Tauranga
Cycle Plan
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PART A

– **What** are we doing?
– **Why** are we doing it?
– **Who** are we focusing on?
– **Where** are we doing it?
– **How** are we doing it?
– **When** are we doing it?
1. What is the Tauranga Cycle Plan?

The Tauranga Cycle Plan (Cycle Plan) outlines why and how Tauranga City Council (TCC) is going to get more people riding bikes, more often. A key focus of the Cycle Plan is outlining how we are going to make Tauranga safer and easier for people on bikes.

Please refer to Section 29 for a diagram showing how the Cycle Plan relates to other key transport documents and strategies.

See Part B of the Cycle Plan for references and more detailed evidence for the statements made in this section of the Cycle Plan (Part A).

2. What is a cycleway?

Throughout the Cycle Plan the term ‘cycleway’ is used regularly. Cycleway means any transport corridor that includes dedicated facilities for people on bikes, such as cycle lanes, shared walking and cycling paths and traffic calming specifically designed to make roads safer for people on bikes.

3. Why are we making Tauranga safer and easier for people on bikes?

Travelling around Tauranga

Benefit: People will have another viable transport choice so they can choose to travel safely and easily the way that best suits them.

Current Problems:

- Parts of Tauranga are not served by any cycleways.
- Tauranga’s cycleways are not well connected to each other and the standard of cycleway varies.
- Connections between cycleways (shared walking and cycling paths) that are physically separated from traffic are very infrequent.
- There are no cycleways that are physically separated from traffic and pedestrians.
- Cycleways are limited to only one or two routes in almost all areas.
- Many off-road cycleways are not of a standard required to encourage people to ride to work and school (i.e. not suitable for commuter or road bikes).

Benefit: If we can get more people riding bikes we can better utilise Tauranga’s space. In a similar space to a traffic lane, a cycleway can transport up to 3.5 times more people per hour than single occupancy motor vehicles.

Benefit: Every person who rides a bike is potentially one less car on the road and one more available car park.

Current Problems:

- Tauranga’s roads are becoming increasingly busy and in many areas building or widening roads is difficult and costly. To keep Tauranga moving we need to use the space we have available wisely.
A car focused approach to transport investment and land use planning has led to a reliance on cars and created barriers to riding bikes. Tauranga has the highest car use of any city in New Zealand with around 91% of trips to work being made by private motor vehicle.

An in-depth study on traffic growth in Tauranga (Tauranga Transport Programme) estimated that by 2031 to ensure travel times for motor vehicles are maintained at reasonable levels we need to increase the amount of people walking and riding bikes for transport in peak traffic times to 14%.

In Tauranga only 1% to 3.2% of journeys to work are made by bike (around 4% of journeys are by walking).

Across New Zealand only 1% of children ride a bike to school, down from 28% 30 years ago. Although in Tauranga 9.7% of trips to the schools we have cycle counts for are by bike.

**Safety**

*Benefit: People who ride bikes feel safer.*

*Current Problem:*

- Many people who ride bikes don’t feel safe riding a bike in Tauranga and safety concerns are putting people off starting to ride a bike. Public feedback revealed that 59% of adult’s do not think it is safe and easy for adults to ride bikes in Tauranga, while 46% of young people and 80% of adults do not think that Tauranga is safe and easy for young people (kids) to ride bikes. Lack of physical protection from traffic on busy roads is people’s biggest safety concern.

*Benefit: Improved safety for people on bikes.*

*Current Problem:*

- In Tauranga people on bikes are over represented in crashes involving deaths and serious injuries. According to the Household Travel Survey trips by bike make up 1% of total transport trips in Tauranga, but crash data shows that people on bikes are involved in 13% of total crashes resulting in deaths and serious injuries.

*Benefit: Improvements for people on bikes, such safer road crossings, will also make communities safer for pedestrians including young people walking to school.*

*Problem: Many roads don’t have safe crossing points for pedestrians.*

**Health**

*Benefit: Riding a bike keeps people active, which has physical and mental health benefits.*

*Current Problems:*

- New Zealand is now the third most obese country in the world.
- Obesity rates in the Bay of Plenty continue to rise and obesity rates are currently greater than the national average.
- Physical inactivity and obesity create significant health risks and costs to society.
**Social inclusion**

**Benefit:** Riding a bike is an independent transport option.

**Current Problems:**
- Many young people are reliant on being dropped off at school and other activities by a parent. This contributes to congestion and creates a barrier for young people to learn about their local environment, road rules and develop safe travel habits.
- The 2013 Census reports that 2700 households in Tauranga (nearly 6.4%) do not have access to a motor vehicle.
- Many people are not able to drive due to health conditions or other barriers.

**Benefit:** Riding a bike is a more affordable transport option, which benefits the whole community particularly those households with less money.

**Current Problem:**
- A lack of safe, attractive and affordable transport options creates barriers to employment, education, social and leisure opportunities for households with less money.

**Benefit:** Riding a bike is fun and can be a social activity with friends and family.

**Better places**

**Benefit:** Cycling facilities can help create streets that are more attractive and inviting.

**Current Problem:**
- Streets designed primarily for cars can be visually unattractive and uninviting for pedestrians and people on bikes. Busy roads and reliance on cars can also reduce social interaction and sense of community.

**Benefit:** More people riding bikes (and walking) creates more vibrant safer streets and helps to connect communities.

**Current Problems:**
- A lack of people on bikes means that some motorists are not used to looking for them.
- A lack of people on bikes (and pedestrians) reduces the vibrancy of streets, reduces safety from crime (passive surveillance) and reduces opportunities for social interaction within communities.

**Benefit:** Providing safe and attractive cycle facilities could make Tauranga a more appealing destination for tourists.

**Current Problem:**
- There is a lack of safe, attractive cycleways for tourists to explore Tauranga by bike.

**Environment**

**Benefit:** Riding a bike is better for air quality.

**Current Problems:**
- 62% of Tauranga’s CO² emissions come from transport.
- In Tauranga emissions from motor vehicles are estimated to cause 9 premature adult (30+ years) deaths and cost $32.7m each year.
4. Tauranga has potential

This section outlines some of the key reasons why Tauranga has potential to get significantly more people riding bikes.

- Research from Tauranga shows that more people would ride bikes if they felt safer.
  
  17% of respondents to our survey said they would start riding a bike and 64% said they would ride their bikes more if the right improvements were made.

- Tauranga is reasonably flat with 67% of roads having an average slope of less than 3%. In nearly all areas it is possible to create connected safe cycle routes that don’t involve too many steep hills.

- Tauranga’s climate is not a major barrier to people riding bikes for transport. We have a great climate with more sunshine hours than any other major NZ city and also more than Northern European cities with very high numbers of people using bikes for transport.

- Around a third of residents in Tauranga ride a bike for either transport or leisure purposes. This shows there is strong potential to increase the number of people riding bikes for transport above the 1% to 3.2% that currently ride to work.

- In Tauranga 9.7% of young people ride to school at the schools we have cycle counts for.

- 72%-80% of young people who responded to our survey are willing to cycle 5km (15 minutes) to school and 40%-43% are willing to cycle 10km (30 minutes).

  In Tauranga typically enrolment zones do not stretch more than 5km from primary schools and intermediate schools zones are usually around 7.5km-10km at their widest point. Where zones stretch further they usually encompass rural/rural-residential areas. College zones can be larger, but the vast majority of the urban areas covered are within 10km of the school.

- 93%-96% of people who responded to our survey are willing to cycle 5km (15 minutes) to work and 64%-73% are willing to cycle 10km (30 minutes). These distances are likely to increase as electric bike use increases.

  85% of Tauranga’s population is within 5km of a key employment area, and 98% are within 10km. 78% of the population are within 10km of the city centre (our largest employment areas) and 70% are within 10km of employment areas around Hewletts Road and Totara St (our second biggest employment area).

- There are significantly less reported crashes resulting in serious injury or death on Tauranga’s off-road cycleways.
5. How are we going to get more people on their bikes?

Who are we targeting?

- We want everyday people to ride bikes for transport, particularly to work, school and tertiary education. This approach will help reduce congestion during peak traffic times as well as getting people active and reducing vehicle emissions. It is likely that many of the improvements implemented will also benefit people who ride their bike for recreation or to access other activities, such as shopping, cafes and parks.

Getting more young people riding bikes to school will also help create habits that they carry into their adult lives.

- Research reveals that many people are interested in riding a bike, but are concerned about safety. TCC is targeting this group of people and will provide cycle facilities that will encourage those ‘interested but concerned’ to start riding a bike.

- We understand that not everyone can ride a bike for transport every day. But even if we can get a significant amount of people riding bikes for transport once or twice a week then this would create great benefits for Tauranga.

- Below are some examples of the type of person we are focussing on:

<table>
<thead>
<tr>
<th>Rebecca, 26 years old</th>
<th>Melissa, 45 years old</th>
<th>Daniel &amp; Annaliese, 72 years old</th>
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<tbody>
<tr>
<td>Works in an office. Rides to work because it keeps her fit and she doesn’t have to pay for petrol and parking.</td>
<td>Works in a factory. Likes riding to work because she hates sitting in traffic. She also likes the feeling of freedom she gets from riding a bike.</td>
<td>Use the safe cycleways in their area to ride to their local café twice a week where they have morning tea with a group of friends. Riding a bike keeps them active.</td>
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<tr>
<th>Jasper, 6 years old</th>
<th>James, 10 years old</th>
<th>Summer, 16 years old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likes to ride to school with Mum. Thinks he is way faster at riding than Mum...well than pretty much anyone. Once Mum drops him at school, she heads to work.</td>
<td>Rides halfway to school with Dad before Dad heads to work. Once he ditches Dad he meets up with his mates to ride the rest of the way.</td>
<td>Rides to school so she doesn’t have to be dropped off by her parents. When riding her bike she wears stylish shorts that cost heaps. There are mirrors at school so she can fix her helmet hair.</td>
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</tbody>
</table>
What principles will guide our initiatives to get more people on bikes?

