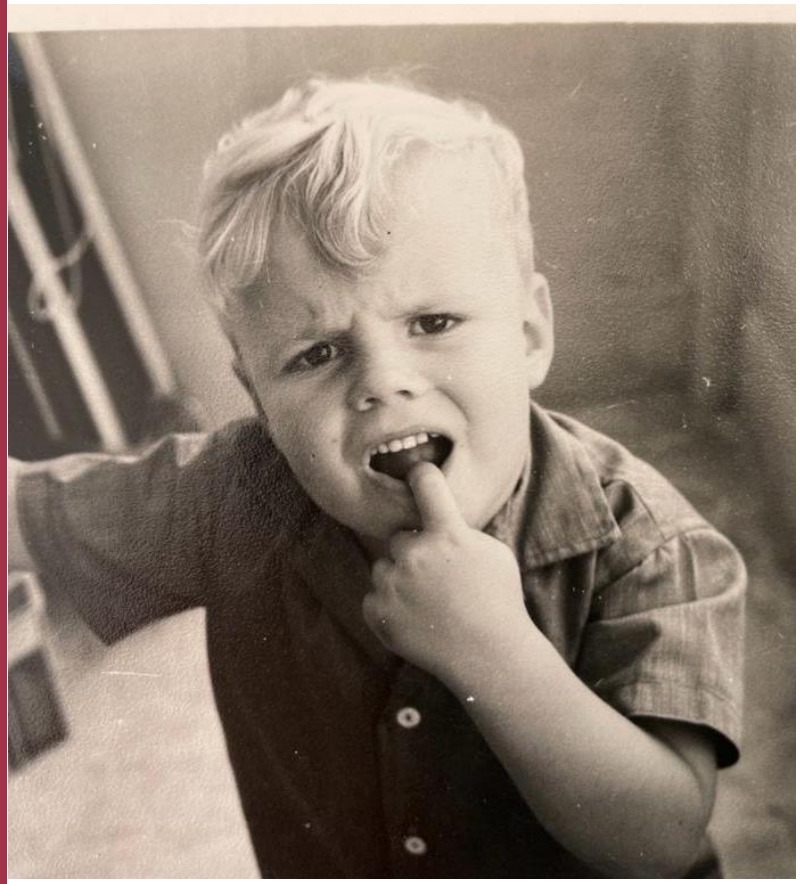
RIMS
Roading Infrastructure Management Support

in association
IDS
Infrastructure
Decision Support

Fact or Friction

Mark Stephenson
Associate Director – WDM limited



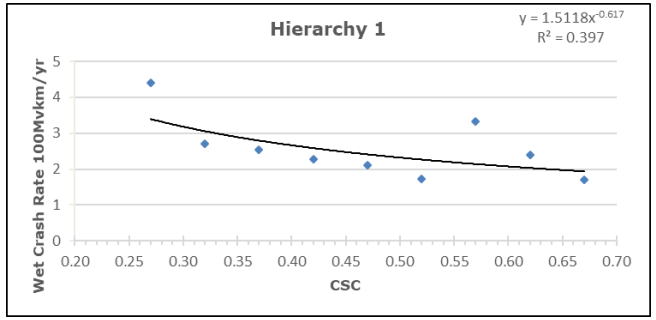
WDM New Zealand

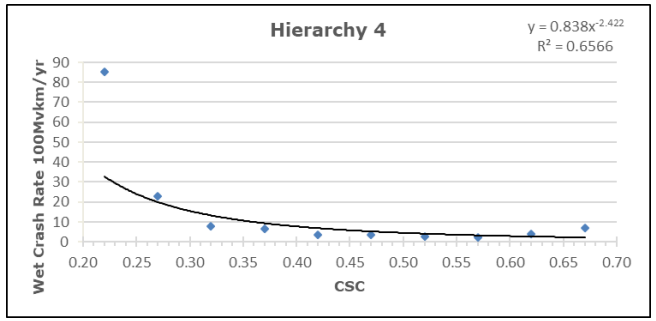
- Surveys for Waka Kohati since mid 90’s
- Operate 2 SCRIM+ vehicles
  - Skid resistance
  - Rut, NAASRA, Texture
  - Video, alignment and GPS
- Worked for over 20 local authorities
- Subsidiary of WDM (UK)
- Link to WDM USA

