



FUTURE STREETS
Te Ara Mua



Future Streets Design: Retrofitting neighbourhood routes to optimise public health

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Human Centred Design



**But we are
not Dutch!!!**





Improving existing suburban infrastructure:

1. Self Explaining Roads
(Liveable Streets)

2. Future Streets

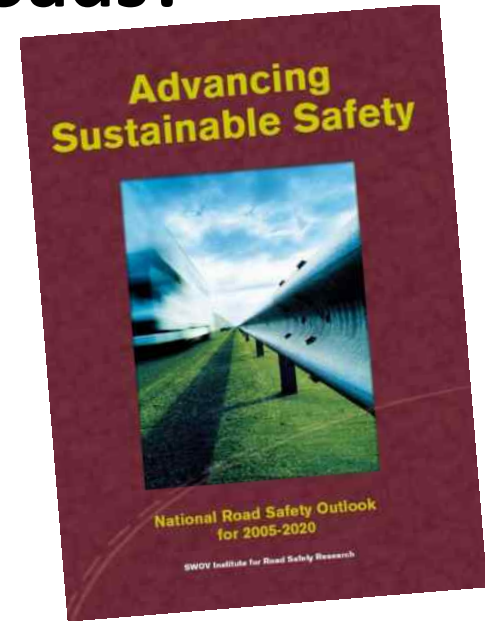
Self Explaining Roads

What are self explaining roads?

Functionality

Homogeneity

Predictability



Safety Science 19 (1995) 217-225

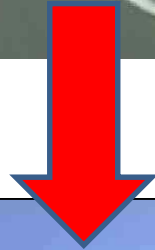
Self-explaining roads

Jan Theeuwes, Hans Godthelp

TNO Human Factors Research Institute, P.O. Box 23, 3769 ZG Soesterberg, The Netherlands



Local roads Pre



Local roads Post

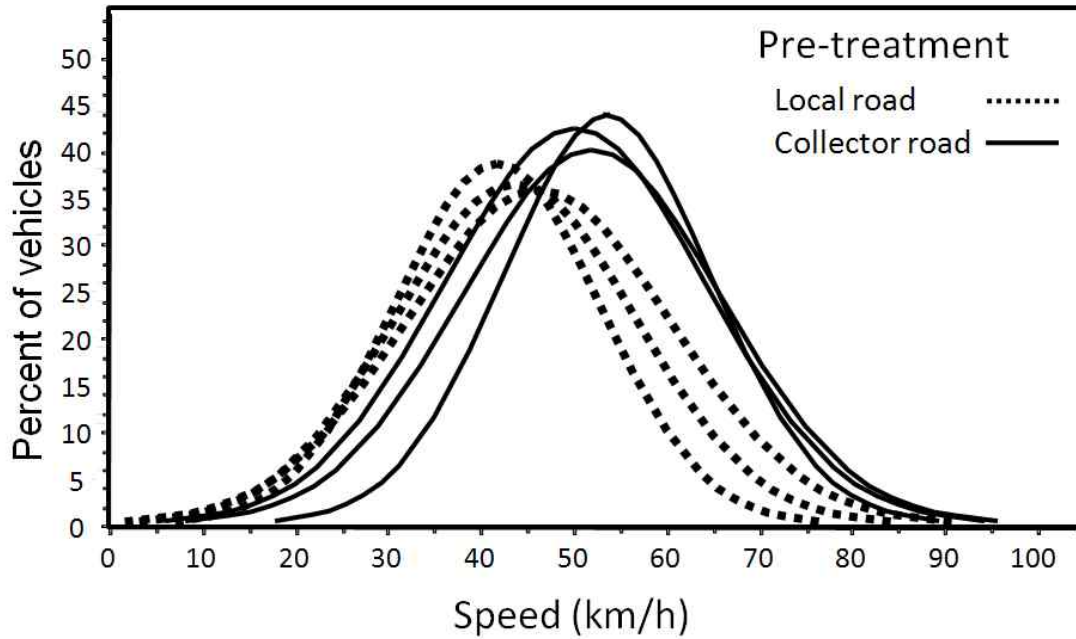


Collector roads Pre



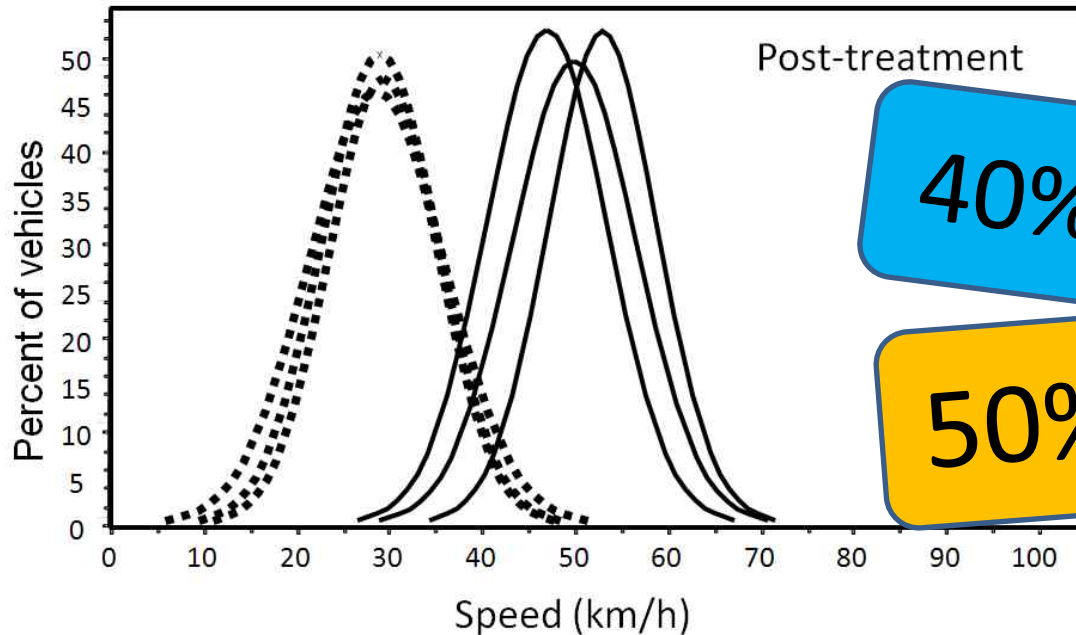
Collector roads Post





Charlton, Mackie et al. (2010).
AA&P 42(1989-1998).

