Urban Cycle Network Masterplan

Papaioea

Palmerston North City

2019

SMALL CITY BENEFITS

BIG CITY AMBITION

Te Kaunihera o Papaioea
Palmerston North City Council

PALMERSTON NORTH CITY COUNCIL

Acknowledgements:

Key stakeholders consulted for this plan included community members of the People on Bikes Forum, NZ Transport Agency investment and multi-modal specialists, Horizons, and Sport Manawatū

Palmerston North City Council (2019) *Urban Cycle Network Masterplan*

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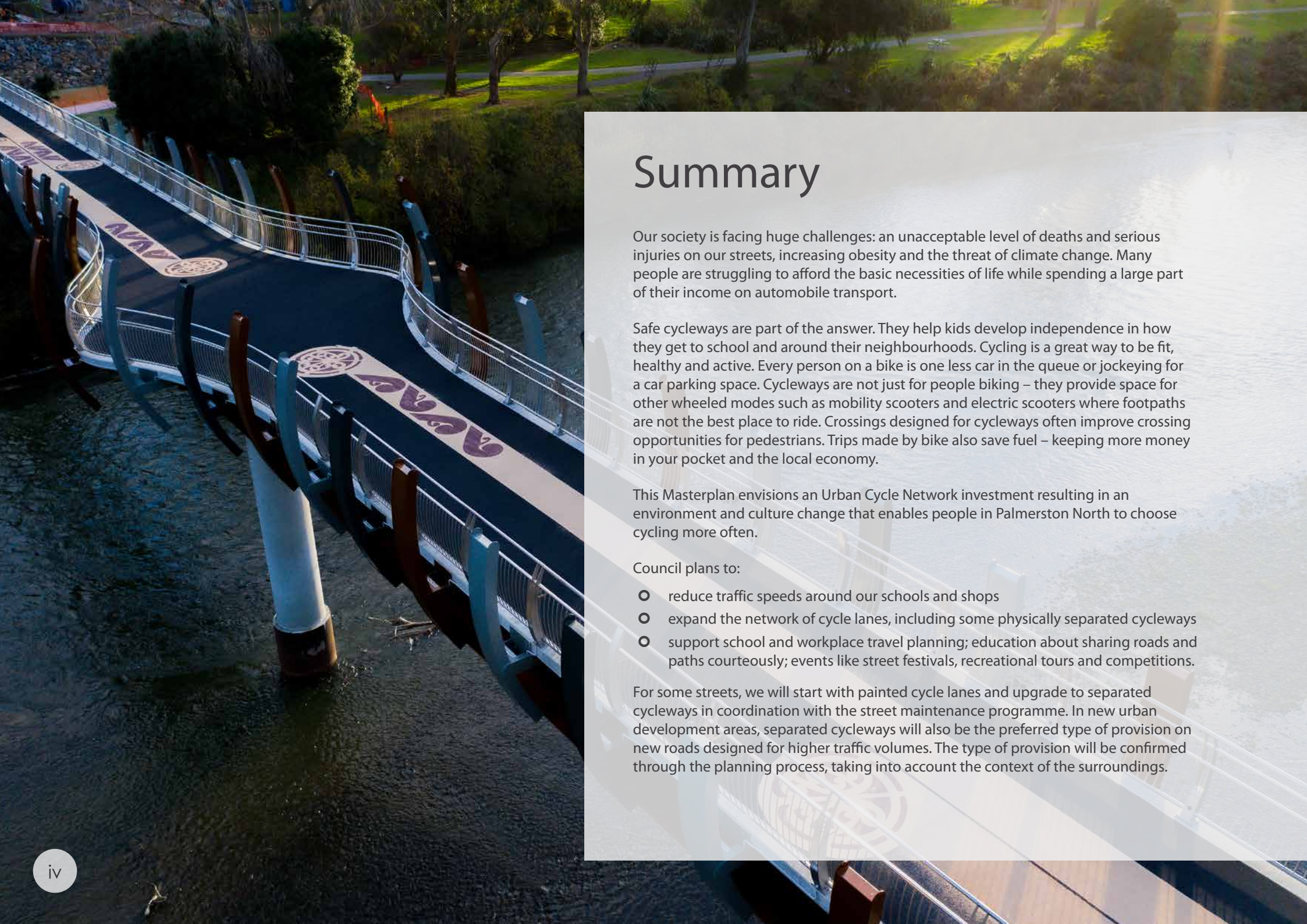
VIASTRADA
TRANSPORT PLANNING AND DESIGN

PALMERSTON NORTH CITY COUNCIL

Contents



Summary

Our society is facing huge challenges: an unacceptable level of deaths and serious injuries on our streets, increasing obesity and the threat of climate change. Many people are struggling to afford the basic necessities of life while spending a large part of their income on automobile transport.

Safe cycleways are part of the answer. They help kids develop independence in how they get to school and around their neighbourhoods. Cycling is a great way to be fit, healthy and active. Every person on a bike is one less car in the queue or jockeying for a car parking space. Cycleways are not just for people biking – they provide space for other wheeled modes such as mobility scooters and electric scooters where footpaths are not the best place to ride. Crossings designed for cycleways often improve crossing opportunities for pedestrians. Trips made by bike also save fuel – keeping more money in your pocket and the local economy.

This Masterplan envisions an Urban Cycle Network investment resulting in an environment and culture change that enables people in Palmerston North to choose cycling more often.

Council plans to:

- reduce traffic speeds around our schools and shops
- expand the network of cycle lanes, including some physically separated cycleways
- support school and workplace travel planning; education about sharing roads and paths courteously; events like street festivals, recreational tours and competitions.

For some streets, we will start with painted cycle lanes and upgrade to separated cycleways in coordination with the street maintenance programme. In new urban development areas, separated cycleways will also be the preferred type of provision on new roads designed for higher traffic volumes. The type of provision will be confirmed through the planning process, taking into account the context of the surroundings.

There will be four main challenges:

1. Funding is limited. Council has allocated $2.9M to jump-start the network improvements signalled in this Masterplan, but leveraging central government funding is never guaranteed and maintaining ongoing funding will require a long term commitment.
2. At intersections, many of our existing cycle lanes drop out in favour of multiple lanes for cars. Our residents say this isn't good enough to encourage them onto their bikes. We may need to widen the street, reduce traffic lane widths, and/or combine left and through movements to fix this.
3. On some otherwise quiet residential streets, speeding endangers people and pets, disrupts sleep, and discourages walking and cycling. Streetscape features such as landscaping help reduce traffic speeds and improve amenity with a minimal impact on parking. We may also need to restrict motor vehicle turns and/or install mid-block traffic signals where these routes intersect with busy roads.
4. Main thoroughfares are primarily for the safe movement of people and goods whether walking, cycling or driving. Council's responsibility is to balance these different uses of the street. A big issue that affects most users is on-street parking. On some streets with commercial shopping centres, we will need to retain as many car parks as possible by removing berms, narrowing flush painted medians, or completely redesigning the street as a slow speed shared space. On other streets with sufficient off-street parking, such approaches are not cost-effective. Each street will be different – there is no single solution.

Addressing these challenges may increase project costs and/or motorist travel time. The combination of safety, health, and environmental benefits will nearly always outweigh the costs by a large margin.

These are not just technical problems to be quantified by economists and solved by engineers. We need to work with affected communities to demonstrate why change is needed and to explore alternatives that meet our shared liveability, accessibility, and safety objectives.

It is clear that our streets and the behaviour of people using them can be improved. This Masterplan is only one part of the solution. We will leverage our stunning He Ara Kotahi pathway with the completion of pathways to Ashhurst, Feilding and the coast. Success will also depend on the implementation of other strategies and policies governing parking, traffic speeds, multi-modal street design, our regional freight network, land use, and the design of our central city.

Let's have the most active community in New Zealand!

1 Introduction

What is this plan and why have one?

Safe cycleways have many benefits. They help kids develop independence in how they get to school and around their neighbourhoods. Cycleways provide more travel choices for all of us. Cycling is also a great way to be fit, healthy and active.

They are not just for people biking – they provide space for other wheeled modes such as mobility scooters and electric scooters where footpaths are not the best place to ride. Crossings designed for cycleways often improve crossing opportunities for pedestrians. Trips made by bike also save fuel – keeping more money in the local economy and giving better environmental outcomes.

This Masterplan builds on previous work

Over the years, public surveys and Annual Plan submissions have revealed that the lack of safe cycleways and the behaviour of some motorists. The 2007 ***Manawatū Active Transport Strategy*** informed the development of today's primary on-road cycling and shared path network. The ***Urban Design Strategy 2010*** sought to "increase numbers of people who ride bicycles" as a measure of success. The ***Cycling Investigation Working Party*** published a Cycle Action Plan in 2015 with actions intended to help deliver on that vision, many of which have been completed or carried forward in this Plan. The purpose of the ***Active and Public Transport Plan*** is to have a safe, efficient, and effective active and public transport system. The ***Roading and Parking Asset Management Plan***[2] aims to reduce injuries and deaths by improving the quality and condition of the cycling network, including at intersections.

PRIORITY 5 of the Council's Creative and Liveable Strategy[3] is

TO HAVE THE MOST ACTIVE COMMUNITY IN NEW ZEALAND

Public input to this Masterplan

Council began the process of urban cycle network planning in mid-2017. Public and key stakeholder engagement has included:

- November 2017 Active and Public Transport Forum (public invited) to review draft maps and obtain input on opportunities and issues
- December–January 2018: business case and Masterplan development workshops
- March 2019: briefing with the People on Bikes Forum and workshop with councillors
- 13 May–5 July 2019: public consultation of the draft Masterplan
- August 2019: People on Bikes Forum briefing on revised Masterplan.

Submissions were received from individuals, community groups and key stakeholders such as the NZ Transport Agency, NZ Police, Midcentral Health, Sport Manawatū, and Massey University. A common theme in the submissions was the need for more transport choices in the face of climate change and rising obesity. There were many comments about the need to balance community needs for parking with safety of people on bikes; many requests for more detail on accessing the central city by bike; and a strong preference for physically separated cycleways.