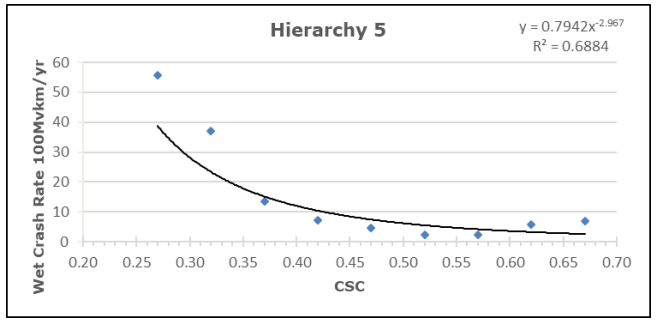
NZ – Road to Zero

- Road safety system that promotes good choices, but acknowledges that road users make mistakes
- Shared responsibility
- Evidence and evaluation
- Target to reduce 40% reduction in deaths and serious injuries by 2030
- 2018 – 377 people were killed on NZ roads

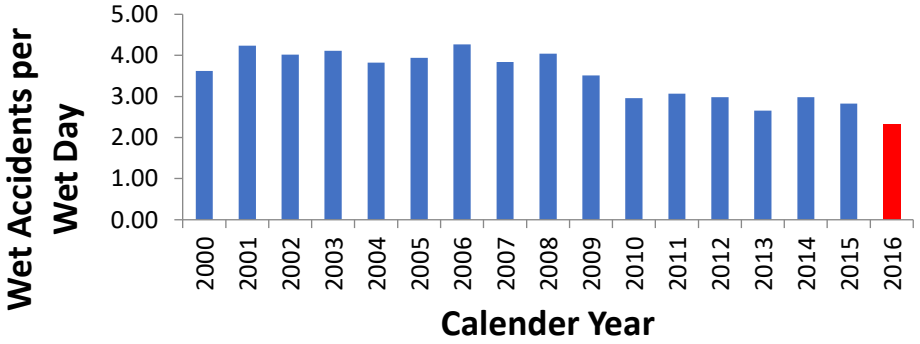
Evidence that a skid strategy works - Scotland