Mackie, Charlton et al. (2013).
AA&P 42(742-750).



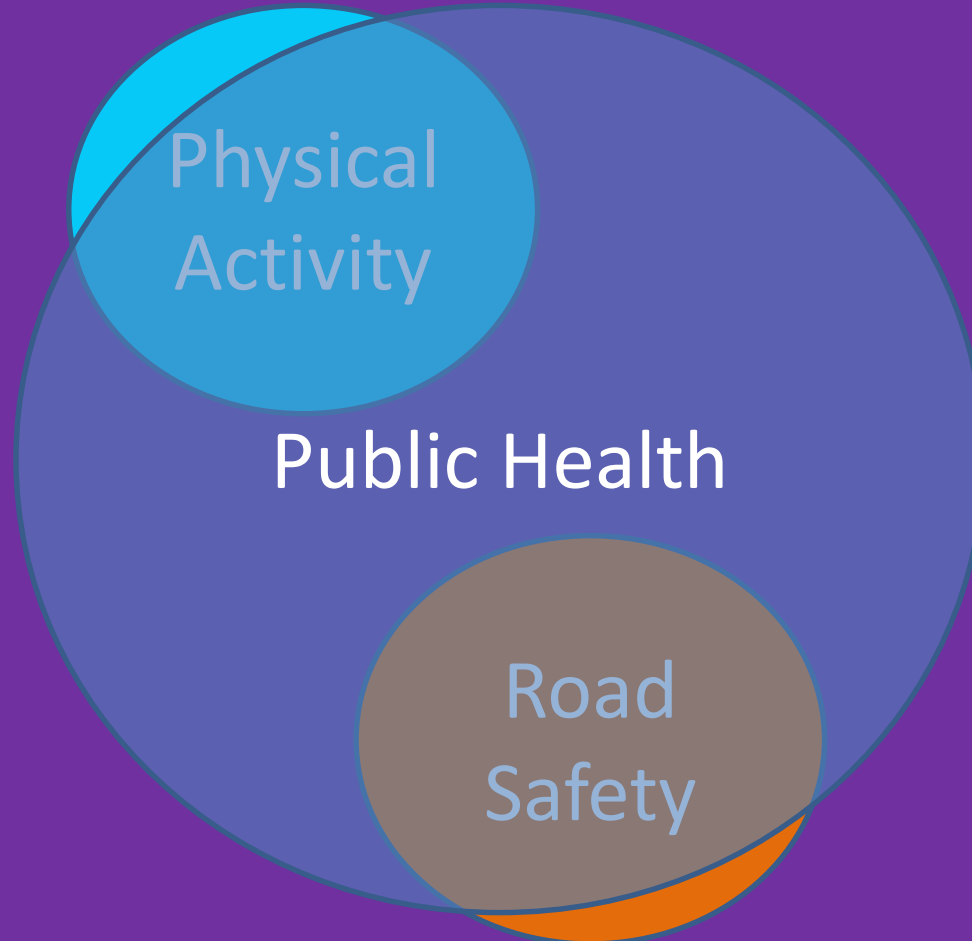
40%

Crash reduction

50%

Reduction in
crash costs

Street design and Public Health





FUTURE STREETS

Te Ara Mua

Te Ara Mua – Future Streets is an exciting project to make streets around Māngere Central safer and easier for people to travel around, especially by walking or cycling.

Please let us know what you think by December 8 at www.futurestreets.org or by calling Hamish on (09) 579 2328



Future Streets

Te Ara Mua

Proudly supported by Auckland Transport



The People of Mangere



Ministry of Business, Innovation & Employment



Safer Journeys
Signature Programme



The Research Team

- Peter Baas (TERNZ)
- Hamish Mackie (Mackie Research)
- Alex MacMillan (Otago)
- Adrian Field (Dovetail)
- Alistair Woodward (Auckland)
- Jamie Hosking (Auckland)
- Karen Witten (SHORE - Massey)
- Melody Oliver (AUT)
- Joanna Stewart (Auckland)

Lydia Sosene
Lina Samu
Rau Hoskins
Samuel Charlton
Bridget Burdett

Future Streets Aims



With an equity focus,

1. demonstrate a *process* for design and implementation
2. Measure health, environmental, social effects of retrofitting low income suburban streets
3. model more generalisable costs and benefits
4. influence institutional change in transport policy

Before and after intervention study design

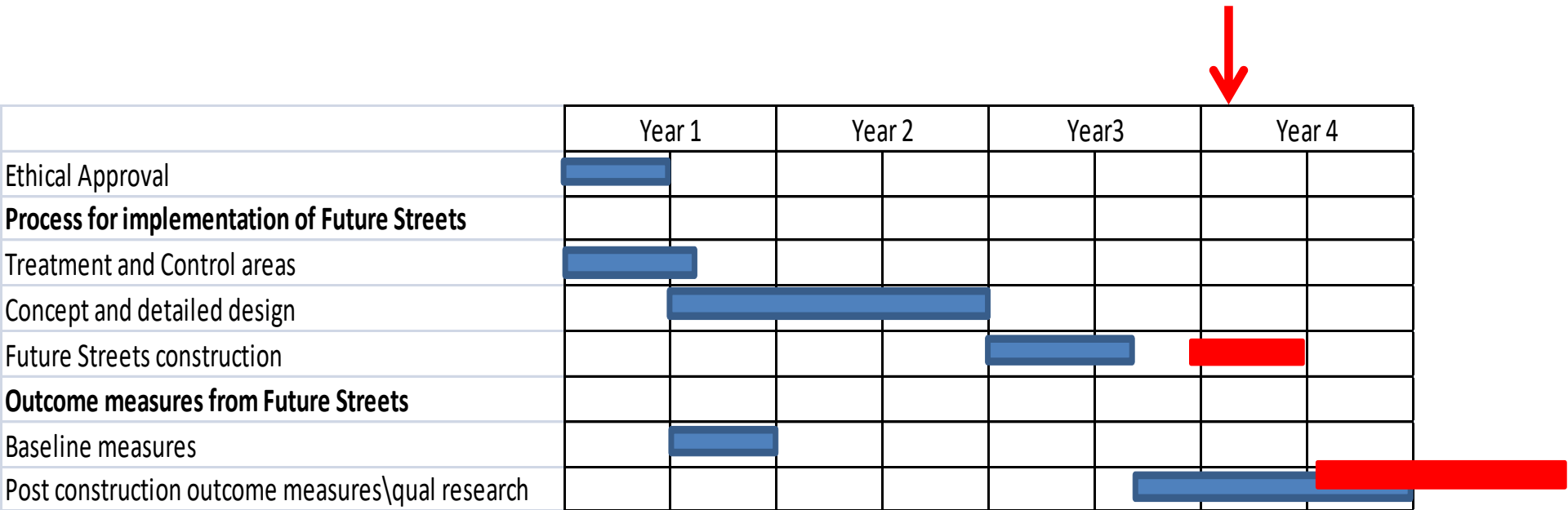
	Intervention area Mangere Central	Control area Mangere East
Before	Traffic behaviour <ul style="list-style-type: none">• Speed & volume measures• Video of behaviour• Motorists, peds & cyclists• Footpaths & roads Residents surveys <ul style="list-style-type: none">• Mode use to local destinations• Physical activity• Neighbourhood perceptions• Injuries (self report & data linkage)• Children & adults	
After		



