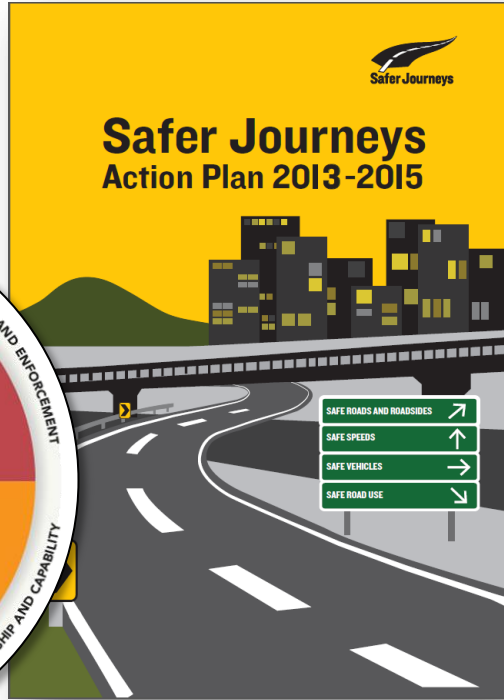
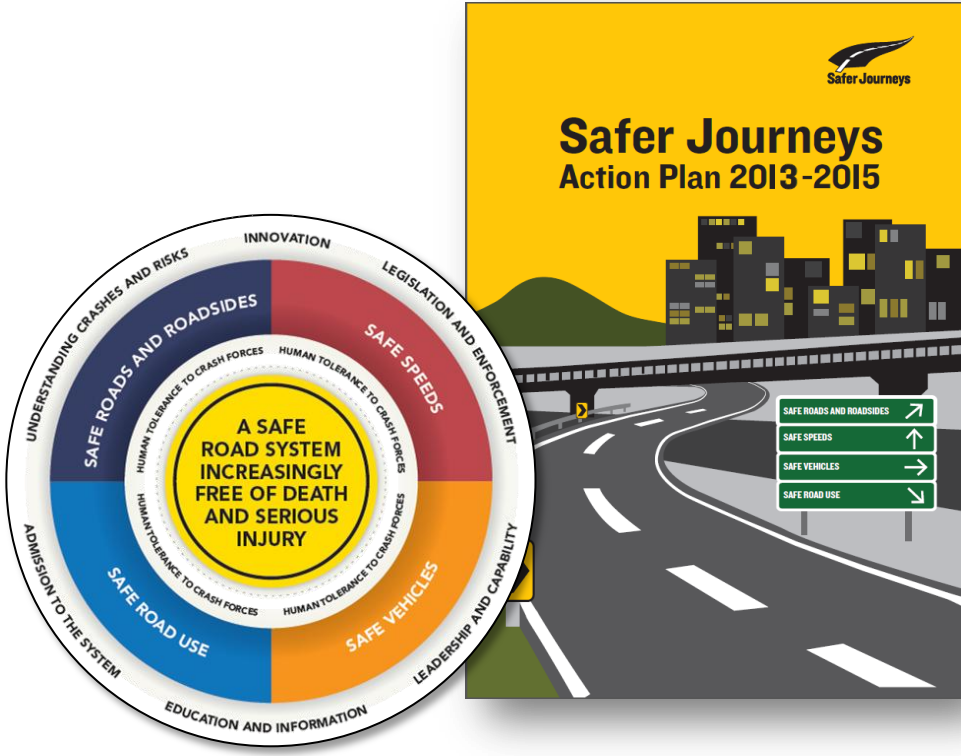


*3M Traffic Safety Innovation Award  
Eastern Bay of Plenty Signature Project  
SignatureNET and the Curve Risk Prediction Model*

