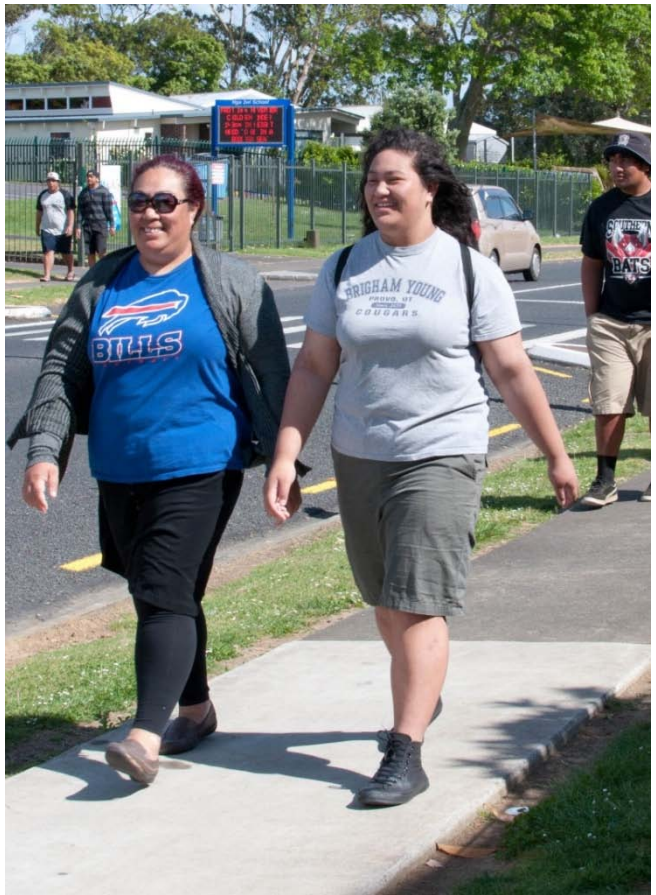


Te Ara Mua

Future Streets

Hamish Mackie

Trafinz Conference September 14-17

Mackie research & consulting
optimising human systems

What would ‘optimised’ suburban routes look like?

How user-friendly are our routes?

What are the wider costs and benefits of better routes for pedestrians and cyclists?


OPEN HOME
Paine Pl
No Exit


Thomas Rd
LIQUOR
Mobil
FRUIT SUPPLIES


kiwi bank
ANZ
Animates
Westpac
UN797


Google


No!!!! I can’t park my car out front?!


ZONE
30

Human Centred Design

But we are not Dutch!!!

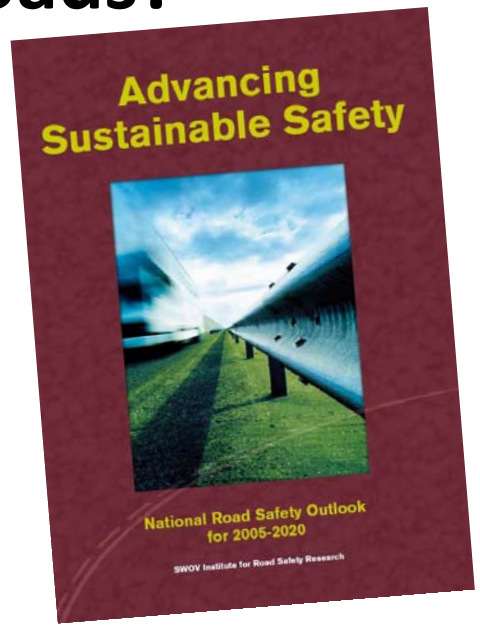
Self Explaining Roads

What are self explaining roads?

Functionality

Homogeneity

Predictability



ELSEVIER

Safety Science 19 (1995) 217–225

safety science

Self-explaining roads

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

Self Explaining Roads demonstration project

Project aim

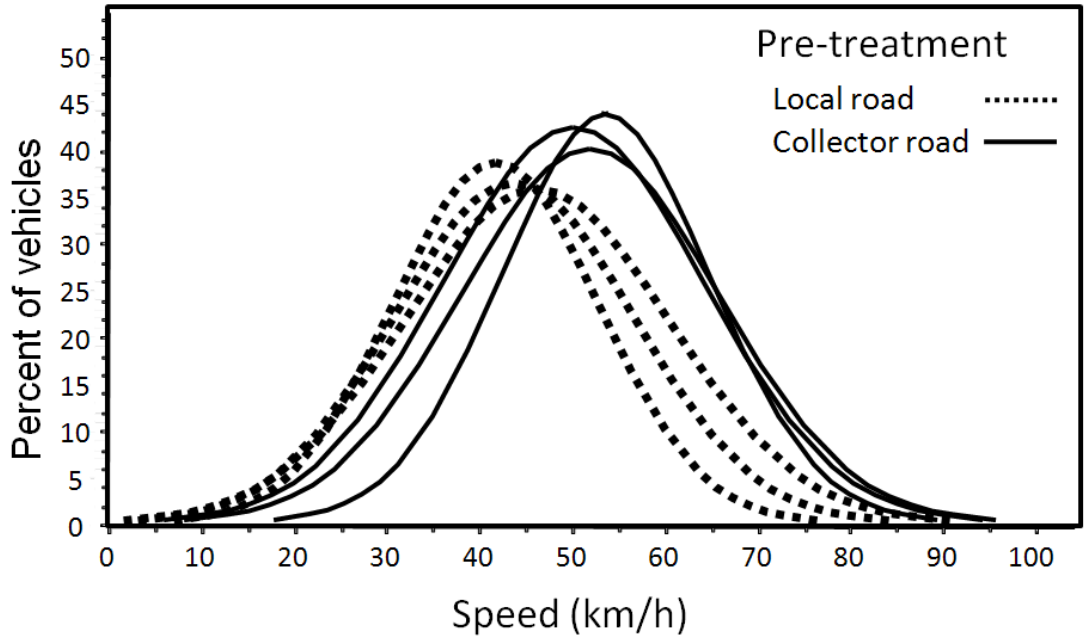
Understand road user behaviour changes and road safety outcomes from Self-Explaining road trial in New Zealand