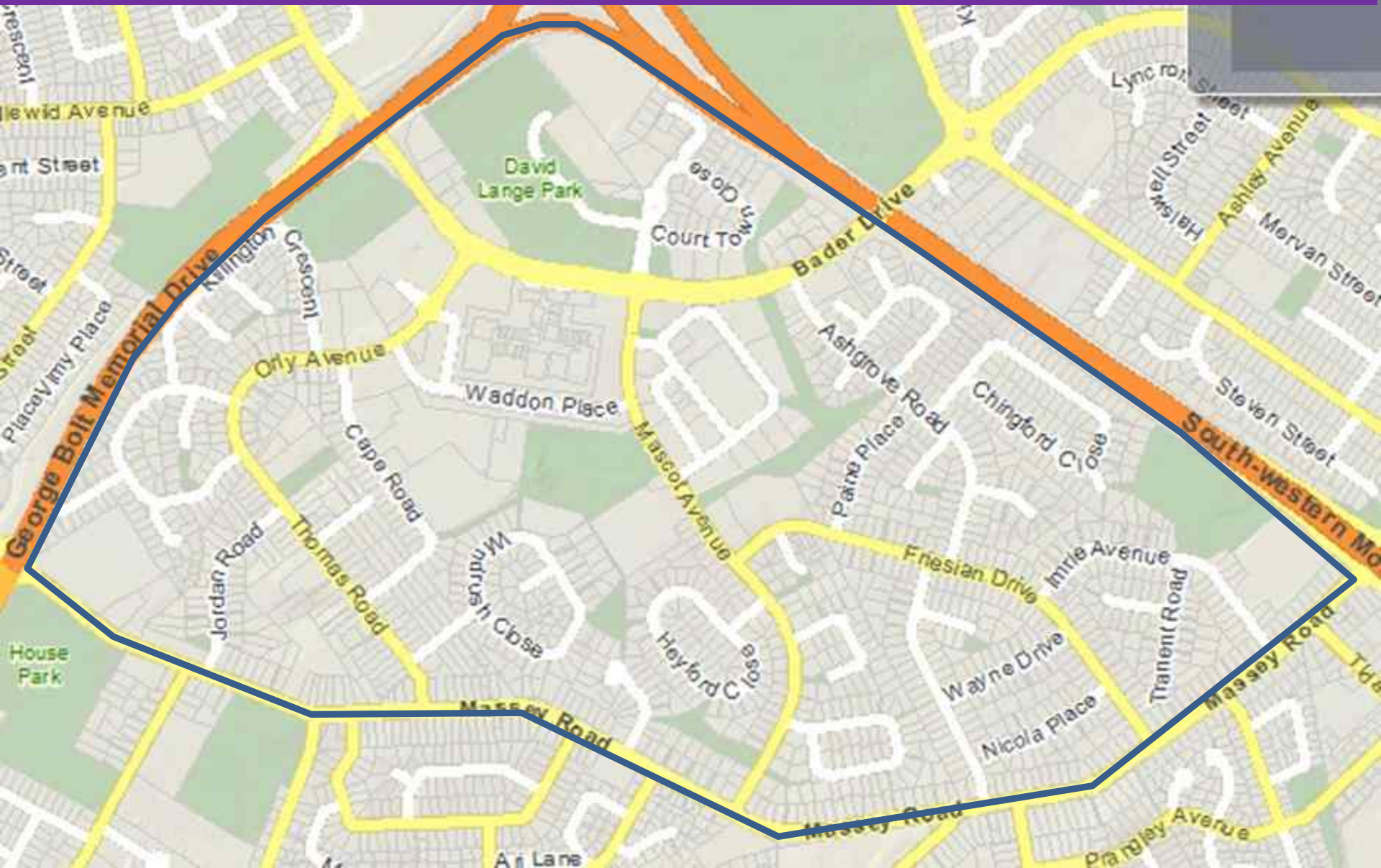
Intervention and control areas were matched for:

- Access to amenity destinations
- Street layout and age of development
- Demographics

Where are we up to?