Separated cycleways are more expensive per kilometre and have a greater impact on parking than wide paint-buffered cycle lanes. To improve safety city-wide, this Masterplan focuses on buffered cycle lanes and cycle facilities at intersections. Kerb separated cycleways are proposed on several corridors (refer Table 1 on page 20) and will be the first option considered for street renewals or new streets designed for higher traffic volumes.

Vision

The **Urban Cycle Network**

INVESTMENT results in an

ENVIRONMENT and **CULTURE**

change that enables more people in

Palmerston North to

CHOOSE cycling more often.

This Masterplan aims to create a safe, convenient, and comfortable cycle network and transport system in the Palmerston North main urban area, for people of all ages and abilities. This includes people who already cycle and those who are currently less confident about doing so (section 2).

Various ways to provide for cycling are illustrated in section 3. Substantial work has already been included in the 10-Year Plan 2018–28[4] (section 4):

- The **investment** includes a multi-million dollar funding boost in years 2 and 3 of the 10-Year Plan (section 4) and a proposed ongoing investment for future years.
- The **environment** change includes cycleways (section 4) and cycle parking (section 6) coupled with supporting speed management, parking management, and land use planning (section 7).
- The **culture** change will be delivered through a comprehensive education, encouragement and enforcement campaign aimed at school children and the wider community (section 7). It will also happen with improved infrastructure that prioritises safety for people walking and cycling.
- **Choice** is about providing multiple transport options for people to suit their particular trip needs. It is also about providing access for people who cannot or do not wish to drive and do not have public transport options. People choosing to cycle is a key outcome to be monitored (section 8).

The actions described throughout this Masterplan are summarised in section 9.

Strategic alignment

The purpose of this Urban Cycle Network Masterplan is to envision how to provide for people to cycle in Palmerston North over the long term, and to inform investment in facilities and supporting activities over years two and three of the 10-Year Plan.

Increasing the number of people cycling in the city has been a Council priority for over 15 years. This aligns with the latest Government Policy Statement (GPS) on Land Transport (Figure 1), which prioritises safety and more transport choices by signalling investment in cycleways, speed management, and promotional activities.[5]

Figure 1: Government and Council priorities align

The 10-Year Plan states the Council's vision for Palmerston North is "small city benefits, big city ambition". To fulfill this vision the Council has adopted five goals, each with an associated high-level strategy. While this Plan contributes to a varying degree to four of these strategic goals (Figure 3), it is most closely aligned with the Creative and Liveable Strategy (Goal 2). The Council works towards this goal through the Active and Public Transport Plan 2018 – of which this Plan is an action.

Council's Eco City Strategy[6] envisions a 25 per cent reduction in total greenhouse gas emissions. More cycling will help reduce the 42 per cent of emissions that are attributed to transport in the city. Wide shared paths and cycleways are also ideal places to ride electric bikes and low-speed vehicles – technologies that have the potential to redefine how we move around and help combat climate change. E-scooters are a major change in New Zealand cities, and have a similar safety profile to that of kick scooters and bicycles. Self-balancing electric scooters are ideal for elderly people with mobility impairments and can travel faster than standard mobility scooters. Central government is planning a law change to clarify rules around low-power/low-speed vehicles in 2019/20.

Figure 2: Low-power / low-speed vehicles can revolutionise how we travel.

10-YEAR PLAN GOALS	CYCLING NETWORK RELEVANCE
An innovative and growing city	A cycling network helps the city attract and retain people who prefer more transport choices.
A creative and exciting city	The most vibrant cities around the world often have strong cycling cultures. Less individual and public spending on vehicle travel means we can spend more on education, the arts, and multi-modal 'complete streets'.
A connected and safe community	Investing in cycleways fills gaps in the existing cycle network and improves the safety of people who cycle. Compared to driving, cycling offers more opportunities for people to connect with one another.
An eco city	Cycleways support zero-carbon transport and provide a way for people to engage with their environment. They reduce the need to dedicate land for motor-vehicle-oriented infrastructure, including parking, as the population grows. Less single-occupant driving helps achieve climate change mitigated targets.
A driven and enabling Council	Through 10-Year Plan submissions and other consultations, the community has asked for better cycleways. Council will work with the community as an enabler for change.

Figure 3: Alignment between 10-Year Plan 2018-19 strategic goals and this Masterplan

People walking and cycling spend $34 per trip and shop more often than drivers.[7]

***15 per cent** of the typical household budget is spent on transport*[8] *– cycling helps keep money in our pockets and available to spend locally.*

Figure 4: The Creative and Liveable Strategy

Figure 5: The Active and Public Transport Plan

Urban cycling today

People who cycle in Palmerston North say that the flat roads and temperate climate make it an easy choice. It's fun, saves money, improves fitness and helps the environment. With 5.9 per cent of its workforce cycling to work, Palmerston North City is well above the national average (2.9 per cent).[9] However, there is much room for improvement. Compared to other major urban areas, Palmerston North was number 1 up until 1996, and has fallen a place in every census since then. The upward trend in other communities like Nelson, Christchurch, and the Hawke's Bay is likely to be associated with a strong investment in cycleways and shared paths these communities have made in recent years. The 2018 census results were not available at the time of writing.

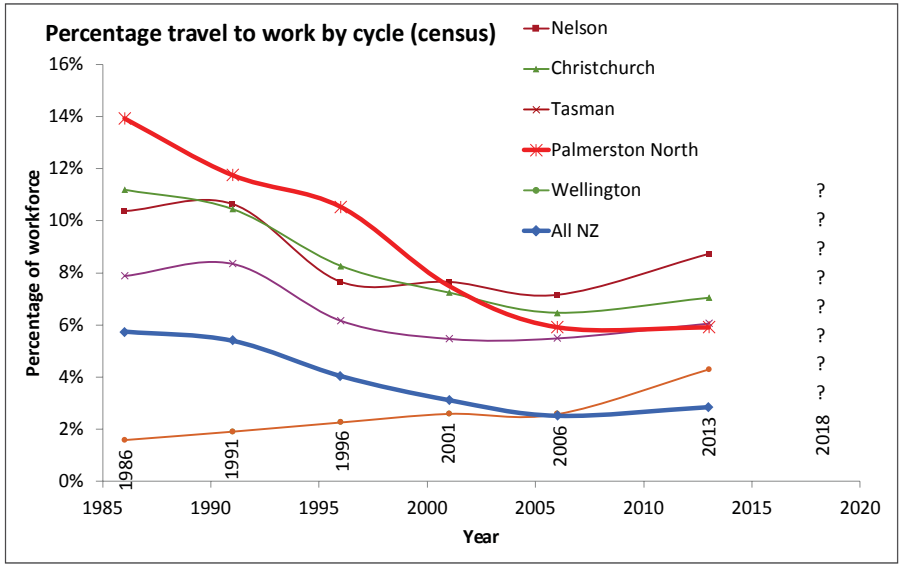


Figure 6: Journey to work by cycle (source: Census)

For example, Christchurch has seen a 34 per cent increase in the number of riders in just one year since eight major cycle routes were opened, and an increase in the proportion of riders who are female from 32 to 38 per cent.[10]

Although there are more people cycling on Palmerston North pathways, the number of people cycling on-road and cycling to school declined between 2013 and 2015, before stabilising in recent years (Figure 7).

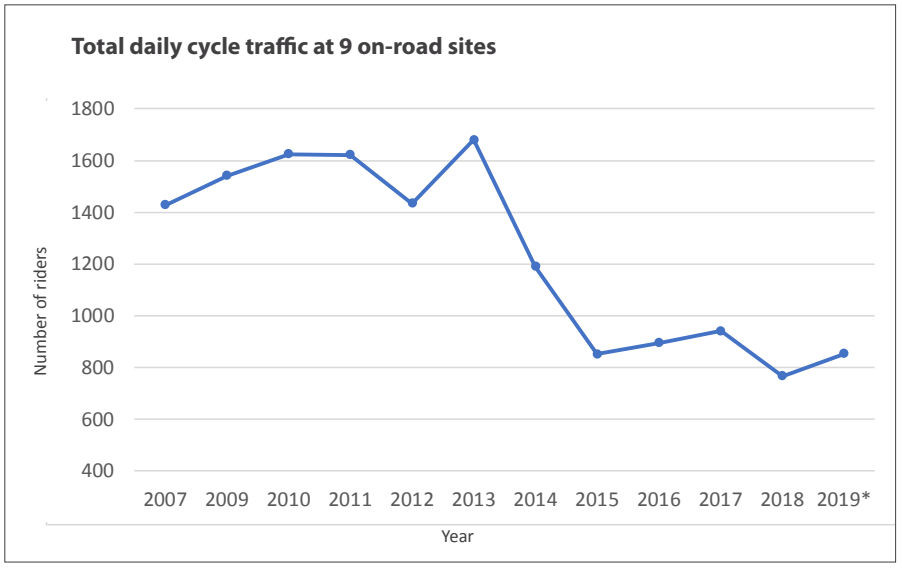


Figure 7: Palmerston North on-road cycle counts over time. *2019 values based on Feb/Mar period only (source: Council data)

As late as the mid 1980s, scores of Palmerston North Girls' High students rode through The Square. Today, fewer than five Girls' High students ride to school – although cycling remains popular for Boys' High students. Like the rest of New Zealand, cycling to school amongst all age groups has fallen precipitously in the past decades.[9]

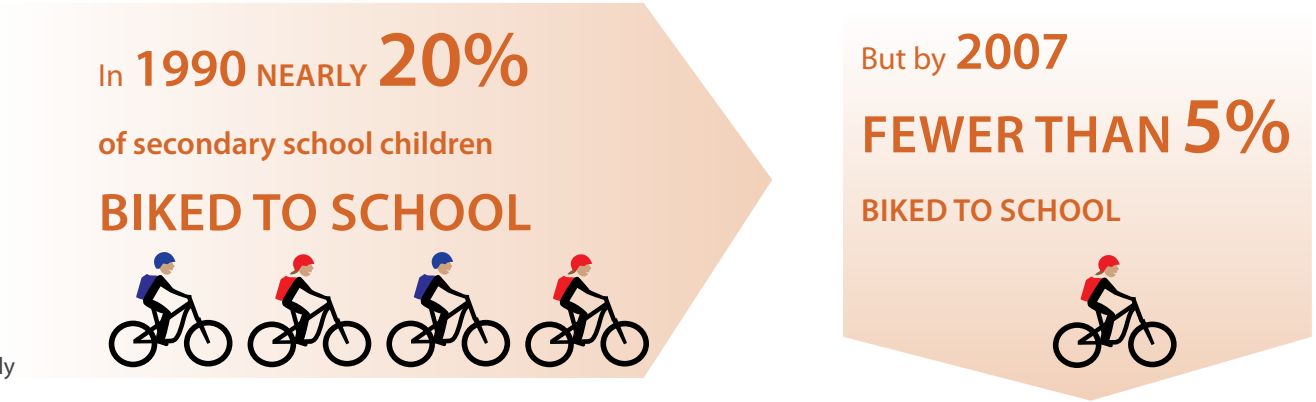


Figure 8: A national trend - cycling to school has declined (source: Ministry of Transport)

On many of our streets, people on bikes are crowded by parked cars, be it cars backing out of parks, cars parking in cycle lanes, or drivers opening their doors without looking. This environment can create discomfort and fear for people on bikes. Our streets should be designed to be forgiving of road user mistakes.

