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Cycling Programme Business Case

Recommendation

That the Board:

i. Endorse the recommended strategic direction for future investment in cycling in Auckland, the funding of which will be subject to prioritisation through the Integrated Transport Programme (ITP).

Executive summary

1 There is a significant opportunity for cycling to play a more substantial role in contributing to a more effective transport system for Auckland. During the programme period, transport demands will continue to grow strongly alongside population and employment across the region, placing increasing pressure on congested networks and, in particular, on access to the city centre.

2 We analysed a range of options to identify which package would most effectively deliver the benefits and objectives of the programme, carried out economic modelling and conducted extensive engagement to arrive at a preferred programme of investment.

3 This programme business case recommends an investment of $635m in cycling over the period 2018-2028 to most effectively meet the objectives of the programme. This would provide benefits of $1.9 to $4.6 for every $1 invested, and would deliver 150km of new cycleways linking to key activity centres and maximising access to public transport. The investment would see an increase in modal share of trips to work for cycling from 1 per cent to 4 per cent across the Auckland region.

Previous deliberations

4 This item was considered by the Customer Focus Committee on 10 July 2017 and feedback has been incorporated into this report. The updated presentation is attached to this report.

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Strategic context

5 The recommended programme delivers on the Auckland Plan target of building 70 per cent of the Auckland Cycle Network by 2030. The Statement of Intent sets out targets for annual increase in the trips made by bicycle in Auckland and new kilometres of cycleway.

6 The programme aligns to the Auckland Transport Alignment Project (ATAP) objectives of supporting growth across the region by offering improved travel choice to key activity centres and increasing access to jobs in areas of the west and south where much of the investment is proposed. ATAP identified cycling as being particularly well suited to "serving higher intensity areas, short-to-medium length trips and extending the reach of strategic public transport corridors."

Background

7 Auckland Transport has worked with the transport agency and council to prepare a programme business case to direct investment in cycling over the next ten years from 2018-2028.

8 The 2015-2018 investment of $200 million in cycling is part of the Urban Cycle Programme, a joint investment by the Ministry of Transport, the transport agency and council to deliver 52 km of new cycleway. The programme was approved before the Better Business Case approach adopted by the transport agency and approved on the basis of a strategic case for investment. Ongoing investment in cycling in Auckland by the transport agency requires the organisation to submit a programme business case to ensure investment aligns with strategic priorities.

9 Investment of the 2015-2018 programme, 27km of which is now delivered, is starting to evidence the impact that a connected network of cycleway could have on Auckland's transport system. The northwestern cycleway has experienced a 44 per cent increase in cycle trips since the Lightpath and Grafton Gully connections were made. Aucklanders are reporting greater satisfaction with the state of cycling infrastructure in Auckland and the organisations research shows that more people agree that investment in cycling is important for Auckland. The programme business case proposes investment that will build on this success.

10 The three agencies agreed on the problems that investment in cycling would address as being:

- Problem 1: Cycling is perceived as unsafe and unattractive, resulting in it not effectively contributing to Auckland's transport system
- Problem 2: Relatively low levels of cycling and high dependence on private vehicles results in poor environmental, place and health outcomes
- Problem 3: The current transport system often fails to meet the needs of people using bikes, resulting in them being over-represented in deaths and serious injuries.

11 Four benefits were identified in solving the problems:

- Benefit 1: Cycling plays a greater role in meeting Aucklanders' transport needs

- Benefit 2: Improved access to opportunities, particularly for people with low levels of transport choice
- Benefit 3: Improved environmental, place and health outcomes
- Benefit 4: Increased safety for people using bikes.

12 Objectives were developed for the programme against which options for investment were measured. The economic evaluation manual was used to establish the benefit cost ratios of each option for investment and a deliverability assessment was conducted on the options.

13 Sequencing of proposed investment areas was developed through consultation with other delivery partners within the three agencies and other key investment partners such as Panuku, so that the proposed investment could be aligned to complementary programmes.

External Consultation/Engagement

14 The Programme Business Case has been extensively consulted within the three partner agencies and with organisations within the Council family. Stakeholders from Auckland District Health Board and Auckland University were included in the consultation process. In addition key stakeholder groups including the Automobile Association, Bike Auckland, Greater Auckland, and Generation Zero have been consulted.

15 The programme was tabled with Iwi and dialogue will be ongoing to ensure te aranga principles are reflected in further development of the programme.

Issues and options

Options analysed

16 The programme business case analysed different geographic areas for their ability to deliver on the objectives of the programme. It considered a range of data sets including where high concentrations of jobs, schools, collisions, public transport, people with poor health and low income are located across the region.

17 A cycling demand model developed by FLOW was used to identify which investment would generate the greatest number of cycle trips on the network. This information was utilised in a benefit cost assessment which analysed investment concentrated on the central area against investment distributed amongst regional centres. A multi criteria analysis established that whilst investment concentrated centrally would deliver a higher number of cycling trips, distributing more investment to regional centres in the west and south would better meet the objectives of improving access to public transport and to jobs for communities with limited work opportunities.

18 The programme business case also established the benefits of three investment scenarios; $300m, $600m and $900m. The analysis indicated that a $900m investment would deliver the greatest benefit but it did not score well against deliverability criteria. The assessment indicated that

$900m would be challenging due to the capacity of the construction market. The assessment concluded that the $600m programme of infrastructure investment was the most deliverable and would generate the significant benefit to Auckland.

Preferred programme

19 The programme business case recommends a $600m investment in cycling infrastructure, delivering approximately 150km of new cycleway over the next ten years or more. This would be accompanied by a $35m investment in complementary activities including training, end of trip facilities and cycle share. This programme would provide between $1.9 - $4.6 for every $1 invested, and increase the share of people cycling to work from 1 per cent to 4 per cent.

20 The proposed programme focusses investment where it would best serve the wider transport network by adding capacity on congested corridors near the city centre and regional centres and by increasing the catchment to public transport stations. This would improve access to jobs and schools across the region.

