

Cycling network guidance – planning and design

A framework for best practice



Megan Fowler, Jeanette Ward and Gerry Dance

Support for providing for cycling in NZ

Many reasons:



The government is “on-bike”:

- **Cycling Safety Panel**
- **“Make urban cycling a safer and more attractive transport choice”**
 - One of six NZTA priorities for 2015–2019
- **Unprecedented funding**
 - \$400m over next 3 years



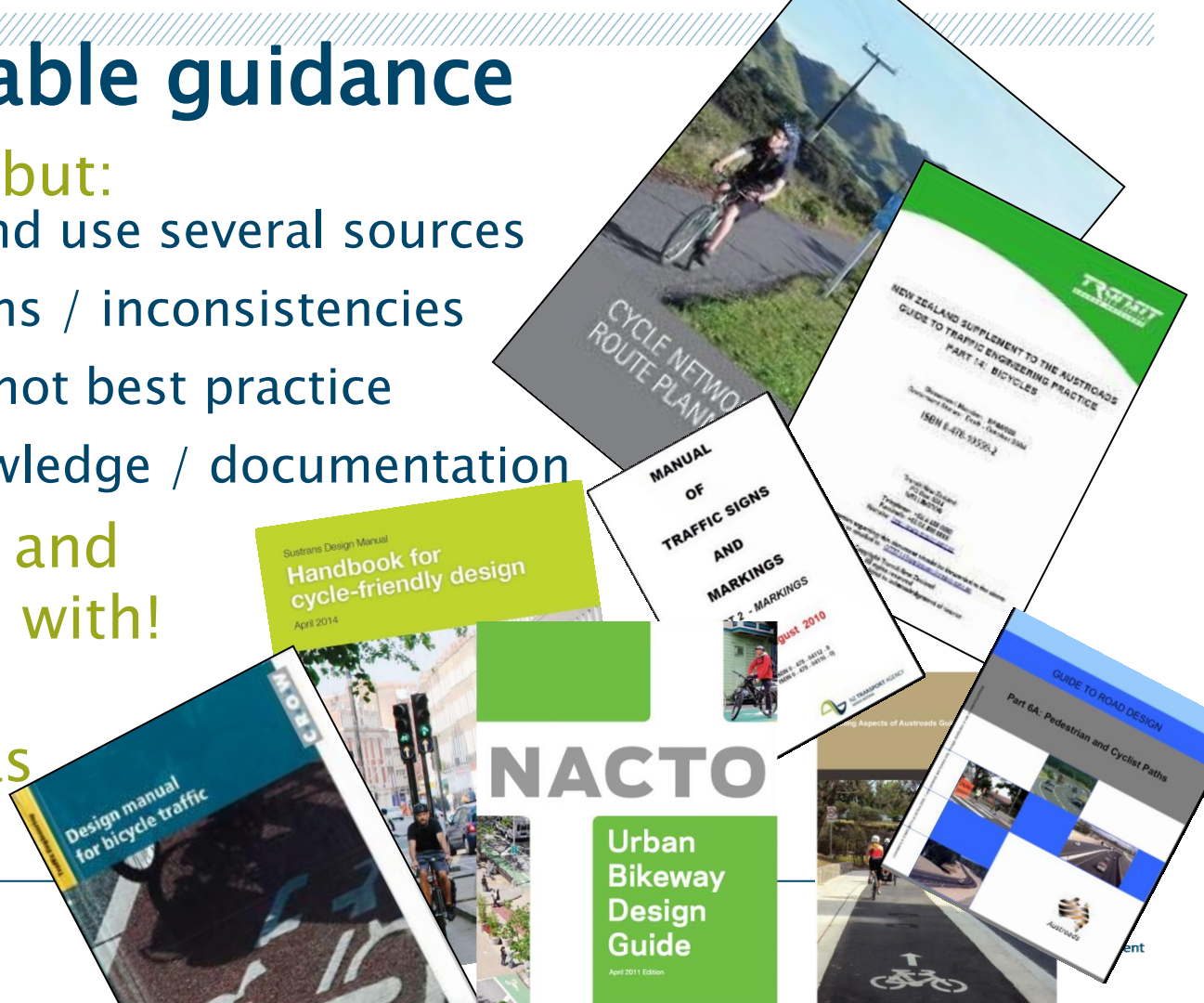
Current available guidance

Lots out there ... but:

- Need to identify and use several sources
- Some contradictions / inconsistencies
- Some guidance is not best practice
- Some gaps in knowledge / documentation

A lot for planners and designers to cope with!

