Why create SafetyNET?

- Ensure that road safety practitioners know where to initiate investigations
- Maximise the benefit of road safety investments
- Maximise the value of existing data sources
- Nationwide study with micro-level analysis and keep it affordable
- Accessible by non IT/GIS experts
Input Data

- NZTA Crash Analysis System (CAS) in CSV Format
  - 18,245 Rows of Data
  - 28 Columns of Information
  - Easting/Northing Information

- KiwiRAP (Road Assessment Programme)
  - 113,319 Rows of Data
  - Row for every 100m of Highway
  - Excel Workbook
  - 44 Columns of Information
  - Easting/Northing Information

State Highway Centreline Network Information
- Based on OSM data
- Edited nationally to ensure geographic match with KAT Data
- For split/dual carriageways dual centrelines were created
15 models
21 sub-models
Many python snippets
Iterator functions
Python scripts
Ability to run simultaneously on separate user accounts.
01. Create Modelling Workspaces

Get Current Windows Username

- Expression:
  - getpass.getuser()

- Code Block (optional):
  - import getpass

Diagram:
- Create File GDB (16)
  - $SH_Segment_Stats_%Username_%gdb$
- Create File GDB (12)
  - $K_SHData_AdSegment_STA TS_%Username_%gdb$
05. Convert KAT Data to Feature Class
10. Create 500m & 5100m SH Segment Stats
Moving Risk/Analysis Worm

North Canterbury - Waipara to Waikari
Urban Area

Minor Injury Crash

100m segment being analysed

Wellington – Rimutaka Hill

Serious Injury Crash

Fatal Crash

Number of crashes in 5100 m segment
- 2-10
- 11-20
- 21-30
- 31 +

500 m segment

5100 m segment
SafetyNET Layers

- Collective Risk
- Personal Risk
- Star Rating
- Safety Performance v Predicted Performance
- Summary Indicator
  - Investigation Priority Rating
- Treatment Strategy Indicator
  - Reactive
  - Proactive
Collective Risk
Kilometres by Region

Northland: 184
Auckland: 140
Waikato: 285
Bay of Plenty: 219
Gisborne: 132
Hawkes Bay: 109
Taranaki: 305
Manawatu-Wanganui: 130
Wellington: 179
Nelson/Tasman: 78
Marlborough: 126
West Coast: 58
Canterbury: 203
Otago: 145
Southland: 326

[Bar chart showing kilometres by region with highlighted sections]
Personal Risk
SafetyNET Flex Viewer
Reactive Treatment Strategy

- Safety Management (M-H, M)
- Safer Corridors (M, M-H, H)
- Safety Maintenance (L-M, L)
Developing Safety Programs

Drivers

Tools

Corridor Treatment Philosophy

Outcomes

Reactive Safety

SH Classification Level of Service

Proactive Safety

Wider Corridor Strategies

Safety NET

• KiwiRAP Risk Maps
• CAS
• Crash Reduction Studies
• Deficiency Database

• KiwiRAP Star Ratings

• KiwiRAP RPS
• Out of Context Curves
• High Speed Data /SCRIM
• Network Inspections

Corridor Safety Treatment Strategy

Safety Programme or Project
SafetyNET Status

- NZTA regional safety staff have been introduced to and trained in the use of SafetyNET
- Informing the development of road safety programmes
- Informing the identification of crash reduction study sites
- Benchmarking of safety performance year to year
- SH Intersection Safety Analysis
- Development of a prototype application for iRAP (Mexico)
Flex Web Mapping Application
To find out more:

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Learn more about us
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Learn more about SafetyNET
www.safetynet.org.nz