Local roads before

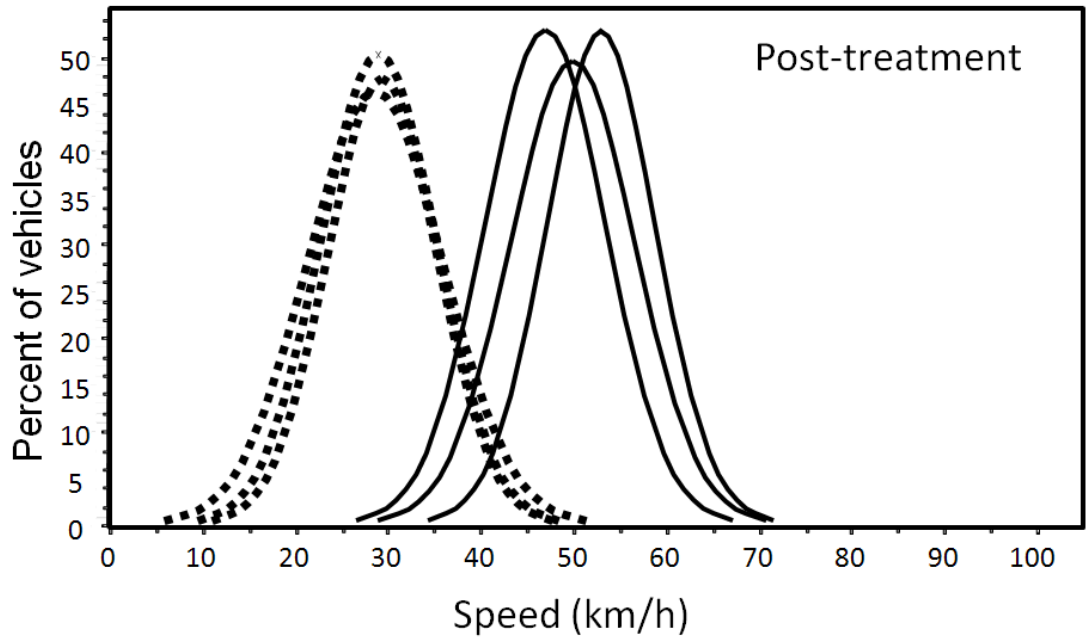
Collector roads before

Local roads after

Collector roads after

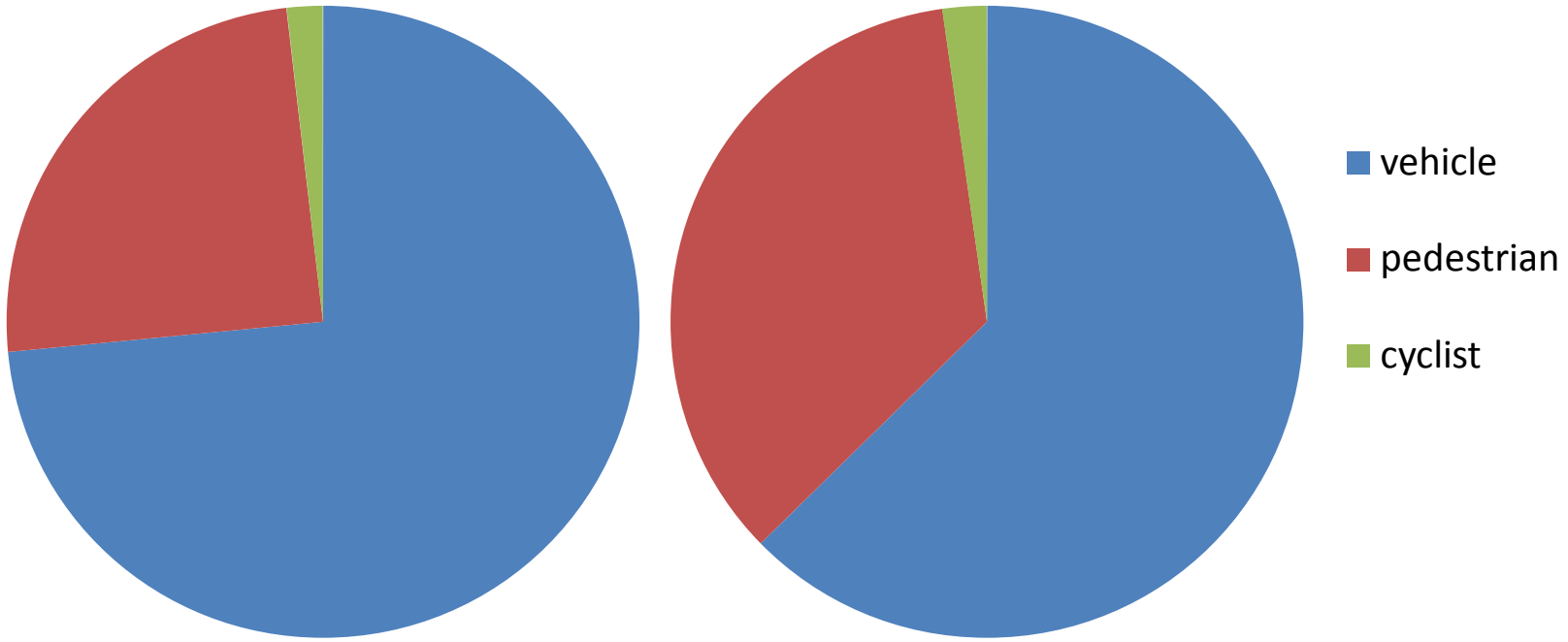


Similar speeds between categories with large variation



Distinctly different speeds with much less variation

A higher proportion of active trips on Local streets



Pre-construction

Post-construction

Fewer and less severe casualties

30% reduction in crashes → Consistent with overseas literature

75% reduction in crash costs

Accident Analysis and Prevention 42 (2010) 1989–1998

Contents lists available at ScienceDirect

Accident Analysis and Prevention

journal homepage: www.elsevier.com/locate/aap

Using endemic road features to create self-explaining roads and reduce vehicle speeds

Samuel G. Charlton [a,*], Hamish W. Mackie [b], Peter H. Baas [b], Karen Hay [c], Miguel Menezes [c], Claire Dixon [c]

[a] Traffic & Road Safety Research Group, School of Psychology, University of Waikato, Private Bag 3105, Hamilton, New Zealand
[b] Transport Engineering Research NZ Ltd., New Zealand
[c] Auckland City Council, New Zealand

Accident Analysis and Prevention 50 (2013) 742–750

Contents lists available at SciVerse ScienceDirect

Accident Analysis and Prevention

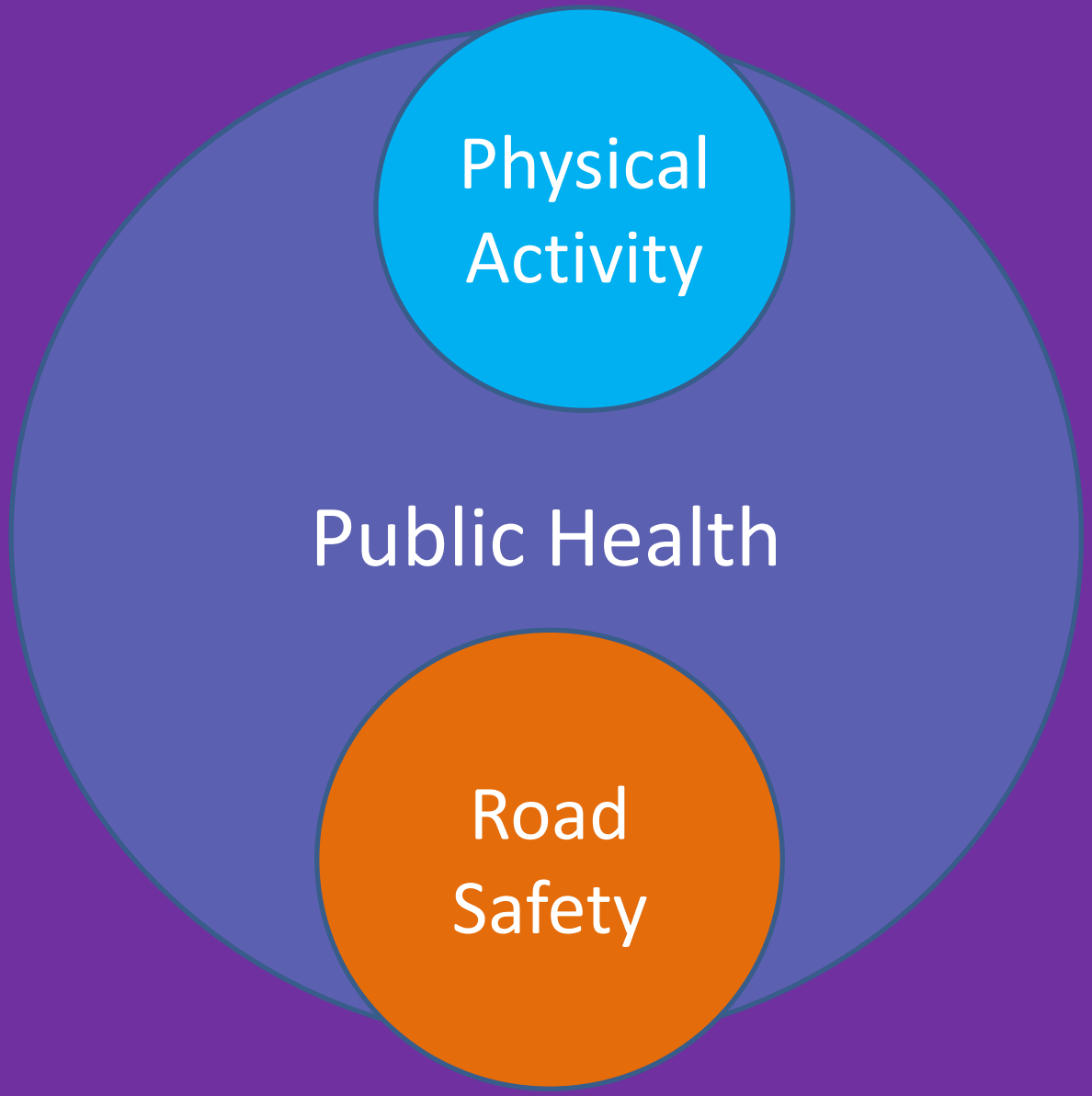
journal homepage: www.elsevier.com/locate/aap