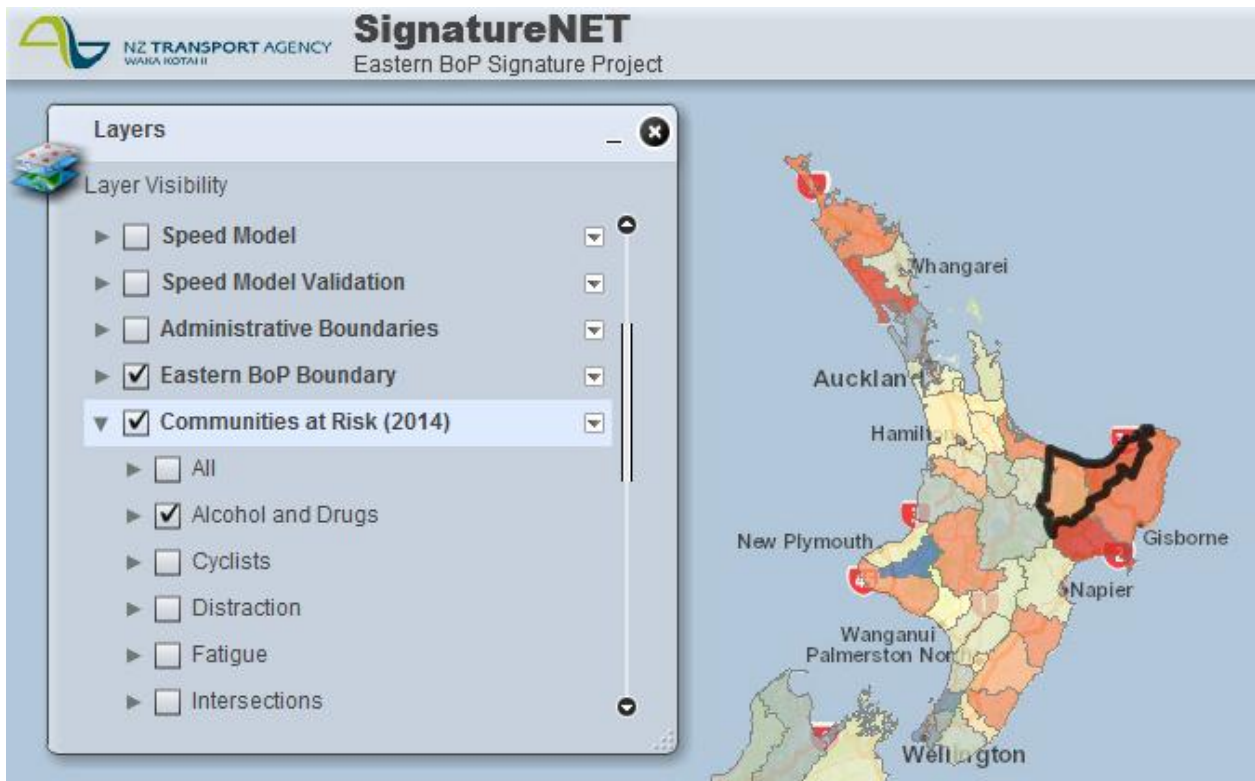
*Paul Durdin  
Dale Harris*

*IPENZ Transportation Group Conference 2015*

# Safe System Signature Projects



# Eastern Bay of Plenty Road Safety Issues