So, the Agency has responded...



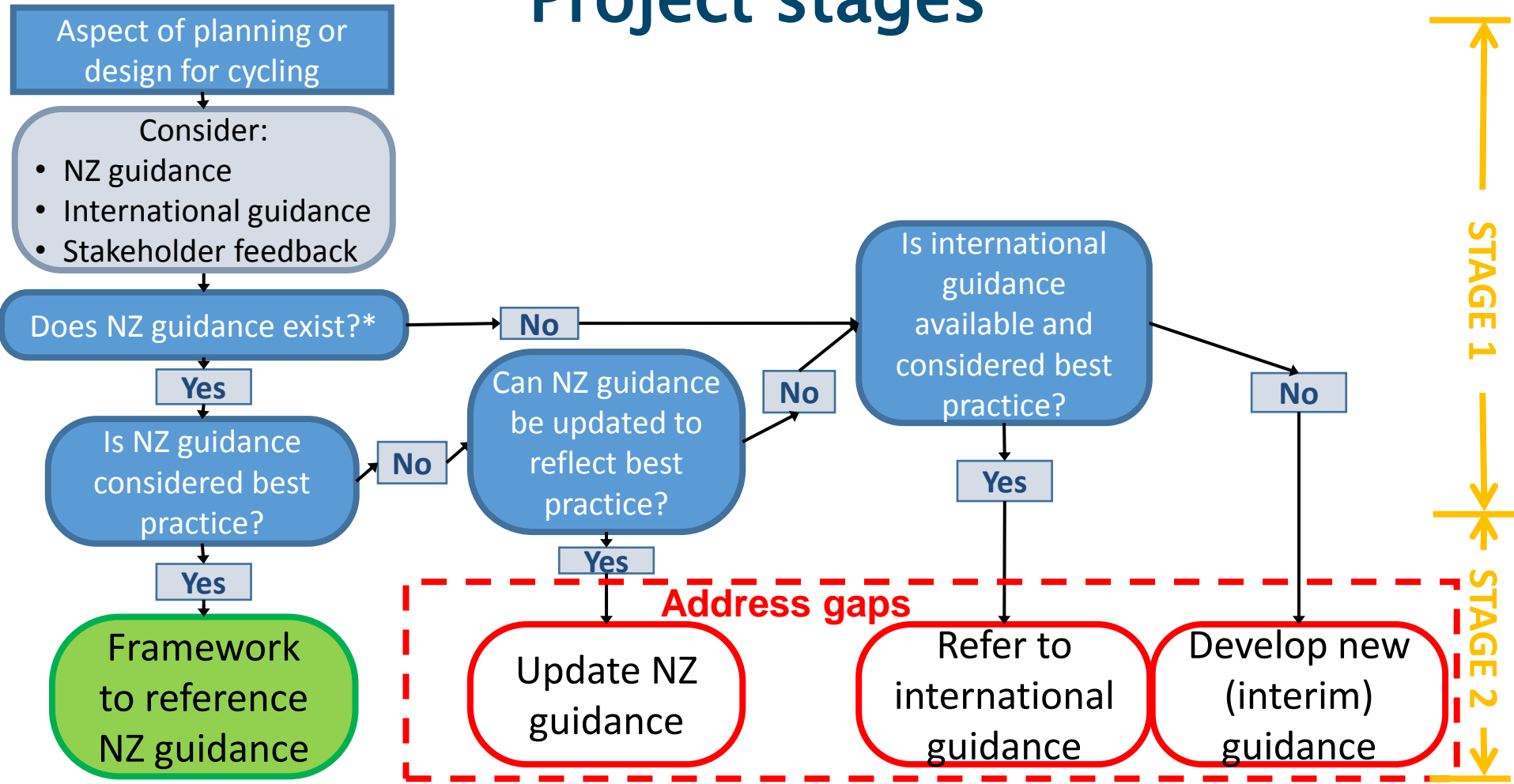
Cycling network guidance – project aims

To develop a framework that:

- Covers all stages of planning and design of networks and routes for cycling
- Directs users to the appropriate existing guidance for each aspect
- Fills in the gaps in existing guidance
- Is online and accessible
- Can be updated as future developments unfold
- Includes industry input through feedback and case studies



Project stages



Project stages

Stage 1:

- Identify available guidance
- Identify gaps in available guidance
- Pick out which gaps are “quick wins”