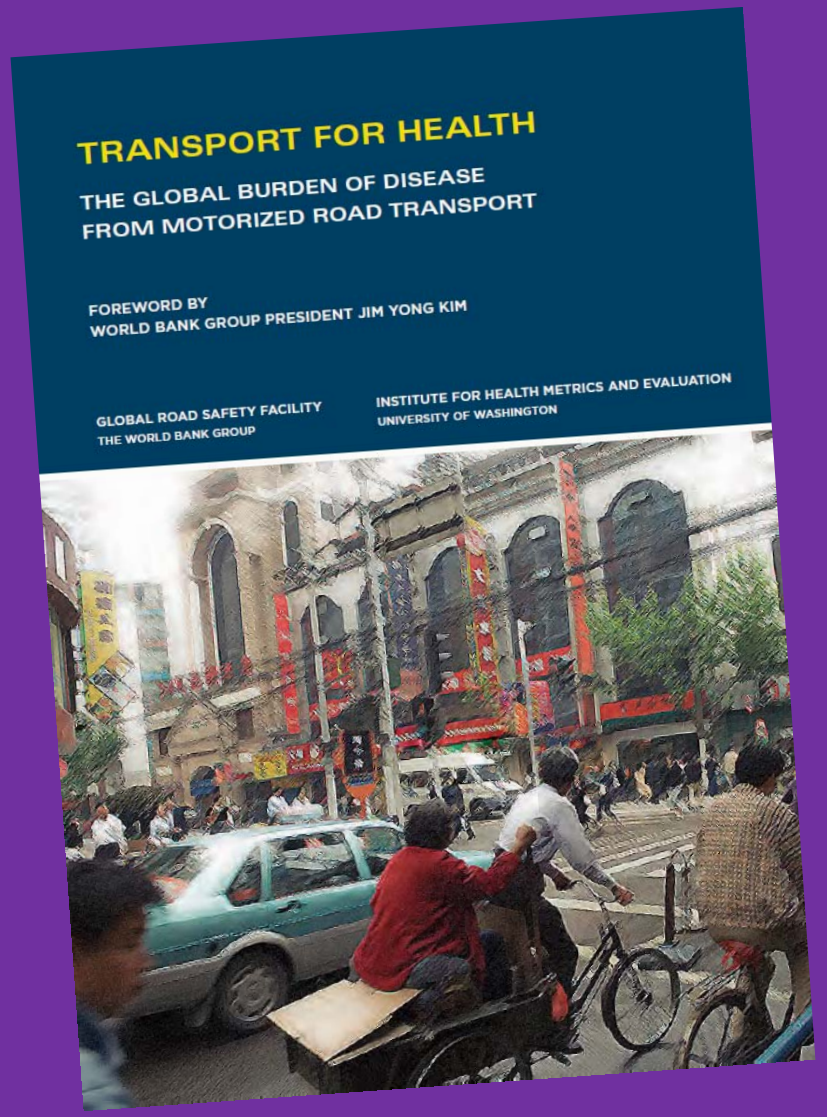
Road user behaviour changes following a self-explaining roads intervention

Hamish W. Mackie [a,*], Samuel G. Charlton [b], Peter H. Baas [c], Pablo C. Villasenor [c]

[a] Transport Engineering Research NZ Ltd/Mackie Research and Consulting Ltd, P.O. Box 106573, Auckland 1143, New Zealand
[b] Traffic & Road Safety Research Group, School of Psychology, University of Waikato, New Zealand
[c] Transport Engineering Research NZ Ltd., New Zealand

Road design is a public health issue





The health benefits are likely to be much greater than safety benefits

RESEARCH ARTICLE VOLUME 122 | ISSUE 4 | APRIL 2014

Environ Health Perspect; DOI:10.1289/ehp.1307250

The Societal Costs and Benefits of Commuter Bicycling: Simulating the Effects of Specific Policies Using System Dynamics Modeling

Alexandra Macmillan,[1] Jennie Connor,[2] Karen Witten,[3] Robin Kearns,[4] David Rees,[5] and Alistair Woodward[1]

Benefits (mostly health related) 10-25 times the costs

Do the Health Benefits of Cycling Outweigh the Risks?

Jeroen Johan de Hartog,[1] Hanna Boogaard,[1] Hans Nijland,[2] and Gerard Hoek[1]

[1]University of Utrecht, Institute for Risk Assessment Sciences, Utrecht, the Netherlands; [2]Netherlands Environmental Assessment Agency, Bilthoven, the Netherlands

Environ Health Perspect 118:1109–1116 (2010)

Health benefits substantially larger that safety risks

Te Ara Mua

Future Streets

Proudly supported by Auckland Transport

Key Statement

Future Streets – Te Ara Mua will demonstrate what New Zealand's urban streets and connections will look and feel like in the future to optimise road safety and public health outcomes.

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

Future Streets Partners

TERNZ TRANSPORT RESEARCH

Mackie research & consulting
optimising human systems

THE UNIVERSITY OF WAIKATO
Te Whare Wānanga o Waikato

THE UNIVERSITY OF AUCKLAND
FACULTY OF MEDICAL AND HEALTH SCIENCES

SHORE AUT UNIVERSITY

UNIVERSITY of OTAGO
Te Whare Wānanga o Otāgo
NEW ZEALAND

SYNERGIA

dovetail

AT

NZ TRANSPORT AGENCY
WAKA KOTAHI

Auckland Council
Te Kaunihera o Tāmaki Makaurau

ACC
PREVENTION. CARE. RECOVERY.

Ministry of Business, Innovation & Employment

The People of Mangere

Ministry of Business, Innovation & Employment

Safer Journeys

Signature Programme

What is the problem?