Some of our main streets, designated as part of the cycling network in previous strategies, have no cycling facilities (Botanical Road, Ferguson Street) or stop-start cycle lanes (Te Awe Awe Street, Featherston Street). Even where we have cycle lanes, they often stop before traffic lights.

Figure 9: Narrow cycle lanes shared with or next to parking can be hazardous[10]

Figure 10: Existing conditions on Featherston Street at Rangitikei Street

Council has made good progress with off-road pathways – and the network will continue to be extended and improved.

However, primary cycling routes such as Featherston Street, Botanical Road and Te Awe Awe Street currently have cycle symbols in the same space as kerbside parking. Larger roundabouts are particularly challenging for cycling, and many traffic signals don't have dedicated cycling lanes.

Council needs to consider how it treats and prioritises space within existing transport corridors, particularly as urban areas are intensified. From planning to design to wayfinding, Council aims to take into consideration the space and safety needs of people on bikes, scooters, and foot.

Figure 11: Unsealed part of the Manawatū River Path

2 Who cycles?

We already have about 10 per cent of residents cycling for various reasons – they're riding, not always comfortably, on our current network of partial cycle lanes and shared paths.

Research[12-14] has shown that more space and ideally physical separation from traffic is required to attract those who are "interested in riding but concerned about safety". This is illustrated in Figure 12, which is an adaptation of work by Geller, Dill and McNeil.[15,16] This Masterplan aims to get more people from the largest (green) segment on their bikes.

Figure 12 also categorises the types of people who ride by skill level and what conditions they prefer.[17] All rider types and skill levels are likely to be comfortable riding on quiet (low traffic volume and speed) streets.

These types and levels are not rigid – for example, some people with beginner level skills will ride on busy streets (or illegally on the footpath) if they must use that street to get to their destination.

Likewise, strong riders with advanced skills may use protected cycleways, although they may find slower riders impeding their progress and be unwilling to use such facilities if there is a loss of priority over turning traffic.

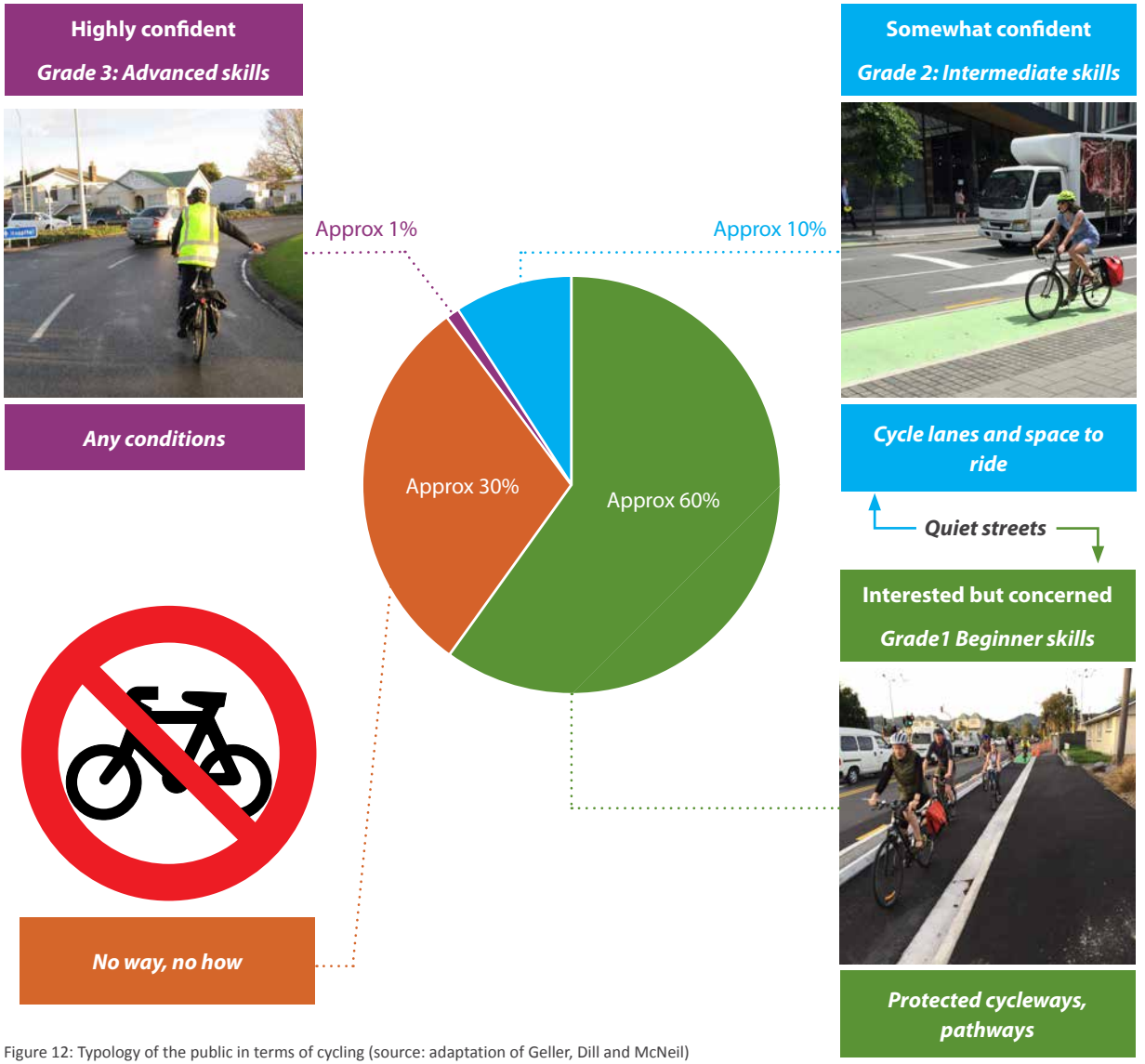


Figure 12: Typology of the public in terms of cycling (source: adaptation of Geller, Dill and McNeil)

Those who are already riding (Figure 13) are role models, and the planned investment aims to make their journeys better.

WORK COMMUTES

GRAHAM

Bus driver

Rides to depot via Highbury Avenue, Botanical Road, and Tremaine Avenue.

Exercise at work is very slim so I bike to work to keep trim. As I drive my bus I pass cyclists without a fuss.

EVERYDAY TRIPS

JOE

Contractor

Bikes to daycare and then to job site.

SCHOOL TRIPS

ELSE

School student

Rides Fitzherbert Avenue every day to Palmerston North Intermediate Normal School.

RECREATION, FITNESS

RAEWYN

Online learning specialist

In her spare time, Raewyn coordinates the iBike4kids and women's skills programme; helps people get confident and out biking

Figure 13: These Palmerston North locals are currently riding and are role models

While some people will drive to the trail, many recreational riders will use streets to connect to trails or rural training routes. Conversely, commuters will use off-road sealed and shared paths as part of their route to various destinations. Therefore, as many routes as possible need to cater for as broad a range of users as possible.

The Creative and Liveable Strategy says the "transport system needs to cater for the lowest level of mobility and physical capability". As will be discussed in the next section, how the system caters for various users depends on the transport and land use context.

3 How to provide for cycling

Overview

The Council's Street Design Manual 2013[18] provides a design vision for Palmerston North by setting out how we want our streets to look for different land uses (residential streets, industrial areas, neighbourhood centres) and transport needs (freight priority corridors, local access, etc).

The Council is also working on a framework to better plan, design and manage our street space to balance everyone's differing needs. On identified streets where all road users need to share limited space, measures can be taken to reduce safety risks through separation, parking removal, or reduction of speeds to make it more comfortable and enjoyable for people travelling by bike.

The NZ Transport Agency Cycling Network Guidance (CNG, Figure 14) will be used to assess what level of provision and design is most suitable for each route. This is the key reference for all New Zealand councils aiming to improve conditions for cycling.[19]

This Masterplan aims to complement the continued expansion of the shared path network with enhanced on-street cycleways on busier streets, and 'family-friendly' neighbourhood greenway routes comprised of quiet local streets and accessways between them. Ways to provide for cycling in the urban area are illustrated in Figure 15.

There are other facility types such as wide shoulders (e.g. Napier Road), hard surface shared paths along rivers (much of the Manawatū River Path), or unsealed trails (Mangaone Stream Path). These are not illustrated because the focus of this Masterplan is on urban cycleways and a few remaining missing parks and reserves path links that connect them.

