speeds up to 25 km/h.

In recent years, the popularity of e-bikes has increased significantly, with many people finding them a quick, affordable and convenient way of getting to and from work or school. What makes them especially appealing for commuting in Australia's hot climate is their ability to alleviate a person's need to take a shower when they arrive at their destination, or carry a change of clothes. Geraldton's 2050 bike network aims to capitalise on the potential of e-bikes, while recognising that regular (human-powered) cycling will continue to remain popular.

Source: https://rac.com.au/car-motoring/info/e-bike-trial

Figure 4.19 E-bikes enable people to commute from further away without needing to take a shower or a change of clothes.

4.4 Harnessing the potential of rail corridors

The intrinsic nature of rail corridors makes them especially appealing for cycling infrastructure. Not only do they provide uninterrupted rights-of-way, they also tend to have more gentle gradients and fewer street crossings compared to most other walking and cycling routes.

Other benefits associated with co-locating cycling infrastructure within or alongside rail corridors include:

- Highlighting the natural, cultural and heritage values of local areas;
- Providing additional connections between towns and suburbs;
- Preserving historical transport corridors for potential future use, also known as railbanking; and
- Increasing the profile of a region and opening up new tourism opportunities.

Potential opportunities associated with disused and closed railway corridors in Geraldton (and surrounding areas) include:

- Developing a walking and cycling route along the alignment of the former railway between Bluff Point and Wonthella (refer to Section 4.4.1);
- Developing a long-distance inter-regional trail between Geraldton and Northampton along the alignment of the now closed Geraldton-Ajana railway line; and
- Developing a long-distance inter-regional trail between Geraldton and various small settlements within the Shire of Chapman Valley along the alignment of the now closed Wokarina-Yuna railway line.

The two inter-regional rail trails mentioned above extend beyond the scope and boundaries of this strategy. Further investigation is required in collaboration with the neighbouring shires of Northampton and Chapman Valley.

Figure 4.20 Providing walking and cycling facilities within or alongside railway corridors is a well-established concept both in Australia and overseas.

4.4.1 Opportunity: Establishing a rail trail between Bluff Point and Wonthella

In Geraldton, there exists a significant opportunity to capitalise on the disused rail corridor which extends from Bluff Point (near the intersection of Chapman Road and Ord Street) to Utakarra (near Horwood Road), and potentially onwards to Narngulu (where the reservation intersects with the Geraldton-Mount Magnet Road). Since the completion of the Southern Transport Corridor, there has been ongoing community support to transform this corridor into a linear greenway complete with walking and cycling facilities.

If realised, this rail trail would provide a high-quality, largely uninterrupted north-south cycling route between Geraldton's north-western and south-eastern suburbs. Such a facility would be completely separated from motorised traffic providing users with a pleasant, and more importantly safe, cycling environment.

The facility would deliver access to and from a number of key trip attractors including:

- Beresford Foreshore;
- Wonthella sports precinct (home to numerous sporting clubs and recreational facilities);
- Other sporting facilities such as (Utakarra Oval, Alexander Park, Greenough Oval);
- Webberton and Narngulu industrial areas (already key areas of employment); and
- St Lawrence Primary School (assuming the northern section of the rail trail is completed).

The rail trail would also afford the residents of various suburbs including Woorree, Strathalbyn and Deepdale with a direct (and relatively flat) cycling route to the northern and coastal parts of Geraldton. Like other rail trails from around Australia, it would provide the opportunity to leverage Geraldton's rail heritage using interpretive signage or wayfinding. The rail trail would also provide connections to a number of east-west cycling routes including Eighth Avenue and Eastward Road.

Figure 4.21 In addition to forming a walking and cycling trail, the Bluff Point to Wonthella rail corridor has the potential to be reimagined as high-quality public open space and community asset.

NOTE: For this opportunity to be realised, ownership of the rail corridor needs to be transferred from the Public Transport Authority (PTA) to the City of Greater Geraldton. In March 2016 the City of Greater Geraldton Council resolved to advise the PTA that the City had no interest in the section between North West Coastal Highway and Place Road, or the section between Horwood Road and the Geraldton-Mount Magnet Road (with the exception of several small, isolated portions needed to satisfy drainage and future road widening purposes). As such, it is only the section between Place Road and Horwood Road that remains viable for a rail trail at this point in time.

Additional issues to be considered and overcome include:

- Land tenure;
- Safety of path users at major road crossings; and
- Personal safety (particularly in sections constrained by private holdings).

Examples of cycling routes which have overcome similar issues are provided in Figure 4.22 and Figure 4.23 below.

Figure 4.22 The popular Coast to Vines Rail Trail in South Australia has several sections which are constrained by private land holdings on both sides, including this section which is located next to a light industrial area.

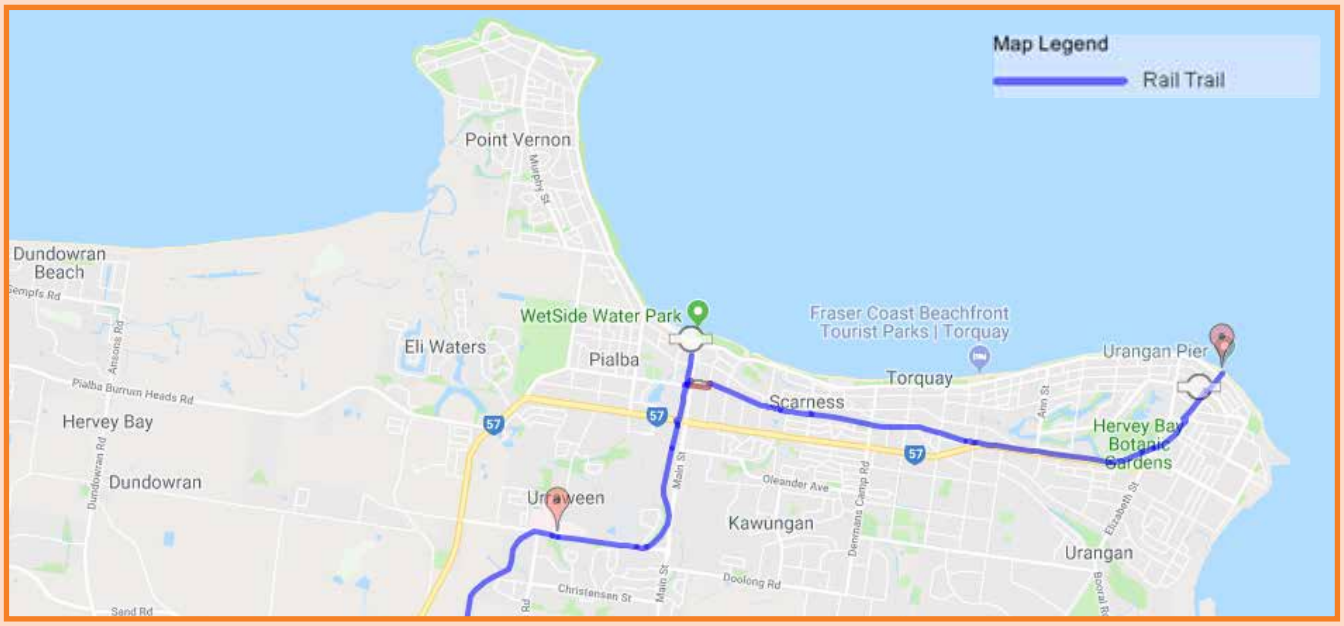
Figure 4.23 Shared paths which cross busy dual carriageway roads do not necessarily require expensive solutions such as underpasses or traffic signals. Sufficiently wide refuges can help people safety stagger their crossings.

4.4.2 CASE STUDY:
MARYBOROUGH TO HERVEY BAY RAIL TRAIL - A KEY COMMUTER ROUTE

The Maryborough to Hervey Bay Rail Trail is a 13.5 km long sealed walking and cycling trail located in Hervey Bay, Queensland. The trail is located on the alignment of the former Colton-Pialba railway which closed in 1993.

The trail, which has been progressively developed by the Fraser Coast Regional Council over a number of years provides a flat, continuous route between a number of residential suburbs, the Hervey Bay town centre and the Urangan Pier foreshore area.

Although popular with recreational walkers and cyclists, the route is also popular with people who are using the corridor to ride to work, school and community facilities. Due to the success of the trail, there are now plans to extend the facility to Maryborough to provide a safe inter-regional cycling link between the two cities (a distance of over 45 km).



Source: Rail Trails Australia

Figure 4.24 The Maryborough to Hervey Bay Rail Trail shares a number of similarities with that proposed for Geraldton (in terms of history, alignment and potential function).

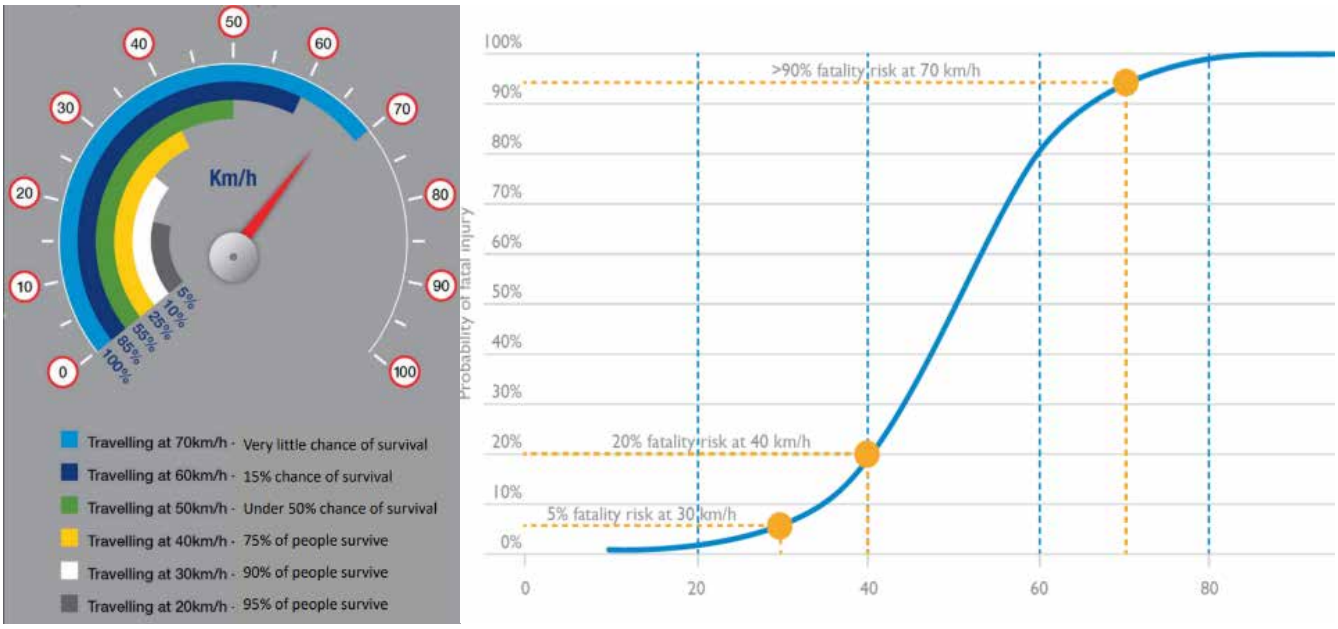
4.5 Re-engineering local streets to create low stress environments

Although relatively new to Australia, the concept of re-engineering local residential streets to reduce vehicle speeds to around 30 km/h is gaining traction in many other parts of the world. Various studies have shown there is a clear relationship between 30 km/h speed limits and a significant reduction in the number, and severity, of accidents involving pedestrians and cyclists.

As shown in Figure 4.25, when impact speeds are less than 30 km/h the overwhelming majority of crash victims will survive, often sustaining only minor injuries. However, at 50 km/h, almost all crashes result in severe injuries and roughly half are fatal. At 70 km/h, more than 90 per cent of crashes involving vulnerable road users are fatal.

Other benefits of low speed residential street environments include:

- Reducing rat-running by non-local traffic;
- Making crossing the road safer for children, the elderly, and people with disability;
- Reducing rates of chronic disease (such as diabetes and heart disease) through increased active living;
- Reducing noise and air pollution;
- Increasing real estate values;
- Improving the economic vitality of local areas; and
- Creating a stronger sense of community.



Source: TfNSW (2014) *Source: Austroads (2012)*

Figure 4.25 When impact speeds exceed 40 km/h the likelihood that a pedestrian or cyclist will survive a traffic crash reduces considerably.

It is expected that safe active streets will play an increasingly important role for cycling within residential areas.

Safe active streets are local streets that have been modified in a way which makes on-road cycling safer and more attractive for people of all ages and experience levels. Sometimes called low stress cycling streets, this type of facility aims to provide a comfortable cycling experience while also increasing amenity for people walking, helping to return local streets to the community.

The fundamental principles of safe active street design include:

- Facilitating benign traffic conditions (using traffic calming measures to reduce traffic volumes and average vehicle speeds);
- Adopting self-explaining street principles (safe active streets should be designed in such a way that makes it intuitive to drive at low speeds, rather than relying on speed cameras or police enforcement); and
- Creating filtered permeability (by strategically restricting some movements to just pedestrians and cyclists).

Road narrowing / lateral shift treatment

Mid-block road closure

Figure 4.26 In addition to making local residential streets quieter and more family-friendly, simple traffic calming treatments can encourage more people to walk or cycle for short trips.