- Mangere Central ranks 4th out of 275 Auckland communities/suburbs for fatal and serious crashes. There is inequity in traffic crashes
- The social costs of crashes in Mangere Central over the past five years are estimated at $18.2m (conservatively).
- Pedestrian crashes account for 26% of all crashes in the area.
- Infrastructure heavily weighted to car travel
- Chronic diseases

1980

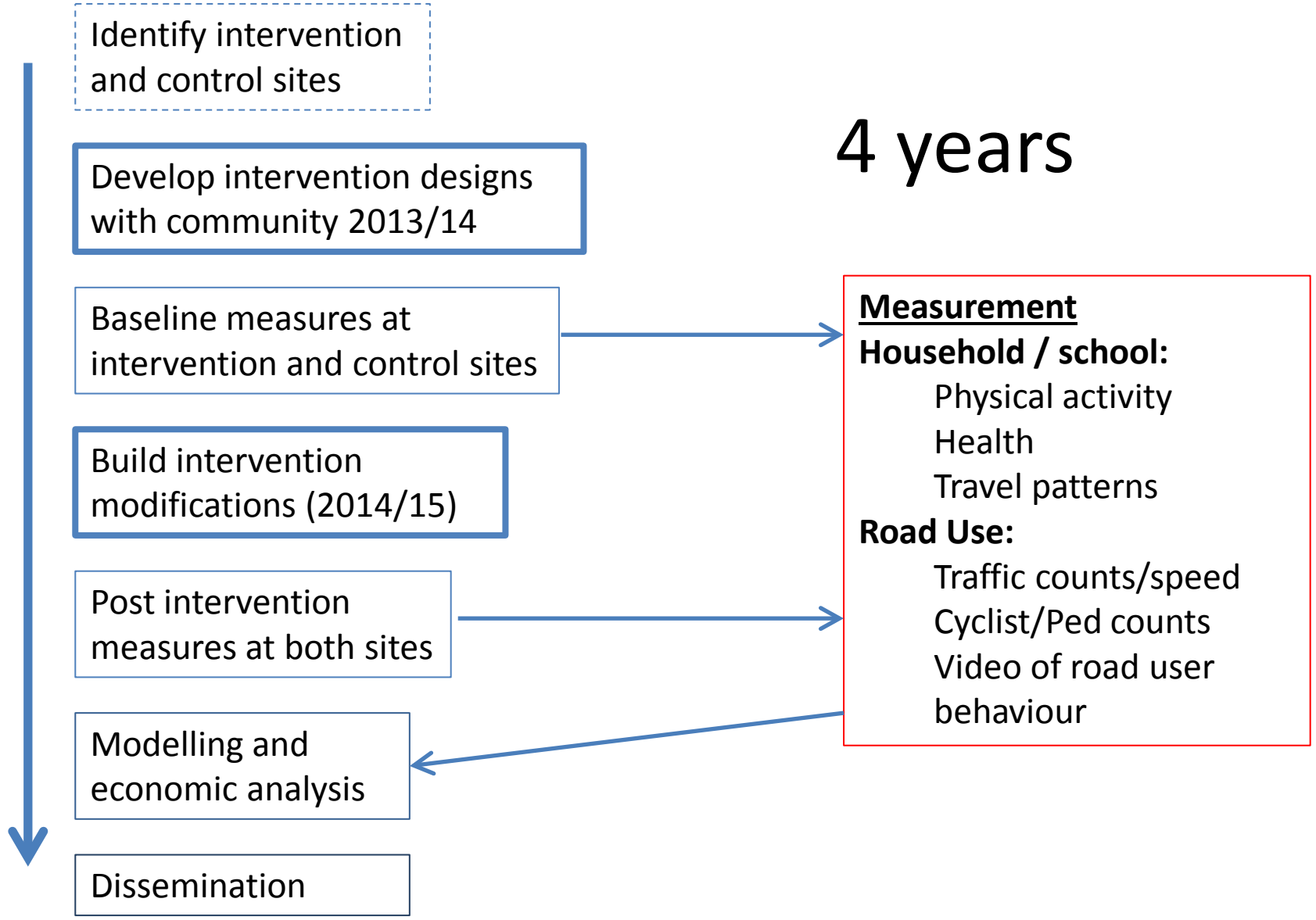
2007

Project goals

1. demonstrate **Future Streets** implementation feasibility
2. measure and describe the integrated road safety, health, environmental and social outcomes

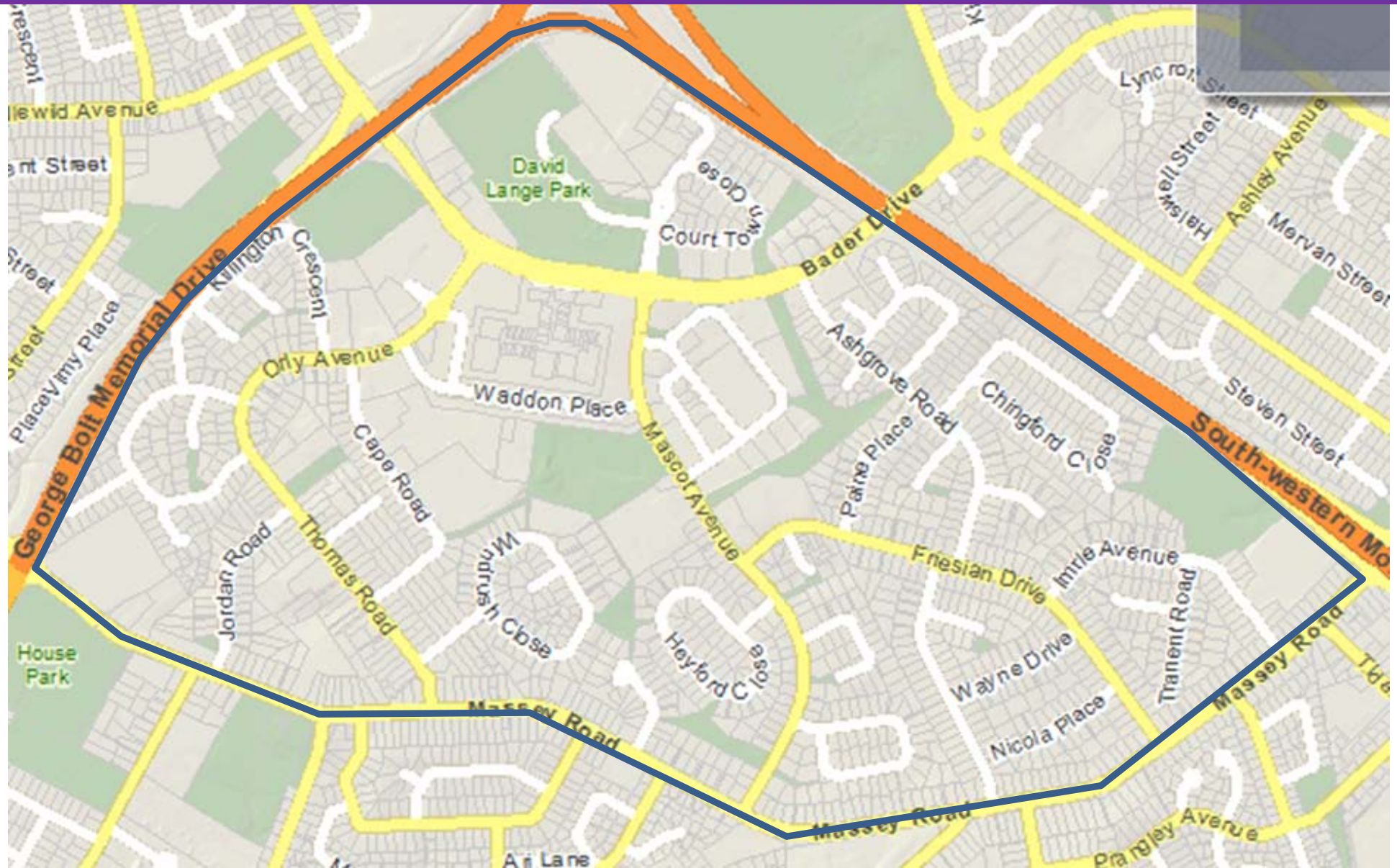
Ultimately inform road investment decisions