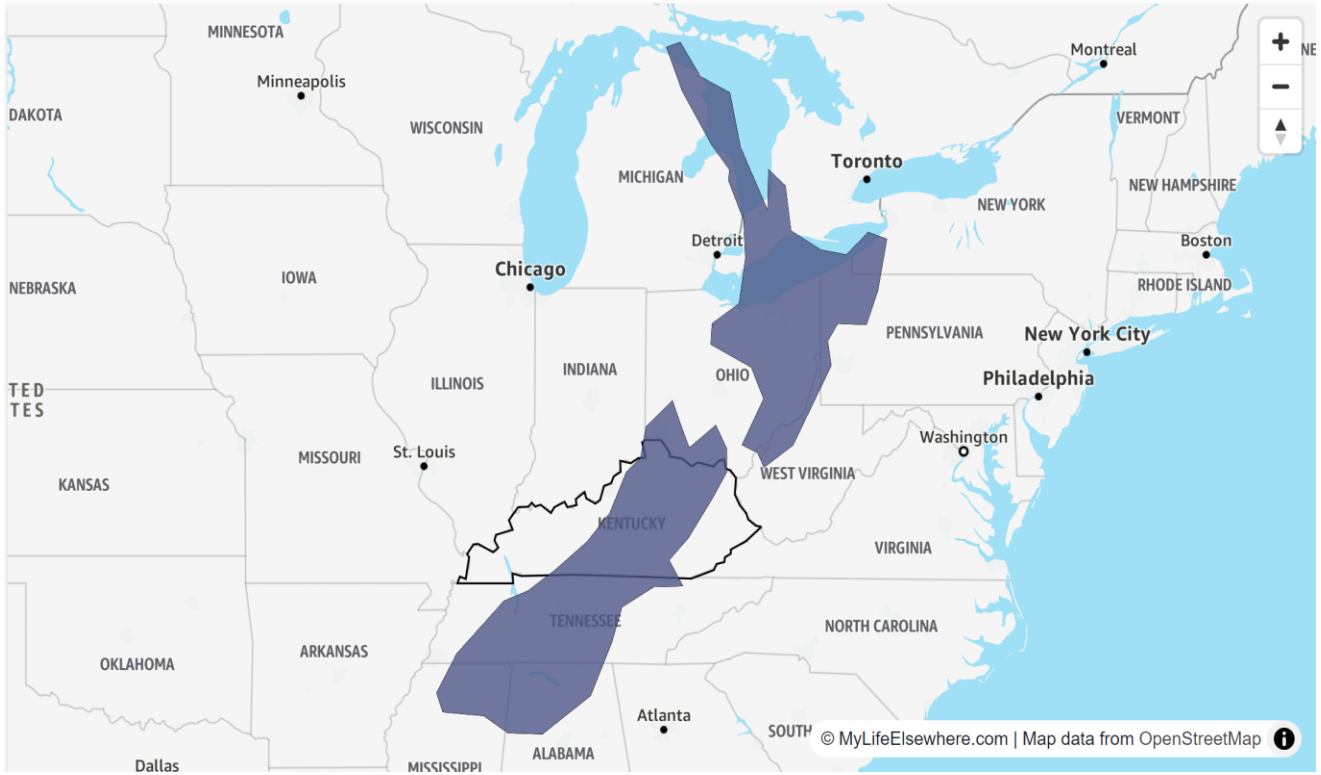




- Stronger relationship between crash rate and crash numbers on lower hierarchy roads
- Process of priortisation/ investigation and evidenced action – but does have some subjectivity
- Wet accidents per wet day reduced by 80% over 10 years/ dry by 5%

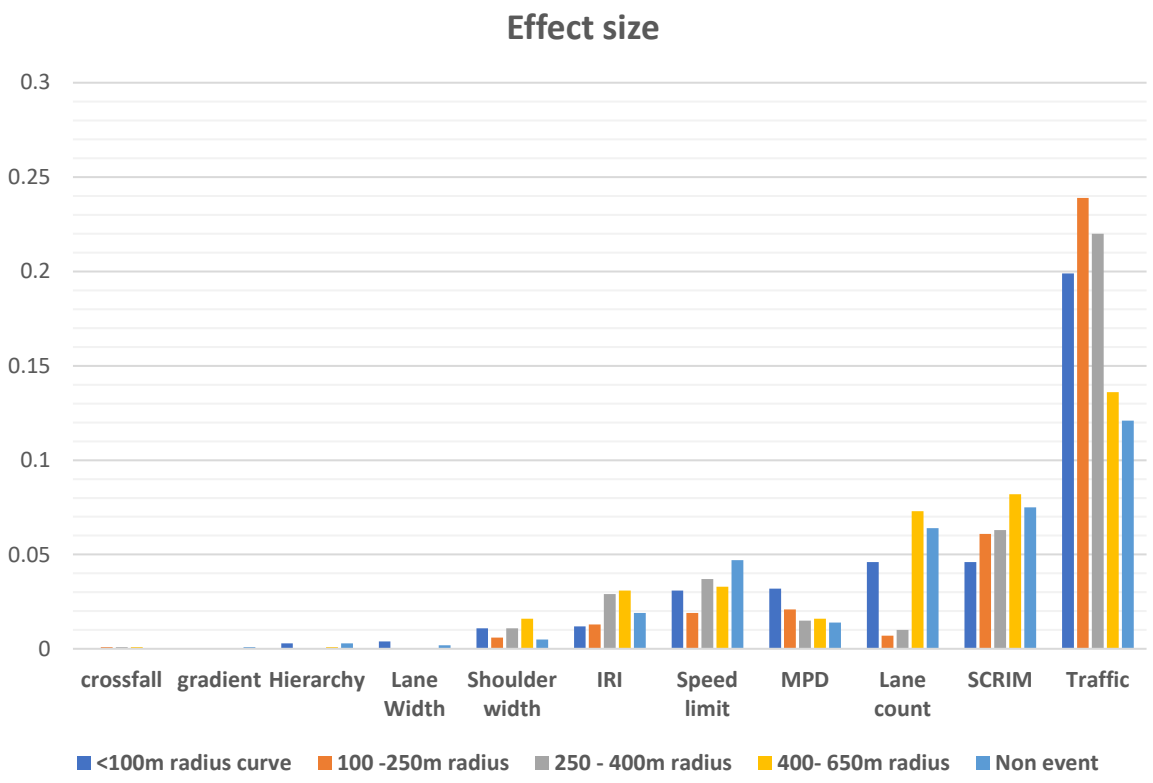


Evidence that a skid strategy works - USA



- Kentucky – 4.5million population
- 806 fatal crashes in 2023
- 60/70% are roadway departures
- 15,000 miles SCRIM survey annually
- Statistical approach to predicting crashes and benefits of interventions
- 10 point (0.08 NZ equivalent) increase in skid resistance would reduce crashes by 10%