Figure 14 : The online Cycling Network Guidance (CNG)

Along streets

Increasing separation from motor vehicles

Cost or quality: Higher → Lower

Low speed commercial streets	Neighbourhood greenway (quiet streets)	Cycle lanes	Buffered cycle lanes	Separated cycleways	Shared paths – along roads
					
Long Beach, California: Green shared kerb lane on 4 lane streets	Campbell Street: Traffic calming and sharrows (1)	Fitzherbert Avenue: Wide lane, all intersections included	Cook Street: Dual buffers, green (latter not shown)	Antigua Street, Christchurch: Kerb separators, cycle signals	Pioneer Highway Path: Sealed path
					
Broadway Avenue: Traffic calming, sharrows (1) on two-lane streets	College Street (east of Victoria Avenue): Sharrows (1)	Rangitikei Street: Narrow lane and/or lacking intersection facilities	Church Street: Single buffer; close to parking	Napier Road: Paint and flexi-posts	Te Matai Road: Gravel path; riders tend to stay on road

Figure 15: Types of provision for cycling along urban streets

(1) Sharrows are road markings indicating where people can ride in lanes where it is too narrow for a motor vehicle and a bicycle to comfortably travel side by side. The markings are there to remind drivers they should expect to see people on bikes riding further out in the traffic lane.

At intersections

ROUNDABOUTS

Roundabouts can be difficult for people on bikes, especially when there is a lot of traffic. In most cases, continuing a cycle lane up to and through a roundabout places riders out of the motorist's field of view and increases collision risks.[20] Council will continue to upgrade older roundabouts with new designs that reduce motorist speed. This will make our roundabouts safer for everyone, including people on bikes.

Figure 16: Cycle lanes up to and through a roundabout only work on three-leg roundabouts (Featherston Street/Freyberg Street)

TRAFFIC SIGNALS

Palmerston North has 36 traffic light-controlled intersections.

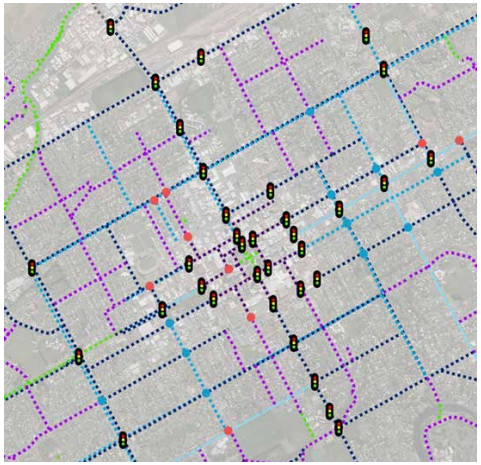


Figure 17: Existing traffic signals in main urban area

At many of these, the existing cycle lanes drop out in favour of multiple lanes for cars (see figure 10, p. 6). Our residents say this isn't good enough to encourage them onto their bikes – the cycleway needs to be continuous up to the intersection.

Every signalised intersection is different, and the technical complexity is high. Council will need to consider a variety of options including widening, space reallocation, time reallocation, and innovative phasing options (or a combination of these). With each proposal, modelling should be undertaken to assess the impact on other road users and ensure that Council maintains the support of the community and avoids unintended consequences.

Existing council budgets provide $41,000 per year for separate phases for cyclists. This is sufficient for minor phasing and hardware changes for one movement at one intersection per year and cannot fund substantial changes. Further implementation is to be funded through the cycling network budget and/or general safety budgets.

Figure 18: A cycle lane continues all the way up to the advanced stop boxes (Church Street/Pitt Street)

"…we cannot continue to define cycle lanes as a painted white line that disappears when it gets too hard, or place unrealistic expectations on our most vulnerable road users as they try to co-exist with two-tonne vehicles travelling at unsurvivable speeds on a complex urban network."

NZ Government 2019, Draft road safety strategy, p. 35[21]

POTENTIAL TREATMENTS AT SIGNALS

We may need to widen the street, reduce traffic lane widths, and/or combine left and through movements to fix this. Assuming that a cycle facility is provided all the way up to the traffic signal, there are several ways to help people on bikes navigate through the intersection:

Right turning riders are either directed to a **hook turn** box (1) to make the turn in two sequential phases or governed by **directional cycle signals**. A 2019 trial in Auckland and Christchurch is proving successful and this treatment is likely to be added to the Traffic Control Devices (TCD) Manual.

A national trial is planned in 2019/20 to test **flashing yellow arrows** for filter turns (2) by drivers across a separated cycleway. This could support the implementation of separated cycleways at more intersections and improve the safety and level of service for all types of riders.

A **right turn phase** such as at Ruahine/Featherston is feasible because there is a left turn slip lane and there is (some) room for right turning riders to queue out of the way of straight through riders. This treatment may be considered at other intersections but does not represent the best possible outcome everywhere. In some cases, a hook turn requires less time to navigate.

Figure 19: Directional cycle signals in Christchurch

Figure 21: Cycle Barnes dance enables pedestrians to go any direction first, then people on bikes

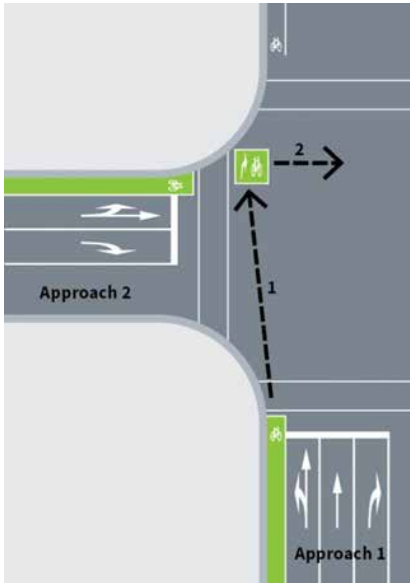


Figure 20: Hook turn layout (source: Cycling Network Guidance, NZ Transport Agency)

A **Barnes dance** enables pedestrians to cross in any direction (all cars are stopped), followed by people on bikes. A Dunedin trial (underway in 2019) may result in national approval. underway. This treatment is only suitable where high numbers of people walking and cycling are expected.

(1) Hook turns enable riders to turn right without having to merge with cars and can reduce rider waiting time compared to a dedicated cycle signal. This video explains more: https://www.youtube.com/watch?v=uPXrKBuFkLc

(2) Filter turning means that motorists turning left can proceed between gaps in the flow of people walking and cycling straight across an intersection, provided that they give way. This way, cyclists could be given more time to travel straight.

4 Where: the cycle network

Projects in development prior to this plan

Palmerston North has a growing network of off-road pathways, including the new He Ara Kotahi pathway linking the city, Massey University and Linton. Rural paths to link to the coast; Bunnythorpe/Feilding, Ashhurst, and Woodville are being planned under separate projects and are not the focus of this city Masterplan.

Work is also planned for Broadway Avenue, which is intended to be a multi-modal safety and streetscape upgrade to improve integration. This project, including the cycle lanes associated with the proposal, are separate from this Masterplan.

With the off-road path network well advanced, this Masterplan aims to:

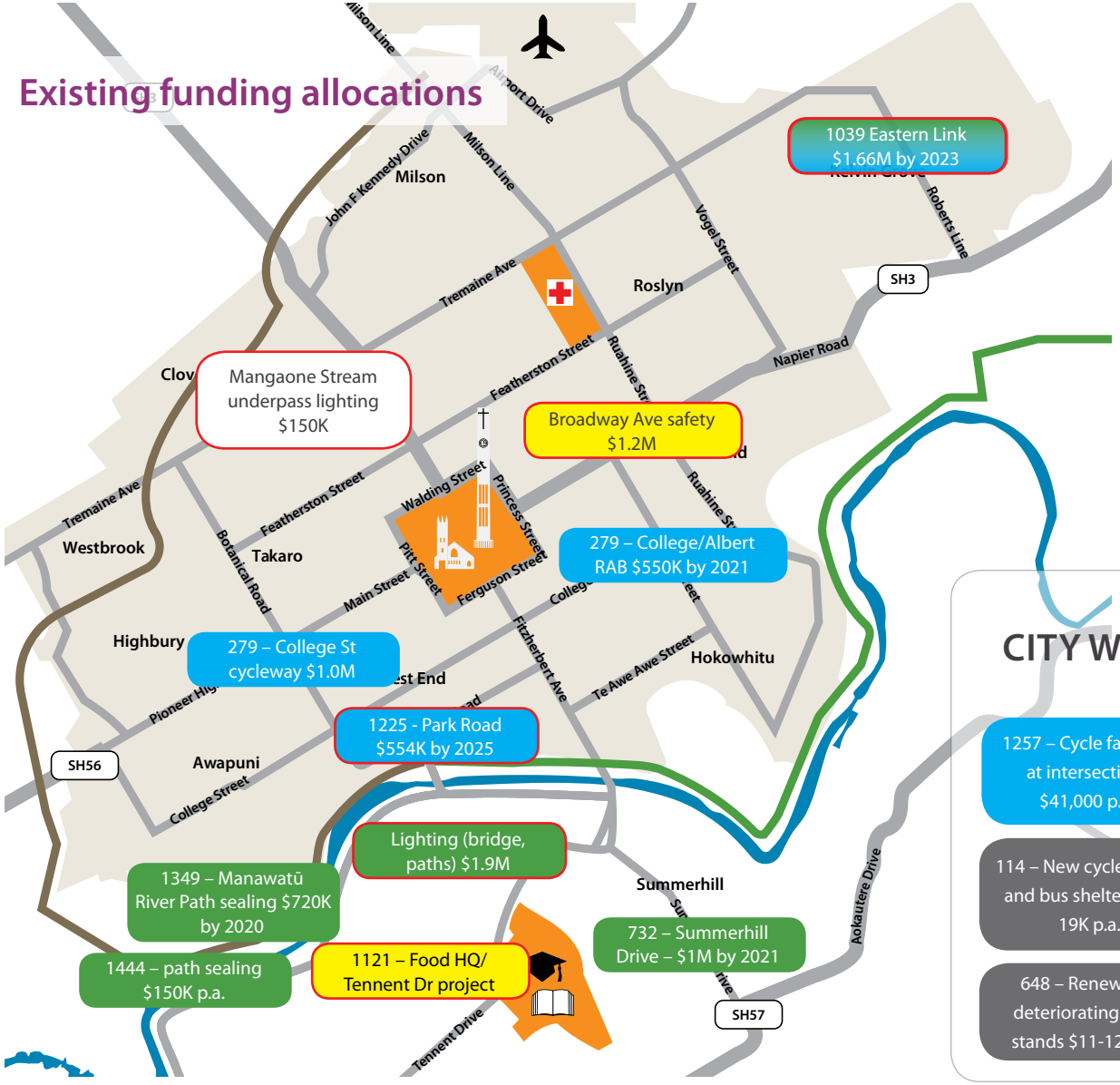
- widen and connect cycle lanes on higher traffic routes
- build out a 'neighbourhood greenway' network comprised of quieter local streets and pathway connections through reserves, with clear wayfinding and easier crossings of major roads.