Project team
Steering Group
Industry stakeholders
(users of current guidance)

MIND THE GAP

STAGE 1

Project stages

Stage 1:

- Identify available guidance
- Identify gaps in available guidance
- Pick out which gaps are “quick wins”

Project team
Steering Group
Industry stakeholders
(users of current guidance)

MIND THE GAP

GAP FILLER

Stage 2:

- Develop framework structure
- Address (many) gaps

Address gaps

Update NZ guidance

Refer to international guidance

Develop new (interim) guidance

STAGE 1

STAGE 2

Stakeholder survey (stage 1)

Proposed framework elements:

Cycle Network Planning

- Cyclists' needs
- Cycle network approaches
- Cycle route locations
- Cycle route components
- Road space allocation
- Assessing cycle demand
- Cycle route options
- Cycle network plans
- Prioritisation

Facility Design

- Separated cycleways & paths
- Neighbourhood greenways
- On-road (cycle lanes, bus lanes, sharing the lane)
- Shared space
- Signalised intersections
- Signalised crossings
- Priority crossings & intersections
- Grade separated crossings
- Roundabouts

Supporting Infrastructure & Post-Design

- Regulatory signs & markings
- Way finding
- Cycle Parking
- Implementation
- Monitoring

Linkages with: ONRC; Safer Journeys; legislation
Trials, rule changes, research, guidance development

Target Audience, LOS for Cycling
Engagement, Urban Design
Business Cases & Funding

Stakeholder survey responses

160 responses

- Consultants, local government, central government

Key messages:

- Proposed guidance framework will add value
- Need for guidance on:



80

Assessing demand for cycling

73

Integrating cycling into wider policy

130

Road space allocation, e.g. parking removal

72

Intersection design

- Separated / protected cycleways mentioned often
- Framework must be simple to use, flexible and leave room for professional judgement and innovation

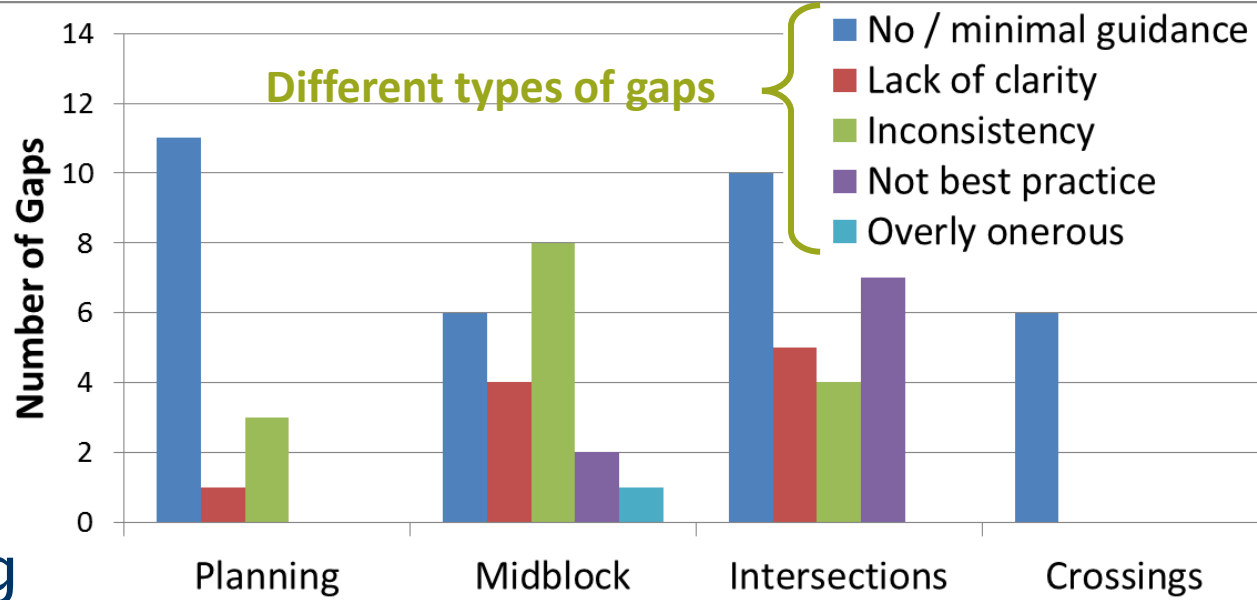
Gaps

68 gaps identified during Stage 1

- 50 considered 'quick wins'
- Remaining 18 more challenging

Stage 2 incorporates

- 43 quick wins
- 2 bigger gaps



Website



Home

Cycling network guidance

Cycling network guidance

Planning a cycling network

Designing a cycling facility

More ▾

Evaluating and monitoring

Trials underway

Case studies

In direct response to, and in support of the Urban Cycleways Programme and the New Zealand Cycling Safety Panel's report recommendations, the Transport Agency is leading a process in collaboration with local government to develop best practice guidance for nationally consistent cycle networks and facilities.