4.5.1 Opportunity: Railway Street Safe Active Street

There is an opportunity to establish a north-south safe active street corridor in Geraldton linking Beresford to Sunset Beach (refer to Figure 4.27). A potential route has been identified using Railway Street in Bluff Point – a local access road which runs parallel to North West Coastal Highway between St Lawrence Primary School and Spalding Park. The proposed route would provide a safe alternative to both North West Coastal Highway and Chapman Road, both of which are considered relatively hostile environments for cyclists.

Such a facility would require a combination of local area traffic management to reduce vehicle speeds and traffic volumes and several short sections of shared path to ensure connectivity along Railway Street and to the wider network.

Potential future stages of the safe active street corridor could potentially include:

- Nichols Street / George Street – providing access to Beresford and the Geraldton town centre;
- Pope Street – providing access to Wonthella (and beyond);
- Beattie Street – providing access to Waggrakine; and
- Alexander Drive – formalising an interim cycling connection to Drummond Cove, until such time that a better facility is provided.

In the longer term, Main Roads have indicated that North West Coastal Highway will be upgraded to dual carriageway between Chapman Valley Road and White Peak Road. When this occurs, it is likely that Alexander Drive will be closed and a higher-order cycling facility provided as part of the road upgrade project.

As shown on the maps in Section 3, a secondary route is also proposed along North West Coastal Highway between Brand Highway and Chapman Valley Road. In order to facilitate this, future widening or upgrade projects will need to consider cycling facilities for this corridor as part of the planning and design process.

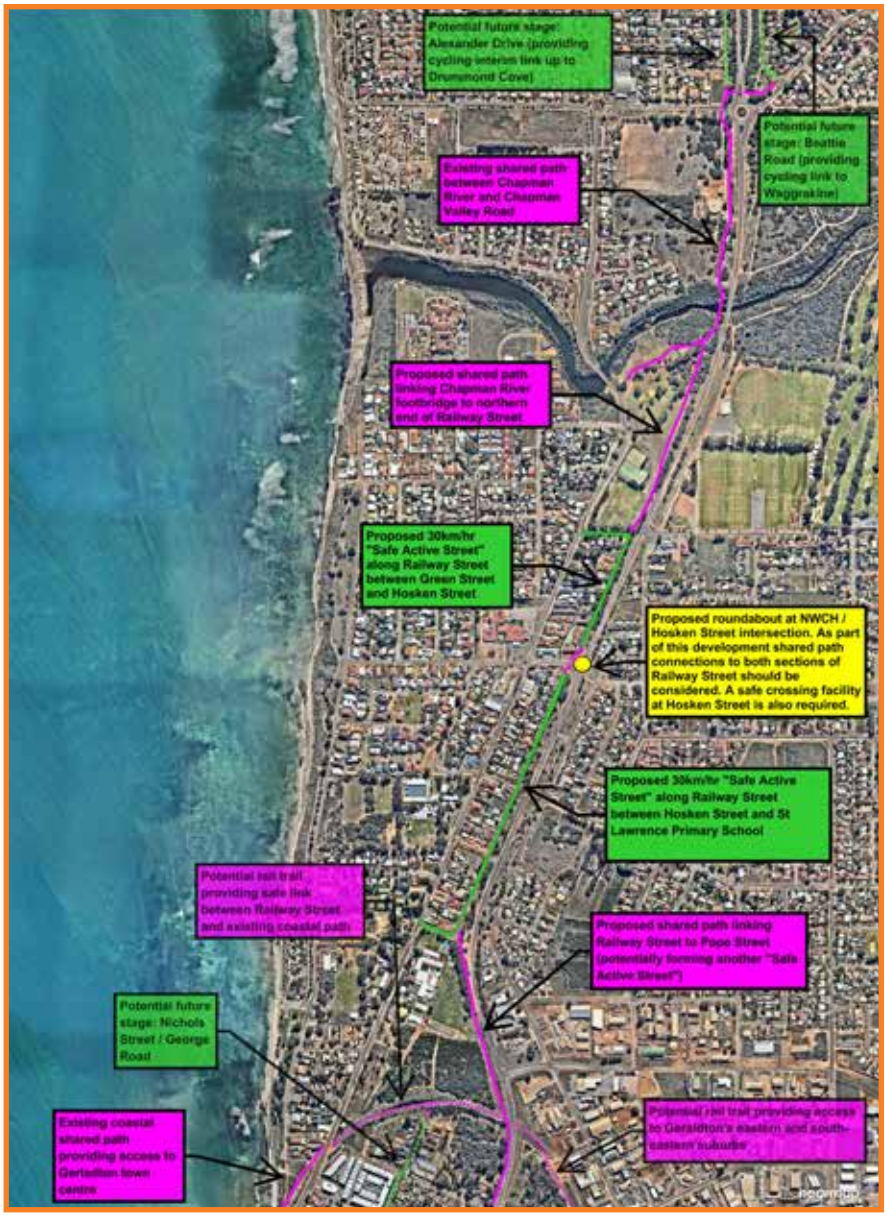


Figure 4.27 There is an opportunity to establish a north-south safe active street corridor in Bluff Point linking St Lawrence Primary School to the Chapman River.

4.5.2 CASE STUDY:
SHAKESPEARE STREET BIKE BOULEVARD

WA's first safe active street - the Shakespeare Street Bike Boulevard - was completed in 2018. The facility runs for around 3 km between Shakespeare Street and Scott Street in Mount Hawthorn, and includes connections to other cycle paths via Bourke Street and Richmond Street at the southern end of the route.

The project was undertaken in two stages. The first stage, between Green Street and Scarborough Beach Road, was officially opened in December 2016, whilst the second stage south of Scarborough Beach Road to Richmond Street, was constructed in mid-2018.

Key elements of the project include:

- A new 30 km/h speed limit complemented by one-way slow points and speed cushions aimed at reducing vehicle speeds and traffic volumes;
- Red asphalt with safe active street and 30 km/h pavement markings;
- Reversal of stop or give way controls along the route to provide priority to cyclists where possible;
- Improved crossing facilities, including at Scarborough Beach Road where wider traffic islands and a central median treatment are used to increase safety and highlight the presence of cyclists; and
- Landscape enhancements to provide shade and improve the overall amenity of the street.

Connecting schools, parks and activity centres to higher-order cycling facilities, the Shakespeare Street project has been well received by the local community as well as cyclists travelling through the area on their way to Mt Hawthorn, Leederville and onwards towards the Perth CBD.

Project evaluation is ongoing however initial monitoring and data collection has shown a reduction in vehicle speeds and traffic volumes, and an increase in the number of cyclists and pedestrians using the street. The number of cyclists using the road (instead of footpaths) has also increased, indicating improved amenity for pedestrians.

Figure 4.28

The Shakespeare Street safe active street connects schools, parks and other trip generators to higher-order cycling facilities.

4.6 Developing safe cycling routes for road cyclists

There is an opportunity to develop or formalise a road cycling route for Geraldton's road cyclists. Road cycling routes (as described in Section 2.5) are typically conducive to rural and semi-rural roads which have low traffic volumes, scenic landscapes and changes in elevation. The road cycling user group generally does not require (or use) dedicated or protected cycling infrastructure.

4.6.1 Opportunity: Improving safety outcomes along the Wolf Pack Route

The Road Safety Commission has been working with the City of Greater Geraldton and Shire of Chapman Valley improve outcomes for road cyclists along the Wolf Pack Route, comprising Rudds Gully, Moonyoonooka-Narngulu, Moonyoonooka-Narra Tarra, Narra Tarra and Chapman Valley roads (shown in yellow in Figure 4.30). The initiative involved installing permanent static "Share the Road" signage to help raise awareness of cyclists and prevent and reduce cyclist and driver conflict. Outcomes of the initiative will be evaluated by the Road Safety Commission and may result in the signage being installed along the entire route.

There may also be opportunities to consider other, more sophisticated measures such as:

- Shoulder widening (particularly on uphill sections);
- Time/day activated warning lights (similar to school zone signage); and
- Button activated warning lights (refer to Figure 4.29).

There is an opportunity to review the key routes being used by road cyclists in order improve safety and user-experience. Road safety improvements could include shoulder widening, advisory signage and electronic flashing warning signage which detect when groups of cyclists are using certain sections of road.

Figure 4.29 Button-activated warning lights could help further improve cyclist safety along the Wolf Pack Route.

Figure 4.30 The Wolf Pack Route is a well-established road cycling route among Geraldton's road cycling community.

4.7 Getting cycling infrastructure right from the start

Retrofitting cycling infrastructure to existing urban areas can be slow and expensive. This is why it is critical that new urban growth areas incorporate dense and interconnected networks of cycling facilities from the outset. When planning the street networks of urban developments, consideration should be given to:

- Providing primary routes alongside all main roads, railways and watercourses;
- Providing secondary routes along all urban arterials to provide access to local shops, schools and community facilities; and
- Providing local routes along all local access streets.

In terms of future greenfield developments, key opportunities in Geraldton include the Buller, Glenfield, Cape Burney and Wooree New Town future urban areas, as defined in the *2011 Geraldton Structure Plan*.

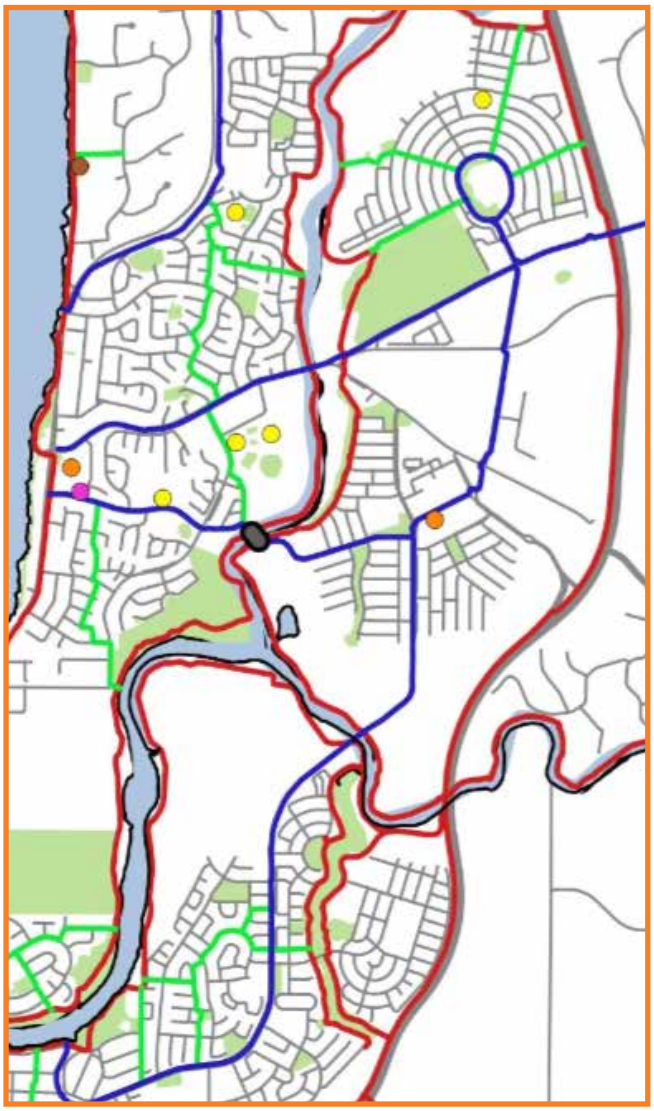


Figure 4.31 When new developments adopt a safe and interconnected network of primary, secondary and local routes cycling becomes an attractive and natural part of everyday life.

4.7.1 Opportunity: Geraldton Heights

Over the next three decades it is likely that a number of new greenfield developments will take place in the Greater Geraldton area. One such development is Geraldton Heights, located on the eastern banks of the Chapman River in Moresby. The development, which is already under construction has a number of features which may enable cycling to become a key mode of transport.

These include:

- Proximity to the Chapman River - where future long-distance trails along each embankment can prove direct connections to the coast, Spalding Park's sports facilities, and the airport;
- Proximity to Webber Road - which may eventually be connected to Place Road via a new traffic bridge providing direct access into central Geraldton;
- The provision of horse trails along public open space and drainage corridors, which could be delivered as multi-use facilities; and
- A future commercial activity centre comprising of shops, school and parks.

The Department of Transport will work closely with the Department of Planning, Lands and Heritage to ensure that the new Design WA guidelines consider contemporary best-practice when it comes to the planning and design of cycling infrastructure in new developments such as Geraldton Heights.

Source: http://www.geraldtonheights.com.au

Figure 4.32 New developments such as Geraldton Heights have the potential to become bike-friendly communities.

4.7.2 CASE STUDY:
LEARNING FROM THE BEST - DUTCH APPROACHES TO SUBURBAN DEVELOPMENT

Australia's suburbs (and particularly those developed from the 1960s onwards) have typically been designed in a way which makes car use the dominant mode of transport, even for very short trips. Design features such as 50 km/h speed limits along local streets, intersections with large radii and non-contiguous pathways, all contribute to reducing the appeal of walking and cycling.

Houten, a city in the province of Utrecht in the Netherlands is an exemplary model of low-density, suburban development. In the late 1960s, Dutch government officials recognised Houten – then a small town of a few thousand people – as a potential area for major population growth. Unlike other suburban developments taking place at that time planners carefully prioritised pedestrians and cyclists over cars.