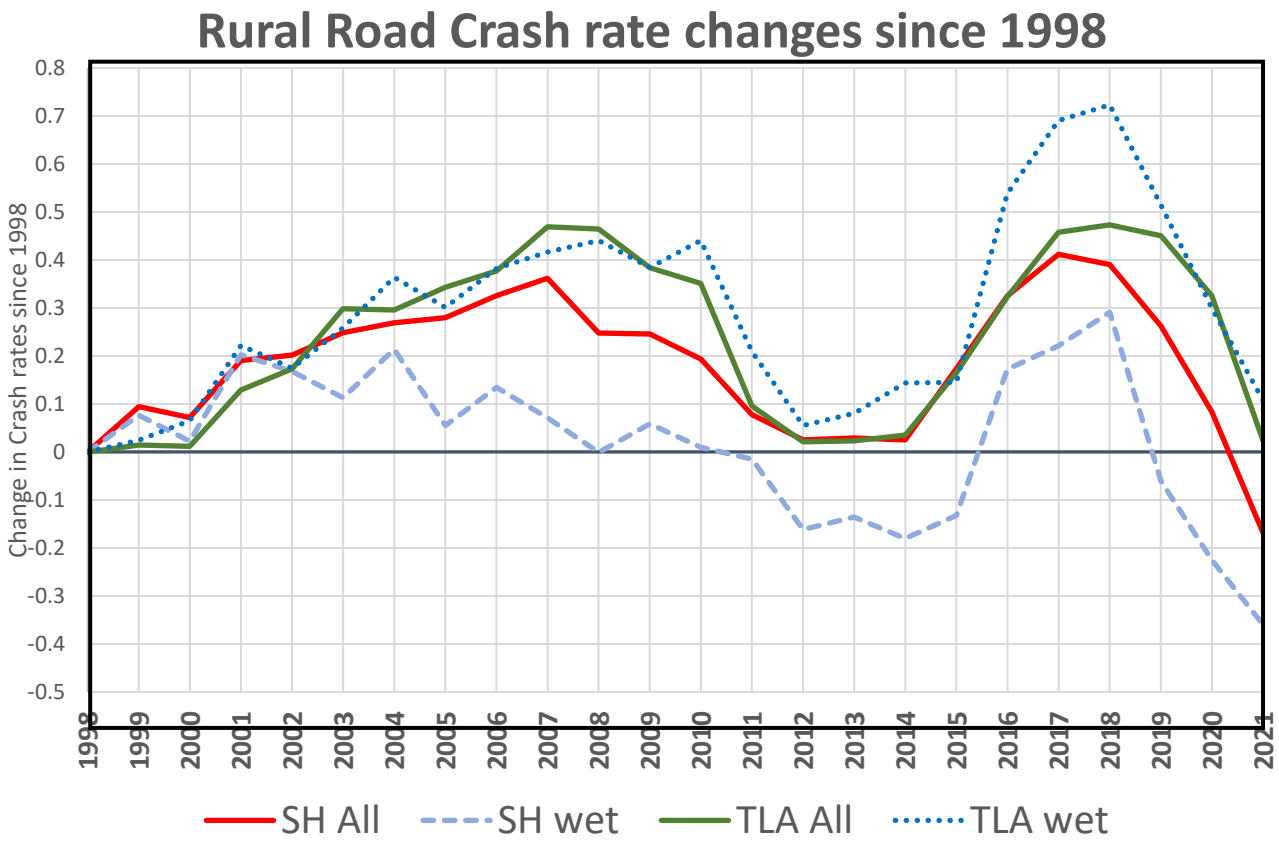
Evidence that a skid strategy works - USA



- Kentucky – 806 crashes in 2023
- Size effects – quantify the relationship between predictors and crashes – rank variable importance
  - $\eta^2 < 0.01$: Very Small
  - $0.01 \leq \eta^2 < 0.06$: Small
  - $0.06 \leq \eta^2 < 0.14$: Medium
  - $\eta^2 \geq 0.14$: Large