21 The modelling of the cycle network near the City Centre indicates that by 2026 4500 people a day will cycle to the City Centre, which is the equivalent to approximately four lanes of traffic on the arterial road network during the peak period. Investment in cycling therefore presents a potentially cost effective means of adding additional capacity to the network.

22 It is estimated to have significant health and environmental benefits of between $468m - $760m.

Funding for the programme

23 The preferred programme is a recommended investment of $635m between 2018 and 2028 for projects delivered by the organisation and the transport agency. This would be a slightly lower level of investment to the current 2015-2018 programme, which is investing $200m over the period.

24 The programme is prioritised against the investment objectives and can be scaled to any budget provision in the ITP.

25 The ITP calculator is used to determine the ranking of all transport programmes which are seeking funding for delivery. Cycling is one programme and will be ranked according to the criteria in the calculator against other programmes like public transport or growth related proposals.

26 The Government Policy Statement for cycling indicates that there will be similar levels of funding available in the walking and cycling activity class from 2018-2021. The transport agency has completed a national programme business case which recommends substantially completing urban cycle networks across the country by 2028.

27 The Ministry for Transport has not yet indicated whether there will be an extension to the Urban Cycle Fund, however an announcement is expected after the election.

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Key issues

28 The 2015-18 programme has faced several challenges. Cost escalations have been experienced across the programme in general due to the lack of quality cost estimates available at the start of the programme. The programme business case addresses this risk by using more accurate cost per kilometre rates based on current delivery costs.

29 The approach to community engagement on the 2015-2018 programme has resulted in delays to project delivery and lessons learnt from the programme will be built in to the recommended programme to address these issues. It is intended to complete more comprehensive external consultation earlier in the project delivery cycle and to use the Roads and Streets Framework process to establish the priority for cycling on a corridor.

30 Delays to the 2015-2018 programme as a result of contractor availability and negotiation with stakeholders, means that there will be construction of projects in 2018/19. This investment is committed as part of the ITP.

31 Analysis of perceived barriers to cycling playing a more significant role in Auckland's transport system indicates that these are not insurmountable. The experience of other cities demonstrates that a connected cycle network is the most important factor in increasing trips by bicycle. Vancouver is a city with a similar climate, topography and density to Auckland and following five years of investment in cycling infrastructure has increased modal share for cycle trips to work from 1 per cent to 5 per cent.

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Next steps

32 The programme business case will be presented to the Transport Agency Board on 25 August 2017. Funding for the programme will be weighed against other transport priorities as part of the ITP process and investment decisions made by Council and the Transport Agency as part of the Long Term Plan (LTP) and National Land Transport Plan (NLTP) process.

33 The sequencing of the programme will be confirmed once funding levels are established. The programme has been prioritised so that funding can be committed to the indicative business case (IBCs) that are likely to generate the greatest benefit for Auckland. AT will start work in 2017/19 on the highest priority IBCs to meet delivery timeframes for the 2018-2021 programme.

34 A document communicating the strategic direction set by this programme will be published in September 2017.

Attachments

Attachment Number	Description
1	Cycling Programme Business Case – Customer Focus Committee Presentation – a copy of this presentation has been saved in the resource centre
2	Auckland Cycling: an investment programme (presentation) - a copy of this presentation has been saved in the resource centre

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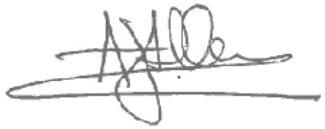
Document ownership

Submitted by	Kathryn King **Walking, Cycling and Road Safety Manager**	
	Randhir Karma **Group Manager Network Management and Safety**	
Recommended by	Andrew Allen **Chief Transport Operations Officer**	
Approved for submission	David Warburton **Chief Executive**	

Glossary

Acronym	Description
ITP	Integrated Transport Programme
ATAP	Auckland Transport Alignment Project
LTP	Long Term Plan
NLTP	National Land Transport Plan
IBC's	Indicative business case

Cycling Programme Business Case

Kathryn King, *Walking, Cycling and Road Safety*

10 July 2017

Issue Overview

Auckland Transport, in partnership with Auckland Council and the NZ Transport Agency, have completed a programme business case to direct upcoming investment in cycling. Investment levels agreed through the ITP and NLTP processes will determine how long the programme will take to deliver.

Anticipated date for Board Presentation: 1 August 2017

Strategic Themes Alignment

Prioritise rapid, high frequency public transport	Supports growth in the public transport network by prioritising access to public transport stations.
Continually transform and elevate customer experience	The proposed programme delivers to the Auckland public's request for greater investment in cycling and safer cycle facilities.
Build network optimisation and resilience for predictable travel times	The cycle trip modelling of the programme indicates greater efficiency on key corridors, and will deliver predictable journey times for customers.
Enable quality urban growth to meet demand	The programme complements the investment proposed in the future urban growth areas.
Fast-track creative, innovative and efficient transport services	The programme includes cycle shared which will contribute to mobility as a service to meet travel demand.

Identified Options

The programme assessed four options against the agreed investment objectives:

- Option One: Minimum investment to complement the current Urban Cycle Programme network development.
- Option Two: Moderate investment prioritised to the City Centre and a limited number of activity centres.
- Option Three: Moderate investment including a limited amount in the City Centre and distributed to more activity centres across the region
- Option Four: High level of investment to provide City Centre access and distribution to activity centres across the region.

Recommendation

The programme business case recommends prioritising investment to where cycling will deliver the most benefit to Auckland's transport system and deliver against the agreed investment objectives. The recommendation is to progress with Option 3, which would deliver a significant increase in cycle trips and scores higher against deliverability criteria.

This means providing a connected and integrated (with other transport modes) cycle network around key activity centres including the City Centre, metropolitan centres, schools and rapid transport stations. The investment is estimated to be $600m for over 150km of new cycle network and $35m for a package of measures to support the infrastructure development. This will deliver benefits of $2-$4 for every dollar invested.