The defining feature of Houten is the extensive use of filtered permeability which discourages people from making unnecessarily short trips by car. The city is divided into a number of smaller residential districts, each of which is only accessible to cars via a peripheral ring road which encircles the city. To get to another district by car, you must use the ring road.

The rest of the city is covered by an extensive network of high-quality walking and cycling routes. Importantly, these routes provide direct access between the residential areas and key destinations such as shops, schools and community facilities. This feature makes walking and cycling the most attractive way to get to and from most local destinations.

Houten's innovative design (and corresponding mode share) has resulted in numerous measurable benefits, including better air quality, fewer incidents of road trauma and higher levels of population health and well-being when compared to other similarly sized cities.

Map of Houten showing the peripheral ring road, "Rondweg", which is needed for most car-based journeys

Map of Houten highlighting the dense network of protected cycling routes

Figure 4.33 Houten, a modern but low density suburban development in the Netherlands has been designed in such a way where it simply makes sense to walk or cycle for local trips.

5. ACTION PLAN AND MAINTENANCE

This section outlines the strategic priorities that are proposed to be progressed over the next five years. While not possible to develop a cycling network that reflects the “8-80” design philosophy immediately, this approach will help enable the City of Greater Geraldton to realise its long-term cycling potential over time.

The priorities identified have been informed by community and stakeholder consultation undertaken throughout the project, as summarised in Appendix C.

5.1 The existing cycling network

To inform the identification of strategic priorities, Geraldton’s existing cycling infrastructure and road conditions have been assessed to determine whether they meet the intent of the proposed route function, in the context of current standards and needs.

Each route has been defined as one of the following:

Existing (adequate) – the level of service provided reflects current best practices for this type of cycling route (as defined in the route hierarchy).

Existing (needs improving) – although possible to cycle along this corridor, the level of service provided does not reflect current best practices for this type of cycling route (as defined in the route hierarchy).

Non-existent (proposed) – it is either not possible to cycle along this route due to the corridor being non-existent or, because of existing road conditions, most people are unable to cycle confidently.

These classifications are reflected in the maps on the following pages, with each route considered in the context of the five-year timeframe of this action plan.

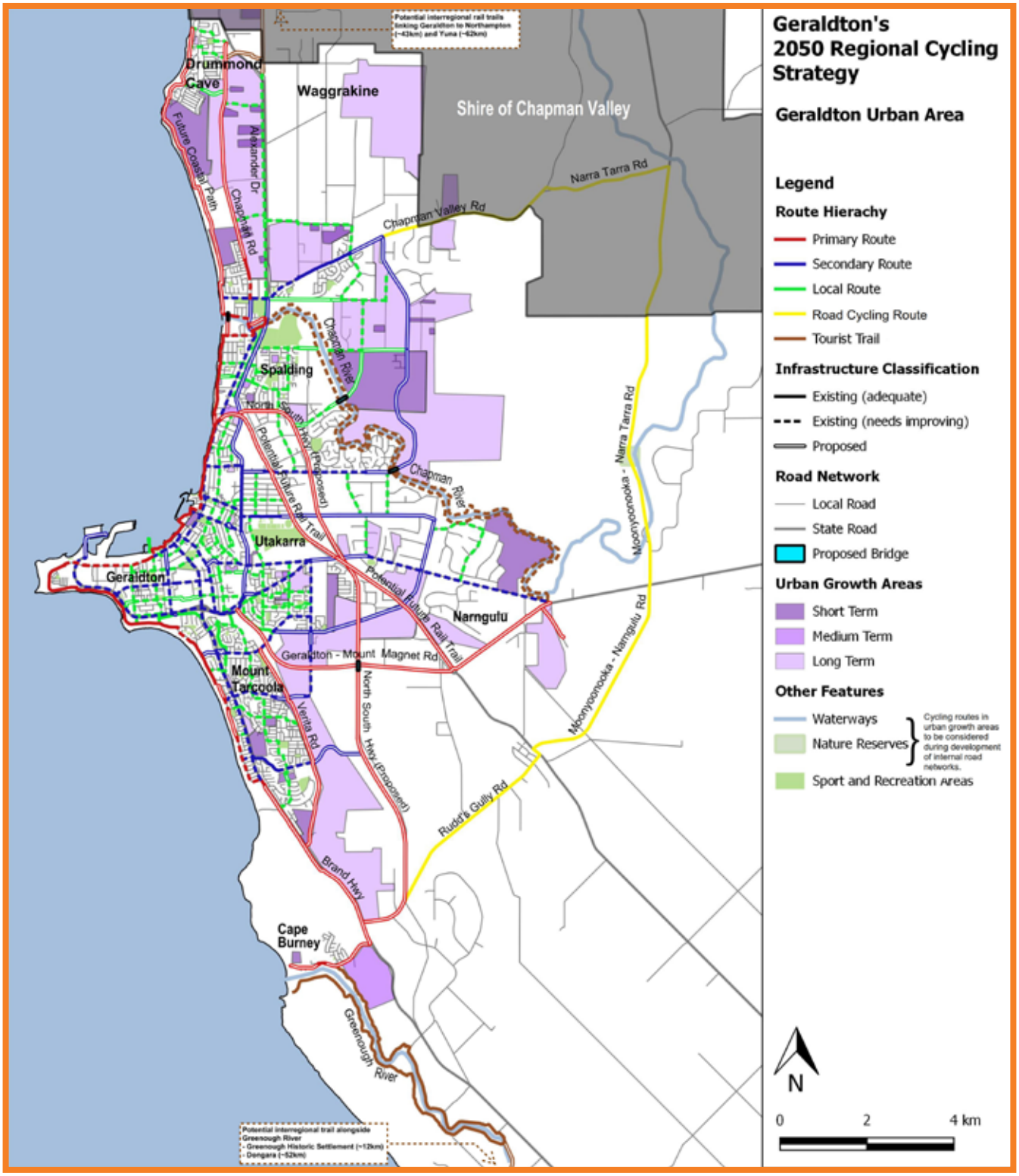


Figure 5.11 Existing cycling network conditions in the Geraldton urban area.

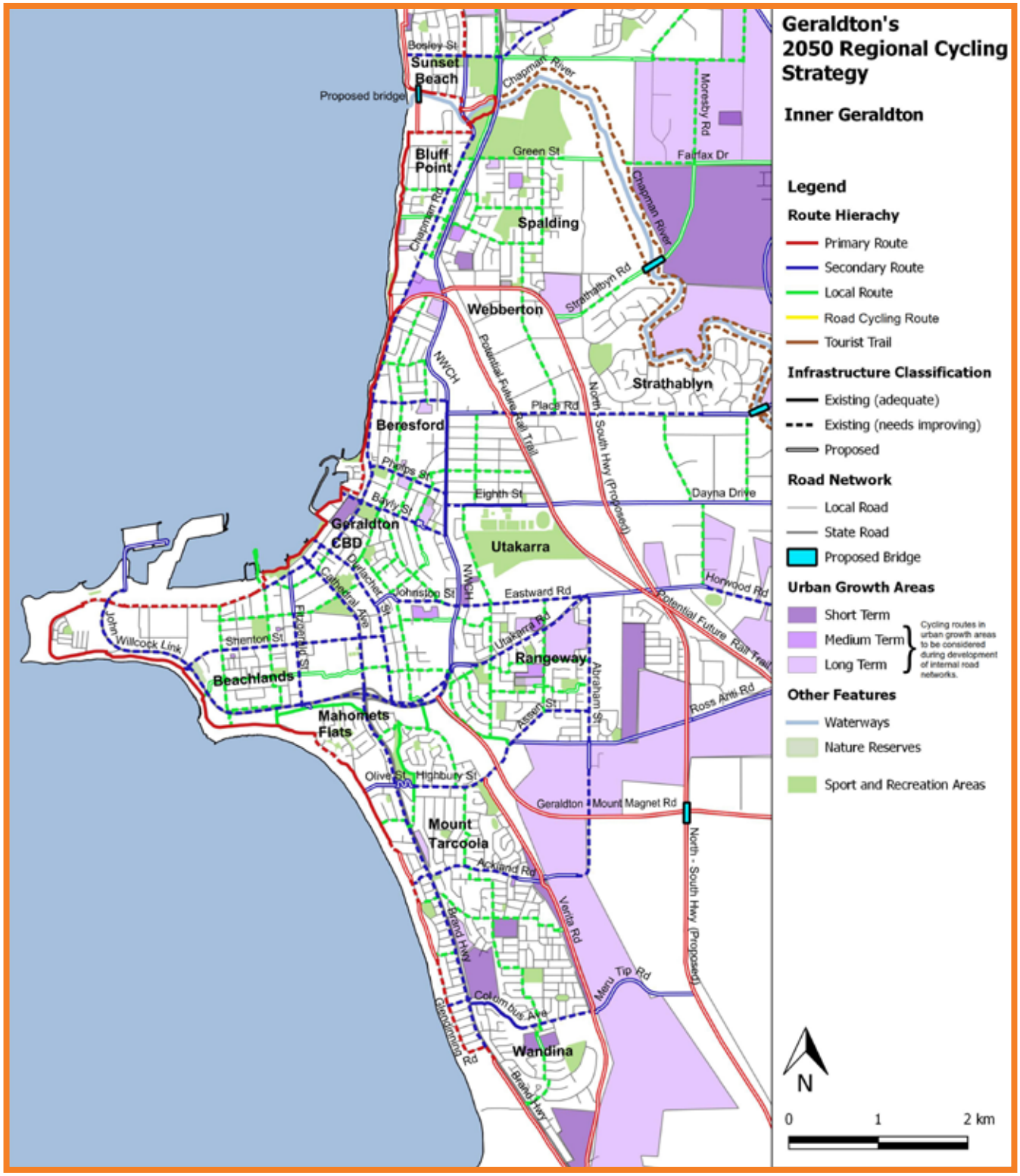


Figure 5.12 Existing cycling network conditions in the inner Geraldton area.

5.2 Priority projects

One of the first priorities of the action plan will be to undertake a detailed constraints analysis of the cycling routes currently defined as existing (needs improving) or non-existent (proposed) to gain a better understanding of their overall feasibility.

Planning projects will involve a range of investigations, including land tenure, engineering feasibility, concept design, cost estimate and cost benefit analysis. These investigations will enable the City to make an informed decision on the project's priority (relative to other works), construction cost and future construction timing.

5.2.1 Developing the primary network

#	Action	Type	Objective / Justification	Timeframe
1	Investigate the development of a cycling link between Sunset Beach and Drummond Cove.	Planning	**Objective:** Investigate the development of a high-quality cycling connection between Sunset Beach and Drummond Cove which is suitable for cyclists of all ages and abilities. **Justification:** There is a growing need to develop a high-quality cycling route between Sunset Beach and Drummond Cove which caters to cyclists of all ages and abilities. Such a facility is well supported by the community, as evidenced by the feedback received during the community consultation process.	Within 2 years
2	Feasibility study into the development of the old PTA rail corridor to incorporate a shared walking and cycling facility.	Planning	**Objective:** Investigate the development of a shared walking and cycling facility along the former rail corridor in Wonthella. **Justification:** The rail corridor which extends from Bluff Point to Utakarra has the potential to provide a high-quality and largely uninterrupted north-south cycling route between Geraldton's north-western and south-eastern suburbs. Such a facility would be completely separated from motorised traffic providing users with a safe and pleasant cycling environment. When combined with a future path along the inner bypass, it would enable the creation of a ~32 km loop around Geraldton, completely separated from motorised traffic.	Within 3 years
3	Investigate the development of a cycling link between Tarcoola Beach and Cape Burney.	Planning	**Objective:** Investigate the extension of the existing southern coastal path south from Glendenning Road in Tarcoola Beach to Greenough River Road at Cape Burney. The project aims to: - provide a recreational facility for the City's residents and visitors; - allow residents of Cape Burney to commute safely to and from various employment, shopping and educational facilities located in Geraldton; and - alleviate the need for less confident cyclists to use Brand Highway – a known blackspot. **Justification**: In addition to the safety concerns mentioned above, such a facility is well supported by the community, as evidenced by the feedback received during the community consultation process.	Within 5 years
4	Investigate the development of a pedestrian and cycling bridge over the Chapman River.	Planning	**Objective:** Investigate the development of a shared pedestrian/cyclist bridge over the Chapman River mouth, near Nazareth House. **Justification:** A bridge in this location will provide an important connection between Sunset Beach and the popular Kempton Street Shared Path in Bluff Point, and also around Chapman River.	Within 5 years