Council has substantial investigation work underway for cycleways on many corridors including, but not limited to, the Eastern Link (Railway Road to Riverside Drive), Summerhill Drive, Maxwells Line, College Street, Botanical Road and Featherston Street. As part of the Food HQ development, there is a plan to redevelop Tennent Drive as a lower speed urban street and help create a 'super campus'. The link between He Ara Kotahi and the city is already planned to be improved with a sealed path from the river, alongside a revamped Esplanade carpark, and through an upgraded intersection at Park Road and Cook Street.

Both the *Roading and Parking Asset Management Plan* and the *10-Year Plan* identify existing planned cycleway or shared path projects. All these projects are illustrated on the next page.

Figure 22: Several corridors are already in various stages of investigation

Existing funding allocations



KEY

- COMPLETE STREETS
- OPERATIONAL FUNDS
- CYCLEWAYS
- SUBJECT TO NZTA FUNDING APPROVAL
- SHARED PATHS

The three- or four-digit numbers correspond to the 10-Year Plan programme budget, if funded.

CITY WIDE

279 – Variable speed limits in school zones $400K by 2021

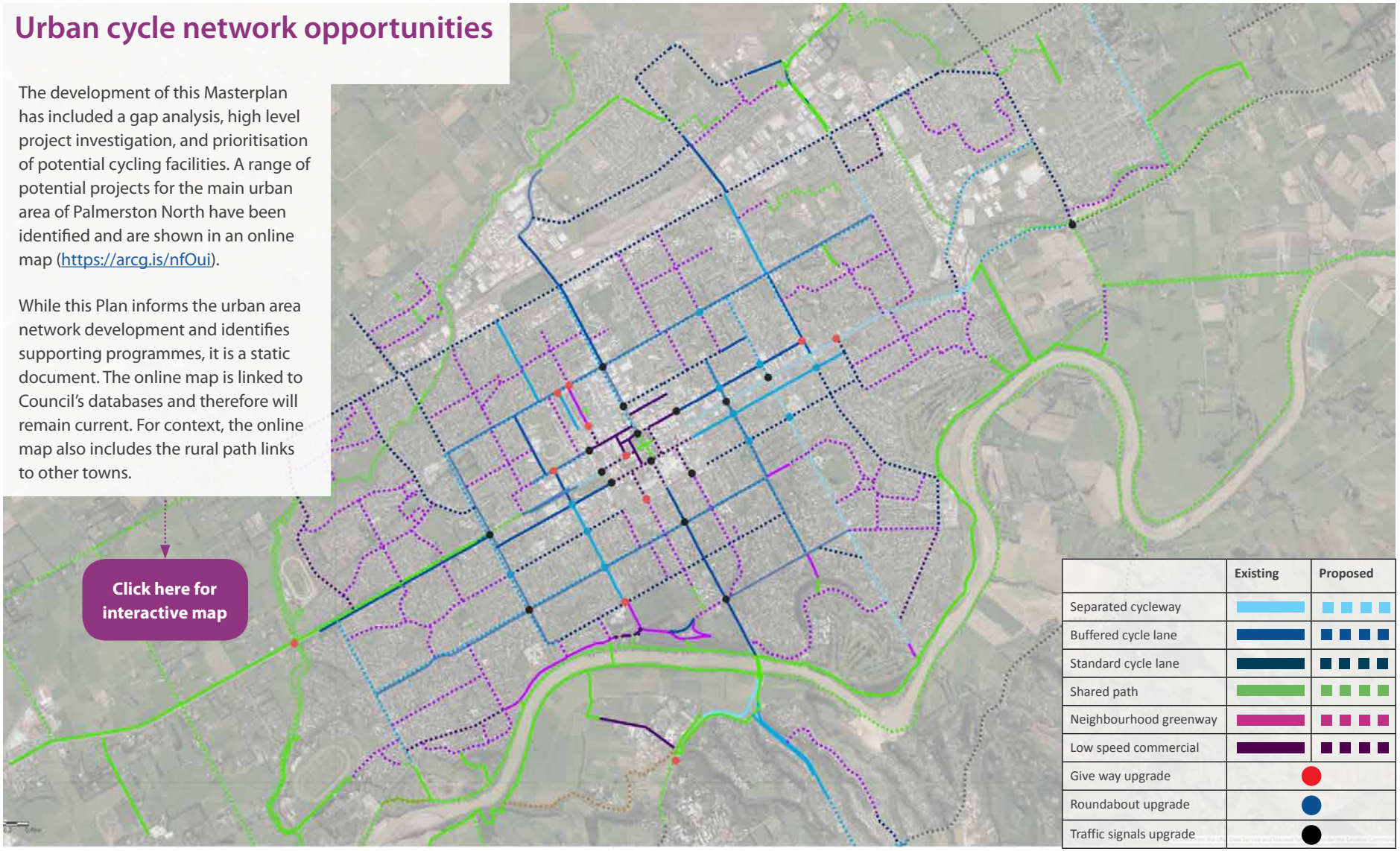
1257 – Cycle facilities at intersections $41,000 p.a.	1216 – Cycle lanes citywide $102K p.a.	1354 – City loop wayfinding $36K 2020
114 – New cycle stands and bus shelters $18-19K p.a.	1442 – Active Transport Behaviour Change Coordinator $21K p.a.	1470 – Additional cycle lane sweeping $82-85K p.a.
648 – Renewal of deteriorating cycle stands $11-12K p.a.	1313 – Sharrows at roundabouts $5K p.a.	1214 – Bikes in Schools $51-53K p.a.

Urban cycle network opportunities

The development of this Masterplan has included a gap analysis, high level project investigation, and prioritisation of potential cycling facilities. A range of potential projects for the main urban area of Palmerston North have been identified and are shown in an online map (https://arcg.is/nfOui).

While this Plan informs the urban area network development and identifies supporting programmes, it is a static document. The online map is linked to Council's databases and therefore will remain current. For context, the online map also includes the rural path links to other towns.

Click here for interactive map



Cycling in the central city

Many people are accustomed to the view through their car windscreen being motor dominated, and cannot picture themselves riding into the city. The ring road (comprised of Princess, Ferguson, Pitt, Bourke, Walding and Grey streets) has been developed as a motor-vehicle priority route with cycling facilities limited to wider kerbside lanes and advanced stop boxes at traffic signals. The ring road helps to divert cars around the central city, but it is also hard for people on foot and bike to cross.

An annual weekday morning (7–9 am) count of people on bikes riding into or through the central city shows nearly 500 cycle movements past the 17 count stations. Women comprise only 13 per cent of the riders observed, whereas the figure for Christchurch is 38 per cent. Women tend to be more risk averse than men and international experience shows that they are unlikely to cycle if they consider streets are unsafe.[22]

Getting to the central city on a bike will be improved by:

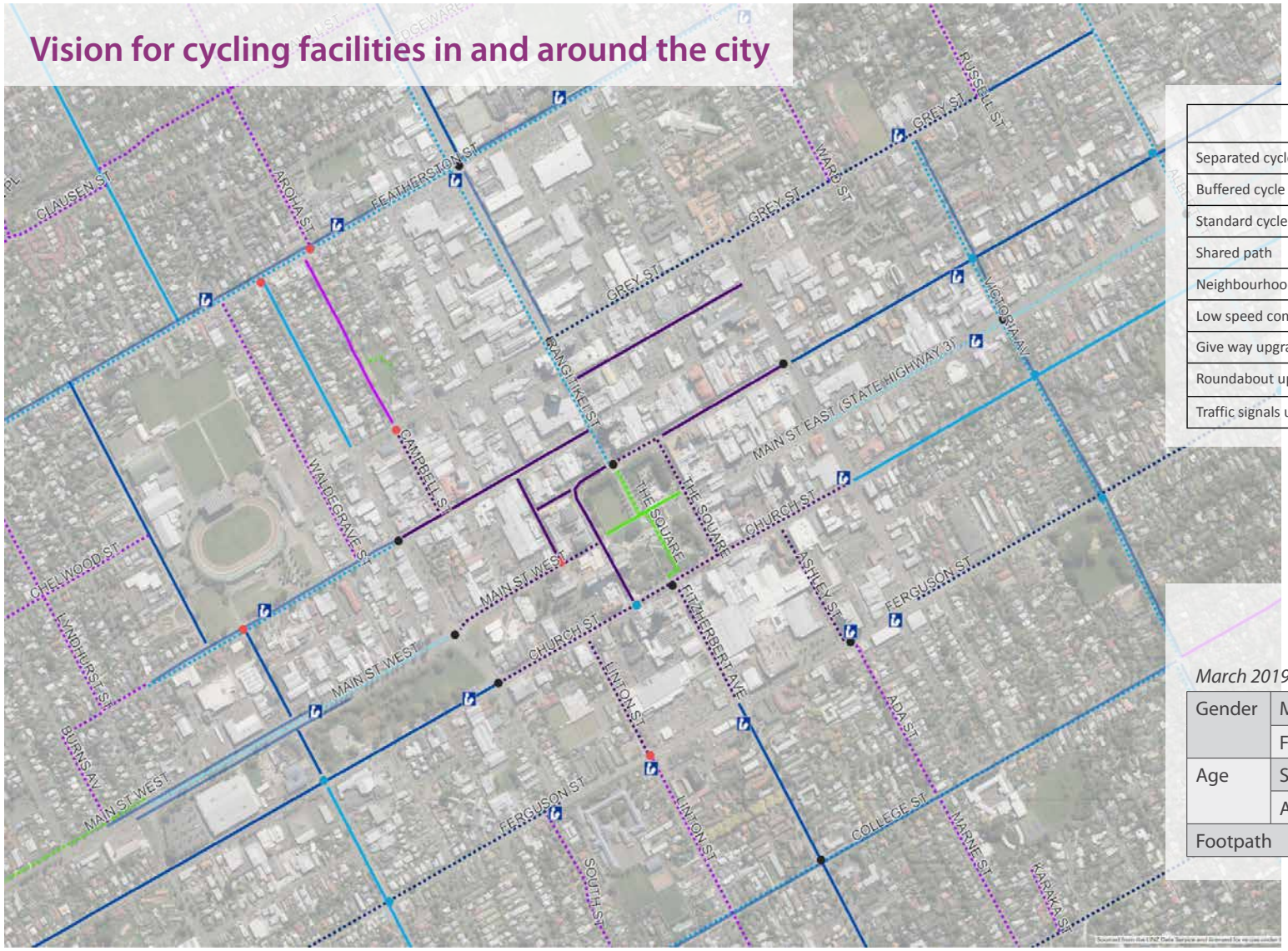
- developing a network of neighbourhood greenways on quiet streets and better cycleways on busy streets connecting to the ring road
- upgrading key ring road intersections (refer to section 3 of this Masterplan and the interactive online map for more information).