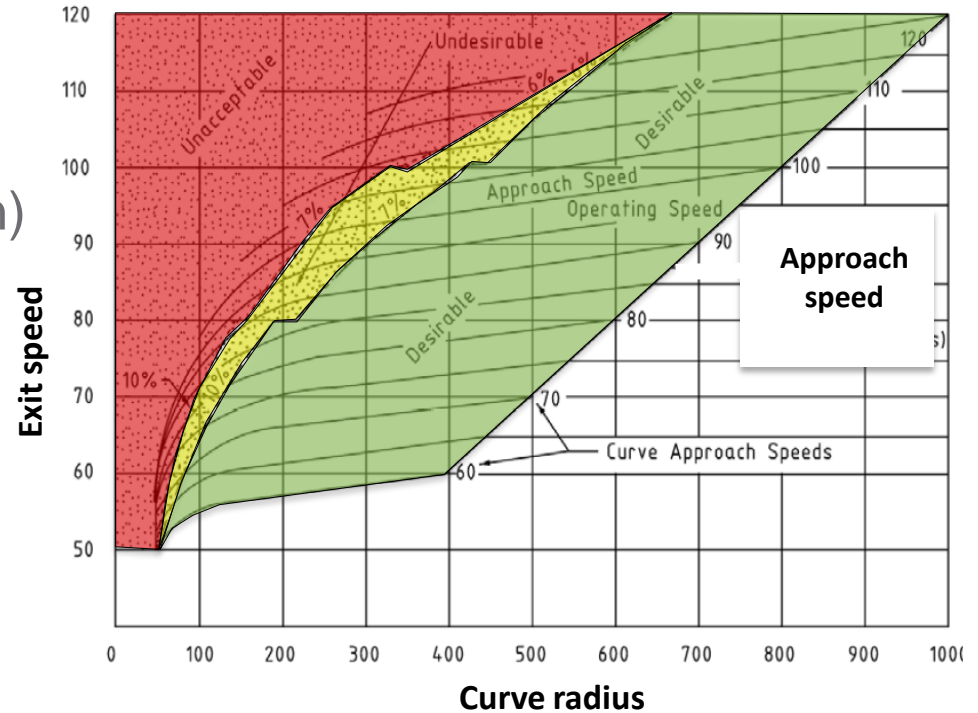
# Austrroads Curve Context Definitions

## Within context:

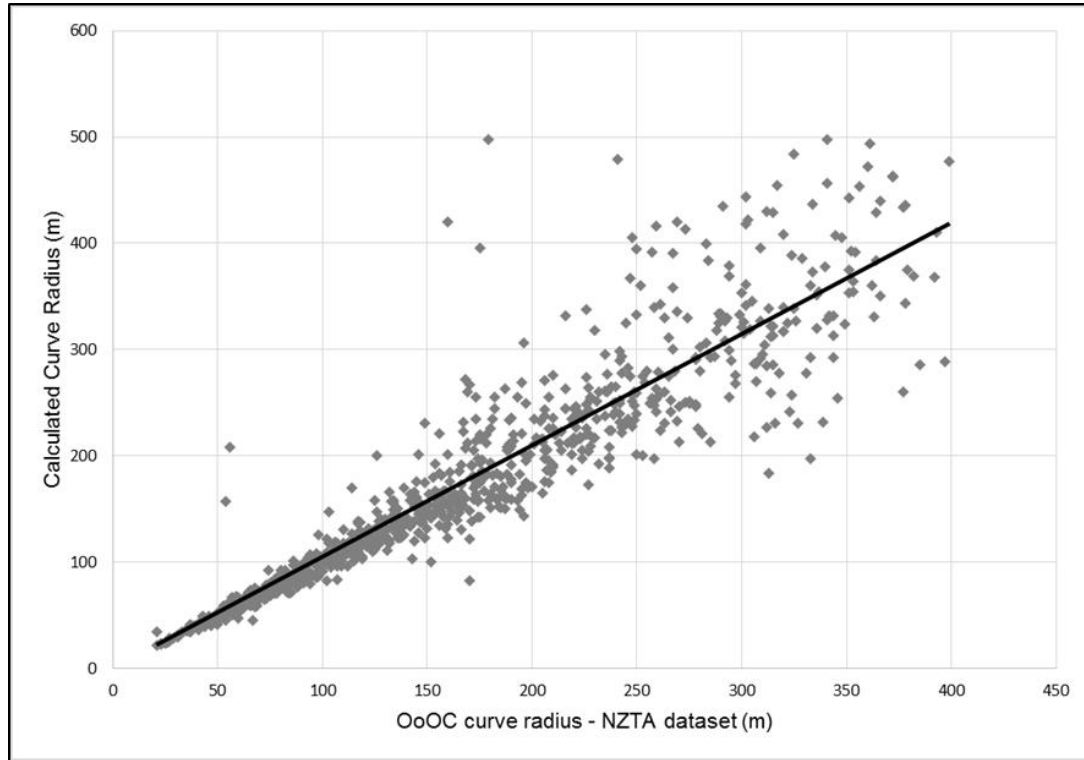
- No limit (no deceleration)
- Desirable (some deceleration)