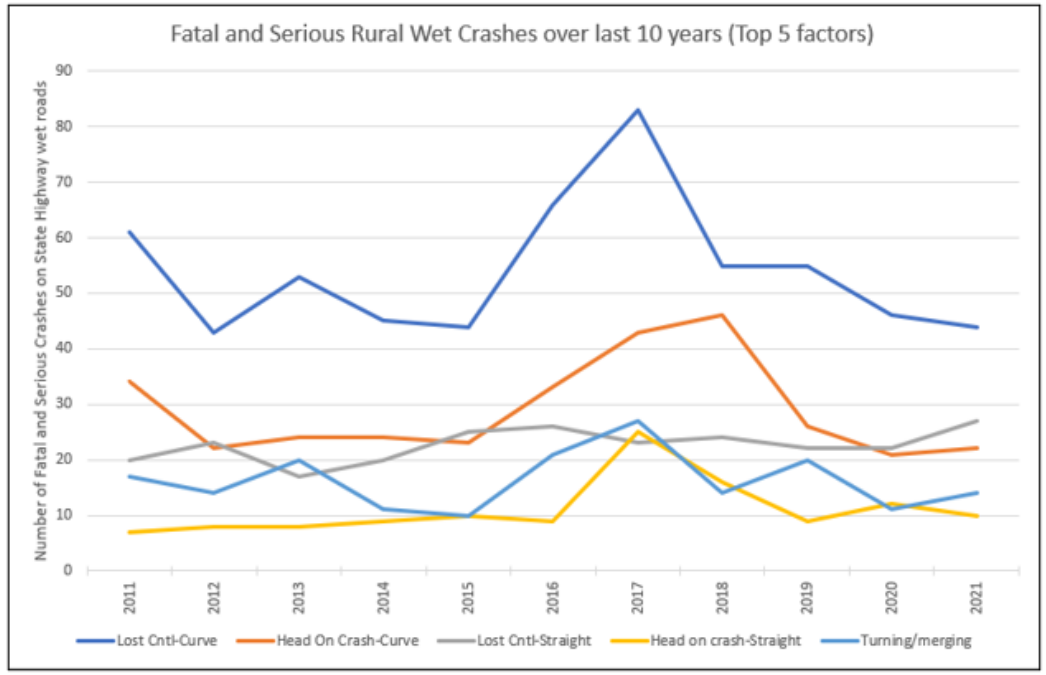
- Small – shoulder width/ IRI/Speed limit/MPD
- Medium – lane count/ SCRIM
- Large - Traffic

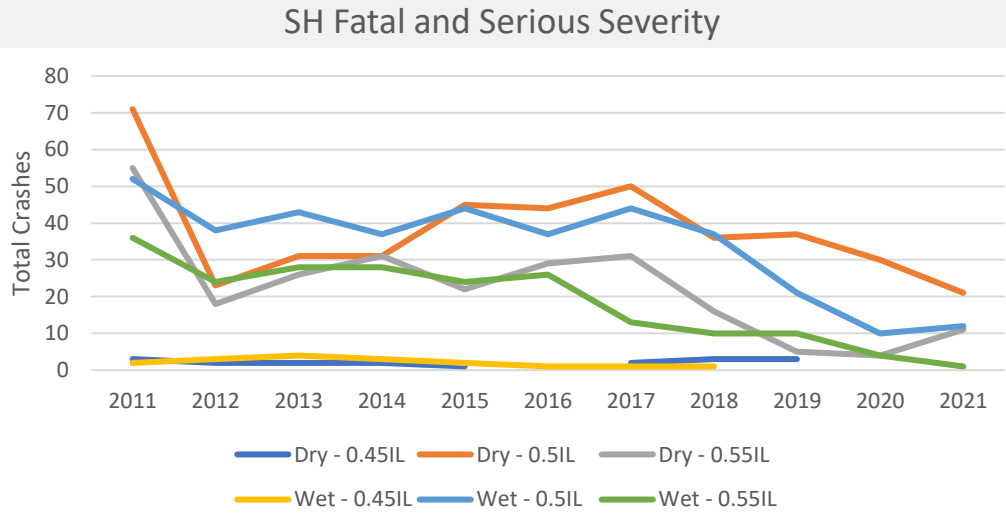
Evidence that a skid strategy works – Waka Kohati