Within the central city recent connections like Cuba Street and ongoing central city street upgrades provide for people to ride in shared traffic lanes or along a wide shared path, whichever is more suitable to their needs and comfort level. Additional work is envisioned to make cycling in the city easier:

- The City Centre Framework[23] envisions a lower-speed environment of 30 km/h or less for all streets and laneways, with less through (cars not stopping) traffic. This would enable people on bikes to share the traffic lane more comfortably (Figure 39, p.28) or cross into The Square itself (Figure 23).
- Kerb ramps, traffic signal phasing, and minor path improvements that improve accessibility for people on bikes travelling north/south through the Square.
- A southbound cycle lane on Rangitikei Street so that people on bikes can have queueing space to access The Square.
- Kerb ramps and cycle bypass of the Church Street/Square roundabout for westbound riders.

Figure 23: Riding through The Square will be made easier with new kerb ramps and traffic signal phases for walking and cycling

Vision for cycling facilities in and around the city



	Existing	Proposed
Separated cycleway		
Buffered cycle lane		
Standard cycle lane		
Shared path		
Neighbourhood greenway		
Low speed commercial		
Give way upgrade		
Roundabout upgrade		
Traffic signals upgrade		

Annual weekday morning peak (7–9am) central city count of people on bikes

March 2019		Number	Percent
Gender	Male	404	87%
	Female	63	13%
Age	School	174	37%
	Adult	293	63%
Footpath		47	10%

Figure 24: A potential separated cycleway on Main Street West

5 Network implementation

Including the current projects, thirty-six corridors have been evaluated. To build all of them would cost about $30M and will take time and funding. Under capital programme 1559 ('Urban Cycling Network'), Council has allocated $2.9M for implementation in years two and three of the current 10-Year Plan (2018–2028), meaning fiscal years 19/20 and 20/21. The timing and scale of investment may be adjusted depending on the outcome of a separate business case and National Land Transport Programme (NLTP) funding opportunities.

This Masterplan sets a direction for future investment. The investment comes from two main streams.

Capital borrowing: Councils borrow money to build physical infrastructure (such as libraries, roads, and cycleways) which will benefit future generations. But, because it wouldn't be fair for the current generation to pay all the costs for infrastructure that will outlast it, repaying the debt is spread into the future.

Operational budgets: Education and encouragement activities (see section 7) are services that are going to be delivered now, and Council can't borrow money to pay for them. This money comes from what's called an operational budget, and it's taken from your rates. (1)

Figure 25 shows how we plan to allocate future capital and operational budgets:

- About 10 per cent should go to supporting measures (described in section 7). So for every $900 invested in physical infrastructure, $100 should also be spent on education and encouragement initiatives.
- About 60 per cent should go to low-cost paint buffered cycle lanes with flexible safe-hit posts and/or temporary treatments (e.g. planter-box separators).
- About 30 per cent should go to separated cycleways, whether through the active transport programme alone, or to support funding for full streetscape upgrades.

This enables the roll out of a connected network of cycleways faster, with conversion to permanent facilities over time. In new urban development areas, separated cycleways will also be the preferred type of provision on new roads designed for higher traffic volumes. The type of provision will be confirmed through the planning process, taking into account the context of the surroundings.

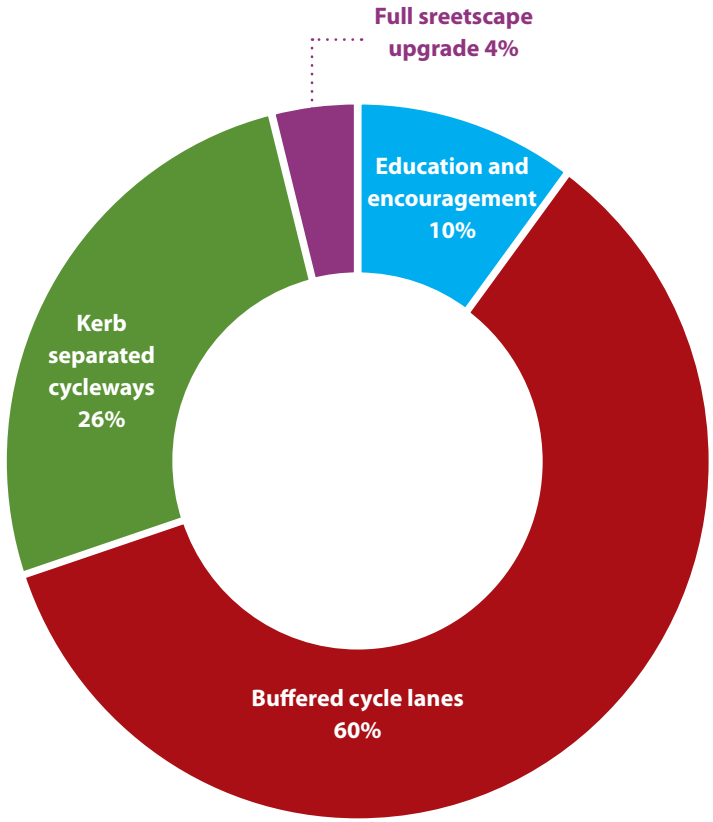


Figure 25: Investment mix

(1) Note that the NZ Transport Agency may part-fund operational expenditure under the road safety and demand management activity class or (if delivered as part of an infrastructure project) under the walking and cycling improvements activity class.

Table 1: Top 25 corridors

Rank	Corridor	Score	Constraints	Current status	Type
1	Featherston Street	593	High	Concept design	Buffered cycle lane
2	Albert Street	499	Medium	Investigation	Cycle lane options to be developed
3	College Street	471	High	Detail design	Complete work in progress
4	Cook Street	456	Low	Investigation	Intersection safety upgrades
5	Park Road West	436	Medium	Investigation	Cycle lane upgrade, Ongley Park path
6	Main Street West	423	Low	Concept design	Separated cycleway
7	Waldegrave (or Campbell) Street	420	Low	Investigation	Neighbourhood greenway
8	Cuba Street	433	High	Investigation	Pending Arena Masterplan
9	Milson Line	408	Medium	Investigation	Buffered cycle lane
10	Maxwells Line	405	Medium	Concept design	Cycle lane or separated cycleway
11	Te Awe Awe Street	401	Low	Investigation	Complete
12	Highbury Avenue	397	Medium	Planning	Cycle lane
13	Botanical Road (South)	386	High	Concept design	Cycle lane (TBC)
14	Tremaine Avenue	384	High	Planning	Cycle lane – significant constraints
15	Ferguson Street	379	High	Planning	Cycle lane – significant constraints
16	Rangitikei Street	374	Medium	Planning	Widen cycle lane
17	Botanical Road (North)	374	High	Concept design	Separated cycleway (TBC)
18	Ihaka Street	372	Medium	Planning	Cycle lane or traffic calming
19	Ruahine Street (Middle)	365	Medium	Planning	Separated cycleway
20	Ruahine Street (South)	344	Medium	Planning	Cycle lane
21	Eastern Link (Roberts Line, McLeavey Drive)	337	Low	Planning	Buffered cycle lane
22	Vogel Street (South)	315	High	Planning	Cycle lane or traffic calming
23	Victoria Avenue	312	Medium	Planning	Intersection upgrades, parallel parking
24	Main Street East	309	Low	Concept design	Separated cycleway
25	Vogel Street (North)	304	High	Planning	Cycle lane – constrained width

Factors included in the prioritisation method

Feasibility

- Business and resident parking impacts can be mitigated
- Network operations (traffic signals, maintenance) can be mitigated
- Ease of constructability (right of way, road profile)
- Consultation requirements

Cost

Rough order capital cost is lower

Asset management

Higher priority if cycleway can be part funded through planned road surface, kerb and channel or sub-surface pipe renewals

Safety

- Reported crashes involving people on bikes
- Heavier traffic routes

Demand

- Number of residents served
- Number of age 10+ school students served

Connectivity

Leverages previous investments in cycling network and/or connects to key activity centres / central city

Equity

Areas of high need as defined by the NZ social deprivation index

Modal conflict

Routes that are not freight or motor vehicle priority routes (unless there is more than enough width)

Botanical Road is an important corridor for cycling, but it is also a designated freight route and has a constrained width. Improvements for walking and cycling along the full length will be developed alongside a wider review of multi-modal transport needs and work being undertaken by West End School that may result in changes for student pick up and drop off. The image here is an artist's impression only; further design and consultation is required to confirm feasibility.

Figure 26: An improved cycleway and pedestrian facilities on a minor arterial.