We will:
- Provide high quality attractive cycleways that feel safe for less confident people.
- Follow universal design principles e.g. accessible by people with disabilities.
- Provide continuous and direct cycle routes.
- Make riding a bike quick and convenient.
- Prioritise routes and areas with greatest potential benefits and create a network of connected cycleways within each area and to key destinations outside of the area. The focus will be on upgrading the priority cycleways¹ that connect people to work and education opportunities.
- Generally start cycleway improvements at the destination and then implement improvements outwards towards residential areas.
- Work with the community when designing improvements for people on bikes.

Priority interventions

Making Tauranga safer and easier for people on bikes requires the implementation of a range of initiatives to be successful. Below is a list of the types of the interventions we will be implementing.

Interventions of highest priority

- Improve our priority cycleways:
  - On busy roads we will be providing cycleways that are physically separated from traffic and pedestrians.
  - On quieter roads and around schools we will typically be providing shared walking and cycling paths or making sure it is safe for people on bikes and cars to share the road. This is likely to include improvements such as traffic calming, speed limit reductions and plantings to slow vehicles and create more attractive streets.

¹ See Section 11 for a map of our priority cycleways
• Where direct routes exist we will provide cycleways that avoid roads (such as through parks).

• Expand our schools and business travel behaviour programmes.
• More cycle parking at key locations such as bus hubs, work, schools, parks and the beach.
• Work with businesses and schools to provide secure cycle parking, lockers and showers.
• Bay of Plenty Regional Council has committed to provide bike racks on buses.
• Implement high quality and consistent way finding/signage for our priority cycleways.
• Provide cycle training for adults and young people, and across all abilities.
• Consider the needs of people on bikes as part of all roading, reserve and parks upgrade and maintenance projects.
• Work with the New Zealand Transport Agency to ensure State Highway projects provide for the needs of people on bikes.
• Progress changes to the City Plan to require better provision for people on bikes as part of developments, such as cycle parking and end of trip facilities.
• Actively influence legislation, strategies and new developments to achieve better outcomes for people on bikes.

Other priority interventions
• Promotional and education activities for people on bikes and motorists.
• Events that get people riding bikes or promotes riding bikes.
• Improved sweeping and maintenance of cycleways.
• Electric bike charging stations.
• Bike maintenance stations.
• Investigate new technology (such as mobile phone apps).
• Investigate a public bike share scheme.
• Help remove barriers to bike ownership.
• Supporting community cycle groups.
Where will we focus improvements?

Priority cycleways

After taking on board public feedback (see Section 12) TCC has develop a network of priority cycleways (see Section 11), these routes are our priority routes for improvements. As we investigate improvements we will work with local communities to confirm preferred routes and to understand the types of improvements they want.

We do not have enough resources to improve all our priority cycleways at once, so we need to prioritise the corridors and areas with the greatest potential to get more people on bikes and improve them first. Within priority areas, the cycleways that connect people to work and education opportunities will be implemented first.

Priority locations

Our priority is to get more people riding bikes to work, school and tertiary education. To achieve this we are focusing investment on priority cycleways that connect people to work and education opportunities.

We are implementing our priority cycleways on an area by area basis. Investment areas have been identified taking into consideration school zones and clusters and the main transport routes communities are likely to use to travel to work. Areas have then been prioritised for investment based on their potential to get more people riding bikes (see prioritisation criteria on the pages that follow).

Generally we will focus on implementing two to three investment areas at a time. In each investment area we intend to continuously upgrade priority cycleways that connect to work and education activities until a comprehensive network is completed. We have settled on an area based implementation approach for the following reasons:

- Within a much shorter period of time, within priority investment areas, we can provide a comprehensive connected network of safe attractive cycleways that the community can use to get to work, school, tertiary education and other activities. If we were to spread funds across multiple investment areas, based on current funding levels, it could be up to 22 years before we deliver a comprehensive connected network of cycleways in any one investment area. This is too long to wait to realise the potential of investment made in the short term.

- We can work with the communities in each investment area so they can really get involved as we finalise the location of the priority cycleways and design and implement them. It’s much more engaging for the community to be involved in comprehensive area wide improvements that happen within a relatively quick timeframe, than one or two cycleways every 3 years.

- Once the priority cycleways are implemented within an investment area, we can target other activities in the area to get more people riding bikes e.g. cycle parking, cycle training, promotional activities and educational activities for people on bikes and other road users.

- We can then assess how successful our investment in each area has been within a relatively short timeframe.

The pages immediately following provide a map of our investment areas and show how we have prioritised each area for investment.
Please note:

- While a large portion of funding will go towards implementing improvements area by area, there are still many ‘standalone’ projects that are being implemented that will benefit people on bikes. These projects will often be implemented before the investment area within which they are located is due for comprehensive area wide improvements (see Section 6).

- In growth areas we will work with developers as part of the structure planning process to ensure that attractive safe cycleways are provided that connect to our priority cycleways as well as to work, education, shopping, social and leisure opportunities in the development area.
Map of investment areas to improve for people on bikes
Criteria to prioritise investment areas

Below is an explanation of the criteria used to prioritise investment areas, the actual scoring for each area is outlined on the next page and a worked example showing how Papamoa and Mount/Omanu/Arataki investment areas were scored can be found in Section 28. For evidence used to inform each category please refer to Part B (Evidence).

<table>
<thead>
<tr>
<th>Public Feedback</th>
<th>Heat Maps</th>
<th>Social Inclusion</th>
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<tbody>
<tr>
<td>Investment areas that include routes the public told us should be priority cycleways have been scored higher in this category.</td>
<td>We mapped out appealing cycling distances from schools, employment areas, shopping centres, recreational routes and tourist destinations. Then produced three heat maps (All Locations, Employment, and Schools) which show locations with good potential for investment in cycling (hotspots). Hotspots appear where there are overlaps in cycling catchments from each destination. Investment areas with hotspots were scored higher in this category.</td>
<td>Improved transport connectivity can help improve access to jobs, education, leisure and social activities for people with less money and reduced work and education opportunities. Investment areas containing more deprived communities (according to the New Zealand Index of Deprivation 2013) were scored higher in this category.</td>
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<th>Terrain/Slope</th>
<th>Gaps in existing and committed cycleways</th>
<th>Safety</th>
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<tr>
<td>We looked at the terrain of each area to make sure we could create connected safe cycle routes that don’t involve too many steep hills. Investment areas with flat terrain were scored higher in this category.</td>
<td>Before we developed the Cycle Plan we already had some existing cycleways and projects that were committed for construction. To maximise the value of existing investment we need to connect these routes together and to key destinations. Investment areas with existing or planned cycleways were scored higher in this category.</td>
<td>Research shows there is a fairly even spread across Tauranga of crashes involving people on bikes, but with some notable hotspots. Investment areas with more crashes (particularly deaths and serious injuries) were scored higher in this category.</td>
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<th>Congested routes</th>
<th>Potential trips to work by bike</th>
<th>Bus services</th>
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<tr>
<td>We looked at where traffic congestion will be occurring by 2031. Investment areas that require travel along congested routes to get to key employment areas were scored higher in this category. Congestion levels were assessed based on traffic delays that were modelled on a ‘do least’ scenario (Programme 2 of the Tauranga Transport Programme). This is because the Cycle Plan implementation will help achieve the comparatively improved travel times predicted by other transport programmes.</td>
<td>We looked at where people are travelling from to access our 6 biggest employment locations (by trip generation). We discounted trips greater than 10km, then mapped all remaining trips to reveal potential cycle trips to work on each transport corridor. Investment areas that include transport corridors with a large number of trips to work were scored higher in this category.</td>
<td>To try and help provide better transport choices across Tauranga, investment areas not well served by public transport were scored higher in this category. We assessed this category using the new public transport network to be implemented in late 2018.</td>
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<th>School roll numbers 2017</th>
<th>School cycle numbers 2017</th>
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<td>The more school students there are in a particular area, the more potential students there are to ride to school. Investment areas with high total roll numbers (combined for all schools in the area) were scored higher in this category.</td>
<td>Investment areas with greater numbers of students already riding to school were scored higher in this category. Because we do not have cycle counts for all schools, no schools have been scored negatively in this category.</td>
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## Investment area prioritisation matrix

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<th>Area/Corridors</th>
<th>Public feedback</th>
<th>Heat map: Employment</th>
<th>Heat map: Schools</th>
<th>Heat map: All layers</th>
<th>Social inclusion</th>
<th>Terrain</th>
<th>Gaps in existing and committed cycleways</th>
<th>Safety</th>
<th>Congested routes</th>
<th>Potential trips to work by bike</th>
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<th>School roll numbers 2017</th>
<th>School cycle numbers 2017</th>
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<td>Welcome Bay/Ohauiti/Maungatapu</td>
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<td>Welcome Bay East</td>
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</table>

*++* (very inconsistent with assessment criteria) = -2pts  *+* (inconsistent with assessment criteria) = -1pt  *0* (neither consistent or inconsistent with assessment criteria) = 0pts  *+* (consistent with assessment criteria = +1pt  **+** (very consistent with assessment criteria) = 2pts
6. Implementation Plan

The map below shows:

- Implementation areas.
- Implementation timeframes for each investment area (area wide improvements). These timeframes refer to the implementation of all priority routes within each investment area that connect people to work and education opportunities. Implementation timeframes for ‘area wide improvements’ are based on budgets in the 2018 Long Term Plan, and a funding subsidy rate of 67% from the New Zealand Transport Agency.
- Projects already planned. Implementation timeframes for ‘projects already planned’ are mainly based on projects identified in the 2018 Long Term Plan.
7. How will we fund the Cycle Plan?