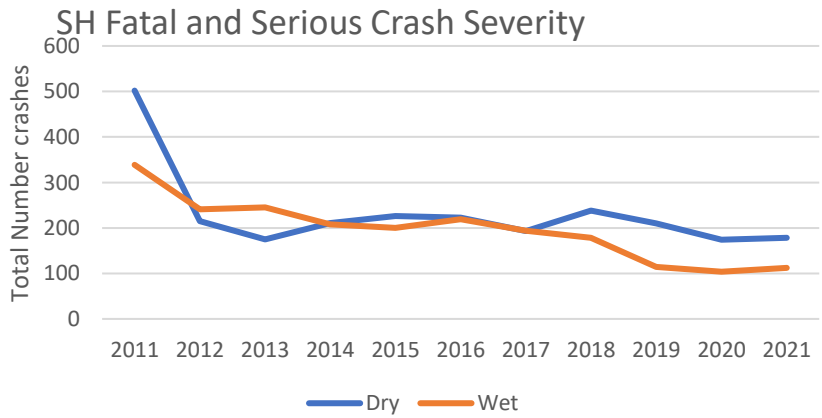


- Last 5 years analysis
- Annually prevent 20 fatal and 71 serious crashes
- BCR – 6.8 (survey + works v crash savings)

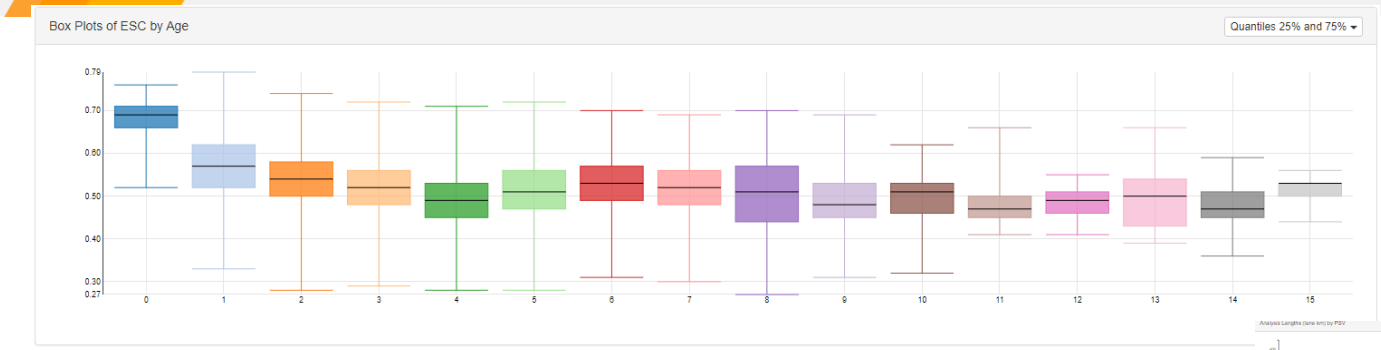
Evidence that a skid strategy works – Waka Kohati