5.2.2 Developing the secondary network

#	Action	Type	Objective / Justification	Timeframe
1	Review of Geraldton's secondary cycling routes and prioritisation of low cost improvements.	Planning and delivery schedule	**Objective:** Review each of Geraldton's secondary cycling routes to determine what type of infrastructure is best suited to each corridor. The study must take into consideration a range of factors (including safety, legibility, continuity and accessibility) and should be used as a roadmap for prioritising/funding the transformation of these corridors into attractive cycling routes over the coming years. **Justification:** Currently many of Geraldton's secondary routes are made up of highly inconsistent/disconnected infrastructure which in addition to being unsafe, has a negative impact on cycling uptake. An example of is Durlacher Street which has on-road bike lanes in some sections, narrow off-road shared paths in other sections (on alternating sides of the road) and no cycling infrastructure at all in other places.	Within 2 years
2	Modifications to the Chapman Road / Phelps Street roundabout.	Planning	**Objective:** Planning of modifications to the Chapman Road / Phelps Street roundabout to improve traffic flow, cyclist movements and pedestrian crossing. **Justification:** The existing roundabout poorly caters for safe pedestrian and cycling movements.	Within 5 years
3	Modifications to the Cathedral Avenue / Sandford Street intersection.	Planning and design	**Objective:** Planning and design for the future upgrade of the Sanford Street / Cathedral Avenue intersection including improvements to universal access and cyclist provisions. **Justification:** The existing intersection poorly caters for safe pedestrian and cycling movements.	Within 2 years

5.2.3 Developing the local network

#	Action	Type	Objective / Justification	Timeframe
1	Review of Geraldton's local cycling routes and prioritisation and delivery of low cost improvements.	Planning and delivery schedule	**Objective:** To identify and develop a delivery schedule for a series of low-cost improvements to enhance the safety, attractiveness and legibility of Geraldton's local network. **Justification:** Minor improvements to Geraldton's network have the potential to greatly improve cycling amenity and legibility.	Within 3 years
2	Plan for a Railway Street - *Safe Active Street* pilot project.	Planning and design	**Objective:** To establish a north-south "safe active street corridor" linking Beresford to Sunset Beach along Railway Street in Bluff Point – a local access road which runs parallel to North West Coastal Highway between St Lawrence Primary School and Spalding Park. Such a facility would require a combination of local area traffic management (to reduce vehicle speeds and traffic volumes) as well as several short sections of shared path to ensure connectivity along Railway Street as well as to the wider network. **Justification:** The proposed route would provide a safe alternative to both North West Coastal Highway and Chapman Road, both of which are considered relatively hostile environments for cyclists.	Within 2 years

5.2.4 Developing the tourist trails

#	Action	Type	Objective / Justification	Timeframe
1	Work with the shires of Northampton and Chapman Valley in assessing the long-term viability of rail trails connecting Geraldton to Northampton and Yuna.	Planning	**Objective:** To liaise with the neighbouring shires of Northampton and Chapman Valley and investigate the potential for two long-distance trails along the historical Geraldton-Galena and Wokarina-Yuna rail corridors. **Justification:** The opportunity to reimagine these two rail corridors as multiuse trails has been discussed over several decades. The trails have the potential to become important tourist attractions showcasing the Mid West region's unique environment, landscapes as well as Indigenous and European heritage.	Within 5 years

5.2.5 Developing the road cycling routes

#	Action	Type	Objective / Justification	Timeframe
1	Improve safety outcomes along the Wolf Pack Route.	Planning and delivery schedule	**Objective:** Work with the Road Safety Commission and Shire of Chapman Valley to plan for improved outcomes for sports cyclists along the Wolf Pack Route, comprising of Rudds Gully, Moonyoonooka – Narngulu, Moonyoonooka – Narra Tarra, Narra Tarra and Chapman Valley roads. **Justification:** Safety improvements are required along Geraldton's most popular road cycling route for road cyclists.	Within 3 years

5.2.6 General

#	Action	Type	Objective / Justification	Timeframe
1	Undertake a constraints analysis of the proposed network.	Planning	**Objective:** Undertake a constraints analysis of the cycling routes assessed as 'Existing (needs improving)' and 'Non-existent (proposed)' and update network mapping as appropriate.	Within 2 years
2	Advocate for the development of a shared path provided as part of future Main Roads bypass project.	Advocacy and liaison	**Objective:** To work with Main Roads in ensuring that a high-quality (primary) cycling route is developed as part of the possible future inner bypass (known as the Geraldton North-South Highway). **Justification:** Major road and rail projects provide important opportunities to establish long-distance and high-quality walking and cycling facilities. This project would provide a connection to and from the outer lying suburbs in Geraldton (existing and future), catering to future demand.	Ongoing
3	Planning with Main Roads for long-term future cycling infrastructure needs along Brand Highway.	Planning, advocacy and liaison	**Objective:** Work with Main Roads in ensuring that any future upgrades to Brand Highway cater appropriately for cyclists. **Justification:** Main Roads are currently reviewing potential cross-sections and land requirements for Brand Highway between Glendinning Road and John Wilcock Link.	Within 3 years

5.3 Activation, Consultation and Evaluation (ACE)

This strategy outlines how the built environment can change to support greater participation in cycling in Geraldton. However, planning and building infrastructure in isolation will not necessarily lead to significantly more people riding.

There needs to be an emphasis on creating inclusive infrastructure projects so that the product delivered fully serves the needs of local communities as well as people visiting. This can be achieved through a range of engagement and monitoring activities as projects are planned, designed and constructed, and as the infrastructure continues to be used after construction.

Ongoing engagement and evaluation starts by incorporating three essential elements into project delivery – activation, consultation and evaluation. This approach is outlined in the following framework:

Activation includes promotions and programs designed to encourage people onto the infrastructure by raising awareness and appeal. This can be anything from highlighting the new facilities in media releases and creating local maps, to making cycling trips more pleasant through added amenities such as end-of-trip facilities, bike parking, natural landscaping, art works and other initiatives.

Activation can take place throughout all phases of an infrastructure project – starting well before a project is built – and can be temporary (one-off activities), intermittent (such as a monthly group ride) or permanent (such as wayfinding signage).

Consultation is a crucial part of the delivery of inclusive cycling infrastructure to ensure that the facilities meet the needs of users, stakeholders and the local community. Consultation can be undertaken in a variety of formats, and is informed by the City's Community Engagement Policy.

Monitoring and **evaluation** of the infrastructure is essential to measure the impact it is having, both for people using the infrastructure and for the wider community experiencing the outcomes of increased transport mobility. These outcomes may include better local liveability, improved congestion and parking management, growth in cycle-tourism and increased spending at local businesses. Ongoing monitoring will ensure facilities are well maintained and that the planning and delivery of cycling schemes undergoes continuous improvement.

All three of these elements are inherently linked and some activities will deliver outputs for more than one, such as a community workshop where people are asked to review existing facilities (evaluation), help prioritise new ones (consultation), and participate in the delivery and promotion of new facilities and amenities (activation).

At its core, this approach acknowledges that cycle networks are part of a richer local landscape and should be delivered in an inclusive way that invites participation and supports a range of community outcomes.

5.4 Maintenance of the strategy and action plan

The strategic priorities identified in the action plan will be reviewed every five years to ensure current conditions are reflected and relevant projects are prioritised. This review, due in 2023, will include reassessing each route's classification as either existing (adequate), existing (needs improving), or non-existent (proposed) and updating the existing network maps.

The ultimate 2050 Geraldton cycling network should remain consistent over the medium term. A review of the whole strategy every 8-10 years will allow any new opportunities to be identified and incorporated into a revised document. This review should commence in 2027 to enable release by 2028.

APPENDIX A
ROUTE HIERARCHY

A1. ROUTE HIERARCHY SUMMARY

NETWORK PRINCIPLES

The Cycling Network Hierarchy is arranged by route function. The function pertains to the type of activities that take place on the route. A routes' built form is based on the physical characteristics of the location. Each form, apart from those supporting road cycling routes, is designed with the "8 to 80" design philosophy in mind.

1 PRIMARY ROUTE

Function

Primary routes are high demand corridors that connect to major destinations. They provide high-quality, safe, convenient (and where possible uninterrupted) routes that form the spine of the cycle network.

These routes are conducive to medium or long distance commuting/utility, recreational, training and tourism trips.

Form

Primary routes are high-quality cycle-only or shared paths, located adjacent to major roads, rail corridors, rivers and ocean foreshores.

Where the environment allows, these are in the form of a Principal Shared Path (PSP). A PSP is a fully lit and separated facility. In locations where vehicles have been grade separated the cycle route will also be grade separated. PSPs are to be designed in accordance with the WA Transport Portfolio's PSP Policy.

2 SECONDARY ROUTE

Function

Secondary routes have a lower demand than primary routes, but provide similar levels of quality, safety and convenience.

These routes provide connections between primary routes and major activity centres such as shopping precincts, industrial areas or major health, education, sporting and civic facilities.

Form

Secondary routes can take on a number of forms and are designed to suit the environment in which they are located.

These forms include:

- High-quality shared paths;
- Bi-directional protected bike lanes;
- Protected on-road bike lanes; and
- Safe Active Streets (Bicycle Boulevards).

3 LOCAL ROUTE

Function

Local routes are low demand and are predominantly located in local residential areas.

They provide access to higher-order routes and local amenities and recreational spaces.

Form

Local routes can take on various forms depending on the environment in which they are located.

These forms include:

- Shared paths;
- Bi-directional protected bike lanes;
- Protected on-road bike lanes; and
- Safe Active Streets (Bicycle Boulevards).

In some locations, quiet residential streets incorporating signage and wayfinding may be appropriate for local routes.

COMPLEMENTARY NETWORK

While not all areas will include Road Cycling Routes and Tourist Trails, they play an important part in the overall network.

These routes are typically used by smaller and more select user groups for recreational purposes.

ROAD CYCLING ROUTE

Function

Road cycling routes are designated routes for training, sports or recreational cyclists to undertake long distance rides in on-road environments.

Form

Road cycling routes are predominantly located on lower order, rural or semi-rural roads on the outskirts of cities and towns. Sections may follow busier roads, particularly as road cycling routes typically begin and end in built up areas and often follow scenic roads popular with other road users.

These routes support cyclists undertaking challenging longer distance rides by raising awareness and encouraging safe behaviour by all road users.

This is achieved through advisory signage, warning technology and other road safety initiatives.

TOURIST TRAIL

Function

Tourist trails provide long-distance, off-road (predominantly unsealed) riding experiences through natural settings, away from motorised traffic. They often support recreational and tourism trips between regions.

Form

Trails are typically located within underutilised transport and service corridors in rural areas. Due to their relatively gentle gradients, former railways make excellent candidates for trails. Purpose built trails may be constructed to connect existing corridors.

Trails should be constructed from well drained, compacted gravel with supporting infrastructure such as way-finding signage. They may be sealed when they run through towns, busy road crossings or in special circumstances.

Dedicated cycling infrastructure - five typologies of route						
		Primary Routes	Secondary Routes	Local Routes	Tourist Trails	Road Cycling Routes
Type of trips	Commuting	✓	✓	✓	✗	✗
	Utility	✓	✓	✓	✗	✗
	Recreation	✓	✗	✗	✓	✗
	Touring	✓	✗	✗	✓	✓
	Training	✓	✗	✗	✗	✓
Responsible agencies (planning, delivery and support):		Department of Transport, Main Roads, Public Transport Authority, Local Government	Department of Transport, Main Roads, Local Government	Department of Transport, Main Roads, Local Government	Department of Biodiversity, Conservation and Attractions, Local Government, Public Transport Authority, Department of Transport, Department of Local Government, Sport and Cultural Industries, LotteryWest Main Roads,	Department of Local Government, Sport and Cultural Industries, Road Safety Commission, Department of Transport, Main Roads, Local Government
Infrastructure should be designed for:		8 to 80 design philosophy	8 to 80 design philosophy	8 to 80 design philosophy	8 to 80 design philosophy	Confident cyclists

Other supporting cycling infrastructure – footpaths	
Footpaths	Since April 2016 all cyclists, irrespective of age, are permitted to ride on footpaths in WA (unless signposted). Footpaths support low-speed-low-volume cycling, and are particularly important for the young and inexperienced user groups. For the vast majority of cyclists however, footpaths remain a "last resort" and will typically only be used where no safe or viable alternative is available. There are several reasons why cyclists choose to avoid footpaths. These include: - Speed: Because footpaths are rarely afforded priority across intersecting side roads, riding on footpaths is slow, and stop-start. The geometric design of footpaths at many intersections often results in cyclists needing to deviate from their intended desire lines. - Ride quality: As footpaths are typically constructed from concrete slabs or bricks, the ride quality is lower than that of parallel roadways, or purpose-built (asphalt) shared paths. - Conflict with pedestrians: In many cases footpaths are of insufficient width for pedestrians and cyclists to pass each other safely and comfortably. - Blind driveways: Riding on footpaths can be dangerous, particularly on streets which contain large numbers of driveways. At walking speed this isn't normally a problem however for cyclists it is often impossible to see reversing vehicles until the last minute, particularly where paths butt-up against property boundaries. Despite footpaths not forming part of the official cycling network, it is important that developers and local governments design, construct and maintain footpaths that provide a safe alternative for people who prefer to ride at low speeds and away from motorised traffic.

Figure A.1 Poor ride quality, parked vehicles, blind driveways and unfavourable intersection designs make riding on footpaths unattractive for some people.

Other supporting cycling infrastructure – roads without dedicated cycling infrastructure	
Roads without dedicated cycling facilities	Cyclists are, and will continue to remain, legitimate users of all roads in WA (with the exception of freeways and controlled access highways). It is important to remember that roads without purpose-built cycling facilities serve an important function for most, if not all, cycling journeys. Wayfinding signage can be a valuable tool to direct cyclists (particularly novice cyclists) to the most suitable streets or corridors.