Projects identified through the Cycle Plan will be funded through TCC’s Long Term Plan (LTP). The LTP is TCC’s activity plan and budget for the next decade. It outlines which projects will be funded over the next 10 years and provides a detailed budget for the first three years. Every three years TCC revises the LTP and seeks public feedback on its proposals.

The funding allocated in the LTP to making Tauranga safer and easier for people on bikes is likely to be match funded by the New Zealand Transport Agency. TCC will also be working closely with other organisations and charitable trusts to try and secure funding for cycling projects that will also help those organisations achieve their goals.

8. How will we know if the Cycle Plan is working?

- **The percentage of people travelling by bike to work and school is increasing.** Trips to work will be monitored using Census, Household Travel Survey and TCC Annual Residents Survey data. Trips to school will be monitored using Census data and TCC cycle counts.

<table>
<thead>
<tr>
<th>Destination</th>
<th>Source</th>
<th>Targets: Percentage of trips by bike</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work</td>
<td>Census</td>
<td>1-3%</td>
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<tr>
<td></td>
<td>HTS &amp; ARS</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>Census</td>
<td>9.7%</td>
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<tr>
<td></td>
<td>TCC Counts</td>
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</tbody>
</table>

- **The number of people using our priority cycleways increases.** We will monitor the number of people on bikes before and after we make improvements to our priority cycleways.

- **More people are riding bikes generally.** This will be monitored using the results of TCC’s Annual Residents’ Perceptions Survey.

- **It will be safer and easier for people on bikes to access work and education opportunities.** Every three years there will be more safe cycleways to destinations such as the city centre.

- **It should be safe and easy to ride bikes to key destinations within new developments.** Cycleways within new developments should also connect to Tauranga’s network of priority cycleways.

- **Perceptions of the safety and attractiveness of cycling are improving.** This will be monitored using the results of TCC’s ongoing Residents’ Perceptions Survey.

- **Communities feel that the implementation of improvements for people on bikes in their area has improved their communities** e.g. more connected communities, more attractive and inviting streets. We will monitor this using community surveys.

- **Fewer deaths and serious injuries involving people riding bikes.**

- **A reduced rate of injuries per person who rides a bike.**

TCC will report on the indicators above as information is gathered and will share results on our cycle page (www.Tauranga.govt.nz/cycling).
9. Next steps

Outlined below are the key ways we are taking the Cycle Plan forward. We will update our cycle page regularly (www.Tauranga.govt.nz/cycling) so you can keep track of the improvements we are making, big and small.

Investment areas

As we focus on each investment area, we will carry out detailed investigations and community engagement to determine:

- The best route(s) for the cycleways to follow (starting from the cycle network outlined in this Cycle Plan). We will consider issues such as safety, directness, terrain, visual attractiveness, connecting key attractions and links to other priority cycle routes.
- The cycleway designs (we will work closely with students and parents to ensure cycleways feel safe and are safe for people of all ages).
- End of trips facilities, such as cycle parking and working with businesses and schools to provide lockers, showers and secure cycle parking etc.
- Physical, social and cultural barriers to young people riding bikes to school.
- Supporting activities in communities with easy access to improved cycleways, such as:
  - Improved wayfinding and signage.
  - Promotion campaigns to encourage people to use the cycleways and ride a bike.
  - Education campaigns for properties abutting cycleways, motorists and people on bikes.
  - Ongoing development and implementation of Travel Safe School Action Plans.
  - Cycle training.

Problem locations identified through public feedback

Problem and unsafe locations identified through public feedback will be actioned as follows:

- As part of improvements to priority investment areas.
- An ongoing general programme to fix ‘quick win’ problems throughout Tauranga.
- All TCC parks, roading and maintenance projects will review identified problem locations during the project planning phase to ensure the project resolves problems within the project area.

Other projects

All our major roading and parks projects will look to incorporate improvements for people on bikes. Of particular focus will be roading and parks projects on our priority cycleways.
Evidence
Conclusions (Current cycle network)

- Parts of Tauranga are not served by any cycleways.
- Tauranga’s cycleways are not well connected to each other and the standard of cycleway varies.
- Connections between cycleways (shared walking and cycling paths) that are physically separated from traffic are very infrequent.
- There are no cycleways that are physically separated from traffic and pedestrians.
- Cycleways are limited to only one or two routes in almost all areas.
- Many off-road cycleways are not of a standard required to encourage people to ride to work and school (i.e. not suitable for commuter or road bikes).
11. Priority cycleways for improvement

The map below shows our proposed priority cycleways for improvement. They have been identified using public feedback and community knowledge and aim to connect people to work, education, leisure, shopping, and social opportunities. Cycleways that connect to work and education opportunities are priorities for implementation through the Cycle Plan. Please note: we will carry out further investigations and engage with the local community before priority cycleway routes are finalised for construction (see Section 9).
12. Public feedback

From September-November 2017 TCC carried out two major public surveys to gather feedback on transport in Tauranga. One survey covered transport in general (Tauranga Transport Programme) and the other was focused on gathering information for the preparation of this Cycle Plan.

The Tauranga Transport Programme survey received 2361 responses, while 1570 surveys were completed for the Cycle Plan and over 2800 pins were placed on our feedback map. The pins were used to identify problem locations, routes that should be added or removed from Tauranga’s proposed network of priority cycleways and to suggest routes that should be priorities for cycle improvements.

The surveys revealed some useful information about people’s perceptions of cycling as a transport mode, their cycling habits, what draws people to cycling, what puts them off cycling and what we can do to get more people riding bikes more often. Respondents identified lots of locations throughout Tauranga that require improvements and also helped us confirm our network of priority cycleways.

The key findings are shown below, with brief commentaries.

Cycling habits

The results showed us that:
- around 70% (1026) of submitters own a bike
- only 31% (448) cycle for transport
- only 44% (629) are confident riding on roads
This shows us that there is a low translation rate from owning a bike, to using that bike to ride for transport. The fact that only 44% of respondents are confident riding on roads indicate that fear of riding on roads could be a factor deterring people from riding their bike for transport.

**Is Tauranga safe and easy for adults to ride bikes?**

This shows us that a large amount (59%) of adults (over 16 years old) do not think it is safe and easy for adults to ride bikes in Tauranga. While this is based on perceptions, the crash statistics (see Section 22) confirm these concerns as people on bikes are over represented in crashes involving injuries.

**Is Tauranga safe and easy for young people (kids) to ride bikes?**

This shows that a large amount (46%) of young people (16 or under) do not think that Tauranga is safe and easy for them to ride bikes. Also telling is that 80% of adults (over 16 years) do not think that Tauranga is safe and easy for young people to ride bikes.

This is of particular relevance as parents need to give permission for their children to ride to school, and therefore improvements to cycleways to school need to ensure that young people feel safe using them and that parents feel they are safe for their children to use – the latter could be the
biggest challenge. To overcome parents concerns it is imperative that they are involved in the development of improvements to cycleways to schools.

**TCC needs to give more priority to improving Tauranga for people on bikes?**

![Pie chart showing responses to TCC needs]

An overwhelming majority of submitters (90%) think that more priority needs to be given to improving Tauranga for people on bikes. This was also supported by feedback on the Tauranga Transport Plan which showed a very strong desire for TCC to invest more in walking, cycling and public transport infrastructure/services – the need for improvements for people on bikes was one of the most mentioned themes.

It’s also worth noting that 85% of respondents to the Tauranga Transport Plan said they regularly travel to work by car, which is consistent with mode share statistics for Tauranga. This shows that even when considering just those people who currently do not ride bikes to work or school, there is strong support for improving cycle facilities throughout Tauranga. Walking, cycling and public transport was also the area where there was the biggest disparity between the importance respondents placed on the topic and the performance of TCC e.g. it is important but TCC are performing poorly. Respondents expressed a strong desire for improvements to happen quickly in this area.

![Bar chart showing importance vs performance disparity]

*Please note: PT = Public Transport*
It is important that young people have the opportunity to cycle to school safely

An overwhelming majority of submitters (97%) think that it is important that young people have the opportunity to cycle to school safely. This gives us a strong insight into the role that people want Tauranga’s transport system to play with regards to how young people get around.

Tauranga needs cycle paths that are physically separated from traffic (e.g. raised barrier island)

An overwhelming majority of submitters (91%) think that Tauranga needs cycle paths that are physically separated from traffic. This provides a clear direction on what type of improvements TCC should be providing to encourage more people to ride bikes more often and to satisfy the needs of people already riding bikes. This approach to cycle improvements is also supported by experience from Christchurch (www.cyclingchristchurch.co.nz/2017/12/10/are-major-cycleways-working-first-surveys/) and Auckland (www.greaterauckland.org.nz/2017/06/21/cycling-numbers-auckland/).
What do you like about riding a bike?

<table>
<thead>
<tr>
<th>16yrs or under</th>
<th>Mentioned</th>
<th>Older than 16yrs</th>
<th>Mentioned</th>
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</thead>
<tbody>
<tr>
<td>Health/exercise</td>
<td>218</td>
<td>Health/exercise</td>
<td>414</td>
</tr>
<tr>
<td>Fun/recreation</td>
<td>202</td>
<td>Explore/outdoors</td>
<td>196</td>
</tr>
<tr>
<td>Faster/no traffic</td>
<td>132</td>
<td>Save environment</td>
<td>110</td>
</tr>
<tr>
<td>Explore/outdoors</td>
<td>73</td>
<td>Faster/no traffic</td>
<td>103</td>
</tr>
<tr>
<td>Save environment</td>
<td>49</td>
<td>Save Money</td>
<td>103</td>
</tr>
<tr>
<td>Easy to get around</td>
<td>48</td>
<td>Fun/recreation</td>
<td>97</td>
</tr>
<tr>
<td>Freedom</td>
<td>41</td>
<td>Freedom</td>
<td>68</td>
</tr>
<tr>
<td>Social/bonding</td>
<td>38</td>
<td>Social/bonding</td>
<td>65</td>
</tr>
</tbody>
</table>

What puts you off riding a bike?