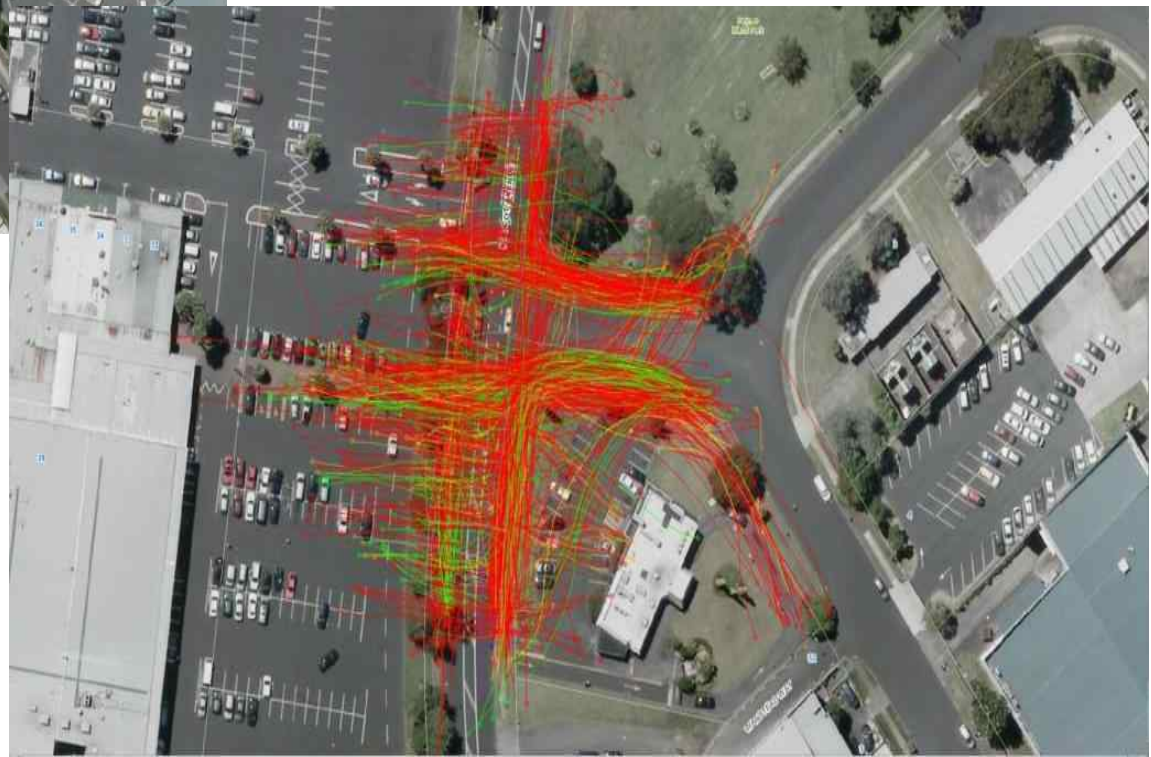
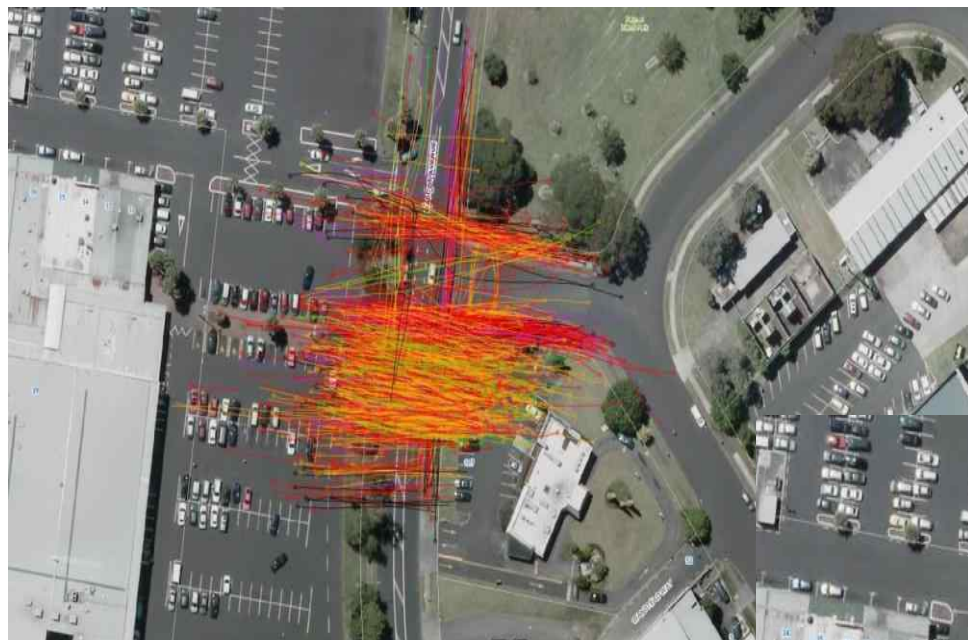
Intervention area Mangere Central



Community engagement



Background data



**Making streets around Māngere
Central *safer* and easier to
travel around, especially by
walking and cycling; and
reflecting local identity**

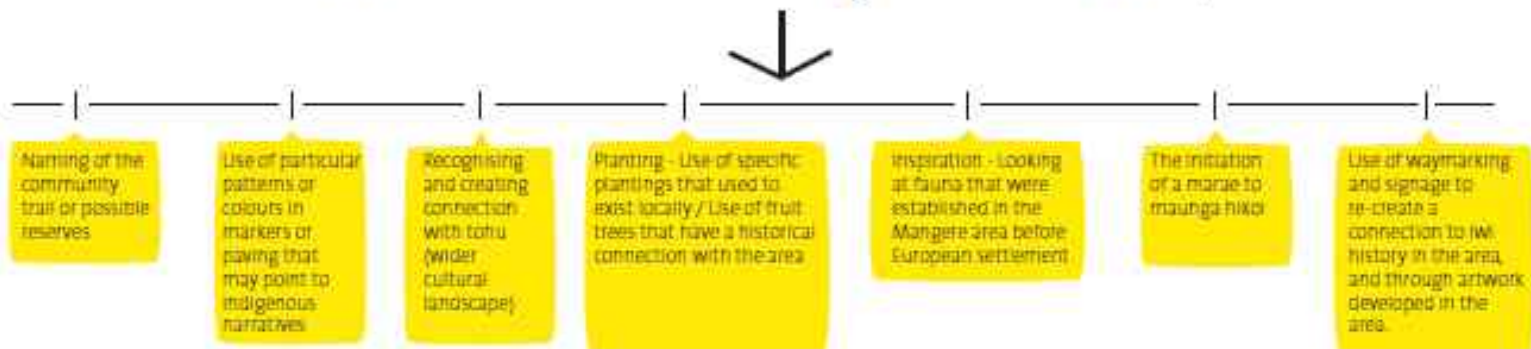
Design principles

1. Street/route hierarchy giving greater priority to pedestrians and cyclists
2. People feel safe on routes
3. Reduce traffic speed and make it more consistent
4. Improve peoples ability to cross the road safely
5. Schools and the Mall are priority destinations for the walking and cycling network
6. An arterial separated bike network is important
7. Improvements reflect the identity of Mangere people