6 Supporting infrastructure

Cycle parking: People who cycle need a safe and secure place to park at home and at their destination. Council policy as set out in the District Plan is "to encourage the development of safe and accessible pedestrian paths and cycleways, as well as convenient and accessible cycle parking, to support the opportunity for people to use active and non-vehicular modes of transport throughout the City".[24] In addition to long stay cycle parking for staff and short stay parking for visitors, the plan requires the provision of showers and lockers for any new or changed activity where there are 11 or more staff.

Private businesses can follow design guidance available on the Bikes Welcome website[25] and the Cycling Network Guidance (CNG) website.[19] Publicly accessible cycle parking is available city wide. Council has funded some stands on private property where there have been requests for parking; given the recent revision of District Plan rules such costs will now be borne by property owners and developers.

Council has provided 449 publicly accessible cycle stands. Council's current budget for cycle stand replacements is $11,000 per annum. New stands are funded from the bus stop and cycle stand budget of $41,000 per annum. A map of current council-provided cycle stands is provided in an interactive online map: https://arcg.is/nfOui

Bike fix-it stations provide tools, a repair stand, and pump for public use. One has been installed at the Junior Road Safety Park on Fitzherbert Avenue. More are planned in key locations including outside the i-Site.

Wayfinding signage has been installed parallel to College Street and on a number of pathways. The CNG now has a national standard for wayfinding signs on all types of cycleways, including on-street cycleways. A network plan for wayfinding is planned, taking into account key destinations. Wayfinding signage will be included in all major cycle route project development.

Behavioural message markings on pathways: new markings have been added to the Manawatū River Path encouraging people to move off the path when stopped, control their dogs, warn pedestrians when overtaking, and keep left. These markings will be maintained regularly.

Figure 27: Council's relocatable covered cycle 'parklet' around the Square is well-used

Figure 28: Behavioural message markings on Manawatū River Path

Figure 29: A bike fix-it tool & pump station in Christchurch

7 Supporting programmes

This section describes non-infrastructure actions Council and partners will take (and where resources are available) to help achieve the Plan vision. Capital budgets (for infrastructure) and operational budgets (for things like school travel plans) are funded in different ways. Only activities that are directly related to an infrastructure project can typically be included in capital budgets. In the next Annual Plan cycle, Council will consider whether more operational funding is needed; this will likely depend on the level of NZ Transport Agency funding that is approved under the non-infrastructure work category. The business case for urban cycleways will include a proposal for an operational budget that is about 10 percent of the total capital budget.

Delivery partners

Together with key partners (Figure 30), Palmerston North City Council provides local infrastructure and sets city speed limits. Funding for infrastructure is often a mix of local rates and assistance from the National Land Transport Fund, administered by the NZ Transport Agency and coordinated by Horizons Regional Council.

Advocates are represented through the Council-convened People on Bikes Forum, established to get user perspectives and community involvement in the development of the network.

Council supports cycling programmes through its contract with Sport Manawatū and through grant funding for the Bikes in Schools programme (including bike tracks). Various community groups also help deliver on the Plan objectives: the Manawatū Mountain Bike Club which holds weekly skills training for kids and adults, and The Greasy Chain Charitable Trust organises mass participation events, competitions, and promotes cycling generally.

PALMERSTON NORTH CITY COUNCIL

- Plan and design built environment
- Manage speed limits
- Host People on Bikes Forum
- Provide resources for Bike Ready, Bikes in Schools, travel plans

horizons regional council

- Funding coordination
- Road safety education

SPORT MANAWATU

Active Transport Advisor delivers Bike Ready cycle skills education

NEW ZEALAND POLICE Ngā Pirihimana o Aotearoa

- Traffic and parking rule enforcement
- Support school cycling skills instruction

NZ TRANSPORT AGENCY WAKA KOTAHI

- Deliver funding in line with Government priorities
- Maintain standards, guidelines, research
- Provide education materials
- Coordinate national encouragement campaigns

Figure 30: Key programme delivery partners

Massey University and other educational institutions can support Bicycle User Groups (BUGs). In doing so they help staff and students who cycle benefit from enhanced end-of-trip facilities and encouragement programmes. Massey's Sustainable Transport Working Group is currently developing a 5-year Sustainable Transport Plan 2020–2024 covering all aspects of transport related to the University's activities on all its campuses. In particular, this will include the preparation of a cycling plan for the Manawatū campus.

Marketing and communications plan

Messaging content. Communicating the benefits of cycling is required to encourage a habit change. This includes addressing common public misconceptions and driver behaviours towards people on bikes (and vice versa). A marketing and communications plan will be developed to support the urban cycling network investment.

Information for drivers about sharing the road with people on bikes is available online and can be promoted through council communications.(1)

Figure 31: This NZTA publication[26] will inform Council's communications plan

Figure 32: Billboard aimed at improving motorist behaviour

Website and advertising. The communications plan will consider means to educate residents on the meaning of cycle facilities such as hook turn boxes and sharrow markings as well as how to safely navigate roundabouts. Messaging is also needed to address motorist perceptions about people who bike. The communications plan will consider the most effective use of the Council website, social media, mailings, and billboards to get the messages out.

Engagement at the project level. A separate 'complete streets engagement guideline' has been developed to improve project delivery from initial discussions with residents and road users through to community events such as grand openings. This has been informed by NZ Transport Agency collated best practices from other cycleway projects in New Zealand. Council will continue to engage with the People on Bikes Forum to obtain user input on project plans.

Figure 33 : Engagement is key to the project delivery

The International Cycling Union (UCI)'s Bike City Label[27] recognises leading cities and regions around the world that not only host major cycling events but also demonstrate outstanding commitment to Cycling for All. With continued success of the annual UCI approved Gravel and Tar race from Feilding to Palmerston North and implementation of this Masterplan, we may be the first New Zealand city to achieve this recognition.

(1) https://www.nzta.govt.nz/resources/roadcode/about-other-road-users/sharing-road-with-cyclists/

Cycling skills training and Bikes in Schools

Bike Ready[17] cycle skills education is already being delivered in some schools but we plan to target additional skills training at the schools that will directly benefit from the initial urban cycleways investment. The education also aims to address parental concerns about the safety of cycling, as parents make the decision about how their children travel to school.

Figure 34: Bike Ready cycle skills instruction in Palmerston North

Figure 35: The award winning and popular Junior Road Safety Park

Bikes in Schools (BiS)[28] is a package of bikes, helmets, and one or more riding tracks implemented within a school that enables all students to gain confidence and skills in a safe environment. Six schools are now participating, and more are expected to join.

Figure 36: Bikes in Schools Terrace End

Council's funding support for Bikes in Schools tracks has included a stipulation that these are available for public use outside school hours, enabling people of any age to learn to ride in a traffic-free environment. The Junior Road Safety Park is a well-used playground with a shed full of bikes that can be borrowed for formal training of younger children. It is also used by adults immigrating from countries where cycling is uncommon.

The **NZ Transport Agency Education Portal** has a wealth of information for parents and educators about cycling[29]

The **official code for cyclists**[30] is a valuable resource for anyone wanting to know more about the rules of the road and how to stay safe.

Figure 37: Code for cyclists

School and workplace travel plans

Travel plans help to support physical changes around school and workplace campuses with education and encouragement activities. We have piloted travel plans at Cloverlea, Roslyn and Ross schools and we aim to strengthen these in the 19/20 financial year, before a further city-wide roll-out in 20/21. The budget in Council's 10-Year Plan currently has $21,000 per annum to resource this; further expansion is being considered dependent on Government funding assistance levels and prioritisation.

Walking, scooting, skating, and cycling to school starts a habit that can last a lifetime. The benefits are clear:

- Congestion is reduced near the school.
- Children who are active before school are more ready to learn, as shown by improved test scores.[31]
- Daily activity helps hold a healthy body weight.[32]

- Active travel is social and fun for children and their parents.
- Self-directed travel is proven to enhance child development – they acquire road safety skills and confidence.

- Saves money – not having to drive some or all of the time.
- Builds community (the school's neighbours aren't keen on all the traffic either!).

TRAVEL PLANS WORK

To support active travel, Councils across NZ are running various education and encouragement campaigns. For example, at the first 15 **New Plymouth** Let's Go schools, **300 kids started walking**, another **300 started biking,** and **600 parents started school run carpools**.[33] Hastings, Auckland, and Christchurch also have council staff dedicated to helping people try active ways to travel.

In **Christchurch**, council staff have provided **workplace travel planning services** for many central city employers returning to rebuilt premises post-earthquake. This has included one-on-one advice, maps, information, and ongoing support – and it is working. Among targeted employees, **car travel** decreased 31 per cent, **bus use** increased 16 per cent, **cycling** increased 8 per cent**, walking** increased 5 per cent, and **carpooling** increased 2 per cent.[34]

Other supporting programmes

Ride with Us – a Green prescription (GRx). Many adults lack the confidence or motivation to try cycling. This Plan envisions a 'Ride with Us' programme such as proven effective in the Hawke's Bay. This is open to any adult who is written a physical or mental health prescription.[35] Participants are given a loan bike to use if they don't have one, and a ride leader takes a small group (about 10) out on easy area trails. Many participants have gone from only being able to ride 2km to riding up to 40km in just four months. Some have reported making strong friendships and gaining confidence in themselves. According to the programme organiser from Sport Hawke's Bay: "Nurturing friendships among the group helped build everyone's confidence, motivation and a sense of looking out for one another, helped build a sustainable programme which works".

Keys to sustainability include sourcing affordable bikes, forming a regular riding group, finding volunteers who can go through the Cycling New Zealand rider leader workshops and having the resources to offer ongoing mentoring and support to the participants after the programme.

Figure 38: Ride with Us: a Green Rx group (source: L. Johansson)

Other Council Work will influence the uptake of cycling.

The way that streets are managed and maintained is defined in ***Roading and Parking Asset Management Plan 2018.***[2] Section 6.5 Cycleways and Shared Paths of that document defines current problems, benefits, asset condition, and levels of service for cycling. It also includes description on a number of cycling related programmes included in the 10-Year Plan. The most relevant of these are included in section 4 of this Plan.