Method


Identify intervention and control sites
Develop intervention designs with community 2013/14
Baseline measures at intervention and control sites
Build intervention modifications (2014/15)
Post intervention measures at both sites
Modelling and economic analysis
Dissemination
4 years
Measurement
Household / school:
Physical activity
Health
Travel patterns
Road Use:
Traffic counts/speed
Cyclist/Ped counts
Video of road user behaviour

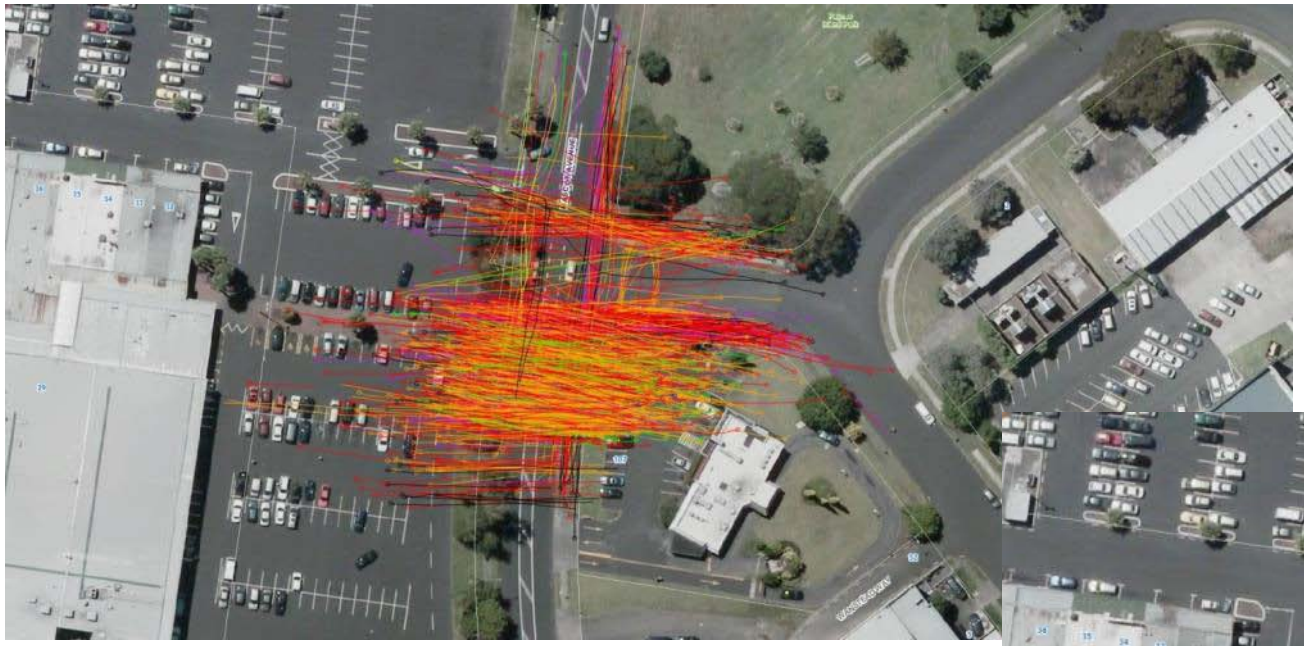
Area selection