AUCKLAND CYCLING

An Investment Programme

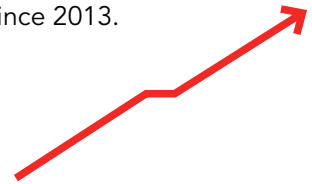
Proposed 2018-2028

Auckland Snapshot

THE CURRENT INVESTMENT PROGRAMME IS PROVING EFFECTIVE AND AUCKLANDERS SUPPORT CONTINUED INVESTMENT IN CYCLING:

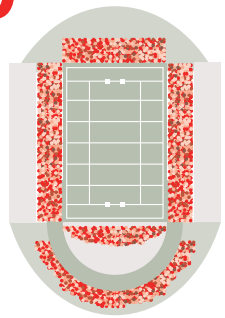
248%

Increase in cycle trips into the city via Upper Queen Street, since 2013.

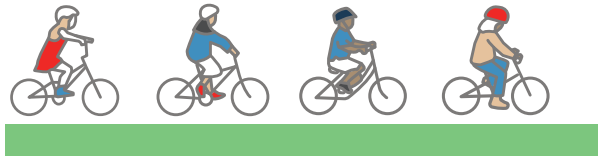


45,600

New cyclists in 2016, enough to fill Mt Smart Stadium.



BECAUSE WE'VE JUST BUILT 27KM OF NEW CYCLEWAYS:



27km of new cycleways.

New connections in the cycle network has created a

44%

increase in people on bikes using the Northwestern Cycleway.

39%

of Aucklanders are positive about the state of cycling, compared with 22% in 2015.

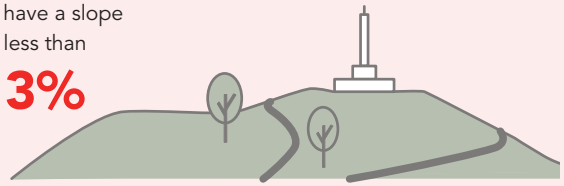
Auckland's Cycling Opportunity

Many people would cycle short distances if the conditions were right. Overall, Auckland has good weather and lots of flat areas and with the popularity of e-bikes, hills are no longer such an issue.

CASE STUDY: VANCOUVER

The typography, size and climate of Vancouver are similar to Auckland. Over the past five years the city has had a similar sized investment to Auckland in neighbourhood greenways and city connections which has resulted in a shift in mode share for bikes from 1% to 5%.

73%
of Auckland streets have a slope less than
3%



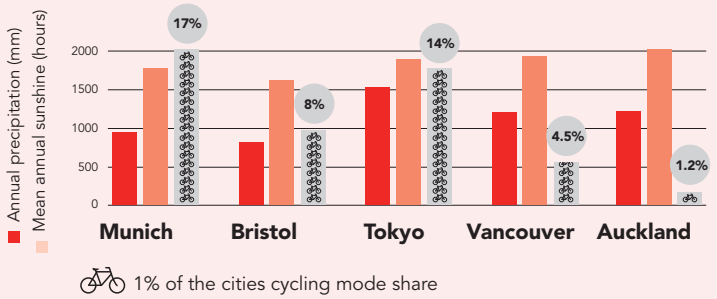
54%

of people would consider cycling if the conditions were right.

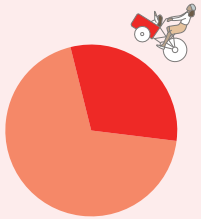
230,000
Aucklanders live within a 30 minute bike ride to the city.

RAIN **ISN'T A BARRIER**

RAIN AND SUNSHINE IN SELECTED CITIES



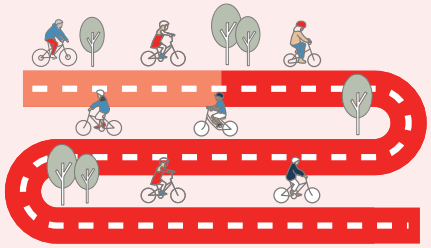
OVER **50%** OF AUCKLANDERS **WOULD RIDE BIKES**



31%
of Aucklanders ride bikes at least monthly.

AUCKLANDERS **DO LIKE CYCLING**

AND HAVE RIDDEN MUCH MORE IN THE PAST



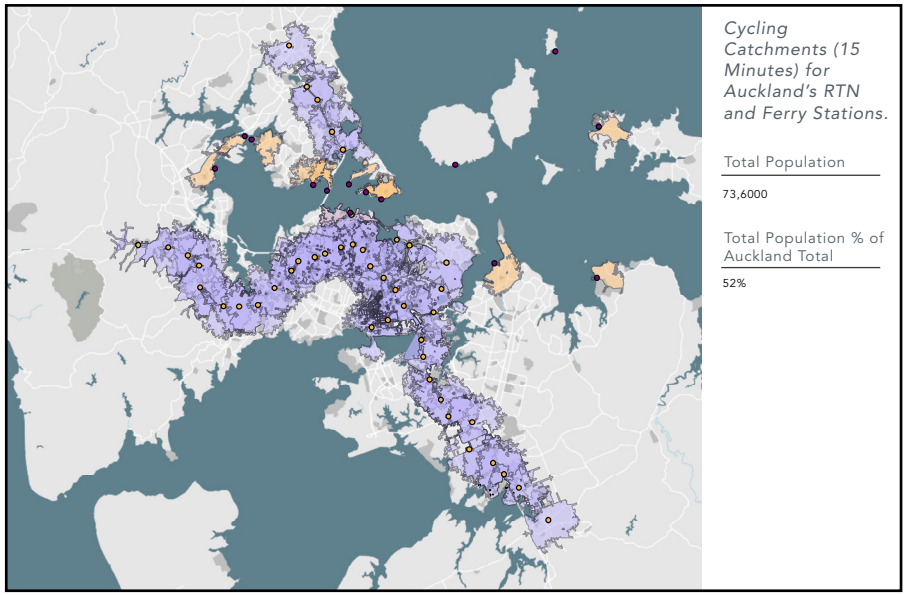
20%
of Auckland intermediate school children cycled to school in the late 1970s.