Enforcement of illegal cycling behaviour does not need to be a discouragement. Palmerston North has a long record of giving away bike lights during the March daylight savings time shift. Footpath cycling by adults can be dangerous, and Police may stop and educate riders.

The ***Active Community Plan***[36] includes a number of relevant actions supported by 10-Year Plan programme budgets, including the designation of shared path connections in the *District Plan* and the development of a Spatial Plan for the whole city that depicts activity hubs along with proposals such as cycleways indicated in this Masterplan.

Supporting plans and policies

In addition to requirements for cycle parking, the ***District Plan***[24] guides land use planning outcomes and therefore how feasible it is for people to choose cycling. Planning applications come before the city transportation engineer for a multi-modal safety check.

The ***Speed Limits Bylaw***[37] is periodically reviewed and offers an opportunity to potentially lower urban speeds, benefiting people on bikes. Last updated in 2013, the next review can take advantage of the updated Setting of Speed Limits Rule 2017[38] and the new NZ Transport Agency MegaMaps tool, designed to help assess whether current speed limits are safe and appropriate.[39]

Speed management using traffic calming measures in local streets is a key feature of this Cycle Network Plan and would benefit from an update of the ***Local Area Traffic Management Policy 2003***.[40]

Developments also have to comply with the ***Engineering Standards for Subdivisions 2016***.[41] These standards ensure that new roads are fit for purpose including for people on bikes. The standards are regularly reviewed to keep up with the evolution in best practice.

The ***Proposed Parking Management Plan 2016-2018***[42] notes that cycle lanes and parking on both sides requires ideally 13.6m of carriageway (or more). The plan states: "Few streets are 13.6m wide however if parking were removed from one side of the road a carriageway width of 11.3m to 11.6m could allow for traffic and cycle lanes in both directions. This has been done on College Street (Botanical Road – Fitzherbert Avenue) and could be achieved on other roads such as Botanical Road, Vogel Street and Te Awe Awe Street."

The Parking Management Plan 2016-2018 covers a time period that has elapsed. A new city-wide parking strategy and policy would be useful to help inform future reallocation of street space for multi-modal projects.

Figure 39: Cycling is easier on the upgraded Cuba Street

8 Measuring progress

Several targets will be established once baseline data has been obtained. Progress reports will be issued annually.

Problem	Benefit/objective	Measure	Most recent value	Target
Car oriented land use and transport planning	Improved access by cycling	Length of NZ Transport Agency CNG standard cycleway/greenway (1, 3)	70 km	75 km by 2021 100 km by 2023 120 km by 2030
		Qty. cycle wayfinding signs (2)	TBD	TBD
Culture is to drive Inadequate infrastructure Driver behaviour	People have (and use) more transport choices Social connections (outside our cars)	Cycling to school (as proportion of all modes)	TBD	TBD
		Access to Bikes in Schools	TBD	TBD
		On-street counts (2)	941 across 9 sites	10 per cent increase p.a.
		Journey to work cycle mode share from the Census (1, 3)	5.9 per cent (2013)	TBD after 2018 data released
Traffic skills, confidence, and/or fitness is lacking	Fewer people being killed and injured	Rate of cyclist serious/fatal casualties (1, 4)	0.53 / 100K pop (2009-2014)	Decreasing trend
		Bike Ready skills participation	340 - Grade 1, 1010 - Grade 2 (2017/18)	TBD
	People have better health	Residents cycling participation (3, 4)	13 per cent (2017)	15 per cent (2020)

(1) Creative and Liveable Strategy measure (may be a refinement or subset of)
(2) Active and Public Transport Plan measure (may be a refinement or subset of)
(3) Active Community Plan measure (may be a refinement or subset of)
(4) Long-term measure that will be affected by many things – not just the urban cycle network investment. Typically measured every 3 to 5 years.

9 Summary of actions

All projects are subject to funding availability.

Plan section / category	Action	Responsibility	Timing
3. How to provide for cycling	Review the Local Area Traffic Management Policy and Guidelines June 2003; consider city wide parking strategy.	Strategy & Planning/Infrastructure	19/20
4 & 5. Engineering	Implement priority projects	Infrastructure	19/20–20/21
	Remove or reconfigure vehicle barriers to Manawatū River Path that limit cycle access	Infrastructure	20/21
	Continue working with contractors to keep cycle lanes clear of traffic management signs	Infrastructure	Ongoing
	Review road and path sweeping maintenance contract; tie proactive maintenance of underpass to storm events	Infrastructure	19/20
6. Supporting infrastructure	Develop and implement a cycling wayfinding plan	Infrastructure	19/20
	Cycle stands new and upgrade	Infrastructure	Ongoing
7. Engagement	Continue People on Bikes Forum meetings	Infrastructure	At least quarterly
	Use the Complete Streets Engagement Guideline to involve community	All Council units	Ongoing
7. Education	Bike Ready cycling skills training	Sport Manawatū	Ongoing
	Continue promotion of the Junior Road Safety Park for training younger children and adults not ready to ride in traffic.	Welcoming Communities Coordinator	Ongoing
	Resident education including the meaning of sharrows, hook turn boxes, and safe use of roundabouts	Infrastructure/Comms	Every October
	Professional driver education using the Road Code information about sharing the road with cyclists – advocate to Horizons, freight companies, and taxi operators	Strategy and Planning	19/20
7. Encouragement	Address perceptions of people who cycle and benefits of cycling	Infrastructure/Comms	Ongoing
	Free lights on daylight savings time change	Infrastructure/Police	Every March
	School and workplace travel plans	Infrastructure	Ongoing
	Bikes in Schools	Infrastructure	Ongoing
	Bike with Us (Green Prescription)	Sport Manawatū	2019/20
	Council to participate in, and promote the annual Aotearoa Cycle Challenge	All Council units	Annual
	Apply for the International Cycling Union Bike City Label	Strategy and Planning	2019/20
8. Evaluation	Conduct mode share survey in a sample of classrooms	Infrastructure	Annually
	Conduct annual manual counts including apparent age range and gender	Infrastructure	Every March
	Collate mode share, count, and other relevant data from national, regional and local surveys. Analyse data and publish an annual report card	Infrastructure	Every April

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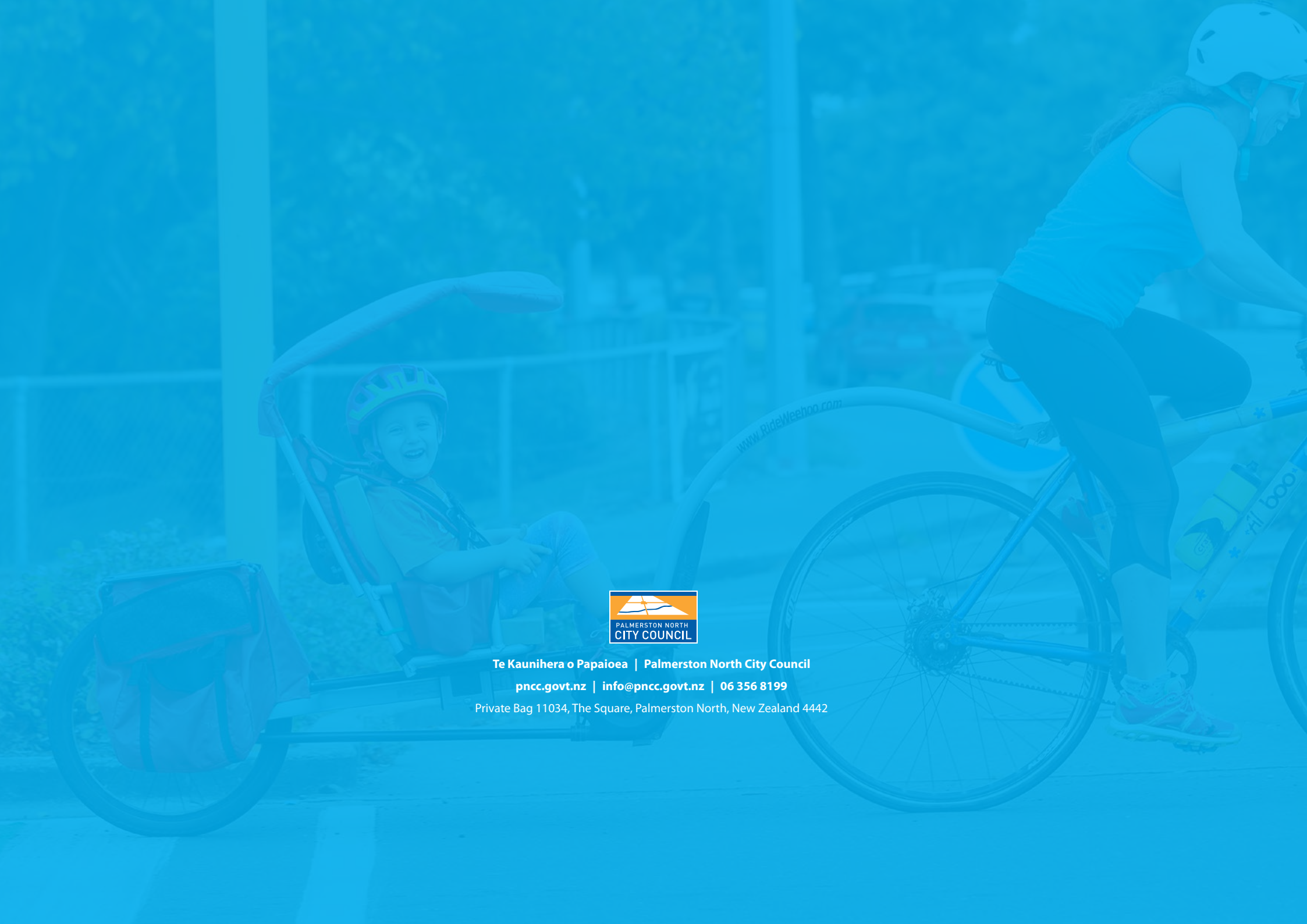

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