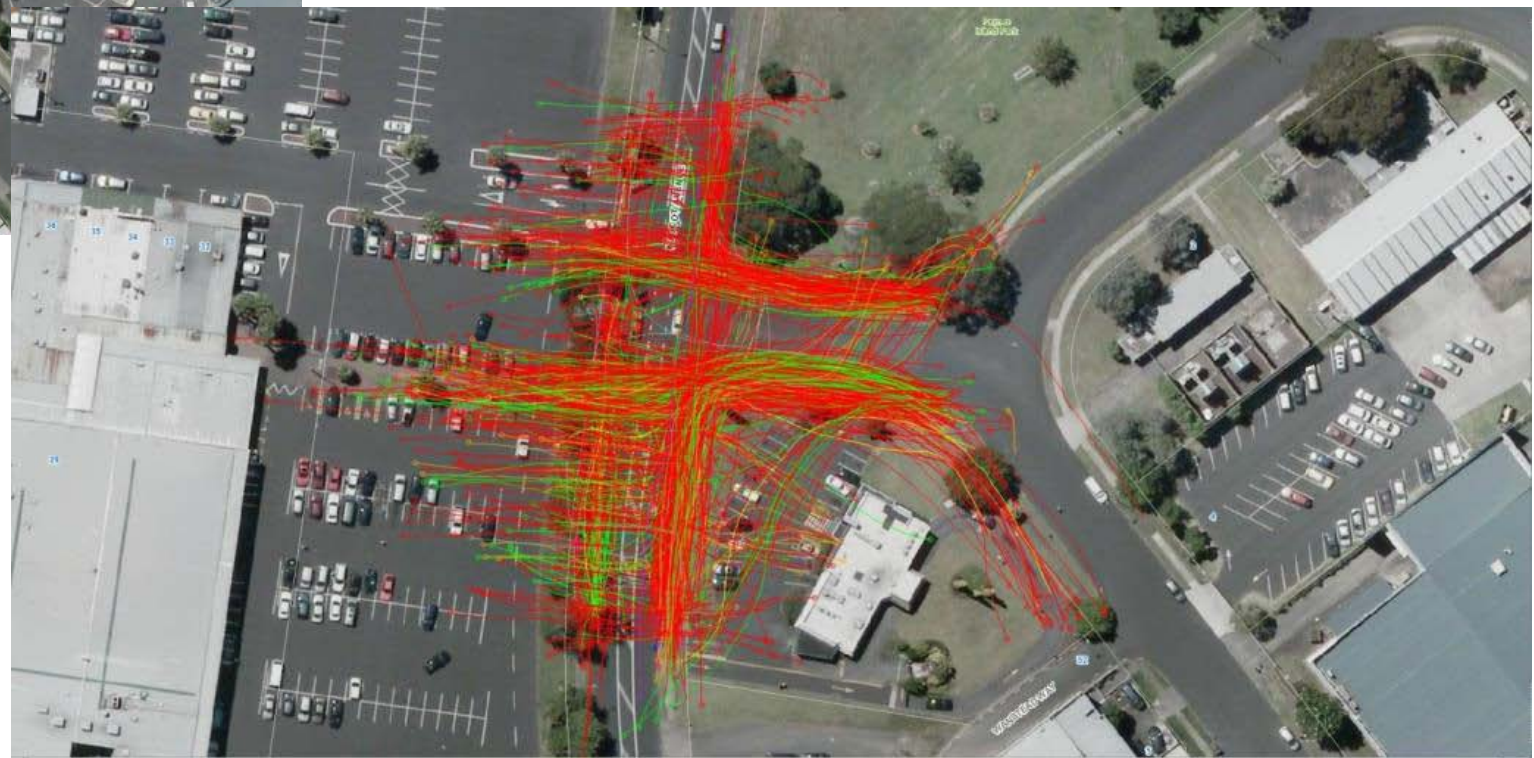
Intervention area Mangere Central



Community Engagement

Background data

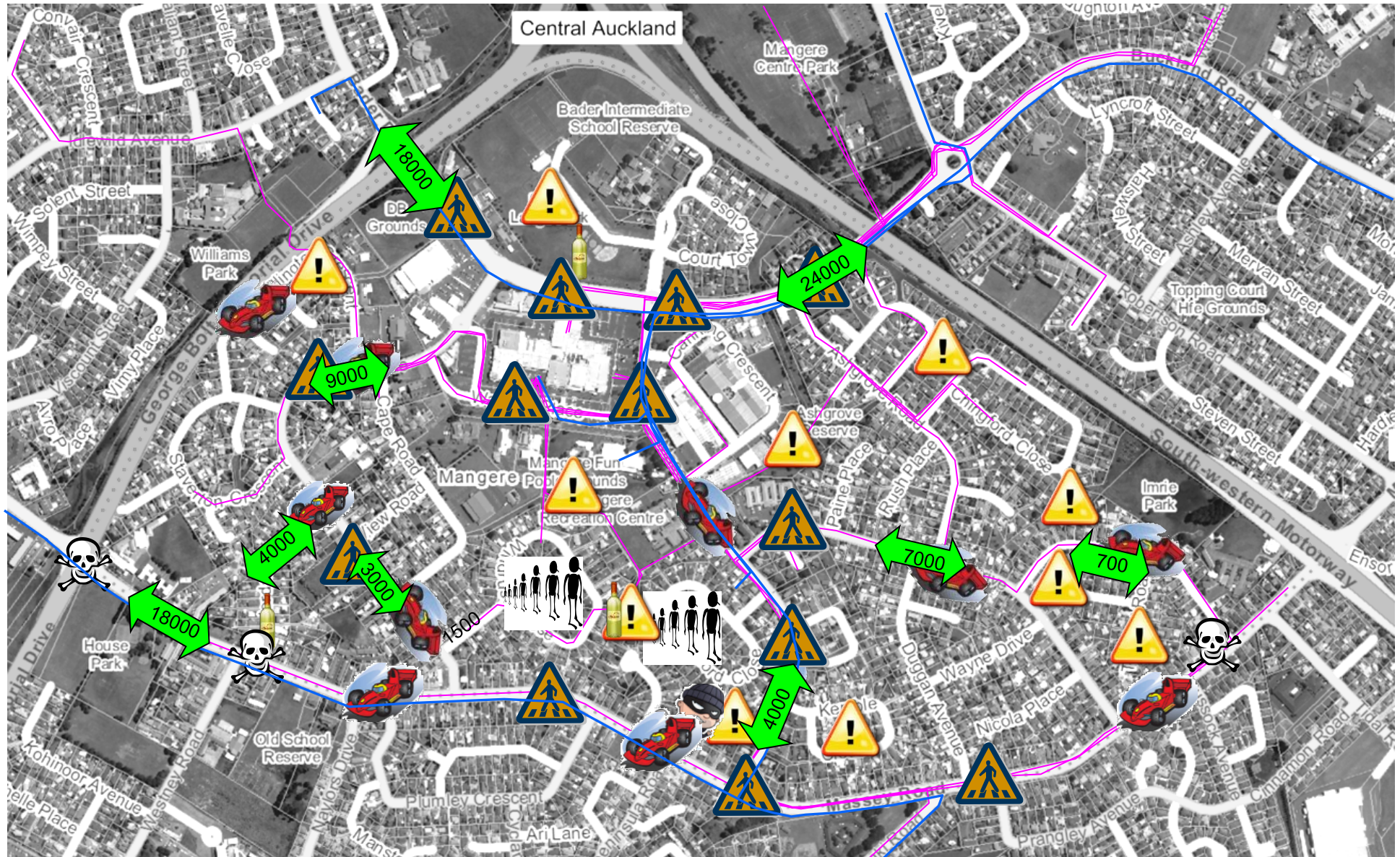




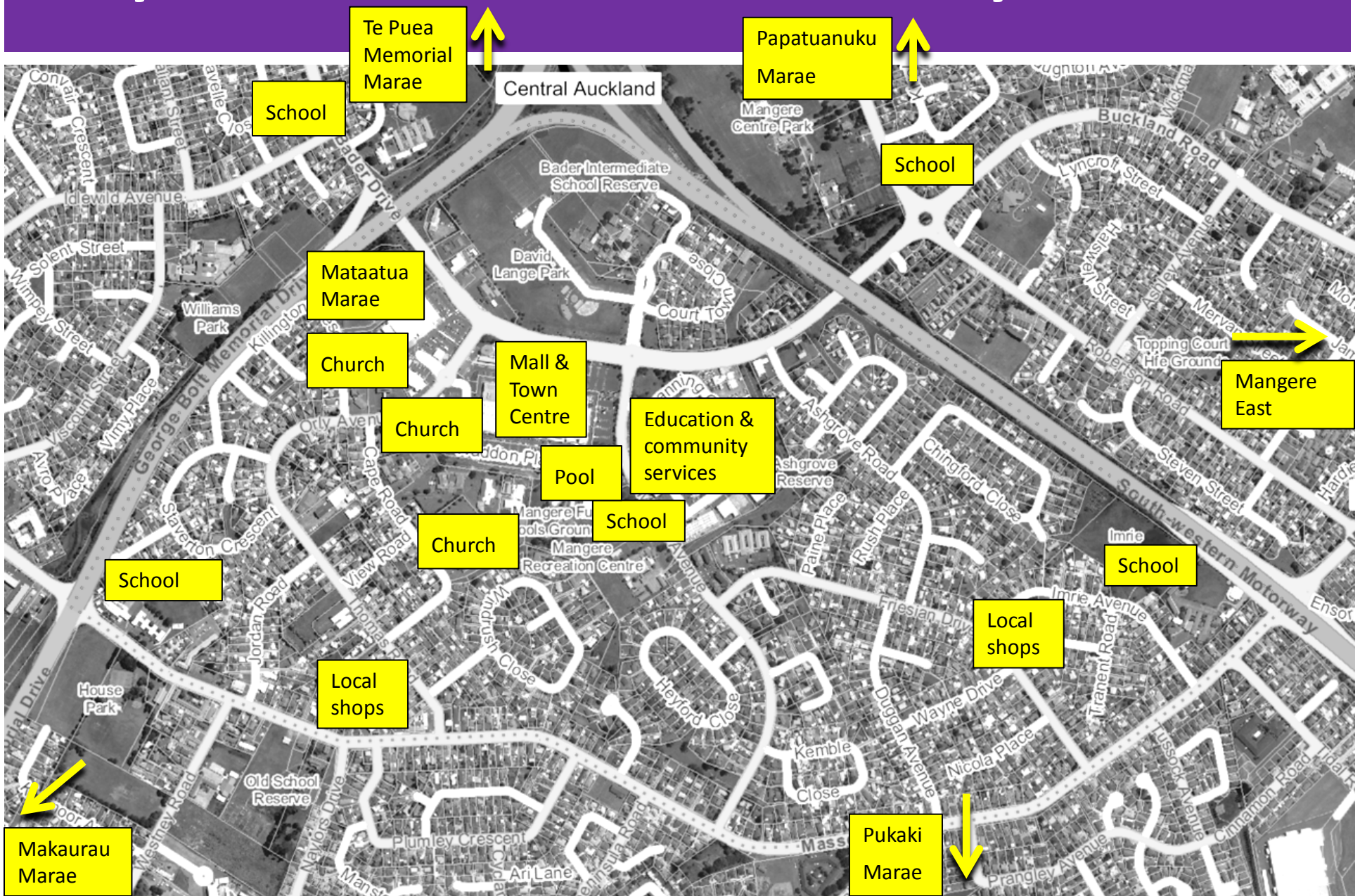
Key community concerns

- Personal Safety
  - Especially pathways due to poor lighting, youth drinking, crime and gang affiliations
- Speeding
- Lack of crossings
  - Massey Road and Bader Drive
- Confusion around priority on Waddon place and around mall
- Dogs in the area pose a threat to walkers and cyclists