## Out-of-context:

- Undesirable
- Unacceptable



# Calibration against State Highway Data



# SignatureNET: High Risk Curve Identification

**NZ TRANSPORT AGENCY**  
WAIHA KOTAHU II

**SignatureNET**  
Eastern BoP Signature Project

Streets Imagery Light Gr

**Layers**

Layer Visibility

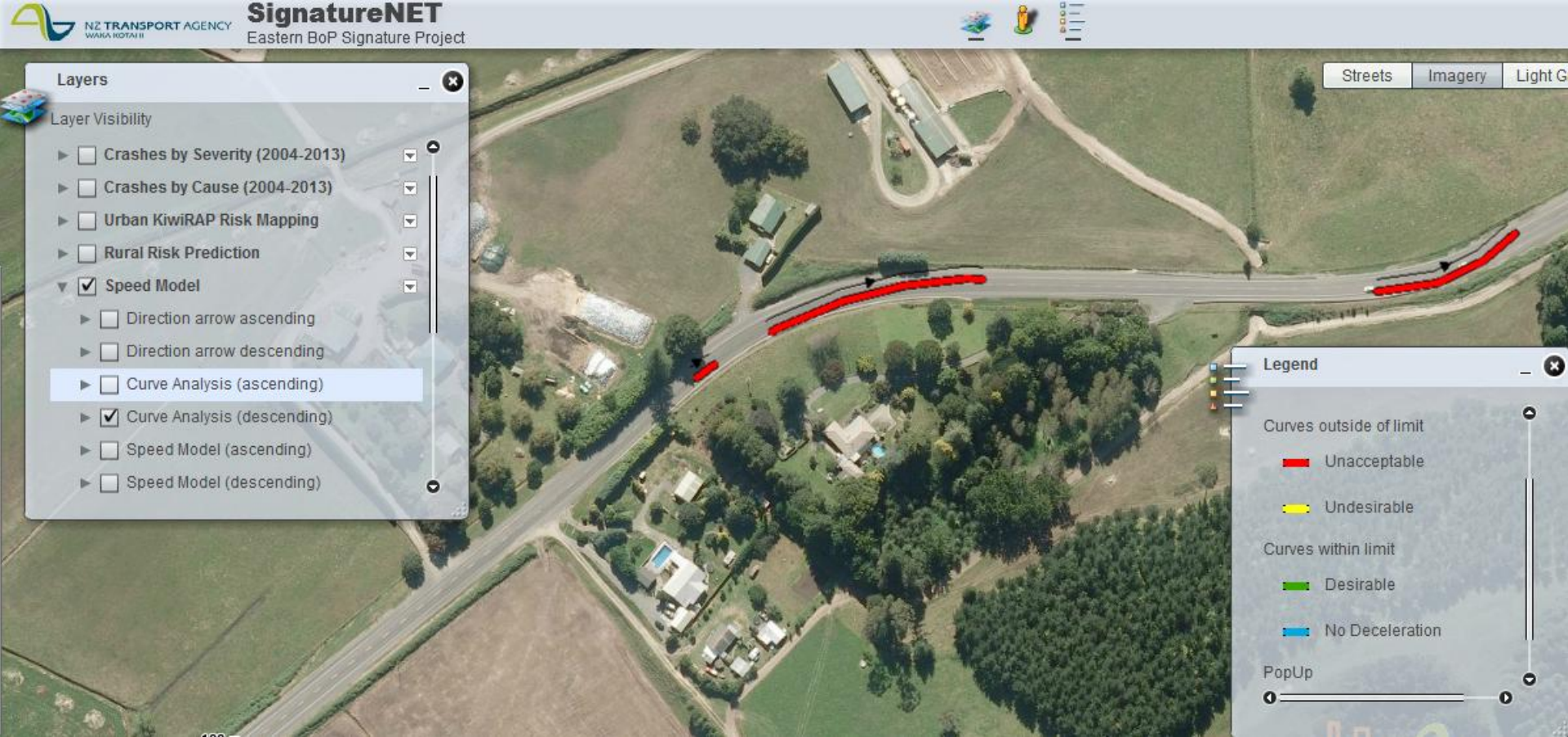
- Crashes by Severity (2004-2013)
- Crashes by Cause (2004-2013)
- Urban KiwiRAP Risk Mapping
- Rural Risk Prediction
- Speed Model**
  - Direction arrow ascending
  - Direction arrow descending
  - Curve Analysis (ascending)**
  - Curve Analysis (descending)
  - Speed Model (ascending)
  - Speed Model (descending)