APPENDIX B
DESKTOP ANALYSIS SUMMARY

B1. ANALYSIS OF PEDESTRIAN AND CYCLIST CRASH DATA (2013-2017)

Contained on the following pages are maps showing the location and severity of pedestrian and cyclist crashes occurring in Geraldton between and January 2013 and December 2017. Figure B.1 provides a breakdown of these crashes by severity.

The following trends/generalisations were noted in Geraldton:

- In the five years to 2017 there was one fatal crash involving a cyclist and one fatal crash involving a pedestrian. The cyclist fatality occurred on Brand Highway just south of Verita Road in 2017.
- There were seven reported crashes where cyclists required hospitalisation and a further two where cyclists required some form of medical attention.
- Unsurprisingly, cyclist crashes resulting in property damage only exceeded those for pedestrians.
- There were several major clusters of pedestrian and cyclist crashes along key busy roads, including:
  - Brand Highway/Cathedral Avenue;
  - Chapman Road;
  - North West Coastal Highway;
  - Fitzgerald Street; and
  - John Willcock Link.

As mentioned above, the available data set covers the period between 2013 and 2017 only. It also only captures reported incidents. Currently there is no reliable data available on near misses, accidents between cyclists and pedestrians, or single cyclist crashes in Geraldton. It has been estimated that cycling incidents reported to Police make up only 20 per cent of all cycling related incidents that result in hospitalisation.

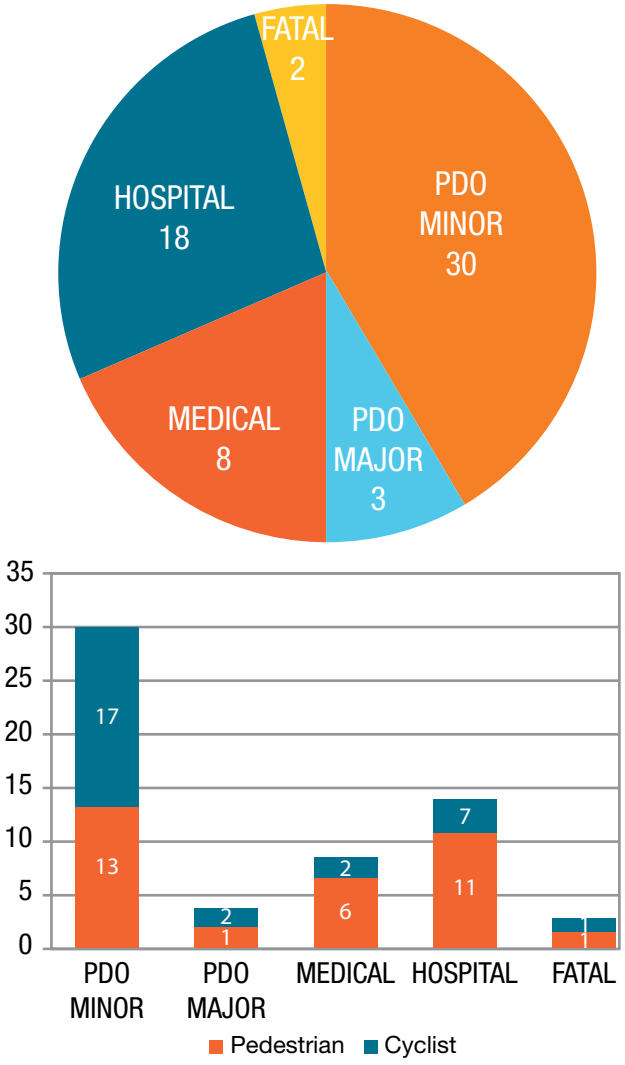


Figure B.1 Geraldton cyclist and pedestrian crashes by severity (2013-2017). Note "PDO" refers to "Property Damage Only".

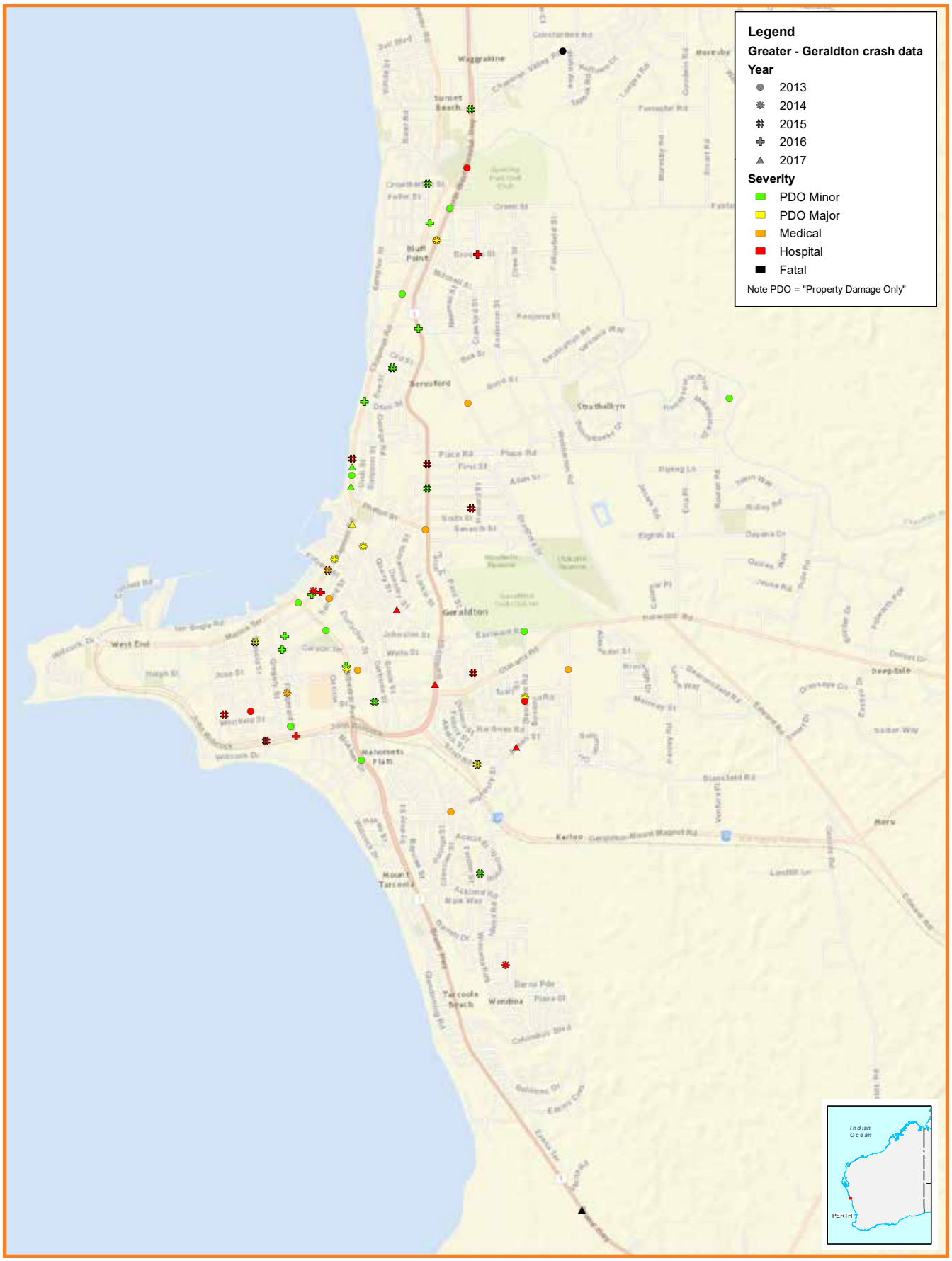


Figure B.2 City of Greater Geraldton cyclist and pedestrian crashes by year (2013-2017).

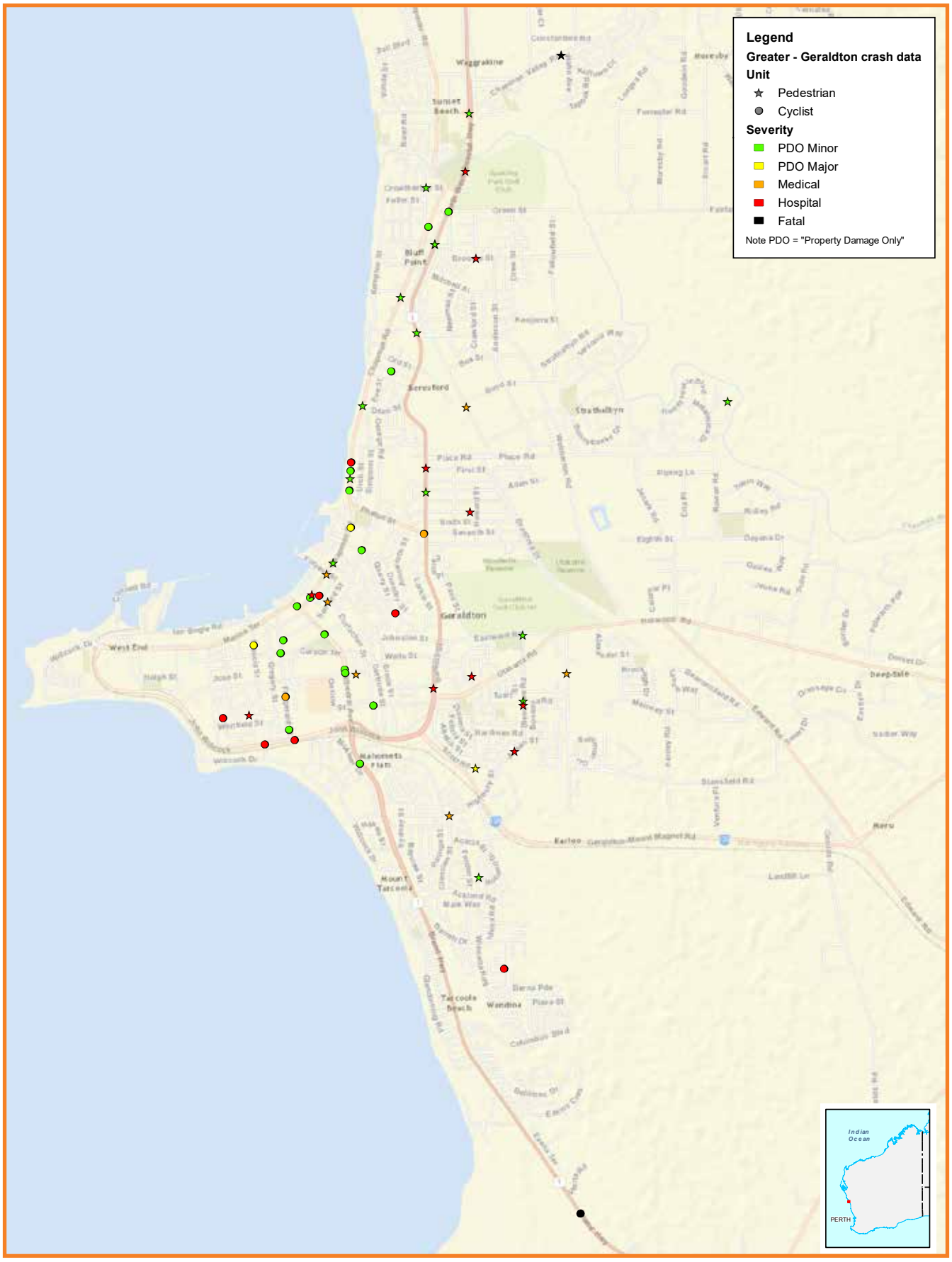


Figure B.3 City of Greater Geraldton cyclist and pedestrian crashes by type (2013-2017).

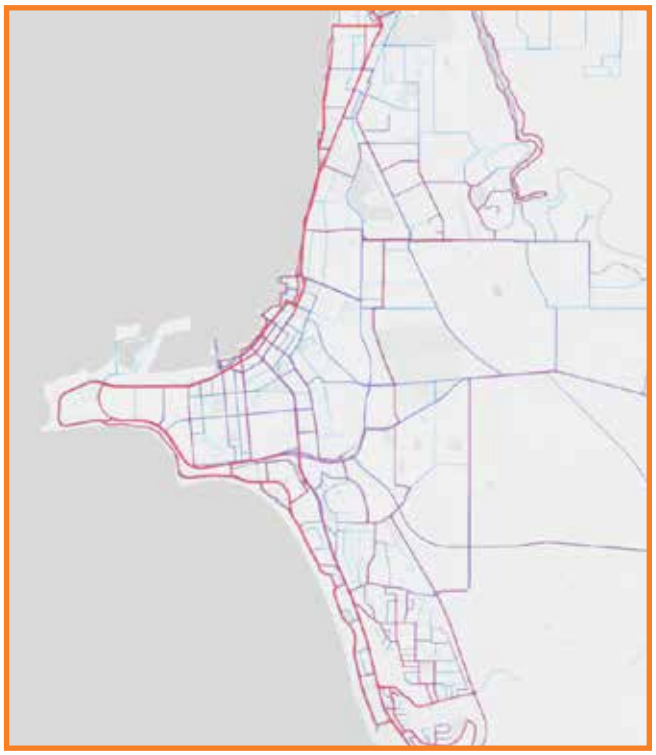
B2. ANALYSIS OF GPS TRAVEL DATA

The GPS mapping tool, Strava Labs, was employed to better understand which parts of Geraldton's road and path network are most heavily utilised by cyclists. The maps shown in Figure B.2 highlight popular cycling routes in Geraldton and surrounding areas.