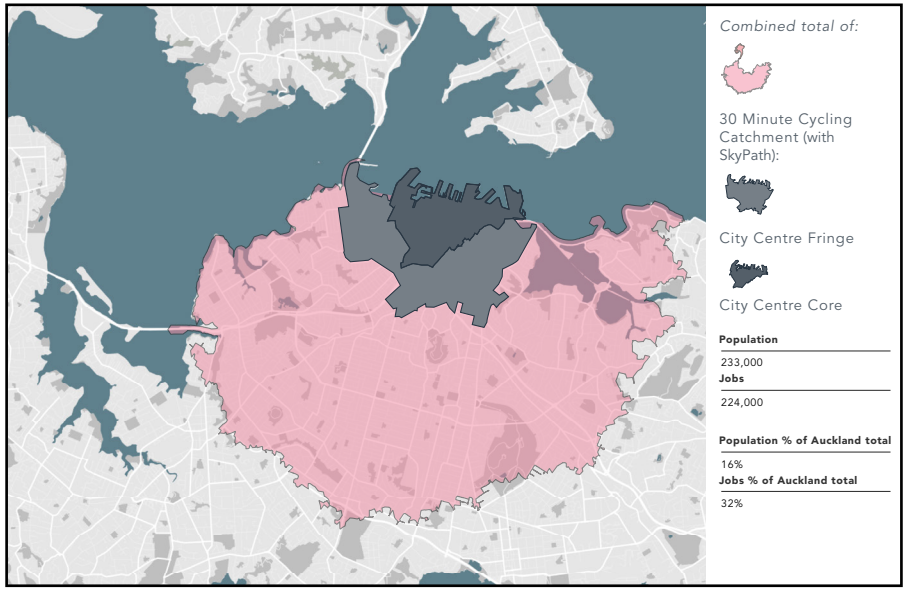
Today that number is: **3.9%**

Where Cycling Can Play A Significant Role in Auckland's Transport Network

Over 230,000 people live within a short 30 minute ride of the city centre, so each day there are many short trips taken by car or public transport that could made on a bike. This is especially so for certain areas of Auckland, such as the city centre where there is limited opportunity to add additional traffic capacity and several years before mass transit can add much needed capacity on public transport.

Auckland is making significant investment in its rapid transport network and public transport use is growing exponentially as a result. Improving cycling connections to stations will help to maximise that investment and make the stations easily accessible to many more neighbourhoods, reducing the need for park and ride facilities.





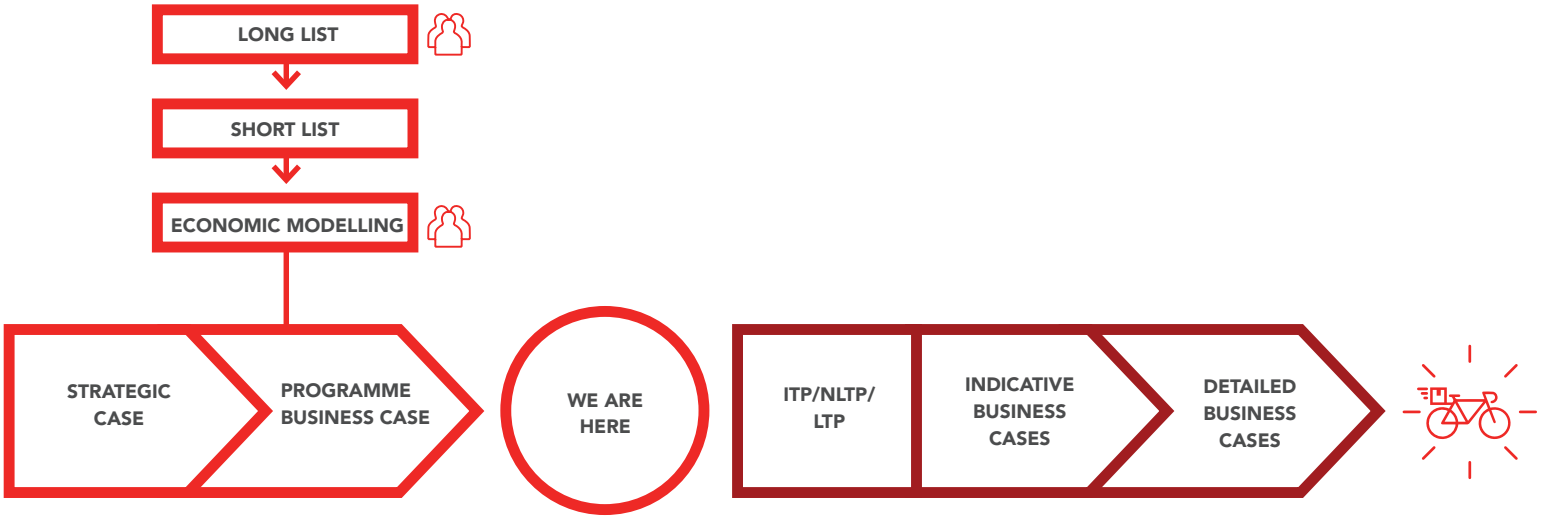
Process

This programme focuses on specific cycling projects being delivered by Auckland Transport and the NZ Transport Agency. Other cycling investments are being delivered through the **Supporting Growth, AMETI and the Auckland Airport business cases,** and therefore are not included in this programme.

Further investments will also be made through local boards, and as part of the Heartland Rides routes by the Transport Agency. This programme prioritises areas for investment and provides partner agencies with direction about co-investment opportunities.

The Integrated Transport Programme calculator is used to determine the ranking of all transport programmes which are seeking funding for delivery. Cycling is one programme and will be ranked according to the criteria in the calculator against other programmes like public transport or growth related proposals.

Auckland Transport business units work together during planning phases to, where possible, co-deliver programmes of work to make the most efficient use of funding and minimise disruption to road users.