<table>
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<tr>
<th>16yrs or under</th>
<th>Mentioned</th>
<th>Older than 16yrs</th>
<th>Mentioned</th>
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<tbody>
<tr>
<td>Traffic speed/busy</td>
<td>181</td>
<td>Traffic speed/busy</td>
<td>171</td>
</tr>
<tr>
<td>Unsafe</td>
<td>146</td>
<td>Unsafe</td>
<td>144</td>
</tr>
<tr>
<td>Nothing</td>
<td>56</td>
<td>Dangerous/abusive motorists</td>
<td>92</td>
</tr>
<tr>
<td>To close to vehicles</td>
<td>55</td>
<td>To close to vehicles</td>
<td>83</td>
</tr>
<tr>
<td>Travel time/distance</td>
<td>53</td>
<td>Need separated cycleways</td>
<td>78</td>
</tr>
<tr>
<td>Dangerous/abusive motorists</td>
<td>47</td>
<td>Unsafe/undesirable route</td>
<td>74</td>
</tr>
<tr>
<td>Unsafe/undesirable route</td>
<td>40</td>
<td>Crossing roads/intersections</td>
<td>70</td>
</tr>
<tr>
<td>Weather</td>
<td>35</td>
<td>Weather</td>
<td>64</td>
</tr>
</tbody>
</table>

For both adults and young people the things that most put them off riding a bike relate to safety and mixing with general traffic. This is also supports the need for TCC to provide physically separated cycle facilities.

How can we get more people riding bikes?

<table>
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<tr>
<th>16yrs or under</th>
<th>Mentioned</th>
<th>Older than 16yrs</th>
<th>Mentioned</th>
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</thead>
<tbody>
<tr>
<td>Safer cycle routes</td>
<td>276</td>
<td>Safer cycle routes</td>
<td>319</td>
</tr>
<tr>
<td>Incentivise/promotion/events</td>
<td>75</td>
<td>Separation from traffic/parked</td>
<td>152</td>
</tr>
<tr>
<td>Separation from traffic/parked</td>
<td>53</td>
<td>Bike parking/storage/changing rooms</td>
<td>101</td>
</tr>
<tr>
<td>More direct routes</td>
<td>22</td>
<td>Incentivise/promotion/events</td>
<td>94</td>
</tr>
<tr>
<td>Motorist behaviour change</td>
<td>21</td>
<td>Motorist behaviour change</td>
<td>55</td>
</tr>
</tbody>
</table>

Safer cycle routes and more specifically separation from traffic is the most common ways that people feel we can get more people riding bikes. Promotion, events and the provision of bike parking and changing rooms were other popular themes.
If the things that put you off cycling were addressed then:

- 17% (233) of respondents said they would start riding a bike and 64% said they would ride their bikes more if the right improvements were made. This is encouraging and shows that there is likely to be significant suppressed demand for riding bikes for transport.

### Maximum time prepared to ride to work or school

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<table>
<thead>
<tr>
<th>Time</th>
<th>Number of submitters</th>
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<tbody>
<tr>
<td>0min</td>
<td>1-5min</td>
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<tr>
<td>6-10min</td>
<td>11-15min</td>
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<tr>
<td>16-20min</td>
<td>21-25min</td>
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<tr>
<td>26-30min</td>
<td>31-35min</td>
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<tr>
<td>36-40min</td>
<td>41-45min</td>
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<tr>
<td>46-50min</td>
<td>51-55min</td>
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<tr>
<td>56-60min</td>
<td>Over 1hr</td>
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- **16 or Under**
- **Over 16**

These data points indicate the maximum time prepared to ride to work or school by respondents grouped by age.
Public feedback shows that 72%-80% of young people are willing to cycle 5km (15 minutes) to school and that 40%-43% of young people are willing to cycle 10km (30 minutes).

In Tauranga typically enrolment zones do not stretch more than 5km from primary schools and intermediate schools zones are usually around 7.5km-10km at the furthest point from the school. Where zones stretch further they usually encompass rural/rural-residential areas. College zones can be larger, but the vast majority of the urban areas covered are within 10km of the school.

Public feedback shows that 93%-96% of people are willing to cycle 5km (15 minutes) to work and that 64%-73% of people are willing to cycle 10km (30 minutes). These distances are likely to increase as electric bike use increases.

85% of Tauranga’s population are within 5km of an employment area, and 98% are within 10km. 78% of the population are within 10km of the city centre (our largest employment areas) and 70% are within 10km of employment areas around Hewletts Road and Totara St (our second biggest employment area).

The above shows that based on the distance people are willing to cycle, there is great potential to get more people riding bikes to work and school.

**Should we focus investment on getting more people riding to work and school?**

97% of respondents agreed that the focus for cycling improvements should be on getting more people riding to work and school. Only 3% of respondents disagreed with this approach.
**Feedback on our priority cycleways**

Respondents were asked to tell us which routes they thought should be added or removed from our network of priority cycleways. They were also asked to tell us which routes should be priorities for improvements. The feedback received is shown in the three maps on the following pages, our final map of priority routes is shown in Section 11.

**Conclusions (Public feedback)**

Public feedback has provided a useful insight in to what puts people off riding a bike, what we need to do to get more people riding bikes more often and also showed us there is good potential to get more people riding bikes if we make the right improvements.

The key message is that we need to make riding a bike safer if we want to get more people riding to work and education opportunities. To make people feel safe we need to physically separate people on bikes from traffic on busy roads and ensure people can make entire journeys on cycleways that feel safe.
Tauranga City Council
Proposed Cycle Network

Public Feedback
Priority Routes

Legend
Route Frequency Count
1 - 5
5 - 10
10 - 20
20 - 50
50 - 100
> 100
13. Sunshine and rain

Conclusions (Sunshine and rain)

Tauranga has a great climate with more sunshine hours than any other major NZ city and more than Copenhagen, a cycling epicentre. Tauranga does have a greater amount of rain per year than many cities around the world, but this is likely due to the intensity of rain events rather than there being significantly more rainy days.

As such Tauranga’s climate is not a major barrier to people riding bikes for transport. The amount of rain in Tauranga may put some people off riding a bike some days, but there are still plenty of sunshine hours for the ‘fair weather cyclist’.
14. Tauranga Terrain: is it flat enough for people on bikes?
There does not appear to be any official recommended standard in New Zealand for how steep cycleways should be, although flatter routes are obviously easier to ride along. The Cycling England – Design Portfolio recommends a maximum gradient of 3% where possible, while allowing for up to 100m of 5% gradient where necessary (www.webarchive.nationalarchives.gov.uk/20110407101524/http://www.dft.gov.uk/cyclingengland/engineering-planning/design-checklist/).

Conclusions (Tauranga’s terrain)

In Tauranga the proportion of road segments with an average slope less than 3% is 67%. In nearly all areas it is possible to create connected safe cycle routes that don’t involve too many steep hills. The least favourable area is Welcome Bay (excluding Welcome Bay Road) which has lots of continuous steep hills.
15. How many people are riding bikes in Tauranga?

Journeys to work

Tauranga has a low number of journeys to work by bike at only 1% (Tauranga City Council Annual Residents Survey) to 3.2% (Census 2013). When using Census data 3.2% is around the median amount of journeys to work by bike across all of New Zealand’s cities.

<table>
<thead>
<tr>
<th>City</th>
<th>% of journeys to work by bike – Census 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auckland</td>
<td>1.2%</td>
</tr>
<tr>
<td>Tauranga</td>
<td>3.2%</td>
</tr>
<tr>
<td>Hamilton</td>
<td>3.8%</td>
</tr>
<tr>
<td>Wellington</td>
<td>4.3%</td>
</tr>
<tr>
<td>Christchurch</td>
<td>7.0%</td>
</tr>
<tr>
<td>Dunedin</td>
<td>2.8%</td>
</tr>
</tbody>
</table>

However the Tauranga City Council Annual Residents Survey June 2017 reveals that 34% of residents in Tauranga ride a bike for either transport or leisure purposes (this has increased from 25% in 2015). This shows there is possibly a large amount of suppressed demand and strong potential to increase the number of people riding bikes above the 1-3% that currently ride to work.

Journeys to school

We do not currently have any reliable data on the total percentage of all trips to school made by bike in Tauranga, but the percentage of children riding to school at the schools we do have cycle counts for is around 9.7%.

Cycle counts are mainly available from schools with Travel Safe School Action Plans, so it’s possible the percentage of trips by bike to all schools is a bit less than this. Either way despite not having a network of safe attractive cycleways connecting to schools, Tauranga has significantly more young people riding to school than other parts of New Zealand which have around 1% (Sports New Zealand, 2013/14 Sport NZ Active New Zealand Survey).

This shows the importance of continuing and further developing our Travel Safe School Action Plans and also hints that with the right improvements to cycleways that connect to schools, we could see an even more significant proportion of trips to school being made by bike.

Conclusions (current cycling numbers)

- There is possibly a large amount of suppressed demand and therefore strong potential to increase the number of people riding bikes to work.

- Tauranga has significantly more young people riding to school than other parts of New Zealand. With the right improvements to cycleways that connect to schools, we could see an even more significant proportion of trips to school being made by bike.
16. Travel time delays by motor vehicles in 2031

As part of the Tauranga Transport Programme evidence base travel time delays on the road network were modelled using different investment programmes and various assumed mode shares for walking, cycling, public transport and cars in 2031.

Effectively the results of the modelling showed that by 2031 to make the two short-listed investment programmes work (Programmes 8 and 9) we need to achieve a combined mode share for walking and cycling during peak travel times of around 14%. This is a significant increase from the current combined mode share of 5%-7%.