Te Aranga and Key Possible Opportunities



Te Ara Mua Future Streets - Design Process and Response



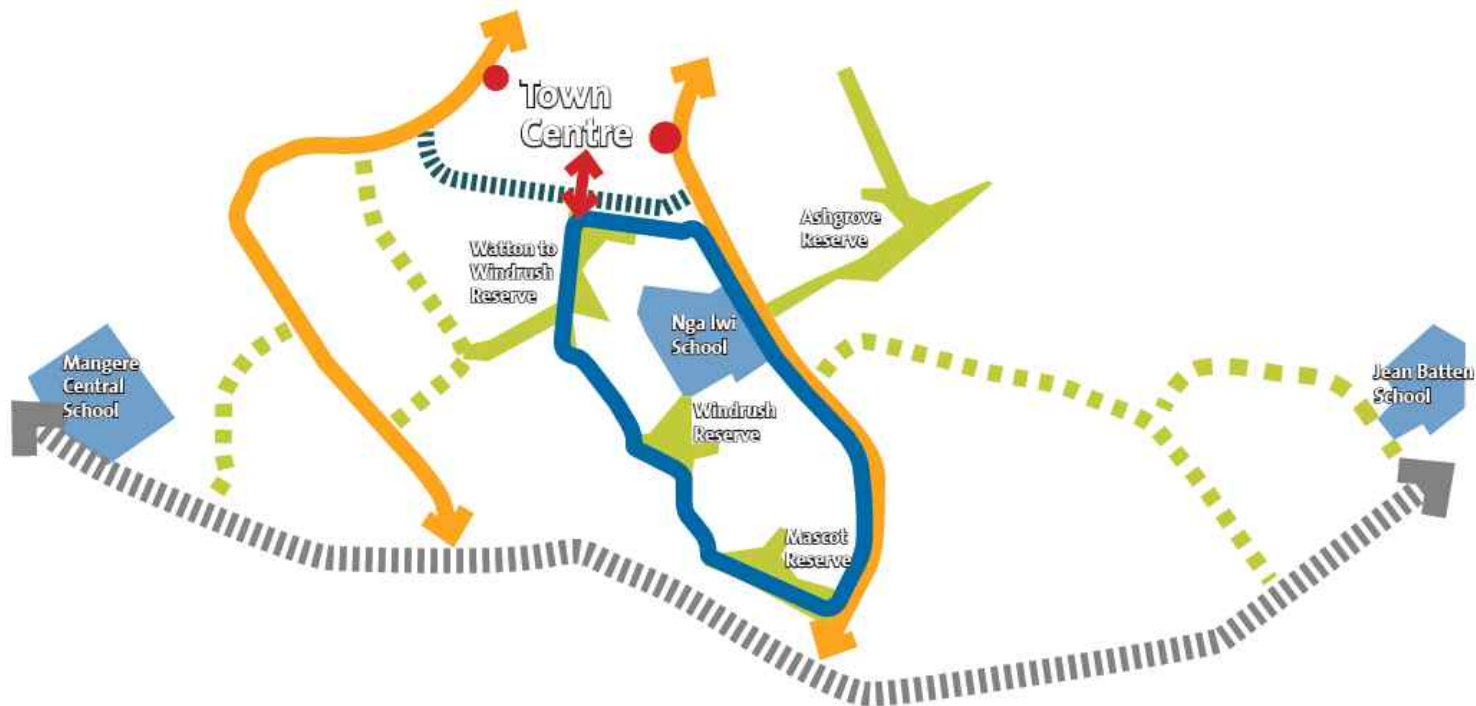
- 1 Planting
- 2 Way Finding Signage
- 3 Trail Marker Posts
- 4 Community Trail Ground Plane
- 5 Pou - Art Installation

Overall Treatment Plan

LEGEND	
ARTERIAL ROUTE	
COLLECTOR ROUTE	
LOCAL ROUTE	
CUL-DE-SAC ROUTE	
RECREATIONAL ROUTE	
KEY CYCLING	
KEY WALKING	
ARTERIAL TREATMENT	
COLLECTOR TREATMENT	
LOCAL TREATMENT	
SPECIAL TREATMENT	
WALKING ROUTES TREATMENT	



NETWORK PLAN



Potential Areas of Focus

- **Art Installation At Key Crossing Point Into Town Centre**
 - Group of carved pou on one or both sides of the street with pedestrian zebra crossing on raised table. Location to be confirmed.
- ↔ **Art Installation Along Key Pedestrian Axis**
 - A line of carved pou which highlight this significant pedestrian entry into the town centre and also connect the iconic fitness trail. Could possibly cross into the reserve.
- **Fitness Trail**
 Area of focus includes:
 - Ground plane treatment on paths
 - Planting
 - Lightpoles
 - Wayfinding / signage
 - Seating / furniture
- **Reserves**
 Area of focus includes:
 - Ground plane treatment on paths
 - Planting
 - Lightpoles
 - Wayfinding / signage
 - Seating / furniture
 - Possible artwork installations
- **Walking and Cycling Spine Routes**
 Area of focus includes:
 - Planting
 - Wayfinding / signage
 - Traffic Calmed Streets
 Area of focus includes:
 - Planting
 - Wayfinding / signage
- Potential East-West Car-park Street Shared Path**
 Area of focus includes:
 - Ground plane treatment
 - Wayfinding / signage
- Massey Road - Outside of project except for key crossing points and side street intersections**
 Area of focus includes:
 - Planting
 - Wayfinding / signage


MANGERE FUTURE STREETS
Overall Network Plan

DOCUMENT NUMBER: A14151_007
 Date: 22 October 2014

Revision: _
 Plan prepared for Auckland Transport by
 Boffa Miskell Limited
 Author: Jonathan Bath at boffamiskell.co.nz
 Checked: SMO