**Legend**

- Curves outside of limit
  - Unacceptable
  - Undesirable
- Curves within limit
  - Desirable
  - No Deceleration

PopUp

# SignatureNET: High Risk Curve Identification



# SignatureNET: High Risk Curve Identification

The screenshot displays the SignatureNET software interface for the Eastern BoP Signature Project. The main map area shows an aerial view of a road network with several curves highlighted in red, indicating they are 'Unacceptable'. A legend on the right side of the map explains the color coding: red for 'Unacceptable', yellow for 'Undesirable', and green for 'Desirable'. The legend also includes a 'Direction Arrow descending' symbol and a 'Speed limit' section. On the left side, a 'Layers' panel is visible, showing a tree view of data layers. The 'Crashes by Cause (2004-2013)' layer is expanded, and several sub-layers are checked, including 'Loss of Control', 'Morning', 'Afternoon', 'Night/Twilight', 'Alcohol/Drugs', 'Inexperience', 'Speed', and 'Failure to Keep Left'. The 'Crashes by Severity (2004-2013)' layer is also visible but not expanded. The top of the interface features the NZ Transport Agency logo and the project name 'SignatureNET Eastern BoP Signature Project'. The bottom left corner shows a scale bar for 100 meters.

**SignatureNET**  
Eastern BoP Signature Project

**Layers**

Layer Visibility

- ▶  Crashes by Severity (2004-2013)
- ▼  Crashes by Cause (2004-2013)
  - ▶  Seat Belt Wearing
  - ▶  Loss of Control
  - ▶  Morning
  - ▶  Afternoon
  - ▶  Night/Twilight
  - ▶  Alcohol/Drugs
  - ▶  Inexperience
  - ▶  Speed
  - ▶  Failure to Keep Left

**Legend**

speed limit

Direction Arrow descending

Curves outside of limit

- Unacceptable
- Undesirable

Curves within limit

- Desirable

Streets Imagery Light G

100m



# SignatureNET: High Risk Curve Identification

**NZ TRANSPORT AGENCY**  
WAIKA KOTAHII

**SignatureNET**  
Eastern BoP Signature Project

Streets Imagery Light Gr

**Layers**

Layer Visibility

- Crashes by Severity (2004-2013)
- Crashes by Cause (2004-2013)
  - Seat Belt Wearing
  - Loss of Control
  - Morning
  - Afternoon
  - Night/Twilight
  - Alcohol/Drugs
  - Inexperience
  - Speed
  - Failure to Keep Left

**Crash was on Sun 13/03/2011 at 400**

Crash Summary: CAR1 EBD on SH 30 lost control turning right, CAR1 hit Tree on right hand bend