On the following pages are maps showing the outcomes for 2031 for the three potential investment programmes.

The reason it is so important to get more people walking and riding bikes to maintain reliable travel times for motor vehicles, is because pedestrians and people on bikes require less space. There is significant variation in estimates of how many bikes can be transported per hour on a cycleway. One research paper that drew on various other studies estimated that a 1.2m wide cycle lane can transport 2,000 to 3,500 bikes per hour (Zhou, Xu, Wang, & Jin). If this figure is doubled then we can conclude that a two-way cycleway could transport 4,000 to 7,000 bikes per hour. This is 2 to 3.5 times more vehicles per hour than the 2,000 private motor vehicles an hour that it is commonly estimated a single traffic lane can transport.

Conclusions (travel time delays by motor vehicle)

To achieve acceptable travel times across Tauranga’s transport network in 2031 we need to significantly increase the percentage of journeys to work being made by bike. Of particular importance is increasing the percentage of journeys by bike along transport corridors with the greatest potential for travel time delays (congestion).
Programme 2 – 2031
Planned Investments
Worst level of service for the day by direction of travel
Programme 8 – 2031
Public Transport and Active Modes
Worst level of service for the day by direction of travel
Programme 9 – 2031
Road Capacity for Cars
Worst level of service for the day by direction of travel
17. How many people are within riding distance of key employment locations?

By location: population within 5km and 10km of key employment locations

<table>
<thead>
<tr>
<th>Employment Location</th>
<th>Residential Properties within 5km</th>
<th>Total population* within 5km</th>
<th>Percentage population within 5km</th>
<th>Residential Properties within 10km</th>
<th>Total population* within 10km</th>
<th>Percentage population within 10km</th>
</tr>
</thead>
<tbody>
<tr>
<td>City Centre (CBD)</td>
<td>14670</td>
<td>35208</td>
<td>28</td>
<td>40860</td>
<td>98064</td>
<td>78</td>
</tr>
<tr>
<td>Eleventh Avenue</td>
<td>18601</td>
<td>44642</td>
<td>35</td>
<td>40149</td>
<td>96358</td>
<td>77</td>
</tr>
<tr>
<td>Mount Maunganui (Shopping Centre)</td>
<td>6072</td>
<td>14573</td>
<td>12</td>
<td>23540</td>
<td>56496</td>
<td>45</td>
</tr>
<tr>
<td>Mount Maunganui (Area enclosed by Hewlett’s Rd, Totara St and Maunganui Rd)</td>
<td>12285</td>
<td>29484</td>
<td>23</td>
<td>36764</td>
<td>88234</td>
<td>70</td>
</tr>
<tr>
<td>Oropi (Maleme St)</td>
<td>13892</td>
<td>33341</td>
<td>26</td>
<td>30151</td>
<td>72362</td>
<td>57</td>
</tr>
<tr>
<td>Tauriko (Whakakake St)</td>
<td>7467</td>
<td>17921</td>
<td>14</td>
<td>27127</td>
<td>65105</td>
<td>52</td>
</tr>
<tr>
<td>Te Maunga</td>
<td>7775</td>
<td>18660</td>
<td>15</td>
<td>21632</td>
<td>51917</td>
<td>41</td>
</tr>
<tr>
<td>Judea</td>
<td>19513</td>
<td>46831</td>
<td>37</td>
<td>37434</td>
<td>89842</td>
<td>71</td>
</tr>
<tr>
<td>Greerton</td>
<td>12919</td>
<td>31006</td>
<td>25</td>
<td>31155</td>
<td>74772</td>
<td>59</td>
</tr>
<tr>
<td>Gate Pa</td>
<td>14115</td>
<td>33876</td>
<td>27</td>
<td>32566</td>
<td>78158</td>
<td>62</td>
</tr>
<tr>
<td>Fraser Cove</td>
<td>14701</td>
<td>35282</td>
<td>28</td>
<td>32817</td>
<td>78761</td>
<td>63</td>
</tr>
<tr>
<td>Bayfair</td>
<td>10868</td>
<td>26083</td>
<td>21</td>
<td>26518</td>
<td>63643</td>
<td>51</td>
</tr>
<tr>
<td>Palm Beach</td>
<td>8567</td>
<td>20561</td>
<td>16</td>
<td>16851</td>
<td>40442</td>
<td>32</td>
</tr>
</tbody>
</table>

* Total population has been calculated using total households times 2.4 people (2.4 is the average number people per household in Tauranga)
Summary: population within 5km and 10km of key employment locations

<table>
<thead>
<tr>
<th></th>
<th>Total Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Residential Properties in Tauranga</td>
<td>52475</td>
<td>N/A</td>
</tr>
<tr>
<td>Total Population in Tauranga</td>
<td>125940</td>
<td>N/A</td>
</tr>
<tr>
<td>(Residential properties times 2.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Residential Properties within 5km of all key employment centres</td>
<td>44721</td>
<td>85</td>
</tr>
<tr>
<td>Total Population within 5km of all key employment centres</td>
<td>107330</td>
<td>85</td>
</tr>
<tr>
<td>Total Residential Properties within 10km of all key employment centres</td>
<td>51301</td>
<td>98</td>
</tr>
<tr>
<td>Total Population within 10km of all key employment centres</td>
<td>123122</td>
<td>98</td>
</tr>
</tbody>
</table>

Conclusions (riding distance to employment)

85% of Tauranga’s population is within 5km of a key employment area, and 98% are within 10km. 78% of the population are within 10km of the city centre (our largest employment areas) and 70% are within 10km of employment areas around Hewletts Road and Totara St (our second biggest employment area).

93%-96% of people who responded to our survey are willing to cycle 5km (15 minutes) to work and 64%-73% are willing to cycle 10km (30 minutes). These distances are likely to increase as electric bike use increases.

This shows us that distance is not a barrier to getting more people riding bikes to work in Tauranga.
18. Tauranga’s busiest routes for travel to work

Using data from the Census 2013 we worked out the transport routes people are taking to access our six biggest employment destinations (by trip generation). We mapped trips by all transport modes that were 10km or less and took them via the route they would most likely take if they were to ride a bike e.g. trips from Papamoa to the city centre were directed via Matapihi. The map on the next page shows the results, the arrows show two-way trips but the numbers in the ‘legend’ are based on one-way travel to work in the morning.

The difference in the number of trips per transport route has been used as a criteria to help prioritise our investment areas i.e. investment areas with routes that had a large amount of trips were scored higher (because the area has more work trips that could be completed by bike).

The Census 2013 data also showed that 68% of trips to our six biggest employment destinations are 10km or less (30mins bike ride).

Conclusions (busiest routes for trips to work)

The Census information on journeys to work (10km or less) has help us identify those transport routes of greatest demand and therefore provide an indication of the potential of an investment area to get more people riding bikes to work (based on this criteria alone, as other criteria can also affect the potential uptake in an investment area).

The information also reveals that a large number of trips (68%) to our six biggest employment destinations are within 10km, which 64%-73% of survey respondents said is a distance they were willing to ride to work. Therefore when considering distance of travel, there is strong potential to significantly increase the number of trips to work made by bike.
Work trips to Tauranga’s six biggest employment destinations (only trips less than 10km)
19. Heat maps – potential hotspots for people riding bikes

We mapped out appealing cycling distances from schools, employment areas, shopping centres, recreational routes and tourist destinations. Then we produced three heat maps (All Locations, Employment Locations, and Schools) which show locations with good potential for investment in cycling (hotspots). Hotspots appear where there are overlaps in cycling catchments from each destination.

The heat maps are shown on the following pages. Using the heat maps we have summarised the locations below that show strong potential to increase the number of people using bikes for transport.

Please note:
- ‘All Locations’ map overlays all the locations and catchments from the Employment and Schools maps.
- This is just one criteria to help identify priority investment areas.

The strongest areas on the ‘All Locations’ map where:
- Mount to Arataki
- City centre to Greerton
- Otumoetai/Matua/Bellevue/Brookfield/Judea
- Hairini

The strongest areas on the ‘Employment’ map where:
- Sulphur Point to 11th Avenue (around the city centre)
- Port/Hewlett’s Road area
- Otumoetai
- Judea
- 11th Avenue to near Greerton
- Matapihi

The strongest areas on the ‘Schools’ map where:
- Bellevue
- Brookfield/Bethlehem
- 11th Avenue to Greerton

Conclusions (heat maps)

Taking all three heat maps into consideration, they showed the strongest potential for cycling uptake at:
- Mount to Arataki
- City centre to Greerton
- Otumoetai/Matua/Bellevue/Brookfield
- Hairini
Tauranga Cycle Heat Map: All Locations

NOTE: Contributing factors to the score include:
Cycling distance to Primary Schools = 1.5km,
Intermediate Schools = 1.5km, and Secondary Schools
and Tertiary facilities = 5km,
Cycling Distance to main Employment Areas (≥100 Employees) = 7km,
Population Density Cycling Distance to Recreational Routes = 1km,
Cycling Distance to Commercial Centres = 1.5km,
Main Tourist hotspot from Mount Central to Tauranga CBD
Tauranga Cycle Heat Map: Employment

NOTE: Contributing factors to the score include:
- Cycling distance to Primary Schools = 1.5km
- Intermediate Schools = 3km, and Secondary Schools and Tertiary facilities = 9km
- Cycling distance to main Employment Areas (>100 Employees) = 7km
- Population Density
- Cycling distance to Recreational Routes = 11km
- Cycling distance to Commercial Centres = 1.5km
- Main Tourist Hotspot from Mount Central to Tauranga CBD
Tauranga Cycle Heat Map: Schools

NOTE: Contributing factors to the score include:
- Cycling distance to Primary Schools = 1.5km,
- Intermediate Schools = 3km, and Secondary Schools
- and Tertiary facilities = 5km
- Cycling Distance to main Employment Areas (>100 Employees) = 7km,
- Population Density, Cycling Distance to Recreational Routes =1km,
- Cycling Distance to Commercial Centres = 1.5km
- Main Tourist hotspot from Mount Central to Tauranga CBD
20. **Tauranga bus routes**

The map on the next page shows the bus network to be implemented in Tauranga in late 2018.