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WINDRUSH



Fitness Trail
Vertical Marker Posts

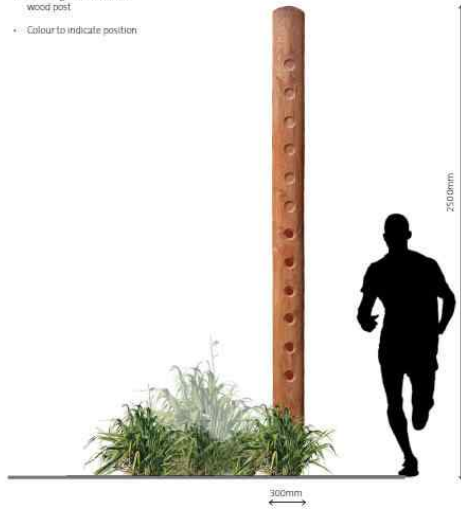


Fitness Trail Distance Markers



3 TRAIL MARKER POSTS

- Trail diagram carved onto wood post
- Colour to indicate position



Smooth concrete base

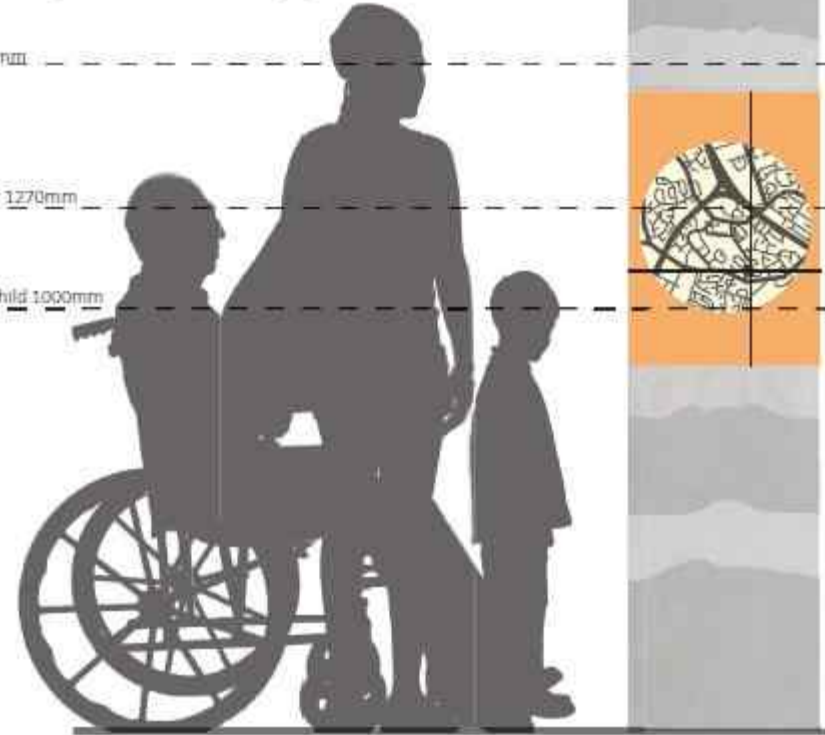
- Custom made signage panel for road network with cross hairs to show location of marker.
- The location plan can be rotated so the direction that the reader is facing corresponds to the location map.
- Historical maunga motif above and below signage

Kokowai

Adult 1600mm

Wheel chair 1270mm

9 year old Child 1000mm



Kokowai

Water

Fauna

Ear



Access to the Town Centre



Waddon – Windrush walkway to the Mall

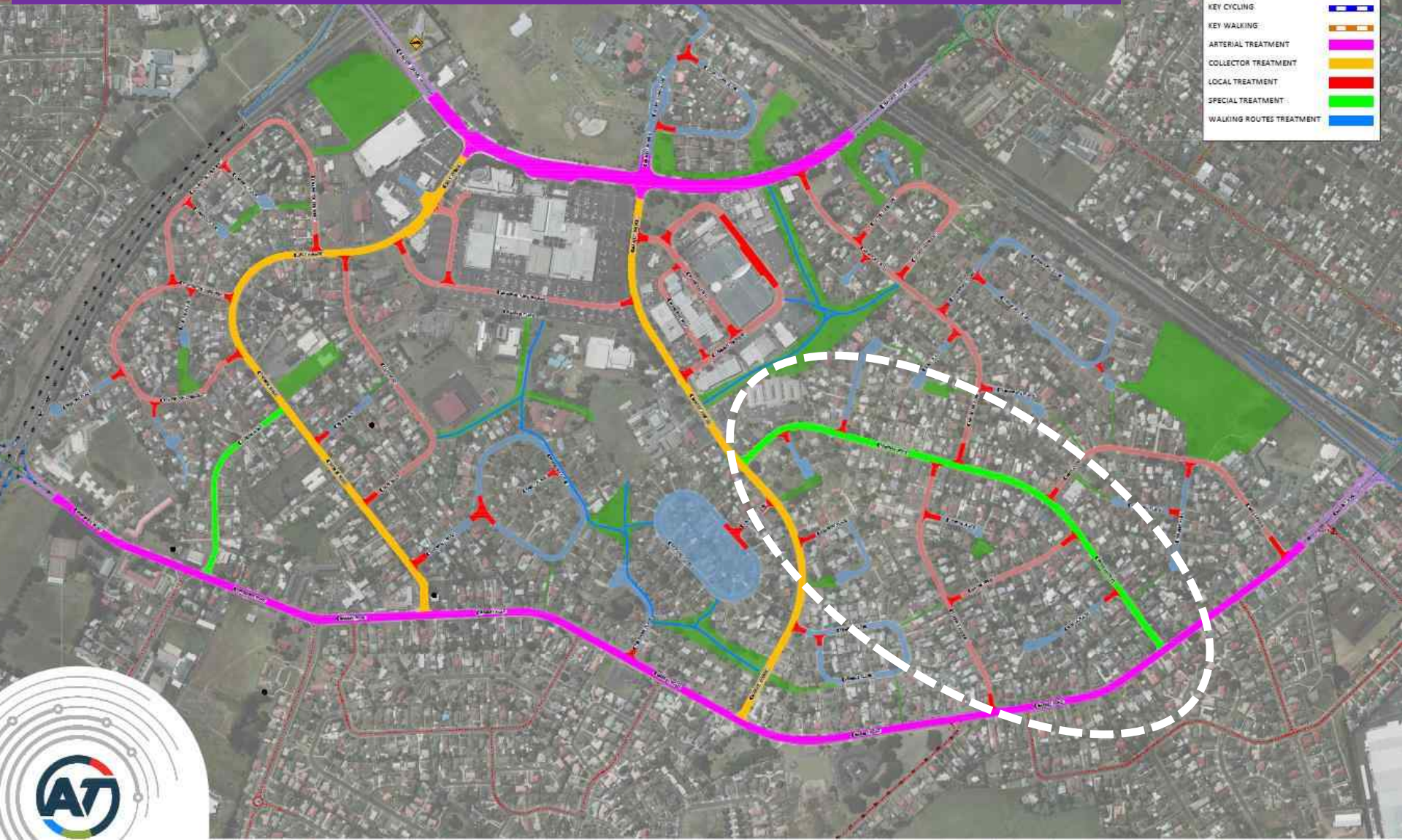




Source: AT

Key local route – Fresian Drive

LEGEND	
ARTERIAL ROUTE	
COLLECTOR ROUTE	
LOCAL ROUTE	
CUL-DE-SAC ROUTE	
RECREATIONAL ROUTE	
KEY CYCLING	
KEY WALKING	
ARTERIAL TREATMENT	
COLLECTOR TREATMENT	
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WALKING ROUTES TREATMENT	