Cycling network guidance – planning and design

This guidance provides the sector with a 'go-to' source of relevant and appropriate planning and design guidance. Currently guidance is spread over numerous documents, with limited referencing between the sources and is not always consistent or even best practice.

Intro
Planning
Designing
More...

Some interesting quick win examples...



Target Audience focus

Original Cycle Network & Route Planning Guide (CNRPG):

- Types of cyclist categorised according to training / experience
- Subsequent planning steps generally focus on trip types

	CYCLIST TYPE	NEIGHBOURHOOD	COMMUTING	SPORTS	RECREATION	TOURING
						
	Cyclists' possible cycling objectives	To shops, school, or riding near home	To get to their destination efficiently	To be physically challenged	To enjoy themselves and get some exercise	To see new and enjoyable places and experiences
NETWORK/ROUTE REQUIREMENTS	CRITERIA					
Safety	Personal security (good lighting etc)					
	High degree of safety					

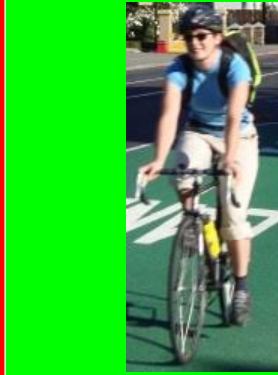
Target Audience focus

Geller typology – four main types of people who cycle

**Strong &
Fearless**



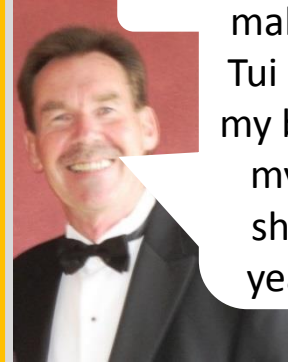
**Enthusiased
& Confident**



Interested but Concerned



No Way No How



that would make a great Tui ad. "I ride my bike to get my weekly shopping - yeah right"

- Target Audience approach focuses on people = customer thinking
- A spectrum!
- Helps understand what is required to achieve a certain mode share

Developing midblock facility types

Planning considerations & design guidance

Increasing degree of separation from motor traffic and other users

Shared roadway

Mixed traffic

Bus lanes

Transit lanes

Neighbourhood greenways

Shared zones

Sealed shoulders

Cycle lanes

- Kerbside
- Next to parking
- Contra-flow

Separated cycleways

- Horizontal separation
- Vertical separation
- Combination of horizontal and vertical separation
- 1-way or 2-way

Shared paths

Trails

Cycle only paths



Separated cycleways: two-way or one-way?

(bi-directional or uni-directional)

Two-way cycleways

- One side of the road only



One-way cycleways

- Both sides of the road



Separated cycleways: two-way or one-way?