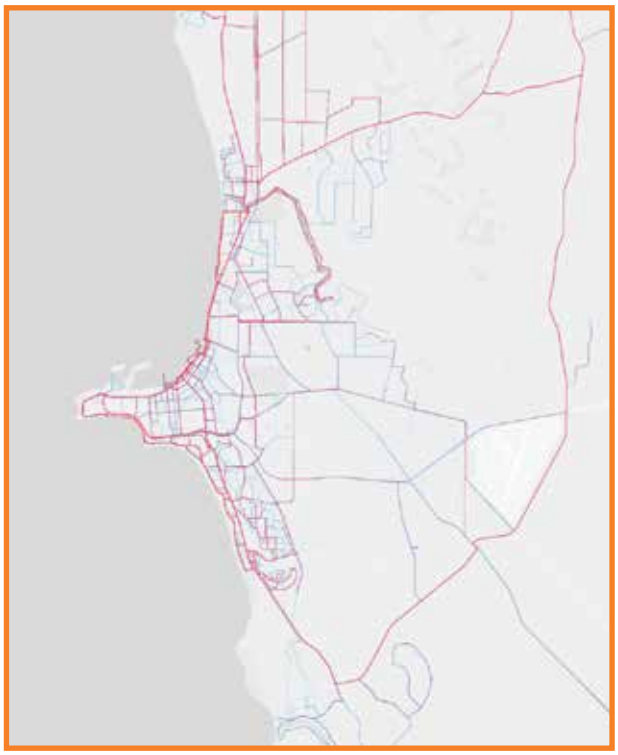
Strava is a website and mobile app used to track athletic activity via GPS. Despite the usefulness of this information, it should be noted that GPS travel data is typically representative of people who cycle for training or high-intensity recreational purposes.

The following trends/generalisations were noted with respect to the GPS travel data:

- The most popular cycling routes within urban Geraldton tend to be those which follow the coastline.
- Where high-quality, separated cycling infrastructure exists (such as the coastal paths) it is frequently used.
- Very few people are prepared to cycle on North West Coastal Highway, most likely due to the high volumes of heavy vehicles which use this road.
- The roads in and around Geraldton's CBD are heavily used by cyclists, which suggests that many cycling trips are made for non-recreational purposes.
- The north-south ridge which runs behind central Geraldton seems to be a barrier for many people making east-west journeys with many people choosing to take indirect, but more gentle routes (such as Mark Street and the John Willcock Link).
- High volumes of people ride the mountain bike trails along the Chapman River as well as the unsealed walking trails along the Greenough River.
- Semi-rural roads such as Rudds Gully Road, Moonyoonooka-Narngulu Road, Narra Tarra-Moonyoonooka Road and Chapman Valley Road form a key route for road cyclists.



2016 GPS heatmap for inner Geraldton



2016 GPS heatmap for Geraldton urban area and surrounds

Figure B.2 Tools such as Strava Labs are important in understanding the demand side of Geraldton's existing cycling network.

B3. DOCUMENT REVIEW

A number of documents have been considered as part of the background review.
This includes, but is not limited to the following:

- Austroads National Cycling Strategy (2010)
- Beresford Foreshore Preliminary Master Plan (2017)
- City of Greater Geraldton Local Planning Strategy (2015)
- City of Greater Geraldton Commercial Activity Centres Strategy (2013)
- City of Greater Geraldton Integrated Transport Strategy (2015)
- City of Greater Geraldton Community Strategic Plan (2017 – 2027)
- Cycling Aspects of Austroads Guides (2017)
- Geraldton Structure Plan (2011)
- Growing Greater Geraldton – A Growth Plan (2016)
- Main Roads WA Dongara to Northampton Coastal Route Corridor Alignment Selection Study (2015)
- Main Roads WA Policy for Cycling Infrastructure (2000)
- Midwest Regional Blueprint (2015)
- Midwest Tourism Development Strategy (2014)
- Our Bike Path 2014 – 2020 (2014)
- Super Tuesday Bike Commuter Count (2014)
- Western Australian Bicycle Network (WABN) Plan (2014)
- Western Australian Mountain Bike Strategy 2015-2020 (2015)

APPENDIX C
COMMUNITY CONSULTATION SUMMARY

C1. PHASE 1 (ONLINE SURVEY)

To support and inform the development of a regional cycling strategy for the City of Greater Geraldton a community survey was conducted between 10 and 29 May 2017 to gather information on the cycling community and to get a better understanding of their wants and needs.

The survey was available both online and in hard copy at the Civic Centre on Cathedral Avenue. The survey was launched with a media release followed by a number of social media posts on the City's Facebook page and an advertising campaign on the Everything Geraldton website and Facebook page.

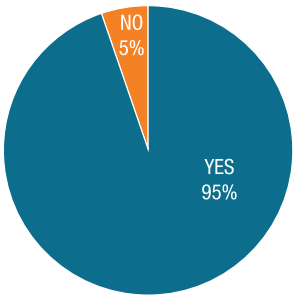
Posters promoting the survey were on display at key locations including at the two cycle shops in the City. Emails were also sent to a wide range of stakeholders including community and sporting groups, all schools, government agencies and known interested individuals inviting them to participate in the survey. The survey received 475 responses. A summary of the results is provided below.

Survey Results

1. Do you ride a bike?

Yes - 447

No - 25



2. How often do you ride a bike?

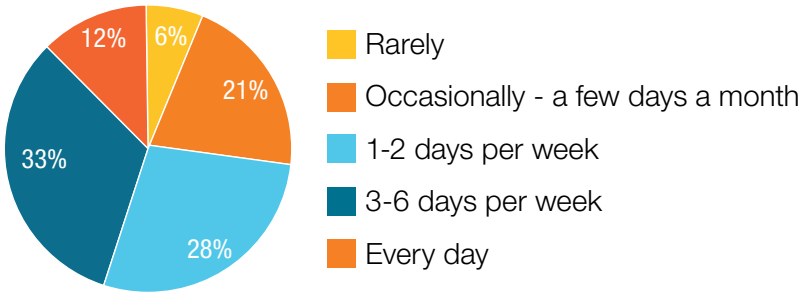
Rarely - 28

Occasionally - a few days a month - 95

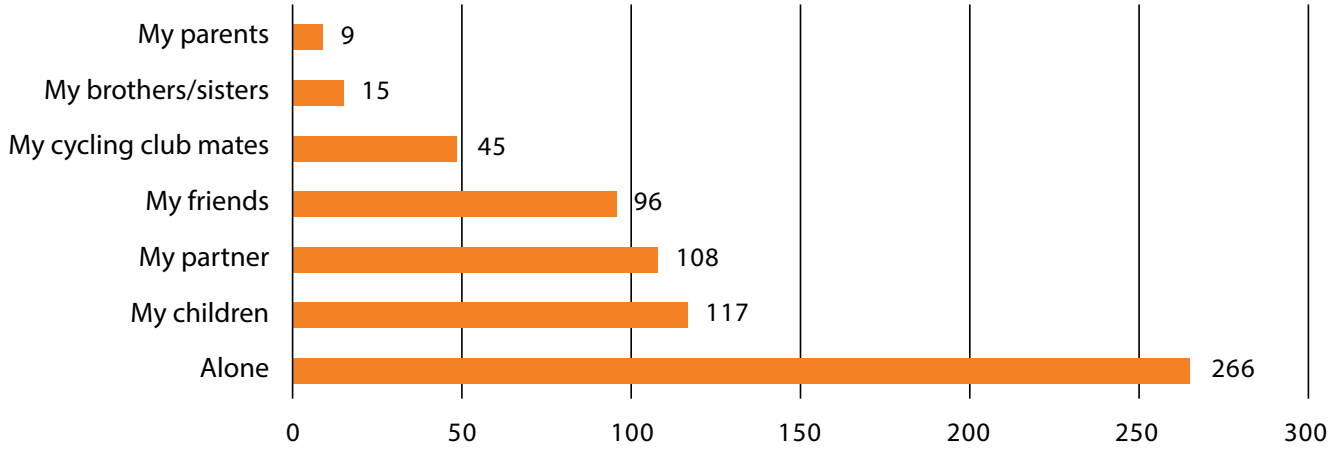
1-2 days per week - 126

3-6 days per week - 148

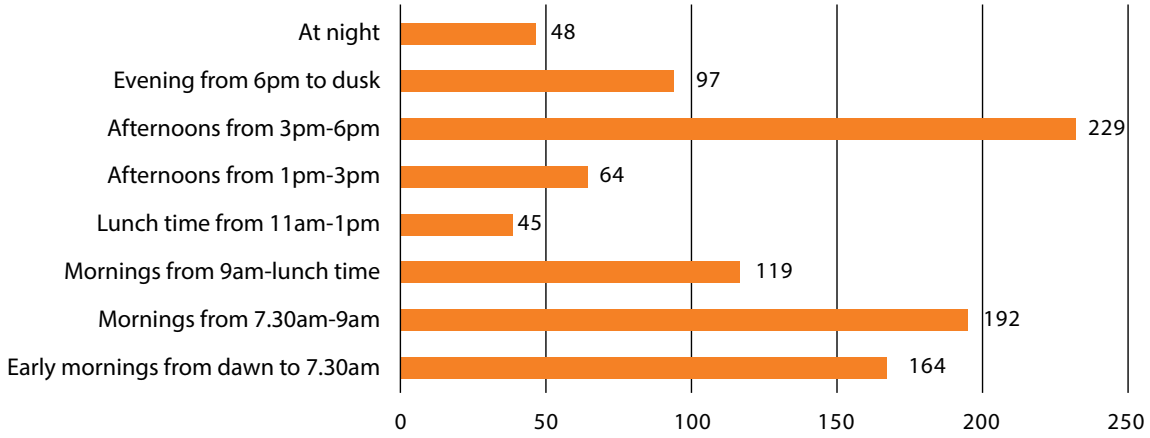
Every day - 55



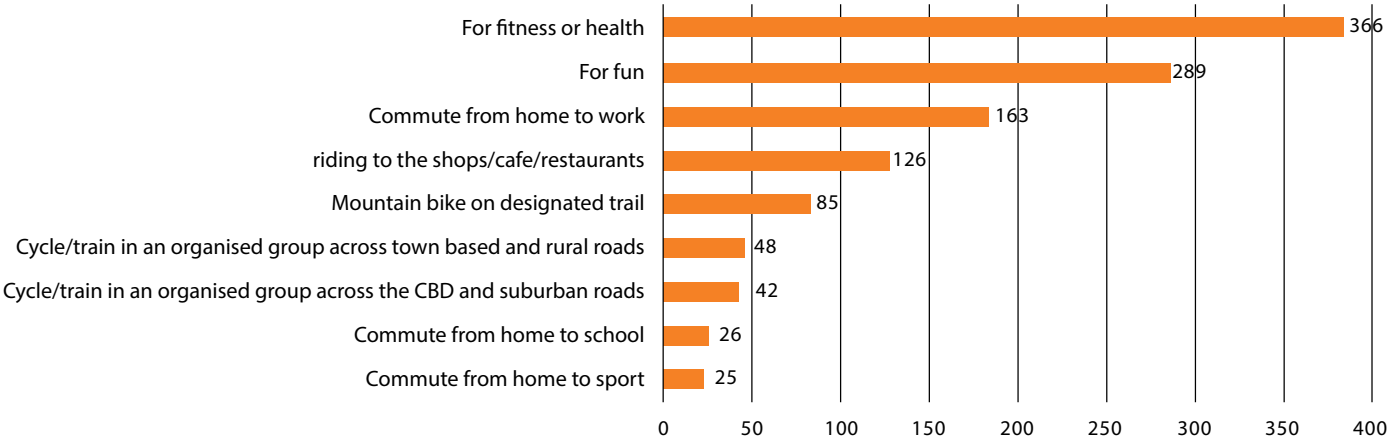
3. Who do you mostly ride with?



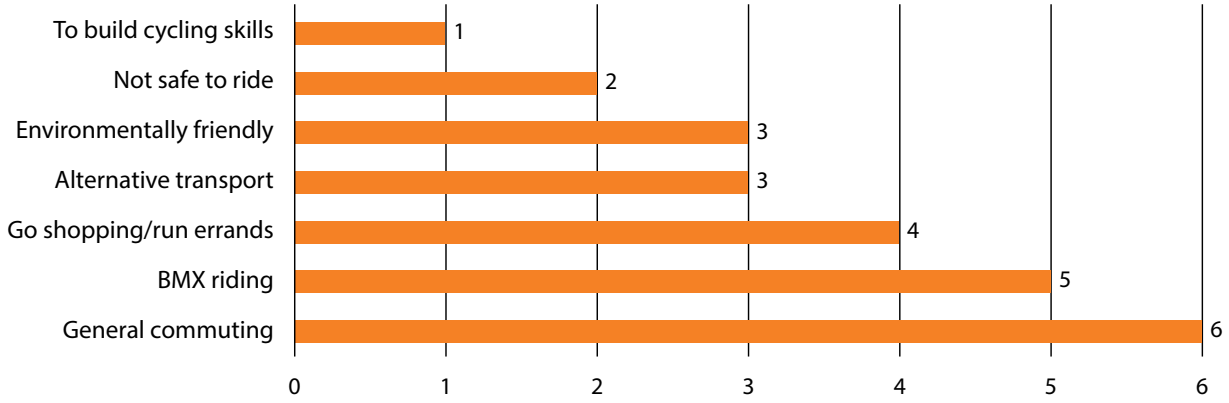
4. What time times of the day do you usually ride?