Causes: CAR1 lost control due to road conditions. ENV: road slippery (loose material on seal)

Fatalities: 0

Serious Injuries: 1

Minor Injuries: 0

Crash Road: 30/206/10.336

Zoom to

**Legend**

Loss of Control (2009-2013)

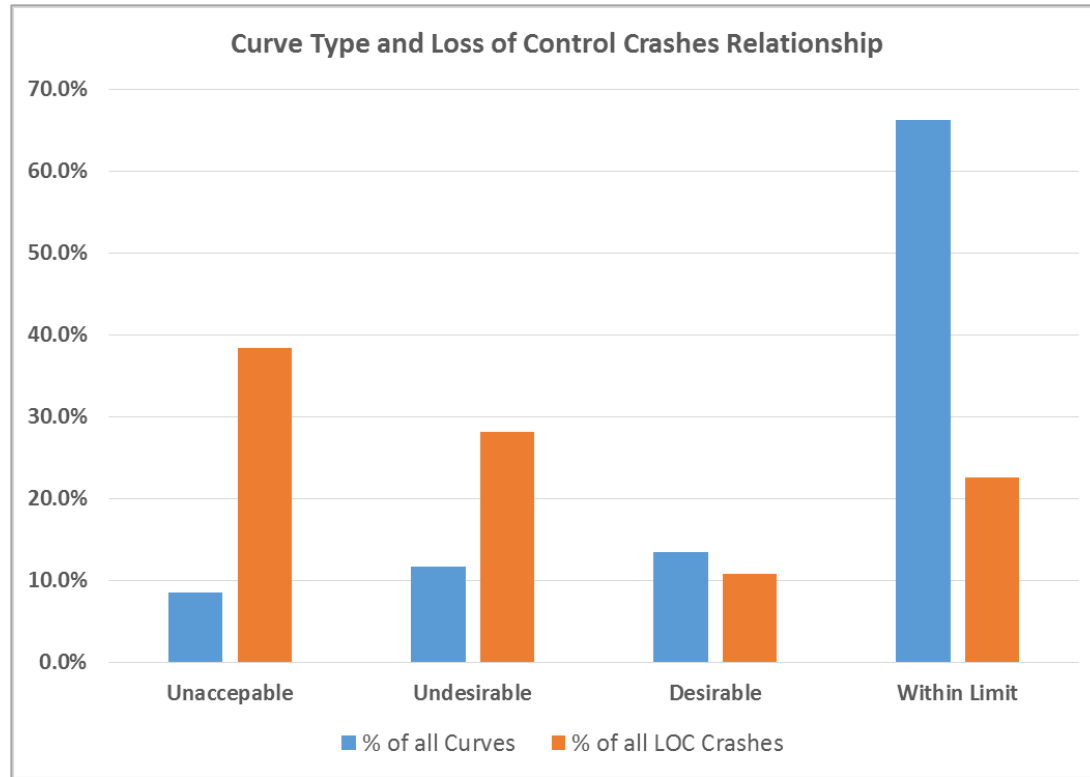
- Fatal
- Serious
- Minor
- No Injuries

Speed Model

Direction Arrow descending

100m

# Why Target High-Risk Curves?



# Key Points

- Network screening tool developed specifically for low-volume rural networks.
- Identifies curves by targeting to risk = proactive
- Assists Road Controlling Authorities make informed decisions about road safety.



**Paul Durdin**

**T** +64 3 367 9004

**M** +64 27 302 4313

**E** paul.durdin@abley.com

**Contact  
the office**

**T** +64(0)3 377 4703

**M** +64(0)3 377 4700

**W** [www.abley.com](http://www.abley.com)

**Auckland**

Level 8, 57 Fort Street  
P O Box 911336  
Auckland 1142  
New Zealand

**Christchurch**

Level 1 and 2,  
30a Carlyle Street.  
PO Box 25350,  
Christchurch 8144  
New Zealand

Connect**Better**