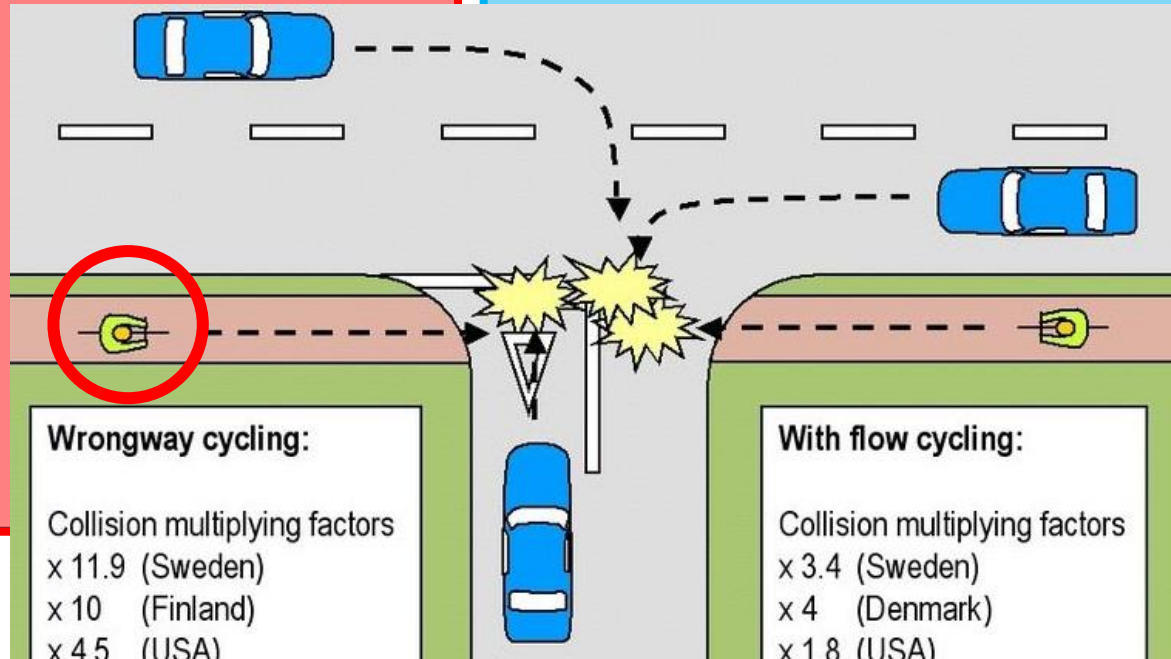
(bi-directional or uni-directional)

Two-way cycleways

- One side of the road only
- Particular risks for contraflow cycling (i.e. opposite to adjacent traffic).

One-way cycleways

- Both sides of the road



Separated cycleways: two-way or one-way?

Tool to inform decision-making

Conflict scenarios

Conflict locations:

- Driveways (2 types)
- Side streets
- Signalised intersections

X

Parameters:

- Cycle and vehicle volumes
- Proportion heavy vehicles
- Adjacent parking

X

Facility type:

- One-way (uni-directional)
- Two-way (bi-directional)

Separated cycleways: two-way or one-way?

Tool to inform decision-making

Conflict scenarios

User inputs

Conflict locations:

- Driveways (2 types)
- Side streets
- Signalised intersections

Parameters:

- Cycle and vehicle volumes
- Proportion heavy vehicles
- Adjacent parking

Facility type:

- One-way (uni-directional)
- Two-way (bi-directional)

Model factors

Separated cycleways: two-way or one-way?

Tool to inform decision-making

Conflict scenarios

User inputs

Model factors

Conflict locations:

- Driveways (2 types)
- Side streets
- Signalised intersections

Parameters:

- Cycle and vehicle volumes
- Proportion heavy vehicles
- Adjacent parking

Facility type:

- One-way (uni-directional)
- Two-way (bi-directional)

Evaluation tool

Relative risks

Separated cycleways: two-way or one-way?

Tool to inform decision-making

Conflict scenarios

User inputs

Model factors

Conflict locations:

- Driveways (2 types)
- Side streets
- Signalised intersections

Parameters:

- Cycle and vehicle volumes
- Proportion heavy vehicles
- Adjacent parking

Facility type:

- One-way (uni-directional)
- Two-way (bi-directional)

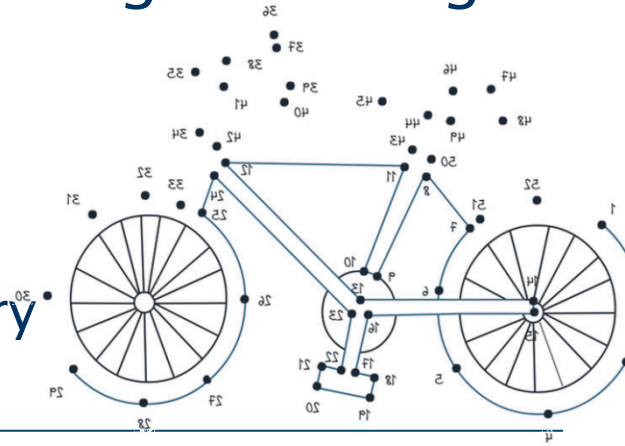
Evaluation tool

Relative risks

Crash risks

Summary

- Quality provision for cycling is important
 - From initial planning through to on-going upkeep
- There are gaps in current available guidance
- The “Cycling network guidance – planning and design” will add value to the industry
 - Links relevant guidance
 - Addresses some of the current gaps
 - Opportunity for sharing within the industry
 - Platform for up-to-date information



Questions?