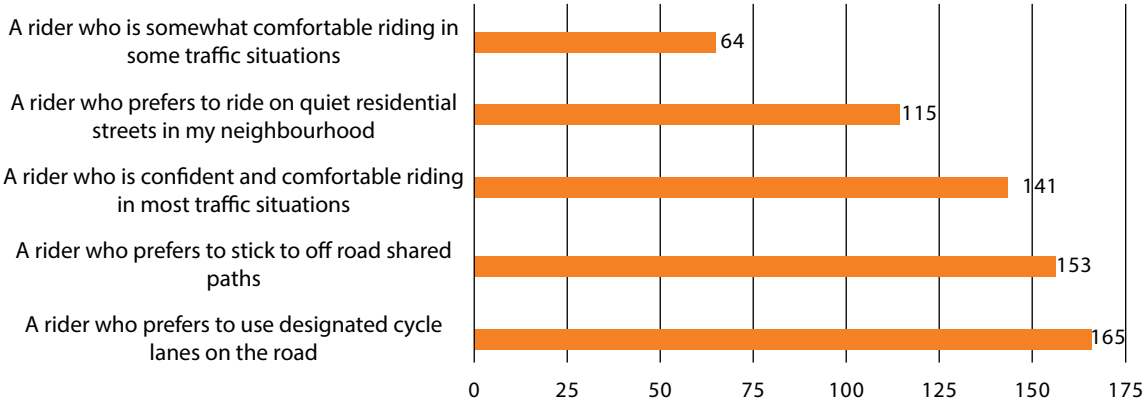
5. Why do you ride a bike?



General comments received regarding why respondents ride bikes:



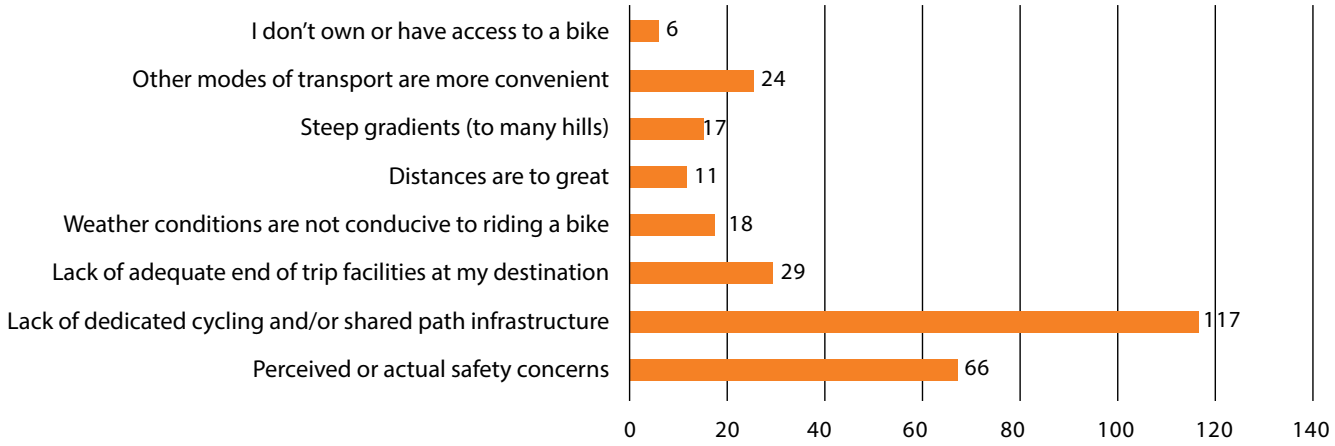
6. What best describes you as a cyclist?



7. Which routes do you usually ride on, in and around Geraldton?

Along the Foreshore	102	Along Place Road	11
On Chapman Road	85	To the airport	10
Sunset Beach to the CBD	79	Along Fitzgerald Street	10
To the light house	67	In Geraldton suburb	10
Along Marine Terrace	54	Along Horwood Road	10
To Back Beach/Mahomets Flats	53	To Moonyoonooka	10
Throughout the CBD	53	Tarcoola Beach to the CBD	10
Along Beresford Foreshore path	52	Along Hall and David Roads	8
Drummond Cove to Sunset Beach	49	Along Greenough River	8
Coastal paths only	44	To 8th Street Sports precinct	8
Along Willcock Drive path	39	From Wandina to the CBD	8
Along Kempton Street path	38	Along Foreshore Drive	7
In the Chapman River Park	33	To Separation Point	7
Along Chapman Valley Road	33	In Deepdale suburb	5
Along Glendinning Road	30	In Rangeway suburb	5
Along Rudds Gully Road	24	In Sunset Beach suburb	5
Shared paths only	23	From Cape Burney to CBD on Highway	5
In Drummond Cove/Glenfield suburb	20	Along Cathedral Avenue	5
From Bluff Point to the CBD	20	Along Durlacher Street	5
Along the North West Coastal Highway	19	Along Flores Road	5
In Tarcoola Beach suburb	18	From Glendinning to Drummond Cove	5
In Beachlands suburb	16	In Moresby suburb	5
In Woorree suburb	16	In Mount Tarcoola to the CBD	5
In Waggrakine suburb	15	In Wonthella to the CBD	5
Along Brand Highway	14	In Beresford suburb	4
Along Willcock Drive Road	14	In Mount Tarcoola suburb	4
In Strathalbyn suburb	13	Greenough to CBD on highway	4
In Wonthella suburb	12	Along Fifth Street	3
Everywhere	12	In Point Moore/West End suburb	3
In Spalding suburb	3	From Woorree to the CBD	2
In Webberton suburb	3	In Utakarra suburb	1
In Wandina suburb	3	Along Eastern Road	1
To the BMX track in Woorree	3	Along Edward Road	1
Along Sanford Street	3	Along Francis Street	1
Along Anderson Street	2	Along George Road	1
In Bluff Point suburb	2	Along Mark Street	1
In Cape Burney suburb	2	Along Mount Magnet Road	1
Along Bayley Street	2	Along Verita Road	1
From Ellendale Pool to the CBD	2	In Walkaway suburb	1
Along Mabel Street	2	Along Winetta Ridge	1
Along Phelps Street	2		

8. If you don't ride a bike, or often ride a bike, what are your main reasons why?



General comments received regarding why respondents do not ride bikes:

lack of paths to town	9	broken or uneven paths	1
no paths in my suburb	9	disabled	1
don't feel safe	8	eco friendly	1
can't keep kids safe	6	hate helmet law	1
lack of bike lanes on roads	5	injured	1
motorist attitudes and actions	4	just lazy	1
motorists speeding past	4	not practical - carrying bags	1
road is too dangerous, no shoulders	4	paths are full of broken glass	1
my kids are too young	3	too windy	1
broken bike	2	need to upgrade skate parks	1
lack of continuous paths	2		

9. What would be your top priority project(s) to encourage more cycling?
a) Specific off-road shared paths or on-road cycle lanes:

Drummond Cove to Sunset Beach bike path or cycle lane	74
Cape Burney to Glendenning bike path	19
Brand Highway cycle lanes	9
Bike lane/path along Chapman Valley Road	8
Flores Road bike path	7
NWCH bike lanes	6
8th Street path/lane	5
Horwood Road bike lane	5
Durlacher Street cycle lanes	4
Former railway corridor bike path	4
Place Road - cycle lane to the east end	4
Bike lanes on Chapman Road between Morris Street and Mitchell Street	3
NWCH cycle lanes between Place Road and Chapman River	3
Rowan Road path/lane	3
Anderson Street	2
Bayley Street path/lane	2
Bike paths/lanes to the BMX park in Woorree	2
Wider bike lanes on Chapman Road	2
Bike lanes all along Chapman Road	2
Fitzgerald Street cycle lane	2
Phelps Street and Chapman Road Roundabout bike lane	2
Rudds Gully Road cycle lane	2
Bike path/cycle lane Willcock Drive to Glendenning Road	2
5th street path/lane	1
Streets leading to Sydney memorial	1
Beachlands to Mahomets path	1
Boyd Street cycle lane	1
David Road cycle lane	1
Bike lanes in Drummond Cove suburb	1
Bike lanes in Deepdale suburb	1
Extend Drosera Street path	1
Fallowfield Street path	1
Moonyoonooka Road cycle lane	1
Narngulu to Walkaway cycle lane	1
Bike path around outer edge of Rangeway suburb	1
Bike paths to Moresby range and into Chapman Valley	1
Waldeck Street cycle lane	1
Utakarra Road cycle path	1

b) Non-specific off-road shared paths, on-road cycle lanes or other projects:

Build more off road shared bike paths	115
Build more on-road cycle lanes	74
Build more off-road mountain bike or free style trails	29
Provide bike racks	24
Provide bike lockers	23
Signage to inform where paths go, paths continue and rules of cycling	16
Extend all existing paths	13
End of trip facilities at major destinations (CBD, 8th Street, sporting centres, Hospital, Foreshore, Glenfield Shopping Centre)	13
Woorree suburb bike paths	8
Bike lanes throughout the CBD	8
Improve Chapman River path, make it more fun	6
Build a pump and jump track	6
Build paths that go somewhere interesting	5
Cycle lanes in Geraldton suburb	4
Foot/cycle bridge across the Chapman River mouth	4
Build more skate parks	4
Provide bike paths/lanes/footpaths on all major roads	3
Bike lane from Drummond Cove to Glendinning	2
A continuous bike path along the coast	2
Bike paths/lanes in all suburbs	2
Build bike boulevards	2
Paths in Cape Burney locality	2
Bike paths/cycle lanes to eastern suburbs	2
Bike paths to all schools	2
Build a street plaza close to the foreshore	2
Food and drink facilities along major cycling routes	2
Bike lockers at Glenfield IGA Roundabout	1
Bike lanes from CBD into commercial/industrial areas	1
Build a beginners mountain bike trail	1
Bike lanes around Point Moore suburb	1
Build footpaths/cycle lanes from Wonthella to the beach	1
Walkaway township cycle paths	1
Install a foam pit at skate park	1
Build and indoor skate park	1
Build an inland bike path and connect to coastal path to make a loop	1
Build more facilities	1
Build more footpaths	1
Bike paths to all beaches	1
Build a cycle/footpath tunnel under the North West Coastal Highway	1

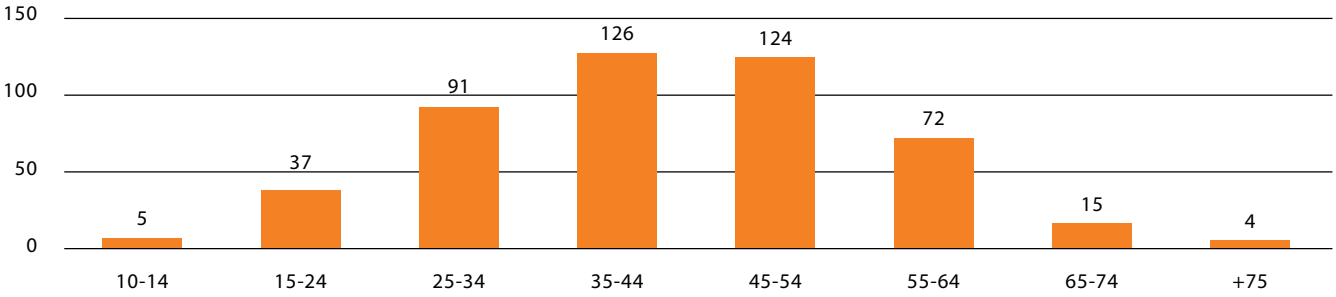
c) Ideas to improve rider safety, awareness and convenience.