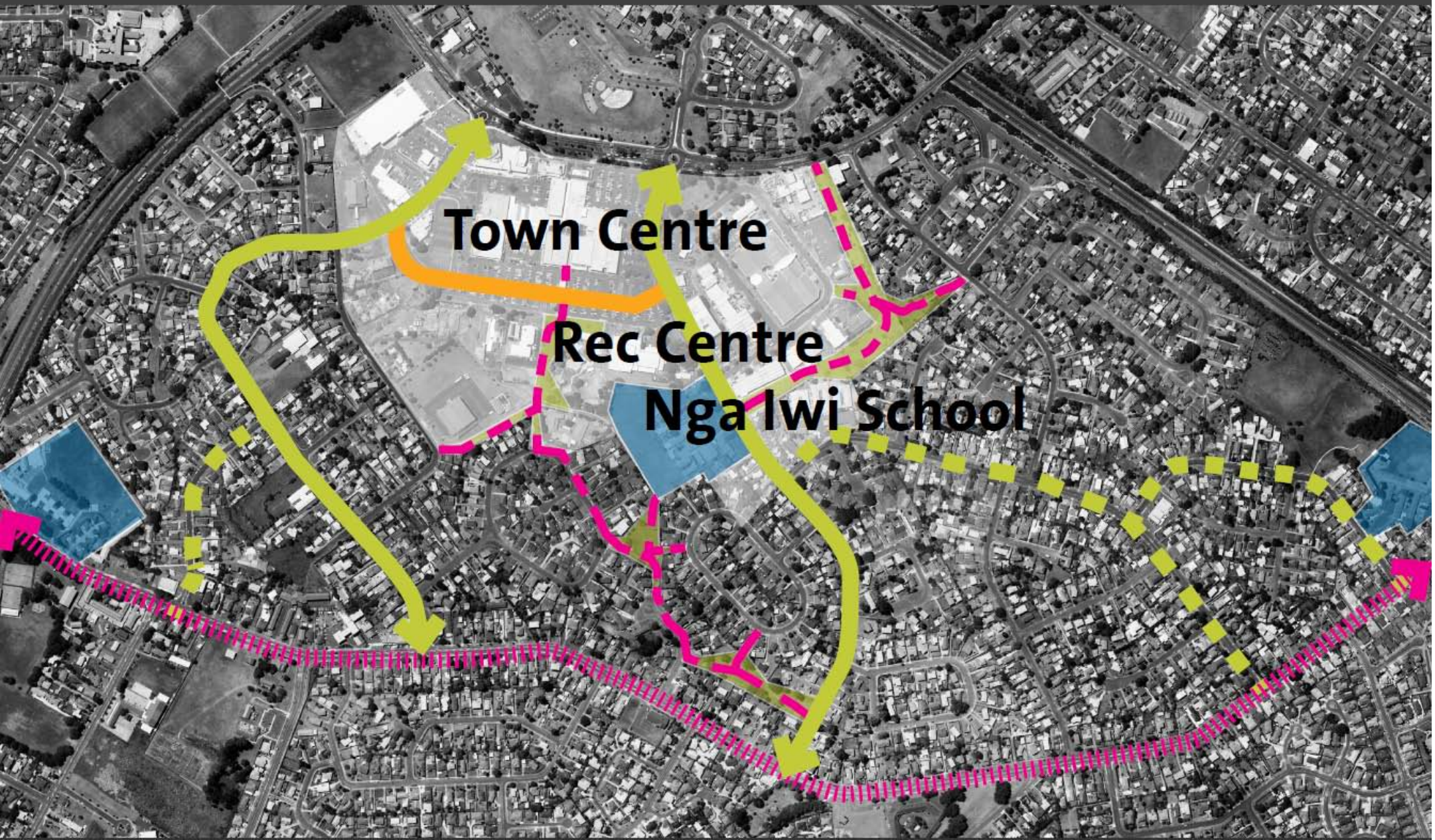
How people get around and problem areas



Key Destinations from Community Feedback



>> Identifying Areas of Focus



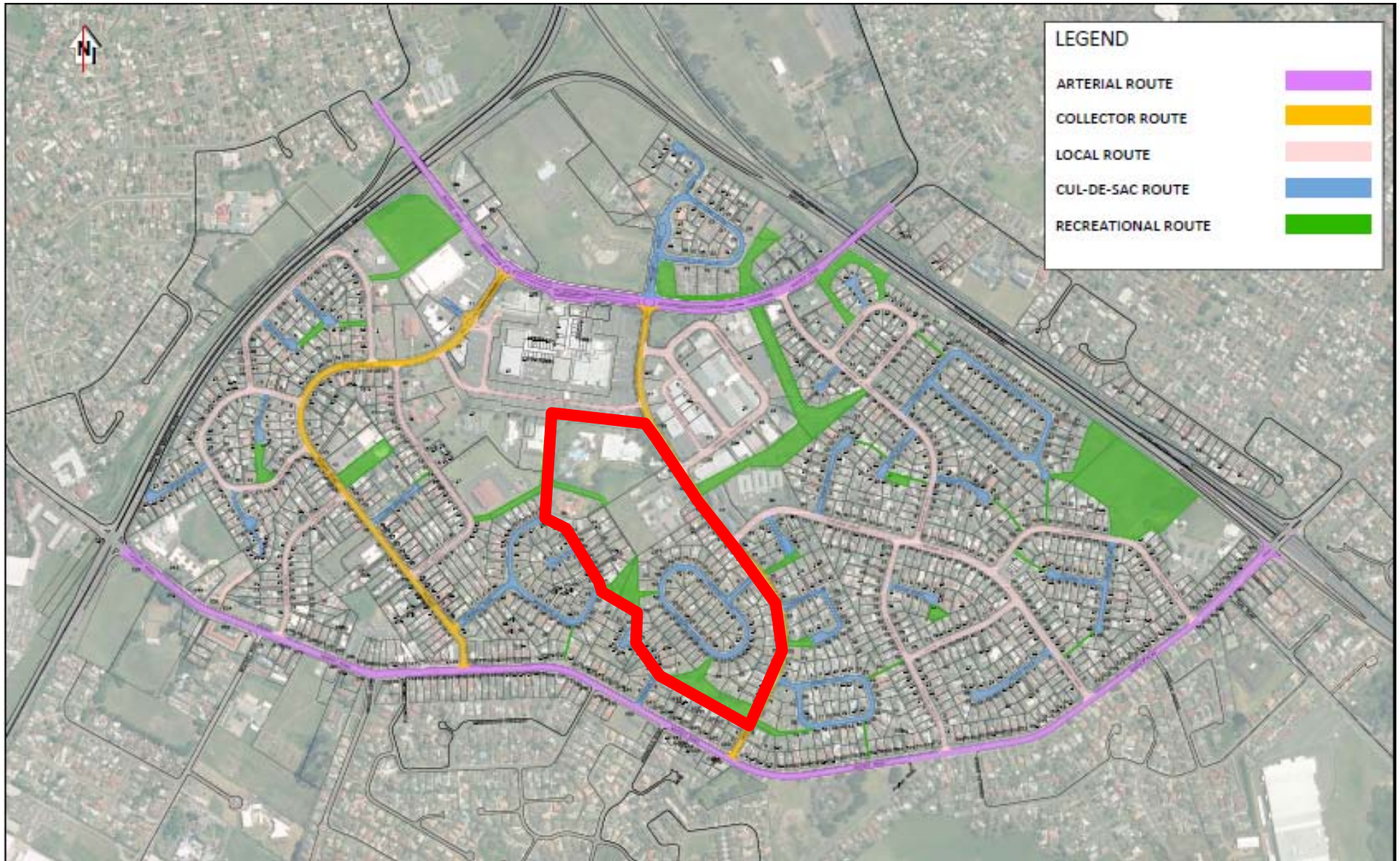
Source:
Boffa Miskell

Design principles

- A street hierarchy reflecting desired FUNCTIONS
- High quality cycle and pedestrian connections reflecting the needs of **young, old and those with disabilities**
- Safe traffic behaviour and speeds when activities
- Safe and routes to school by active modes
- Integration with the wider public transport and arterial network
- Enhance a sense of place and community identity

This is not business as usual: push the boundaries

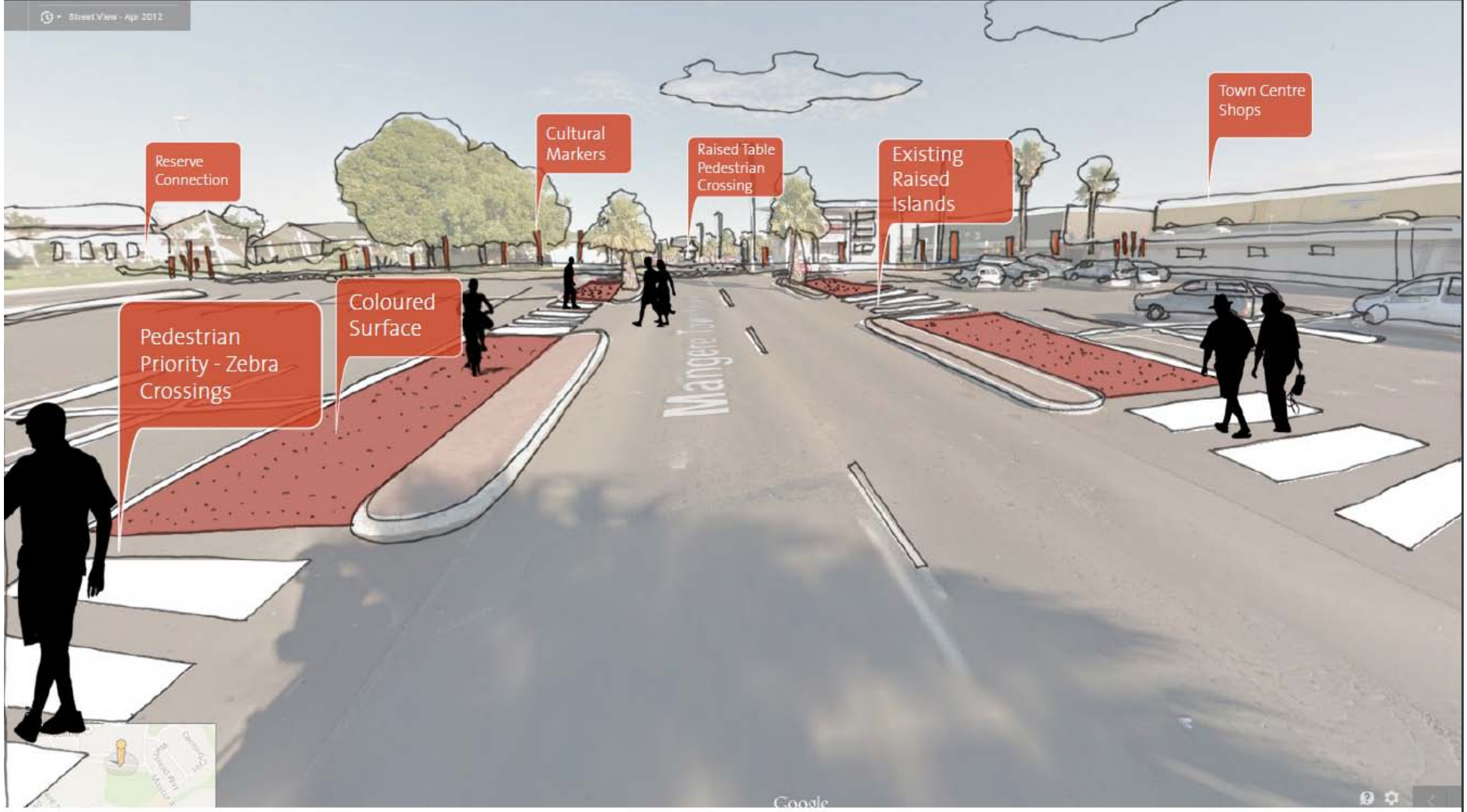
Iconic fitness circuit - Extending the Nga Iwi cycle track into the community?



Partial closure

Windrush Reserve


