

KiwiRail Level Crossing Technology and Initiatives

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Safer Systems

- People make mistakes
- People are vulnerable
- Reduce serious and fatal injuries
- Very much the scenario for Level Crossings



Problem Identification

- 1329 Public Road Crossings (64%)
- 743 Vulnerable User Crossings (36%)
- Social Cost 2011-15 \$52 million road user, \$64 million active mode user (55%)
- Social Cost 2000-04 \$126 million road user, \$40 million active mode user (24%)
- Active mode user risk increasing
- Realign upgrade protection expenditure



Pedestrian LED Trials

- Collins Avenue, Tawa – Commissioned last week 18/11/16
- LEDs in footpath
- Activated by approaching train - monitoring reliability
- Aim to mitigate distraction- increase awareness



Other LED Trials

- Feb 2017- 2 User Group Workshops
- 3 prototypes – WAIT, Red Man / Red Cyclist and illuminated tactile pad and other option graphics
- Sep 2017 to April 18 - Trial 4 options
- Before & After – compliance, violations, mistakes
- Cannot prevent violations, **can prevent mistakes**
- Report on findings and conclusions- June 2018
- Favourable outcomes? Roll out across networks – 2018/19





Active Signs Passive Crossings



Expect Trains Variable Message Sign – Higher cost Passive Crossing option



Active Sign Trial Progress

- 100% reliable to date
- Speeds reducing
- Stop line compliance increasing
- ACRI research – November 2016
- Report findings and conclusions – June 2017
- Favourable trial- roll out in 2016/17



Short Stacking Level Crossings



Level Crossing Dual Detection Early Alarm Activation System

- 267 identified Short stacking Public Crossings in NZ
- Desktop HV delay analysis – 100 with higher risk rating
- Shortlisted three suitable trial locations with high proportion of HVs, large main road traffic volumes and large theoretical HV delay
- System activates active crossing alarms early if over length vehicle and train are assumed to be on a Collision course with the level crossing
- Video camera – view of truck position at limit line and in relation to the track
- Footage used to validate over length vehicle detections
- Advanced train detection system linked with alarm activations to validate reliability
- Collect baseline and post installation data - Jan to May 2017
- Produce report – June 2017- Use elsewhere if beneficial



Video and Animation

- LED video footage
- Short Stacking animation