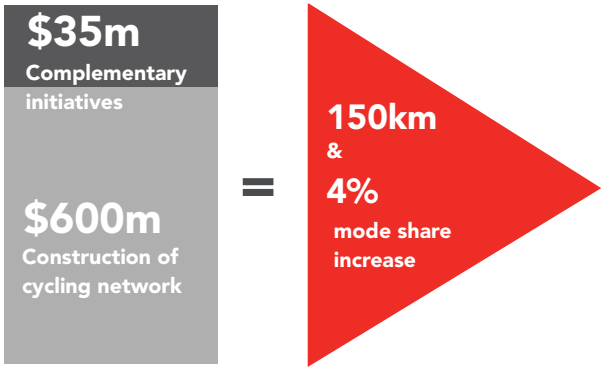
Programme Overview

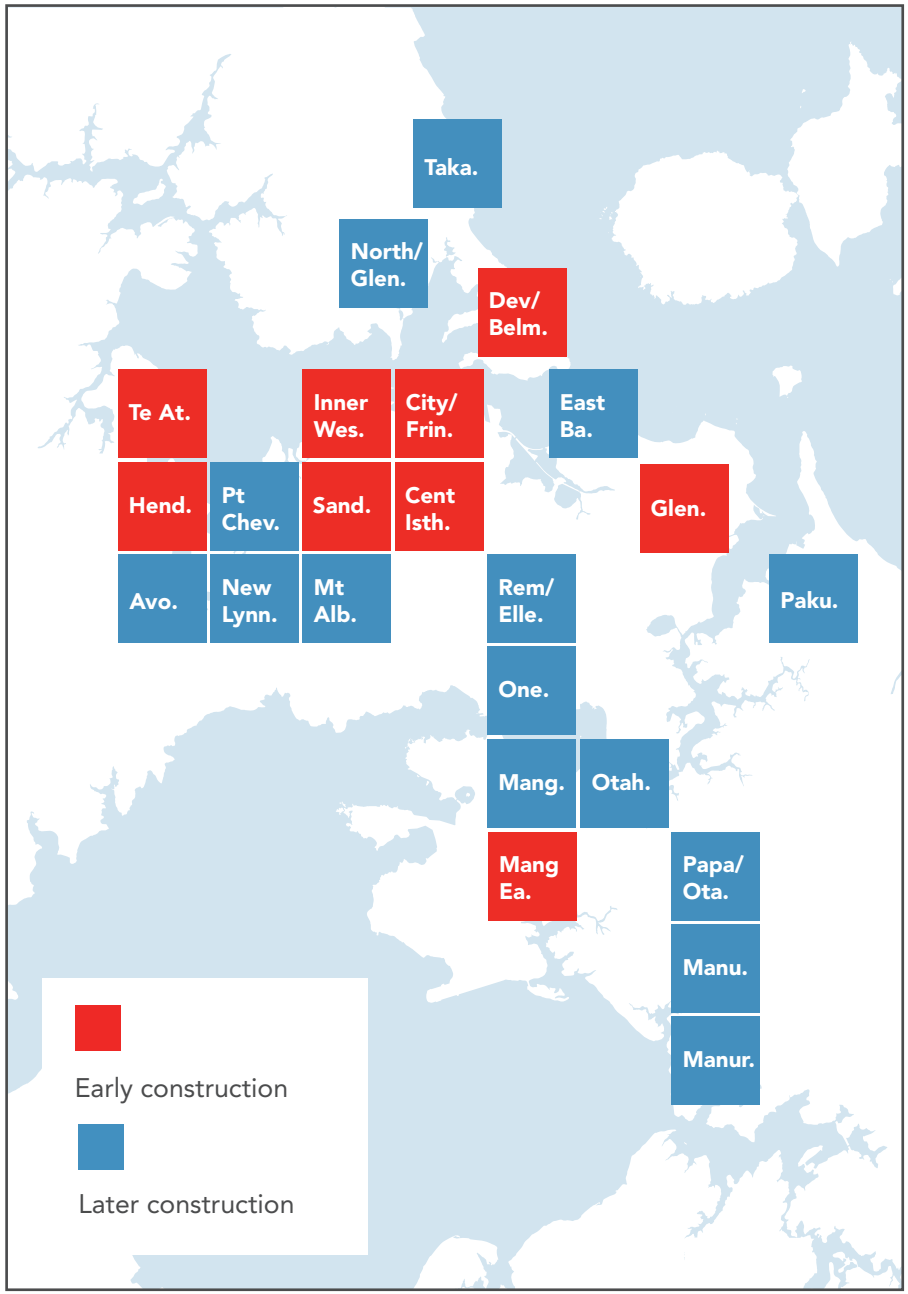
We estimate that the proposed programme would be an investment of $635 million and have prioritised the most strategic areas to start first. If we maintain our current investment levels this will take 10 years to deliver.

The funding process will establish how long it will take to deliver the programme which consists of approximately $600 million of new cycleways and $35 million of complementary initiatives.

Complementary initiatives help to maximise the potential of new cycleways and include initiatives such as bike share, speed management and cycleway and way-finding signage.

RECOMMENDED INVESTMENT
Funded by AT and the NZ Transport Agency





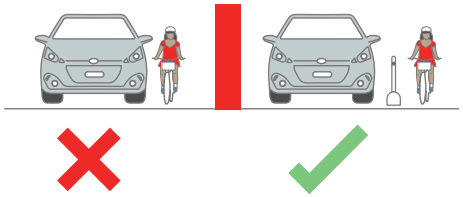
Problems

There are three main problems that the Programme addresses:

CYCLING **FEELS UNSAFE**

60%

would cycle with better infrastructure.

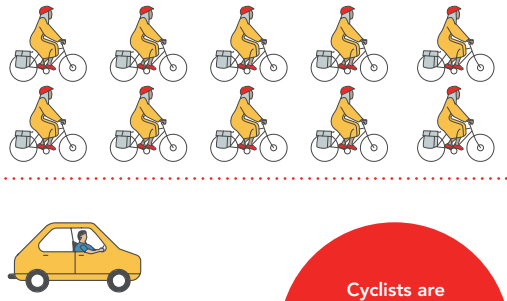


CONDITIONS FOR CYCLING **ARE UNSAFE**

Cyclists are involved in

10x

as many serious crashes as motorists (by mode share).