**Conclusions (bus routes)**

- The new bus network provides bus services to most parts of Tauranga and covers all major urban areas, although some areas have more bus services or more regular bus services than others. To help provide better transport options across Tauranga we have weighted investment areas (for improvements for people on bikes) higher if they have less bus services or less frequent services.

- Bay of Plenty Regional Council has committed to gradually introducing bike racks to buses in the coming years. This provides an opportunity for people to make journeys to work and school by a combination of bus and bike. If we consider a distance of 1km (3mins) to be an acceptable distance to cycle to catch a bus, then the vast majority of the urban area of Tauranga has potential for a bike/bus journey.
Map: Tauranga draft bus routes to be implemented late 2018
21. Safety for people on bikes

Crashes

In Tauranga people on bikes are over represented in crashes. According to the Household Travel Survey trips by bike make up 1% of total transport trips in Tauranga, but crash data shows that people on bikes are involved in 13% of total crashes resulting in deaths and serious injuries.

According to the Tauranga City Council Annual Residents Survey June 2017 the number of respondents that cycle around Tauranga has increased from 22% to 34% over the past 10 years. Over that same period crashes resulting in injuries to people on bikes has remained fairly consistent but with some yearly fluctuations. However in 2016 there was a significant increase in crashes causing minor injuries and a significant decrease in crashes causing serious injuries (see table below).

Overall there is no solid evidence to suggest that the total number of crashes involving people on bikes is decreasing or that the percentage of total crashes is decreasing.

The map on the next page shows the locations of all crashes involving people on bikes between 2007 and 2016. There is a fairly even spread of crashes across Tauranga, but with significantly less reported crashes on Tauranga’s off-road cycleways and notable hotspots at the following locations:

- Marine Parade
- Ocean Beach Road
- Maranui Street/Papamoa Beach Road
- Girven Road
- City Centre
- Cameron Road
- 15th Avenue/Turret Road

Crash history has been used as a criteria to help prioritise investment areas for cycle improvements in Tauranga (see Part A).
Map: Crashes involving people on bikes 2007-2016
Perceptions of safety

Tauranga City Council Annual Residents Survey June 2017 (see graph below) found that of those people that cycle, 36% were satisfied and 28% were dissatisfied with the level of safety when cycling on roads or cycleways in Tauranga. As a general trend, over the past 10 years both the percentage of respondents who are satisfied and dissatisfied has decreased, which makes it difficult to identify any trends with confidence. Regardless of trends the current satisfaction and dissatisfaction rates show clear signs that a large proportion of people riding bikes in Tauranga do not feel safe.

Concerns about safety were even stronger from respondents to our Cycle Plan survey carried out in 2017 (see Section 12). 59% of adult’s do not think it is safe and easy for adults to ride bikes in Tauranga, while 46% of young people and 80% of adults do not think that Tauranga is safe and easy for young people (kids) to ride bikes. When asked what puts them off riding a bike, safety and traffic related concerns dominated responses.

An overwhelming majority of submitters (91%) think that Tauranga needs cycle paths that are physically separated from traffic. When asked what they thought would get more people riding bikes the top theme was safer cycle routes.

Also of note is that 17% of respondents to the Cycle Plan survey said they would start riding a bike and 64% said they would ride their bikes more if the right improvements were made.
Conclusions (safety)

- People on bikes are over represented in crashes involving injuries.
- There are some crash hot spots in Tauranga for people on bikes.
- There are significantly less reported crashes involving injuries on Tauranga’s off-road cycleways.
- Crash history has been used as a criteria to help prioritise investment areas for cycle improvements in Tauranga (see Part A).
- Perceptions of safety when riding a bike in Tauranga are a key concern for people, particularly mixing with general traffic.
- Public feedback indicates that providing cycleways that are physically separated from traffic would improve perceptions of safety for people on bikes.
- Physically separated cycleways could also reduce the percentage of crashes involving people on bikes, particularly deaths and serious injuries.
- Research conducted through the Cycle Plan survey indicates that significantly more people would ride bikes, or ride bikes more often, if safer cycleways were provided.
22. Urban Form

The impact of urban form on transport

Tauranga’s urban form is predominantly based around the private motor vehicle. The key issues are that Tauranga predominantly has low density residential areas (a low number of residential dwellings per hectare) and streets that are mainly designed for private motor vehicle use. These two factors have combined to reduce the appeal of active transport modes.

Higher density urban areas can increase the provision of local services and shops because there are more potential customers within the area. It’s likely that more people will consider riding a bike or walking to local services, than goods and services that are further away.

Higher density neighbourhoods are also likely to increase the viability of providing high quality cycleways because more people are in close proximity to the cycleways. Higher density residential areas within 10km of Tauranga’s key employment destinations would also increase the potential number of trips to work that could be made by bike.

Neighbourhoods that are more permeable for pedestrians and people on bikes (such as shared walking and cycling paths at the end of cul-de-sac streets) can create travel time savings for people on bikes and make riding a bike (or walking) a competitive choice to the private motor vehicle. Research found that a 5% increase in neighbourhood walkability was associated with a 32.1% increase in active transport modes and a 0.23 point reduction in Body Mass Index (Genter, Donovan, Petrenas, & Badland, 2008).

Tauranga Urban Form Strategy

TCC is developing an Urban Form Strategy which will help improve our urban form and deliver the benefits touched on above (amongst other benefits). Locations of key interest for the Urban Form Strategy are still being determined, but early indications are that they are likely to be around town centres and key transport corridors. As such the priority areas for the Urban Form Strategy are very likely to align with the priority investment areas outlined in this Cycle Plan.

This is important because, amongst other things, the Urban Form Strategy will be looking to create neighbourhoods that are easier to walk and ride bikes around. Therefore improvements stemming from the Cycle Plan can align with and support outcomes from the Urban Form Strategy (and vice versa).

Conclusions (Urban form)

- Tauranga’s urban form is predominantly based around private motor vehicle use, which can have a major influence on the uptake of active transport.
- There are benefits of a more dense urban form with more permeable streets for pedestrians and people on bikes.
- Early indications are that the Cycle Plan aligns well with the emerging Tauranga Urban Form Strategy.
23. People on bikes and communities

Another significant benefit of getting more people riding bikes is the positive impact it has on the vibrancy of and social interaction within communities. There are many studies that have reported such links. Below is a series of quotes and references discussing the benefits to communities of more people walking and riding bikes.

- “Walking, cycling and public transport can also help make a community more liveable, making it easier for people to connect with one another while travelling, working, shopping and socialising.” (Canterbury District Health Board, 2016)

- “Neighbourhoods that promote interaction between people tend to have higher stocks of social capital and sense of community. For example people living in walkable, mixed used neighbourhoods have been shown to have a higher social capital than those in car orientated neighbourhoods.” (Leyden, 2003)

- Increased active transport can also get more children in the street which researchers have concluded “is an effective way of breaking down the nature reserve between adults; streets become more interesting, more liveable and more communal places. Regular spontaneous contact in a neighbourhood builds up levels of familiarity and trust, making people feel better about their community.” (Thompson, 2009)

- Many young people are reliant on being dropped off at school by a parent. This contributes to congestion and creates a barrier for young people to learn about their local environment, road rules and develop safe travel habits. “Children who are generally driven to school have less opportunity to develop the habit of walking and to practice their road safety skills, which could lead to lower levels of physical activity. This pattern has been demonstrated in a recent study, which found that car-dependent children are less active overall.” (Cooper, Page, & Foster, 2003)

- More people riding bikes (and walking) creates safer streets (from crime). This is supported in the National Guidelines for Crime Prevention through Environmental Design which heavily reflects active surveillance by people in its principles and guidelines (Ministry for the Environment, 2005).

- When the provision of cycleways includes plantings and/or traffic calming they can help create streets that are more attractive and inviting.

Conclusions (People on bikes and communities)

Getting more people riding bikes has positive impacts on the vibrancy of and social interaction within communities. Cycleways that include plantings and/or traffic calming can help create streets that are more attractive and inviting.
24. Health and people on bikes

Transport impacts on physical activity and health

The transport system can influence physical activity levels and population health. Studies have found that people who use active and public transport are more likely than non-users to meet their daily physical activity needs. Additionally, research has found that active transport delivers more pronounced health benefits than leisure time physical activity alone (Genter, Donovan, Petrenas, & Badland, 2008).

We aren’t doing enough exercise

A strong body of evidence demonstrates that regular physical activity can be protective against the development of a number of health conditions such as diabetes, heart diseases, hypertension and mental health conditions such as depression and anxiety. It is also important for maintaining a healthy weight and building and maintaining healthy bones, muscles and joints. Low physical activity is a major public health concern, accounting for about four percent of all healthy life lost to early death (Ministry of Health, Health Loss in New Zealand 1990-2013: A report from the New Zealand Burden of Disease, Injuries and Risk Factors Study., 2016).

A 2013 report estimated that physical inactivity caused the premature deaths of 246 New Zealanders in 2010. The estimated total cost of physical inactivity in 2010 was $1.3 billion, nearly 1 percent of New Zealand’s GDP (Auckland Council, Waikato Regional Council, & Wellington Regional Strategy Committee, 2013).

The New Zealand Health Survey 2011/14 found people living in the Bay of Plenty reported a slightly higher rate of physical activity than the rest of the country at 54 percent compared with 52 percent. Younger adults in the BOP are slightly less likely to be active than older adults.