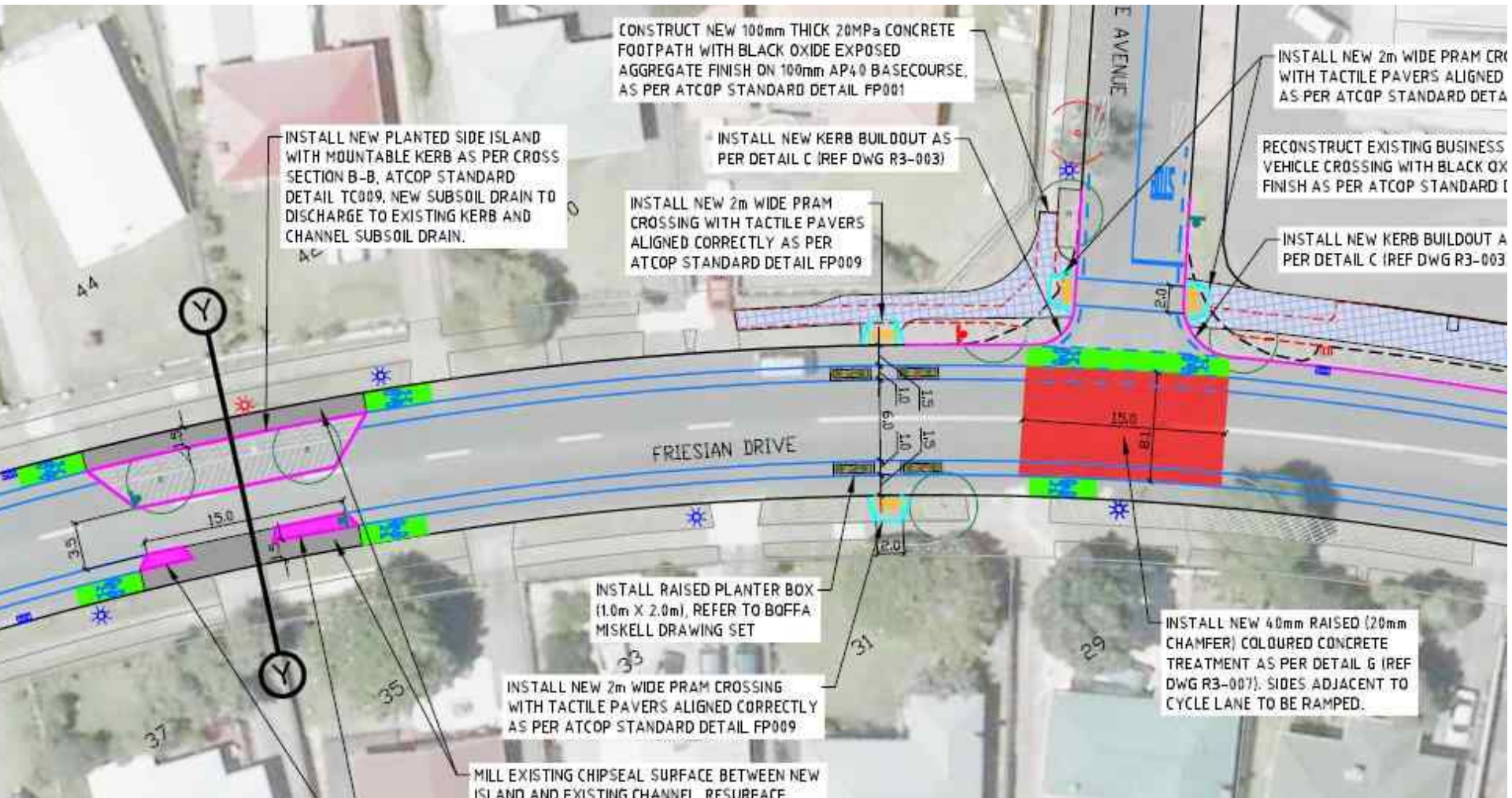
Fresian Drive (local route)



Informal re allocation of space: smooth surface path for cycling, scooting, skateboarding, skating