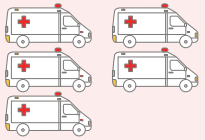


Cyclists are disproportionately represented in serious and fatal crashes.

AND THERE ARE **SERIOUS IMPACTS** FOR SOCIETY

Annually, transport emissions cause:

5x



as many premature adult deaths as the regional road toll, and costing society

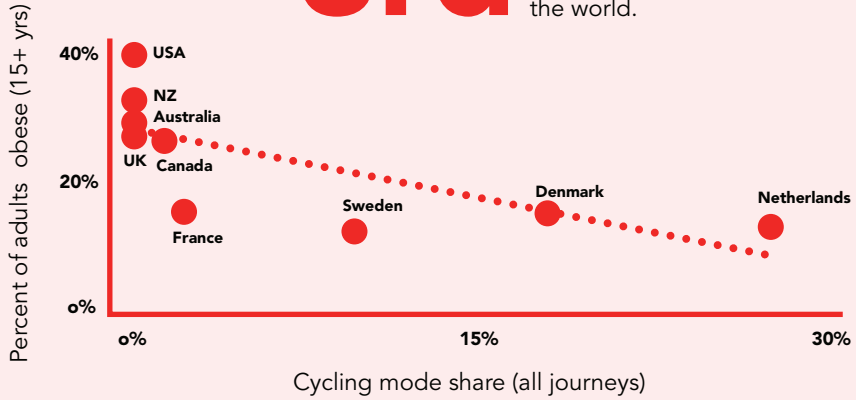
$466m

from mortality and morbidity.

38%

of Auckland's greenhouse gas emissions come from transport.

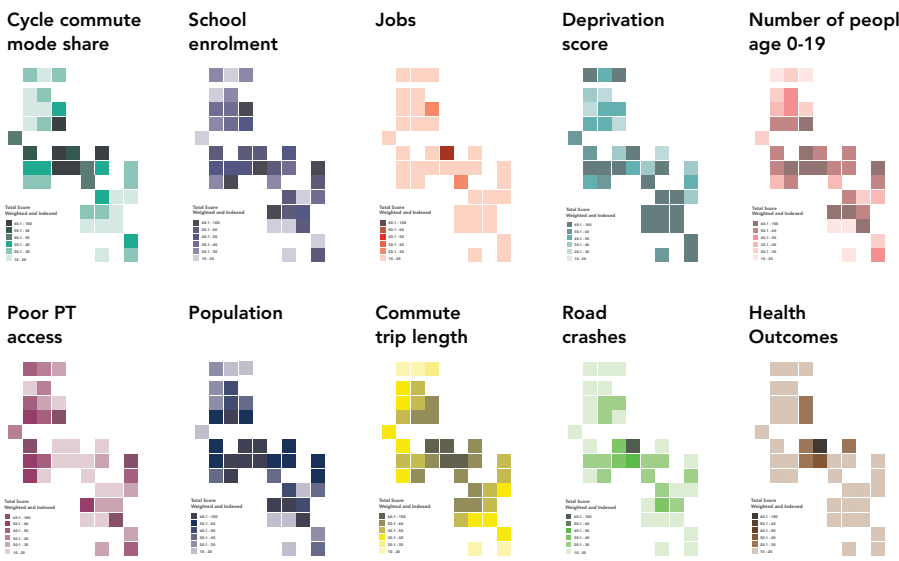
NZ has the **3rd** most obese population in the world.



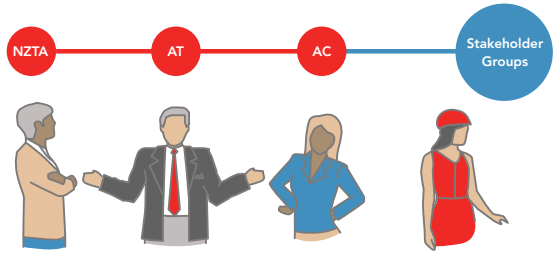
How We Came Up with the Programme

The analysis presented below has undergone a robust process to determine the areas for investment. The city centre ranks highly for increasing trips and reducing congestion but addressing projected declines in access to jobs in large parts of the west and some parts of the south means they also score highly. We have used economic modelling to come up with benefit cost ratios as shown on page 12. Within the range of options the health and environment benefits are between $468m - $760m and the safety benefits are between $18m - $20m.

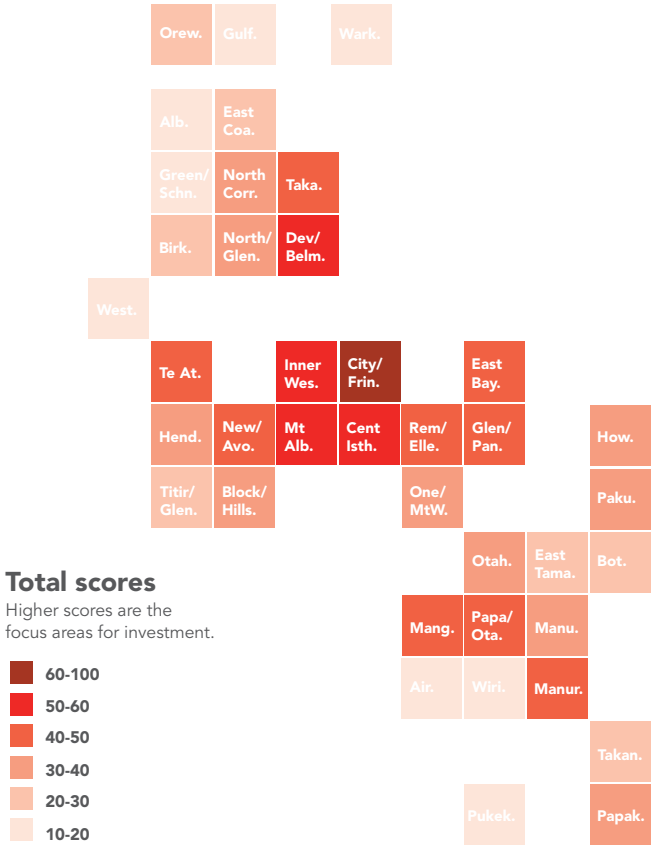
1 We analysed numerous data sets:



2 We consulted with key stakeholders:



3 The combined analysis showed the best areas for investment:



Who we are building for

The programme targets practical trips and journeys where mode shift to cycling would benefit the wider transport system. This is about targeting congestion and improving access to jobs and study across Auckland.