Obesity is rising

There is a strong association between obesity and health risk. Excess weight is linked to the occurrence of chronic diseases such as type 2 diabetes and cardiovascular diseases, and cancers such as breast and prostate. Large increases in obesity have occurred over the past 30 years and obesity is now the leading modifiable risk factor for health behind smoking, accounting for eight percent of healthy life lost due to early death (Ministry of Health, Health Loss in New Zealand 1990-2013: A report from the New Zealand Burden of Disease, Injuries and Risk Factors Study., 2016). New Zealand is now the third most obese country in the world.

The only estimate of the cost of healthcare and lost productivity due to obesity in New Zealand estimated that in 2006 the total cost lay between $784m to $911m. Since 2006, adult obesity has increased from 26 percent to 31 percent (Lal, Moodie, Ashton, Swimburn, & Siahpush, 2012). According to the New Zealand Health Survey 2011/14, the rate of obesity in Bay of Plenty is higher than the New Zealand average at nearly 32 percent of all adults. This has risen from 25 percent back in 2006/07. Younger adults are less likely to be obese than older adults in the Bay of Plenty.

In the Bay of Plenty, an estimated nine percent of children 2-14 years are obese. Child obesity carries significant physical and mental health risks both in the short and long term. Short term risks include asthma, sleep apnoea, joint problems, bullying and low self-esteem.
How can riding a bike help?

To manage weight and improve energy, sleep, mental wellbeing and overall health the Ministry of Health advises that adults should engage in at least 2.5 hours of moderate physical activity (or 1 hour 15mins of vigorous activity) each week and for extra health benefits should engage in 5 hours of moderate physical activity (or 2.5 hours of vigorous activity). Children (5-17 years old) should engage in at least 1 hour of moderate or vigorous physical activity spread over each day (Ministry of Health).

There is strong evidence that cycling has the potential to make a significant contribution to improving public health. Cycling can be easily incorporated into daily life, can be carried out at different intensities, and has few side-effects (Cavil & Davis, 2007).

A New Zealand study found that moving 5% of short urban car trips (of up to 7km) to cycling would result in 116 deaths avoided annually in New Zealand through increased physical activity, 5.6 fewer deaths due to local air pollution from vehicles and an additional 5 cyclist deaths from road crashes (Lindsay, Macmillan, & Woodward, 2011).

Conclusions (Health and people on bikes)

Physical inactivity and obesity rates in New Zealand continue to rise, both of which carry significant health risks and costs to society. Getting more people riding bikes for transport has great potential to increase physical activity and reduce obesity because it can be carried out at different intensities and can be integrated into an existing daily routine with little or no additional time commitments.
25. **Emissions from transport**

- A recent study carried out for TCC showed that 62% of CO2 emissions in Tauranga come from transport. CO² emissions are shown to be a major contributor to climate change, which through rising temperatures, more severe weather events and rising sea levels has the potential to create significant negative impacts on Tauranga’s social, economic and environmental wellbeing.

- The Health Effects Model estimates that annually in Tauranga emissions from motor vehicles are estimated to cause 9 premature adult (30+ years) deaths and cost $32.7m (Health and Air Pollution in New Zealand, 2012).

- A New Zealand study found that moving 5% of short urban car trips (of up to 7km) to cycling would result in 5.6 fewer deaths annually across New Zealand due to local air pollution from vehicles (Lindsay, Macmillan, & Woodward, 2011).

- Riding a bike creates less emissions that single occupancy motor vehicles, so has the potential to help reduce emissions from transport in Tauranga.

**Conclusions (Emissions from Transport)**

- Emissions from transport are negatively impacting on the physical health of the people of Tauranga and climate change has the potential to create significant negative social, economic and environmental impacts.

- Riding a bike creates less emissions that single occupancy motor vehicles, so has the potential to help reduce emissions from transport in Tauranga.
26. Social inclusion

According to the New Zealand Index of Deprivation 2013 (see next page and www.ehinz.ac.nz/indicators/population-information/socioeconomic-deprivation-profile/), 42% of Tauranga’s population live in the two most deprived quintiles (4-5), compared to 34% living in the least deprived (1-2). Furthermore the 2013 Census reports that 2700 households in Tauranga (nearly 6.4%) do not have access to a motor vehicle and 41% only have access to one motor vehicle.

Improved transport connectivity, particularly cheaper modes of transport such as the bike, can help improve access to jobs, education, health, leisure and social opportunities for people with less money and reduced work and education opportunities.

Conclusions (Social inclusion)

Parts of Tauranga have reduced access to work, education and other opportunities due to the costs associated with private vehicle ownership. These households would benefit from improved connectivity by bike as it is a more affordable transport option.
### School roll and cycle numbers

<table>
<thead>
<tr>
<th>School</th>
<th>Roll Nov 2017</th>
<th>Cycle Count 2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golden Sands School</td>
<td>558</td>
<td>169</td>
</tr>
<tr>
<td>Papamoa College</td>
<td>1200</td>
<td>195</td>
</tr>
<tr>
<td>Papamoa Primary School</td>
<td>640</td>
<td>60</td>
</tr>
<tr>
<td>Te aku ki Papamoa</td>
<td>635</td>
<td>Unknown</td>
</tr>
<tr>
<td>Tahatai Coast School</td>
<td>666</td>
<td>38</td>
</tr>
<tr>
<td><strong>PAPAMOA TOTAL</strong></td>
<td><strong>3699</strong></td>
<td><strong>462</strong></td>
</tr>
<tr>
<td>Arataki School</td>
<td>421</td>
<td>26</td>
</tr>
<tr>
<td>St Thomas More School</td>
<td>204</td>
<td>5</td>
</tr>
<tr>
<td>Mount Maunganui Intermediate</td>
<td>635</td>
<td>85</td>
</tr>
<tr>
<td>Omanu School</td>
<td>625</td>
<td>94</td>
</tr>
<tr>
<td>Mount Maunganui College</td>
<td>1400</td>
<td>266</td>
</tr>
<tr>
<td>Mount Maunganui Primary</td>
<td>490</td>
<td>66</td>
</tr>
<tr>
<td><strong>MOUNT/OMANU/ARATAKI TOTAL</strong></td>
<td><strong>3775</strong></td>
<td><strong>542</strong></td>
</tr>
<tr>
<td>Te Kura o Matapipi</td>
<td>146</td>
<td>4</td>
</tr>
<tr>
<td><strong>MATAPIHI TOTAL</strong></td>
<td><strong>146</strong></td>
<td><strong>4</strong></td>
</tr>
<tr>
<td>Pillans Point School</td>
<td>549</td>
<td>58</td>
</tr>
<tr>
<td>Matua School</td>
<td>465</td>
<td>Unknown</td>
</tr>
<tr>
<td>Bellevue School</td>
<td>415</td>
<td>Unknown</td>
</tr>
<tr>
<td>Otumoetai College</td>
<td>1894</td>
<td>96</td>
</tr>
<tr>
<td>Otumoetai Intermediate</td>
<td>821</td>
<td>170</td>
</tr>
<tr>
<td>Otumoetai Primary</td>
<td>521</td>
<td>Unknown</td>
</tr>
<tr>
<td><strong>BELLEVUE/MATUA/OTUMOETAI TOTAL</strong></td>
<td><strong>4665</strong></td>
<td><strong>324</strong></td>
</tr>
<tr>
<td>Brookfield School</td>
<td>240</td>
<td>6</td>
</tr>
<tr>
<td>Bethlehem College</td>
<td>1632</td>
<td>Unknown</td>
</tr>
<tr>
<td>Bethlehem School</td>
<td>520</td>
<td>Unknown</td>
</tr>
<tr>
<td>Tauranga Seventh Day Adventist</td>
<td>103</td>
<td>Unknown</td>
</tr>
<tr>
<td>Te Wharekura o Mauao</td>
<td>24</td>
<td>Unknown</td>
</tr>
<tr>
<td><strong>BETHLEHEM/JUDEA TOTAL</strong></td>
<td><strong>2519</strong></td>
<td><strong>6</strong></td>
</tr>
<tr>
<td>Tauranga Primary</td>
<td>497</td>
<td>12</td>
</tr>
<tr>
<td>Te Whakatipuranga (Otumoetai TPU)</td>
<td>24</td>
<td>Unknown</td>
</tr>
<tr>
<td>St Mary's School</td>
<td>456</td>
<td>Unknown</td>
</tr>
<tr>
<td>Tauranga Boys College</td>
<td>1920</td>
<td>176</td>
</tr>
<tr>
<td>Tauranga Girls College</td>
<td>1340</td>
<td>5</td>
</tr>
<tr>
<td>Tauranga Intermediate</td>
<td>1297</td>
<td>126</td>
</tr>
<tr>
<td>Tauranga Special School</td>
<td>88</td>
<td>Unknown</td>
</tr>
<tr>
<td>Gate Pa School</td>
<td>320</td>
<td>10</td>
</tr>
<tr>
<td>Merivale School</td>
<td>142</td>
<td>Unknown</td>
</tr>
<tr>
<td>Greenpark School</td>
<td>905</td>
<td>Unknown</td>
</tr>
<tr>
<td>School</td>
<td>Roll Nov 2017</td>
<td>Cycle Count 2017</td>
</tr>
<tr>
<td>--------------------------------------------</td>
<td>---------------</td>
<td>-----------------</td>
</tr>
<tr>
<td>Greerton Village School</td>
<td>418</td>
<td>14</td>
</tr>
<tr>
<td>CBD/HOSPITAL/GATE PA/GREERTON</td>
<td>7407</td>
<td>343</td>
</tr>
<tr>
<td>(6 of 11 schools)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tauriko School</td>
<td>360</td>
<td>Unknown</td>
</tr>
<tr>
<td>TAURIKO TOTAL</td>
<td>360</td>
<td>Unknown</td>
</tr>
<tr>
<td>(0 of 1 school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aquinas College</td>
<td>764</td>
<td>10</td>
</tr>
<tr>
<td>PYES PA TOTAL</td>
<td>764</td>
<td>10</td>
</tr>
<tr>
<td>(1 of 1 school)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maungatapu School</td>
<td>590</td>
<td>Unknown</td>
</tr>
<tr>
<td>Selwyn Ridge School</td>
<td>488</td>
<td>15</td>
</tr>
<tr>
<td>Tauranga Waldorf Steiner School</td>
<td>200</td>
<td>Unknown</td>
</tr>
<tr>
<td>Welcome Bay School</td>
<td>320</td>
<td>Unknown</td>
</tr>
<tr>
<td>WELCOME BAY/OHAUTI/MAUNGATAPU TOTAL</td>
<td>1598</td>
<td>15</td>
</tr>
<tr>
<td>(1 of 4 schools)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Te Kura Kaupapa Maori o Otepou</td>
<td>69</td>
<td>Unknown</td>
</tr>
<tr>
<td>Te Kura Kaupapa Maori o Te Kura Kokiri</td>
<td>160</td>
<td>Unknown</td>
</tr>
<tr>
<td>WELCOME BAY EAST TOTAL</td>
<td>229</td>
<td>Unknown</td>
</tr>
<tr>
<td>(0 of 2 schools)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Conclusions (School roll and cycle numbers)**

