

Rainbow Crossing – Safety Review

Dixon Street – Mid Block Pedestrian Crossing – Cuba Street

September 2018

Introduction

It has been proposed to introduce coloured surfacing on the road at the midblock signalised crossing over Dixon Street at Cuba Street.

Some concerns have been raised with respect to road user safety as the proposed markings are non-standard and are new to New Zealand, although used in a number of cities overseas.

As such a safety review workshop was undertaken in early September to identify risks and mitigation before proceeding with any installation.

Safety Review

A workshop was held on 3 September to explore concerns and identify mitigation measures.

The review team comprised of the following Council Officers:

- Moana Mackey – Chief Advisor to the Chief City Planner
- Anna Harley – Manager of City Design and Place Planning
- Siobhan Proctor – Manager of Transport and Infrastructure
- Steve Spence – Chief Advisor Transport and Infrastructure
- Soon Teck Kong – Manager Network Operations
- Paul Barker – Network Improvements Manager

Representing the project team was Peter Fraser – Urban Designer

Both Soon Teck Kong and Paul Barker are qualified NZTA road safety auditors.

Process

The review methodically looked at how colour is being used on our road surfaces both here and overseas, how the existing mid-block crossing is being used and then what road safety risks if any could be attributed to the installation of a rainbow colour marking.

Colour on the road

Pros	Cons	Other
- Creates traffic calming	- Can be confusing	- Innovation, fresh thinking
Motorist perceives road differently	Who has priority?	
More awareness of surroundings		- While new to Wellington, rainbow markings have been used successfully overseas

- Redefines street with pedestrian focus	- Maintenance complexity and cost	
- Increases city vibrancy	- Capital cost high	
- Innovation, fresh thinking	- Doesn't comply with national standards for use of colour on public roads	
- Thinking about public space differently		
- Place-making.-Giving Wellington different look & feel (?)		
- Other cities have used rainbow markings successfully		

Existing crossing conditions

- Vehicle speeds – 85 percentile at or less than 35 kmph
- Vehicle volumes – 6000/day (not high for inner city)
- Safety – 3 crashes in 5 years
 - 1 x minor ped injury, (low)
 - 2 x vehicles into parked vehicles
- Pedestrian volume – 8000- 9000
- One way, one lane with narrowed crossing 4.3m
- Kerb extensions. both sides
- Strong desire line along veranda line – street furniture reinforces this.
 - Majority of peds based on observation (spatially compliant)
 - Not temporally compliant (i.e. Jaywalking)
- Lighting - new pole
 - Light level P8
- Located within entertainment district – some users could be intoxicated (but current crash rates do not highlight this as an issue)
- Street signals - set up is standard
 - Central city set-up
 - Defaults to vehicle phase
- Weltech campus - performance nights, surge of pedestrians on exit.
- 2010 redesign - aimed to cater to pedestrian movements by narrowing crossing
 - Signal control installed to ensure control of pedestrian flows
- Parking on both sides (approach & departure), adds to traffic calming.

Project Proposal

- Approached by Mayor to create rainbow crossing somewhere in Cuba precinct
- Explored - Ghuznee St intersections - too busy + safety problems
 - Vivian St intersections - ruled out, SH1
 - Manners Street intersections – Too far from LGBTQI focus area/ Bus vs pedestrian concerns
 - Dixon St Intersections - best option, safest, lowest risk
- Methods used included - surveyed people on street
 - approached LGBTQI+ community
 - results of survey available
- Options for crossing – perpendicular - chevron
 - Basket weave etc.
- - preference for parallel as looked similar to global examples.

While the review team thought that alternative layouts could potentially reduce any safety concerns these were allayed by the proposed mitigation that was added after the design team discussed with NZTA and added the following safety measures:

- amended shortened design inside of ped. xing areas
- speed cushions
- thickened white lines
- stop box
- Offered alternative designs – Concerns raised by NZTA about all options.

Road Safety Risk

The review team used the NZTA safety audit concern matrix

Table 8.1 Concern Assessment Rating Matrix

Severity (likelihood of death or serious injury)	Frequency (probability of a crash)			
	Frequent	Common	Occasional	Infrequent
Very likely	Serious	Serious	Significant	Moderate
Likely	Serious	Significant	Moderate	Moderate
Unlikely	Significant	Moderate	Minor	Minor
Very unlikely	Moderate	Minor	Minor	Minor

The risks below only relate to road safety risks, the project team have identified a number of project risks , these are not included in our review.

Action	Frequency	Severity	Risk	Mitigation
A Pedestrian steps onto road thinking they have priority	Infrequent	Unlikely?	minor?	-speed cushion -improve signal displays -education + communications

				-increased signage -monitoring programme
Selfies on crossing	Common	v.unlikely	minor	-selfie spot installed -monitoring programme -education + comms
Poor maintenance – colour fading, resembles zebra crossing	Infrequent	Unlikely	minor	-monitoring programme to include surface quality reviewed
Risk to drivers (confused) zebra crossing not signalled	Infrequent	Unlikely	Minor	-monitoring programme set up to see if driver behaviour changes, upgrades to signal lanterns may be required to reinforce signal controls

Conclusion

The review team has considered on balance given the specific site conditions of the proposed location that there would be little residual safety concerns. The team concluded that the project should proceed with all of the suggested mitigation measures and that both the project team and the traffic operations team monitor the use to assess if the crossing is being used differently and/or in a way that could lead to poor outcomes.