Final Fresian design



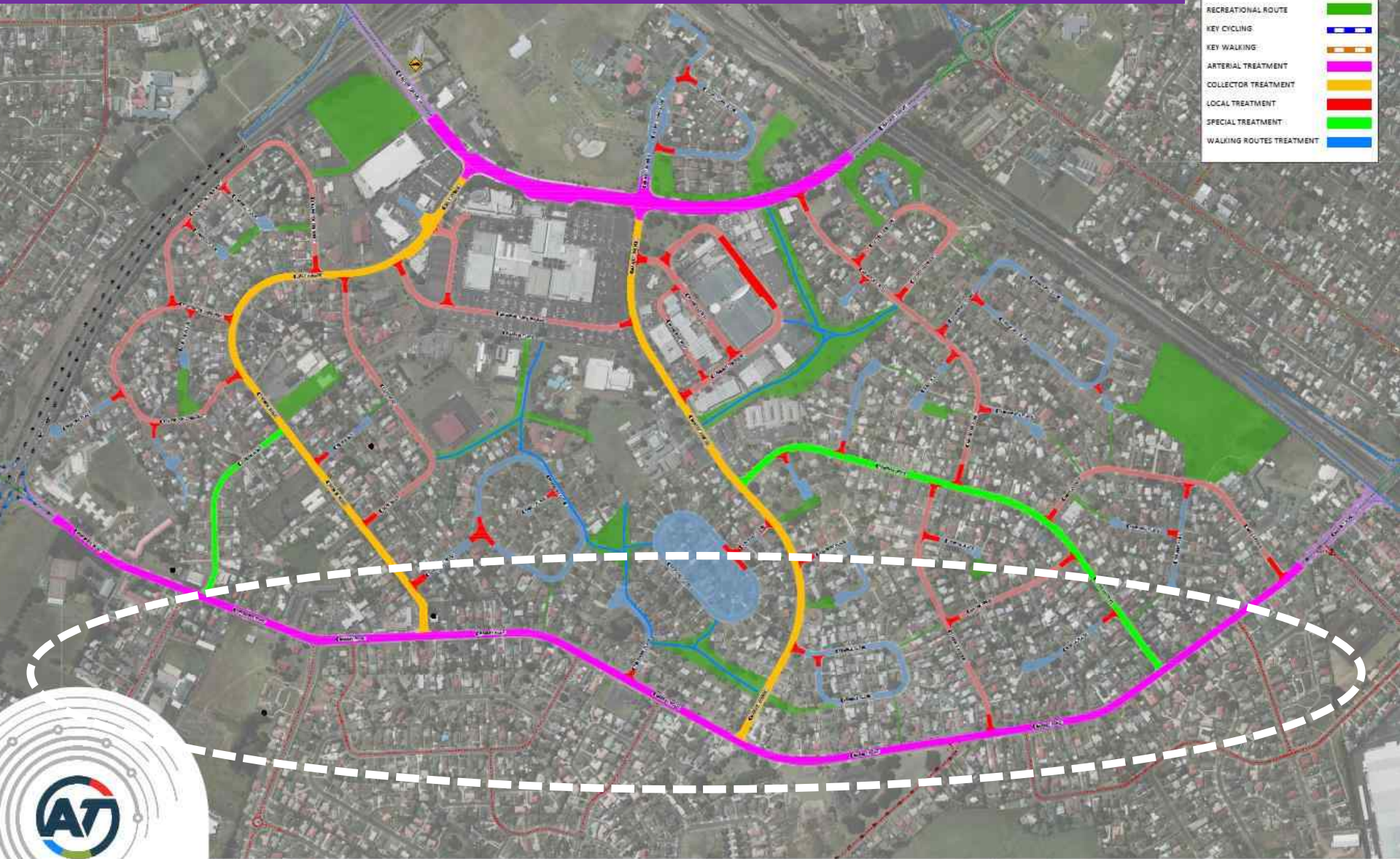


**Prioritising
pedestrians at
intersections:
Mascot & Forbury
(and Mascot &
Heyford)**

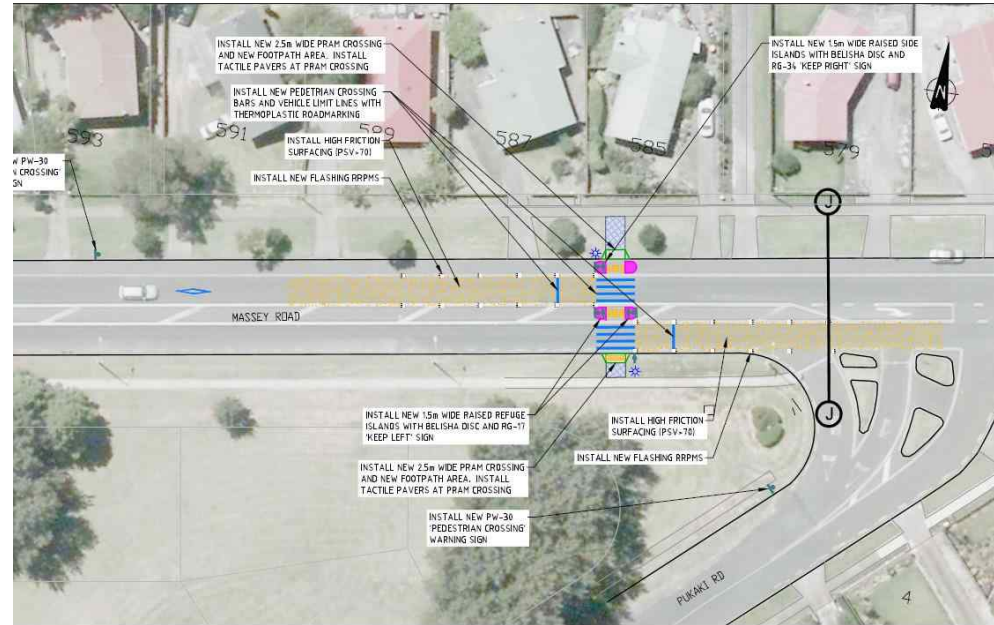


Massey Road Crossings

LEGEND	
ARTERIAL ROUTE	
COLLECTOR ROUTE	
LOCAL ROUTE	
CUL-DE-SAC ROUTE	
RECREATIONAL ROUTE	
KEY CYCLING	
KEY WALKING	
ARTERIAL TREATMENT	
COLLECTOR TREATMENT	
LOCAL TREATMENT	
SPECIAL TREATMENT	
WALKING ROUTES TREATMENT	



Enhanced zebra crossings



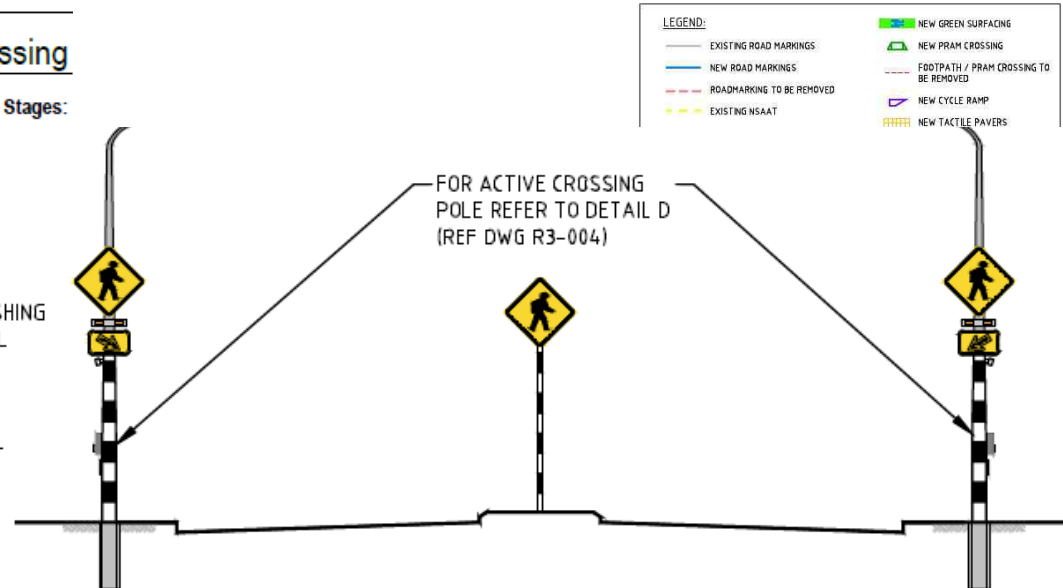
Trial Active Zebra Crossing

Construct Active Zebra Crossing in Stages:

Stage 1:
INSTALL STANDARD ZEBRA CROSSING, MONITOR

Stage 2:
1 MONTH LATER - INSTALL FLASHING SIGNS WITH AUDIO TACTILE CALL BUTTON, MONITOR

Stage 3:
1 MONTH LATER - INSTALL HEAT DETECTING SENSOR, MONITOR



Next Steps

Cultural dimensions - Now

Detailed design – Now

Construction → Oct 2015 – March 2016

Future Streets community activities

Post implementation data collection and analysis

Thank you!