Liz

Place activator

Enjoys her short commute into work from Grey Lynn.

Mat

Planner

Rides his bike to Birkenhead and then takes the ferry to the office.

Maliu

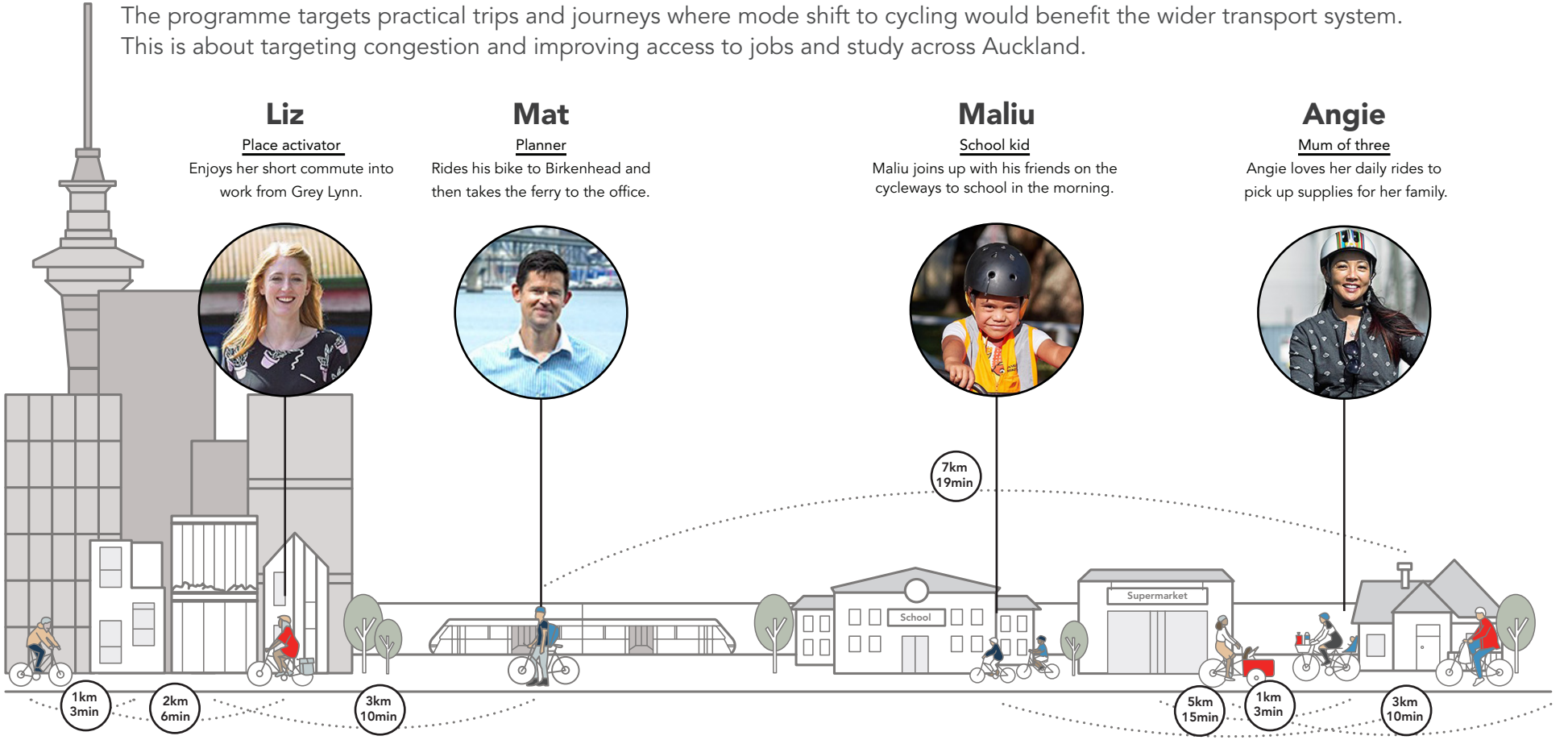
School kid

Maliu joins up with his friends on the cycleways to school in the morning.

Angie

Mum of three

Angie loves her daily rides to pick up supplies for her family.



SHORT-MEDIUM DISTANCE COMMUTES

CONNECTIONS TO MAIN STATIONS

TRIPS TO SCHOOL

EVERYDAY HOUSEHOLD TRIPS

Types of Cycleways

The type of cycleway we build depends on a number of factors such as who is using it and what the street environment is like.

We know the many more Aucklanders would go by bike if they felt safer and didn't have the stress of driving with fast, heavy traffic.

High quality cycleways that form a connected network maximise the investment in cycling as they attract the most users and have the most impact on congestion.

In some areas we are trialling innovation and flexible solutions to extend the cycleway network, such as flexi posts and rubber curbs. These could be temporary until separated cycle ways are built as part of corridor upgrades.

Ayisha

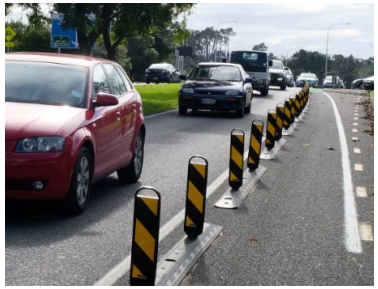
"I love the freedom of riding along the pink Lightpath, crossing the North Wharf Bridge and then the Quay Street Cycleway."