We do not currently have any reliable data on the total percentage of all trips to school made by bike in Tauranga, but the percentage of children riding to the schools we do have cycle counts for is around 9.7%.

Across New Zealand only 1% of children ride a bike to school, down from 28% 30 years ago (Sports New Zealand, 2013/14 Sport NZ Active New Zealand Survey). This shows the Travel Safe School Action Plans are working really well and hints at further potential if safer cycleway connections to schools were provided.

School roll numbers and cycle counts have been used to help prioritise investment areas (see Part A).
### Working example of how investment areas were scored in prioritisation matrix

#### Papamoa Investment Area

<table>
<thead>
<tr>
<th>Scoring criteria</th>
<th>Public feedback</th>
<th>Heat map: All layers</th>
<th>Heat map: Employment</th>
<th>Heat map: Schools</th>
<th>Social inclusion</th>
<th>Terrain</th>
<th>Gaps in existing and committed cycleways</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Score</strong></td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td><strong>Scoring explained</strong></td>
<td>During public feedback a significant amount of respondents requested that cycle routes in Papamoa be prioritised for improvements. Some routes in other areas had more requests, as such Papamoa was given the second highest score in this category.</td>
<td>When averaging out the Papamoa Investment Area, it had a low rating on the heat map (all layers). As such Papamoa was given the lowest score in this category.</td>
<td>When averaging out the Papamoa Investment Area, it had a very low rating on the heat map (employment). As such Papamoa was given the lowest score in this category.</td>
<td>When averaging out the Papamoa Investment Area, it had a low rating on the heat map (schools). As such Papamoa was given the second lowest score in this category.</td>
<td>When averaging out the Papamoa Investment Area, it had a low level of deprivation according to the Index of Multiple Deprivation. We ranked investment areas with higher levels of deprivation more favourably in this category, as such Papamoa was given the second lowest score in this category.</td>
<td>Papamoa is very flat, almost the entire area has a gradient of less than 3%. As such it was given the highest score in this category.</td>
<td>Papamoa has some existing cycleways that are physically separated from traffic (in the recreational reserve that runs through Papamoa). As such it was given the second highest score in this category. The Mount/Omanu/Arataki investment area was the only area to be given the top score in this category as it has a large number of committed projects to create physically separated cycleways along busy roads.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scoring criteria</th>
<th>Safety</th>
<th>Congested routes</th>
<th>Potential trips to work by bike</th>
<th>Bus services</th>
<th>School roll numbers</th>
<th>School cycle numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Score</strong></td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>0-2000 = 0</td>
<td>0-100 = 0</td>
</tr>
<tr>
<td><strong>Scoring explained</strong></td>
<td>Papamoa has had a significant number of crashes causing injuries to people on bikes in the past 10 years. But it has not had as many crashes as some other investment areas. As such it was given the second highest score in this category.</td>
<td>Congestion in the Papamoa Investment Area is limited. However residents do have to pass through the heavily congested Mount/Omanu/Arataki investment area to get to key employment destinations. As such it was given the second highest score in this category.</td>
<td>Using the Census 2013 data there is a very low amount of trips from the Papamoa Investment Area to Tauranga’s key employment locations, that are 10km or less in distance. As such Papamoa was given the lowest score in this category.</td>
<td>This category is about helping to provide better transport options for those investment areas with poorer transport options. So the worse the bus services were in an investment area the better they scored. Using the proposed new bus services for Tauranga to be implemented in late 2018, the Papamoa Investment Area has fairly good bus services. However the CBD/Hospital/Gate Pa/Greerton Investment Area will have better bus services. As such Papamoa was given the second lowest score in this category.</td>
<td>The combined school roll numbers in the Papamoa Investment Area is 3699 students. As per the scaling used for the scoring in this category, that means Papamoa gets the second highest score.</td>
<td>The combined school cycle numbers in the Papamoa Investment Area is 462 trips by bike per day. As per the scaling used for the scoring in this category, that means Papamoa gets the highest score.</td>
</tr>
</tbody>
</table>
### Scoring criteria

<table>
<thead>
<tr>
<th>Score</th>
<th>Public feedback</th>
<th>Heat map: All layers</th>
<th>Heat map: Employment</th>
<th>Heat map: Schools</th>
<th>Social inclusion</th>
<th>Terrain</th>
<th>Gaps in existing and committed cycleways</th>
</tr>
</thead>
<tbody>
<tr>
<td>++</td>
<td></td>
<td>++</td>
<td>++</td>
<td>-</td>
<td>0</td>
<td>++</td>
<td>++</td>
</tr>
</tbody>
</table>

#### Scoring explained

**Public feedback**: During public feedback the Mount/Omanu/Arataki Investment Area had several cycle routes that were highly requested by respondents to be priority routes for improvements. As such Mount/Omanu/Arataki was given the highest score in this category.

**Heat map: All layers**: When averaging out the Mount/Omanu/Arataki Investment Area, it had a high rating on the heat map (all layers). As such Mount/Omanu/Arataki was given the second highest score in this category.

**Heat map: Employment**: Large areas of the Mount/Omanu/Arataki Investment Area had a very high rating on the heat map (employment). As such Mount/Omanu/Arataki was given the highest score in this category.

**Heat map: Schools**: When averaging out the Mount/Omanu/Arataki Investment Area, it had a low rating on the heat map (schools). As such Mount/Omanu/Arataki was given the second lowest score in this category.

**Social inclusion**: When averaging out the Mount/Omanu/Arataki investment area, it had an average level of deprivation according to the Index of Multiple Deprivation. As such Mount/Omanu/Arataki was given the middle score in this category.

**Terrain**: Mount/Omanu/Arataki is very flat, almost the entire area has a gradient of less than 3%. As such it was given the highest score in this category.

**Gaps in existing and committed cycleways**: The Mount/Omanu/Arataki investment area was the only area to be given the top score in this category as it has a large number of committed projects to create physically separated cycleways along busy roads.

### Scoring criteria

<table>
<thead>
<tr>
<th>Score</th>
<th>Safety</th>
<th>Congested routes</th>
<th>Potential trips to work by bike</th>
<th>Bus services</th>
<th>School roll numbers</th>
<th>School cycle numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>++</td>
<td>++</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>0-2000 = 0</td>
<td>0-100 = 0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2000-4000 = +</td>
<td>100-300 = +</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&gt;4000 = ++</td>
<td>&gt;300 = ++</td>
</tr>
</tbody>
</table>

#### Scoring explained

**Safety**: The Mount/Omanu/Arataki Investment Area has had a very high number of crashes causing injuries to people on bikes in the past 10 years. As such it was given the highest score in this category.

**Congested routes**: The Mount/Omanu/Arataki Investment Area is one of the most congested areas in Tauranga. As such it was given the highest score in this category.

**Potential trips to work by bike**: Using the Census 2013 data there is a high amount of trips from the Mount/Omanu/Arataki Investment Area to Tauranga’s key employment locations, that are 10km or less in distance. As such it was given the second highest score in this category.

**Bus services**: This category is about helping to provide better transport options for those investment areas with poorer transport options. So the worse the bus services were in an investment area the better they scored. Using the proposed new bus services for Tauranga to be implemented in late 2018, the Mount/Omanu/Arataki Investment Area has fairly good bus services. However the CBD/Hospital/Gate Pa/Greerton Investment Area will have better bus services. As such Mount/Omanu/Arataki was given the second lowest score in this category.

**School roll numbers**: The combined school roll numbers in the Mount/Omanu/Arataki Investment Area is 3775 students. As per the scaling used for the scoring in this category, that means Mount/Omanu/Arataki gets the second highest score.

**School cycle numbers**: The combined school cycle numbers in the Mount/Omanu/Arataki Investment Area is 542 trips by bike per day. As per the scaling used for the scoring in this category, that means Mount/Omanu/Arataki gets the highest score.
29. Transport documents and strategies

- PT blueprint
- Activity Management Plans
- SmartGrowth Western Corridor and Tauriko PBC
- SmartGrowth Eastern Corridor and TEL Network Plan
- Civic Centre Project
- SmartGrowth Compact City
- Network Operating Frameworks
  - Network Operating Plans
  - Network Improvement Plans
- Tauranga PBC
  - Network Improvement Plans
  - SG Strategic Transport Network
  - CBD Stress Test
- Tauranga Cycle Plan
30. References