Mangere Town Centre
Google



Carpark Road

Source: Boffa Miskell

Park entrance - narrow

Park entrance - narrow

Source: Boffa Miskell

Fresian Drive

Fresian Drive

Mascot Ave

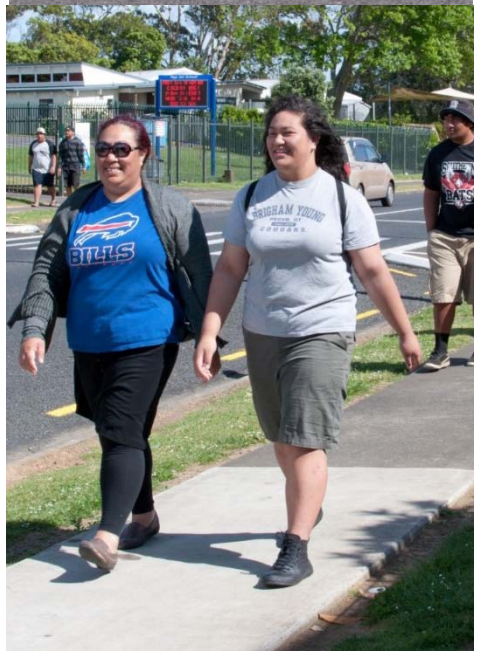
Mascot Ave

Prioritising pedestrians at intersections:


MANGERE FUTURE STREETS ~ TE ARA MUA
LOCAL STREETS ~ Slow Traffic
Fresian gateway to show that it's a local street
Heyford local street gateway with priority for pedestrians
MANGERE FUTURE STREETS ~ TE ARA MUA
MASCOT AVE
Part of the recreation circuit & Mascot Ave near Nga Iwi School. More space for people walking and cycling
OPTION 2:
Wide footpaths and two-way cycle way on Nga Iwi school side

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

What should our urban routes look like based on the ***known*** benefits and costs?



Thank you