PROTECTED CYCLEWAY

TRAFFIC CALMED STREET

SHARED PATH

TEMPORARY, COST EFFECTIVE SOLUTIONS



Complementary Initiatives

Complementary initiatives support the success of new cycleways:

Public cycle parking

Potential to install approx. 5,000 additional short-stay parking spaces. Further investigation of long-stay parking at public transport stations.

Public bike share

Feasibility study of a cycle share scheme for Auckland's city centre is underway.

Bikes on buses

Investigate feasibility and benefits. Initial trial on two suburban bus routes.

Speed management

Incorporate cycle route priorities on the urban network into AT's Speed Management Implementation Plan.

NZ Police enforcement

Work with Police on speed enforcement at high-risk locations, areas of increased cycling including schools, town centres and commuting routes.

Cycle lane enforcement

AT to deliver ongoing enforcement of vehicle use of on-street dedicated cycle lanes. Opportunities for integration with parking enforcement.

Marketing and events

Continue promotion, community engagement and events that support cycling.

Travel behaviour change

Continue schools and business travel behaviour change programmes.

Cycle training

Expand the cycle training programme to target key communities.

Cycle way-finding, signage and maps

Easy to understand signage and maps.

What Investment Looks Like

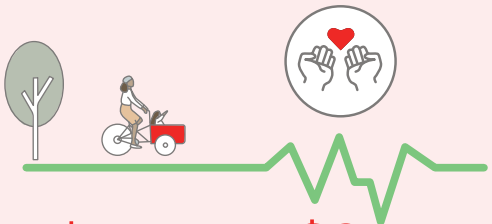
Te Ara Mua, Future Streets Māngere has delivered improvements to six streets around the Māngere Town Centre including protected cycleways and new crossings on busier roads, as well as traffic calming on local streets and new paths through parks. Significant local engagement including a Bikes in Schools programme and training and events has meant more people walking and going by bike and slower streets and a safer environment for the people of Māngere. This project has been so successful because the whole network of streets have been addressed, rather than a few alterations made to the environment.

Auckland Transport and the NZ Transport Agency worked with the Mangere-Otahuhu Local Board and Mackie Research and Consulting to deliver the project.

What Success Looks Like

The benefits of the programme have been derived using our cycle demand model and the NZ Transport Agency economic evaluation manual. Getting more Aucklanders on bikes will see the programme deliver:

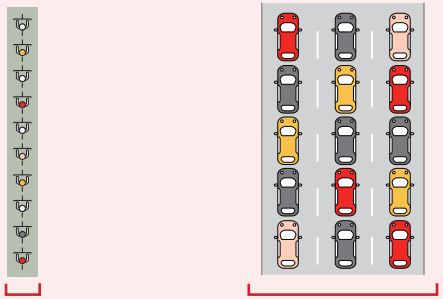
INCREASED **BENEFITS**



$1 invested In cycling → **$2-4** in benefits for society

INCREASED **SPACE**

4,500 **PEOPLE BY BIKE** OR **4,500** **PEOPLE BY CAR**



4,500 people are expected to travel to the city by bike (in the AM peak). This is the equivalent of **three lanes of traffic.**

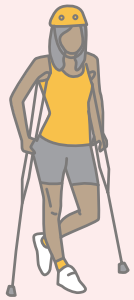
LESS **POLLUTION**

9,000 Less car trips per day on Auckland's network by 2026.

Reducing carbon emissions by more than **13** **tonnes** per day.

FEWER **INJURIES**

A 10-20% reduction in cycling related incidents would correspond with:



40-80

FEWER SERIOUS INJURIES

1-2

LESS DEATHS

over the 10-year period 2018-2028

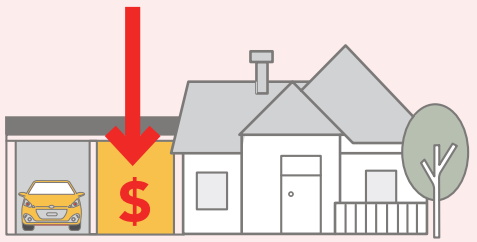
FEWER **HEALTH COSTS**

Saving society **$1,410** in health costs per year per person cycling regularly.

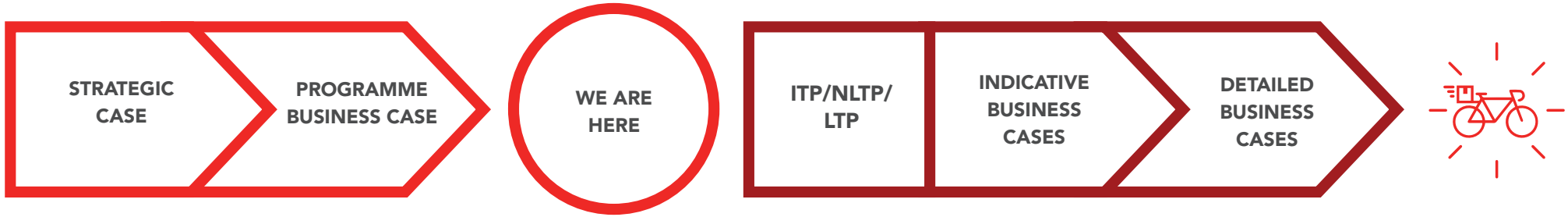
FEWER **HOUSEHOLD COSTS**

Families using one fewer car could save, on average:

$10,200 every year



Next Steps:



The Integrated Transport Programme calculator is used to determine the ranking of all transport programmes which are seeking funding for delivery. Cycling is one programme and will be ranked according to the criteria in the calculator against other programmes like public transport or growth related proposals.

NEXT STEPS

- There are a number of projects from the 2015-18 programme that will be completed in 2018/19 and will require additional capital investment in that year.
- The level of investment made available for this strategy will be determined through AT's Integrated Transport Programme, the National Land Transport Programme and the Auckland Council's Long-Term Plan.
- We will develop indicative business cases for the first priority areas to ensure effective delivery of the programme in 2018-21.