Improve awareness of cyclists and motorist of laws to build respect and increase cyclist safety	37
Reduce speed limits on major roads	6
Promote bike riding	4
Provide bike hire on the foreshore	3
Make wearing helmets optional	3
Support more bike events	2
Riders must wear high-vis clothing and use lights during day	1
Fine cyclists doing the wrong thing	1
Make bells on bikes mandatory	1
Public buses should transport bicycles	1
Free drop off and pick up points	1
Reduce speeds from 6am–10pm on weekends on certain roads (i.e. Rudds Gully)	1
Use coloured stripes on-road to remind drivers of cycle lanes	1
Use curbing instead of white lines to mark cycle lanes	1

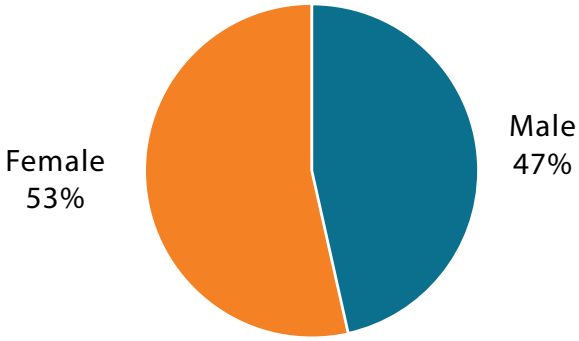
d) Ideas to improve cycling infrastructure:

Better maintain paths/lanes, keep them clean and free of debris	12
Ensure path/lane surfaces are smooth	10
Improve footpaths so you can ride on them	7
Ensure verges are clean and clear of debris	5
Build wider bike paths	5
Build wider cycle lanes	4
Pave wider shoulders on the road	4
Cycle lanes across bridges	1
Improve pinch points	1
Ensure there are no drains in cycle lanes	1
Make paths safer for kids	1
Improve street/bike path lights	3
Improve highway lighting on path by Ackland Street crossing	1
Install lighting on shared paths	2
Self-activation of street lights (bikes aren't heavy enough)	2
Remove speed humps on Foreshore Drive	1

10. How old are you?



11. What is your Gender?



12. What locality do you live in?

Drummond Cove	71	Rangeway	10
Wandina	54	Waggrakine	10
Geraldton	34	Mahomets Flats	6
Mount Tarcoola	28	Utakarra	6
Sunset Beach	28	West End	6
Woorree	28	Walkaway	4
Beachlands	24	Park Falls	3
Bluff Point	23	Moonyoonooka	2
Beresford	22	Rudds Gully	2
Tarcoola Beach	21	Chapman Valley	1
Wonthella	20	Dongara	1
Strathalbyn	16	Greenough	0
Spalding	13	Karloo	0
Glenfield	12	Meru	0
Cape Burney	11	Mullewa	0
Deepdale	10	Narngulu	0
Moresby	10	Webberton	0

C2. PHASE 2 (DROP-IN SESSIONS)

Following the survey, a community drop-in session was held at the Geraldton Multipurpose Function Room on Wednesday 7 June 2017. The session was promoted through online and print media, and via the survey. Several representatives from local cycling groups and bike shops were also contacted and asked to promote the drop-in sessions via their internal networks.

Approximately 60 people attended the session, which involved talking with community members in an informal, roundtable setting. Participants were encouraged to highlight routes which they currently made by bike as well as ideas they had for expanding or improving the existing network.

To gain a better understanding of the community's ideas for future cycling routes, the facilitators posed several "what if" scenarios; emphasising the notion that this is a long-term (2050) bike strategy and how significant changes to the built environment are possible over a 30-year period. Participants were also given the opportunity to record what they considered to be the most important projects for cycling.

Several key themes arose from Phase 2 of the community consultation process. These included:

1. **Providing a safe cycling link extending north from Glenfield Shopping Centre in Sunset Beach to Drummond Cove:**

   This was the most commonly identified idea at both the drop-in sessions and via the online survey. Participants highlighted how such a facility would not only be useful for people commuting to and from Drummond Cove but would also form an important recreational asset for residents living in other parts of Geraldton.

   In terms of alignment, there were two general schools of thought. Some parts of the community hoped to see a continuation of a coastal shared path (including a possible bridge over the Chapman River near Nazareth House) whereas other people believed a facility alongside Chapman Road would be the best and most achievable option.

   Many people noted that the narrow shoulders and 90 km/h speed limit along Chapman Road made cycling along this corridor untenable for all except the bravest of cyclists.

2. **Provide a safe cycling link along Brand Highway to the Greenough River mouth:**

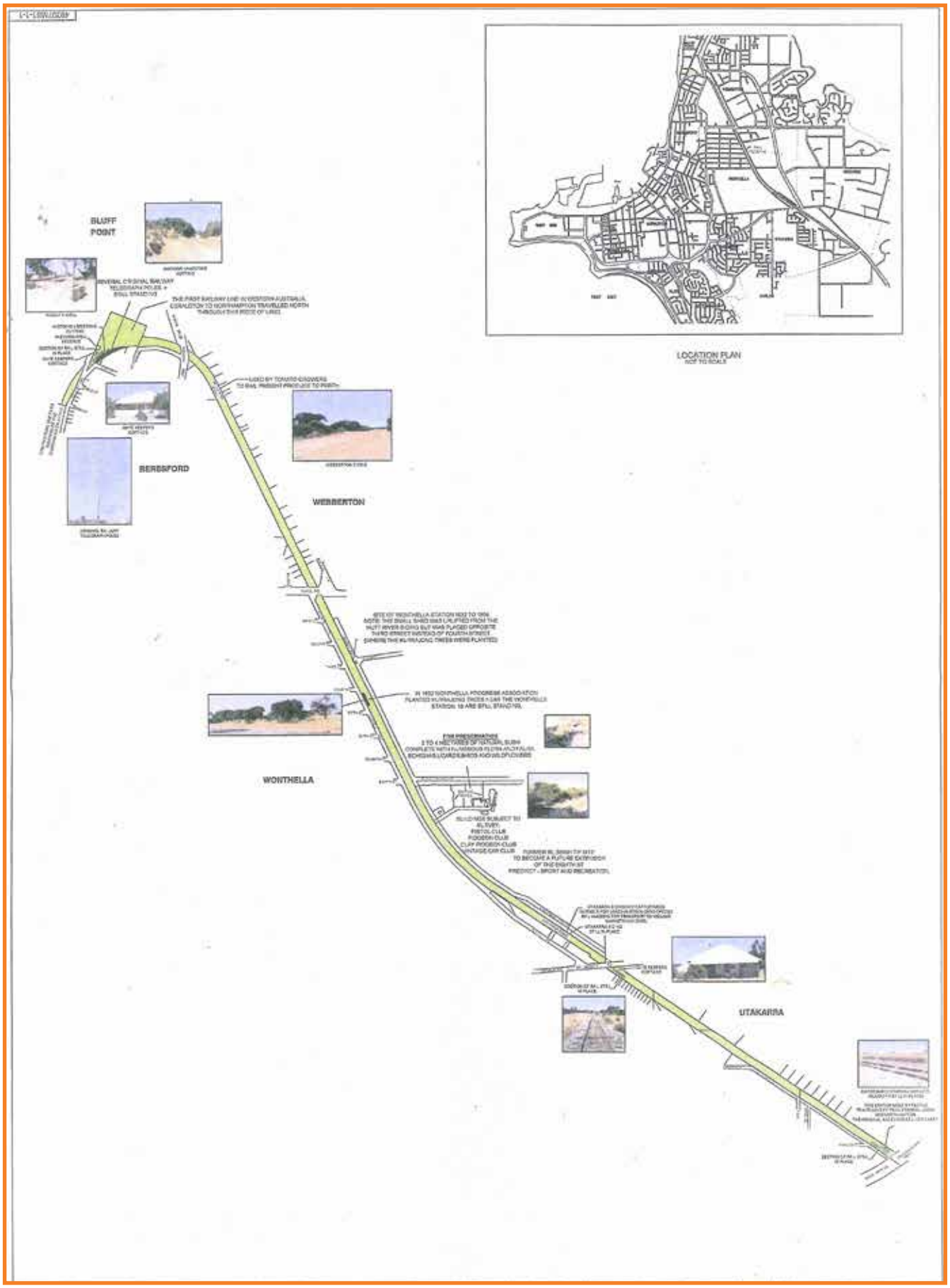
   It was suggested by some members of the community to extend the existing southern coastal shared path south on Brand Highway to the Greenough River Mouth at Cape Burney. Like Chapman Road, Brand Highway does not provide adequate levels of safety or comfort for young or inexperienced cyclists.

3. **Develop a rail trail:**

   The concept of repurposing the old rail corridor for walking and cycling facilities was tabled on numerous occasions at the drop-in session. People generally saw this corridor as an underutilised community asset, with the potential to eventually form a cycling loop, linking back to the Brand Highway somewhere in the vicinity of Verita Road.

   Since 2007, the Wonthella Progress Association has been petitioning various proponents to garner support for this project and have commissioned the development of a concept design outlining potential tourism and rail heritage aspects of the project (highlighted in Figure C.1 on the following page).

   Other people tabled a more ambitious concept for establishing a long-distance rail trail on the northern side of town, linking Geraldton to Northampton, a distance of over 50 km.



Source: Wonthella Progress Association

Figure C.1 Rail trail concept design prepared by the Wonthella Progress Association in 2007.

4. **Improve east-west linkages across town:**

   The feedback received at both the drop-in session and through the written submissions highlighted that cycling between Geraldton's eastern suburbs and the CBD was difficult. This was due to two main reasons:

   - The ridge line running behind Central Geraldton made it difficult for people to take on hills, especially heading eastbound.
   - Severance issues created by major north south roads including Brand Highway, North West Coastal Highway and, to a lesser extent, Chapman Road. It was noted that there is presently no grade separated crossings of these roads, and many signalised intersections did not have adequate path connections or dedicated pedestrian and cyclist phases.

5. **Provide additional safety measures along the Wolf Pack Route:**

   The Wolf Pack Route, comprising of Moonyoonooka-Narngulu Road, Moonyoonooka-Nara Tara Road and Rudds Gully Road is a popular group with Geraldton's road cycling community. A number of suggestions were put forward to enhance safety along this route, including:

   - More (and bigger) advisory signage.
   - Reduced speed limits between 6:00am and 9.30am on particular days (similar to school zones).
   - Shoulder widening along particular sections (such as near the crests of hills).
   - Pull-off bays (to let trucks past).

Other key projects/ideas mentioned at the drop-in session included:

- Connecting Verita Road to North West Coastal Highway with cycling facilities.
- Fixing/removing drains in bike lanes along various roads such as Horwood Road and Marine Terrace.
- Providing a mechanical repair station somewhere along the foreshore (including pump, tyre levers, allen keys etc).
- Providing more bike parking in Geraldton CBD.
- Considering 30 km/h speed limits around Geraldton CBD.
- Fixing discontinuous bike lanes along roads including Flores Road, Chapman Road and Durlacher Street. Some also have central medians which create pinch-points.
- Improving cycling to and from schools. Many schools such as Nagle Catholic College, Strathalbyn Christian College and Geraldton Secondary College are completely isolated from safe cycling infrastructure, which leads to more parents driving their kids to school (and increasing traffic even further).
- Residents of Strathalbyn are isolated from cycling infrastructure. There needs to be a safer way to get from this suburb to the existing on-road bike lanes along Mark Street.
- Providing an overpass at the southern end of Fitzgerald Street – dangerous for school children.

C3. PHASE 3 (FORMAL COMMENT PERIOD)

The draft Geraldton 2050 Cycling Strategy was released for public comment on 11 May 2018. The consultation period ran for just over three weeks, and officially closed on 4 June 2018. The strategy and associated survey was hosted on the City of Greater Geraldton's website, with a link provided on the Department of Transport website. The survey was promoted in the local newspaper, online via social media, with stakeholders and community members involved in earlier stages of the project invited to provide comment via either direct email or via an online submission form.

The survey sought specific feedback on the proposed actions, as well as offering an opportunity to provide additional general comments on the strategy. A total of 50 written responses were received.

Much of the feedback echoed the sentiments of earlier consultation phases, including:

- The importance of delivering coastal cycling infrastructure and in particular, investigating the development of a safe cycle route between Sunset Beach and Drummond Cove;
- Support for providing a primary cycle route to Cape Burney. The submissions indicate differences of opinion surrounding whether the facility should continue through the dunes or follow Brand Highway, south of Glendinning Road;
- The need to provide safe cycling infrastructure through (and connecting to) the centre of Geraldton and for this to be identified as a priority in the strategy;
- The importance of improving cycling access to schools and encouraging more active transport trips by children and their parents;
- Support for a cycle path along the closed Beresford-Wonthella rail corridor; and
- Support for the formalisation of road cycling routes for more confident cyclists. This was contrasted by commentary around road cycling routes only benefiting a select group of cyclists and potential impacts on heavy vehicles, particularly during harvest time.

Other key themes arising from this third phase of consultation included:

- Implementing actions identified in the action plan within shorter time periods and the need to improve existing cycling facilities now;
- The need to undertake educational initiatives for both cyclists and motorists, including introducing cycling classes in schools, raising driver awareness, providing driver and cyclist training, promotion of safe cycling routes and cultural change initiatives;
- Concerns around activation of the strategy and how this is critical to the creation of a bike-friendly community;
- Significant support for the proposed bridge over the Chapman River near Nazareth House, however differences of opinion around its priority comparative to other projects;
- General commentary around the planning and design of cycling infrastructure, including the need to consider different types of cyclists (and bikes), ensuring facilities are continuous, providing infrastructure that is protected from vehicle traffic (and in certain circumstances, separated from pedestrians), the preference for asphalt over concrete paths, providing priority for cyclists at intersections, and ensuring adequate lighting is provided.
- Support for the concept of Safe Active Streets and slower road environments generally, as a way of encouraging cycling; and
- Concerns around funding and priorities comparative to other projects in the City of Greater Geraldton.

Several other individual comments were received, as summarised below. These issues were limited to single submissions:

- Specific comments on the proposed network, including a request to extend the route along Chapman Valley Road, provide a primary rather than secondary route along North West Coastal Highway, include improvements on Marine Terrace, Fitzgerald Street and Lester Avenue, and reconsider improvements to the Chapman / Phelps intersection (noting that others stated this work was a priority that needed to be brought forward);
- Primary facilities should be prioritised above secondary and local routes;
- Provide more secure bike parking areas;
- Consider grade separated east-west crossings of major roads;
- Consider the potential of mountain biking in the Mid West;
- Consider the new passing laws when designing cycle infrastructure; and
- Consider the ongoing maintenance cost of cycle facilities.

Overall, the submissions received were overwhelmingly supportive of the draft strategy.

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