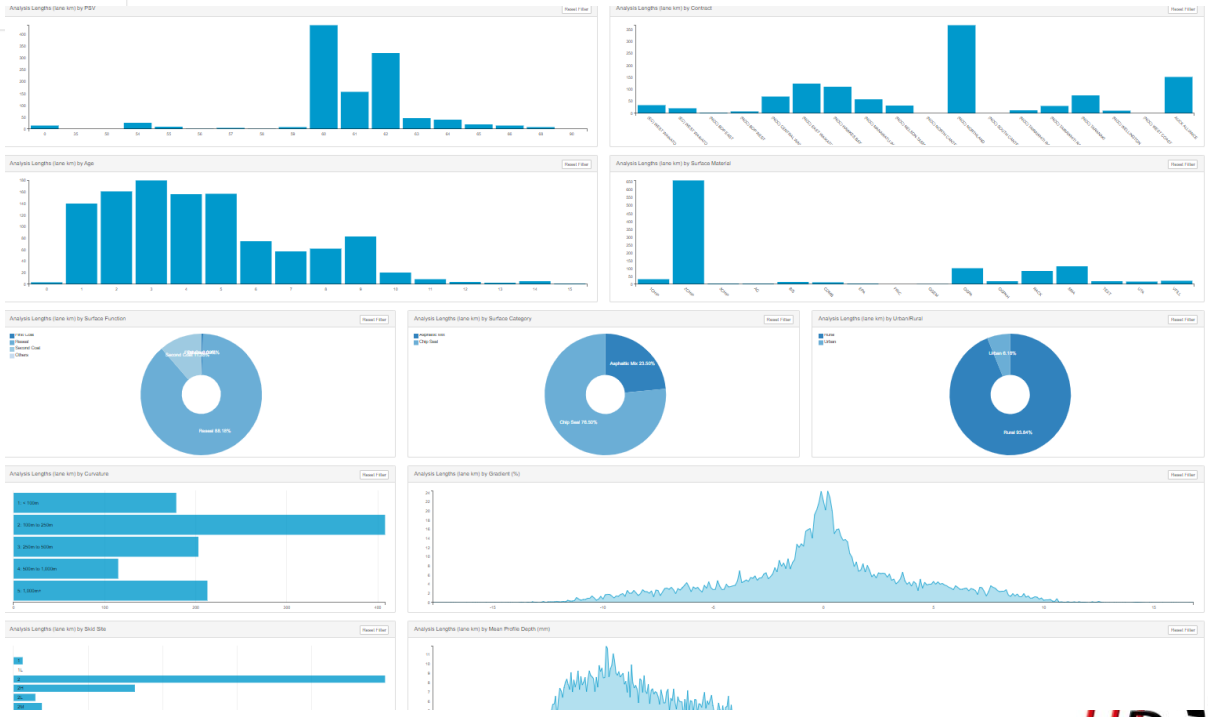






Evidence that a skid strategy works – Aggregate tool

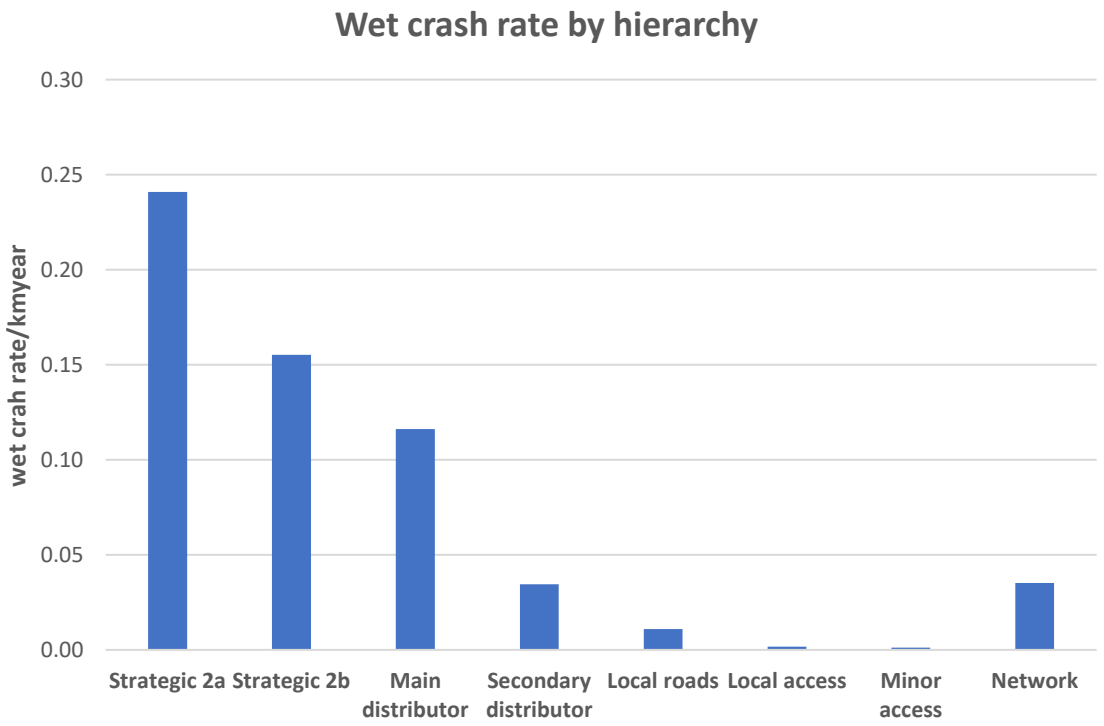




A SCRIM Survey

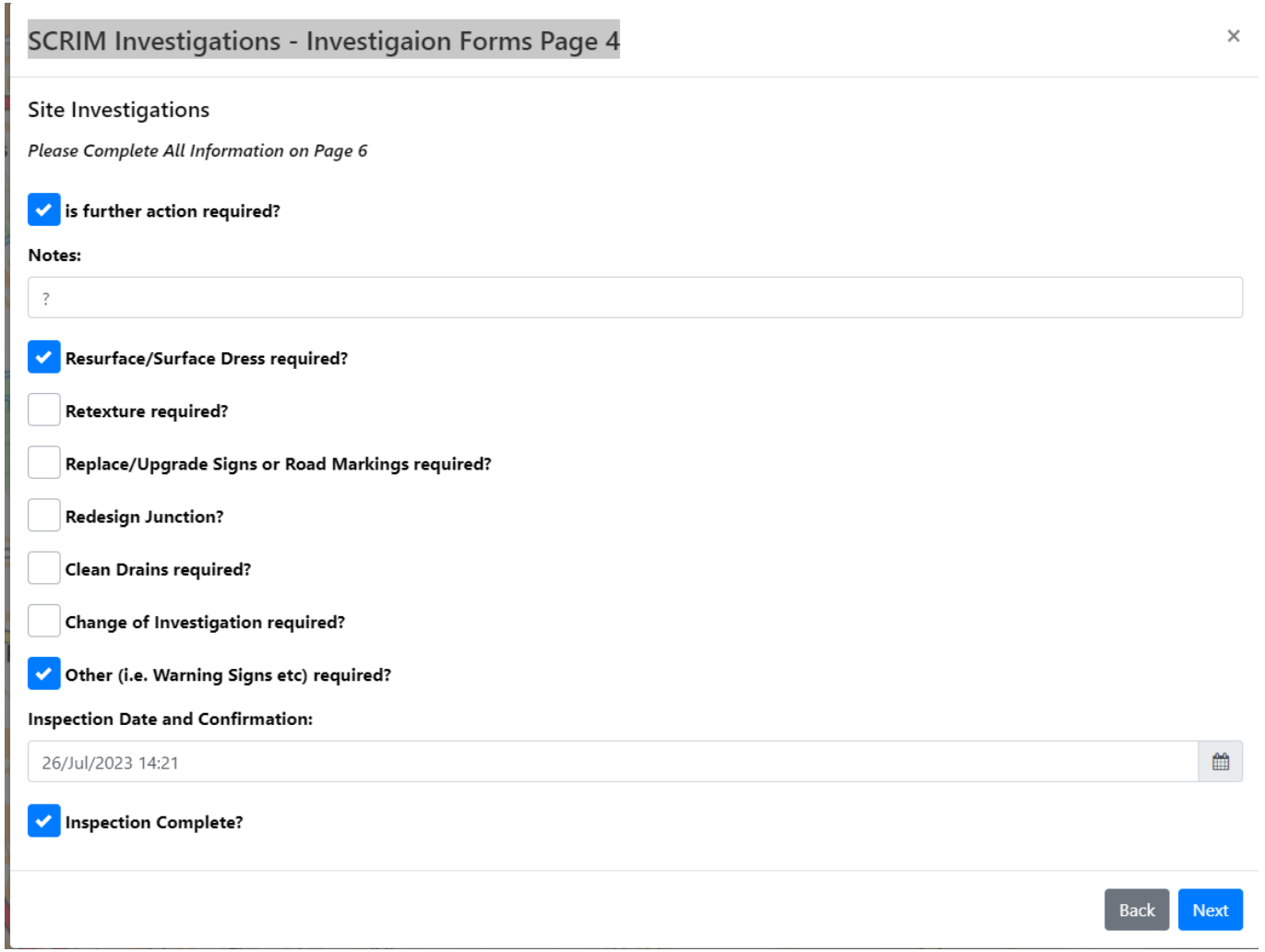
- Continuous measurement
- Traffic speed data collection
- Forces on test wheel/ summarised at 100mm, reported for 10m sub sections

Targeting surveys by ONF



- UK local authority – 7000km network
- Functional hierarchy
- 5-year wet crashes by hierarchy
- Trade off at main/ secondary distributor
- 3a: *rural routes between strategic networks together with heavily trafficked urban roads*
- 3b: *other important rural routes and lightly trafficked urban road*
- SCRIM on 2a – 3a network – 20% of whole network – defined ‘resilient’ network

Targeting surveys by ONF



- Priortisation process applying
  - SCRIM
  - Crashes – no and severity
  - Speed limit
  - Texture
  - Site category

- Investigation protocol using remote working software
- Evidenced and documented action
- Over 70 LA's undertake SCRIM surveys annually

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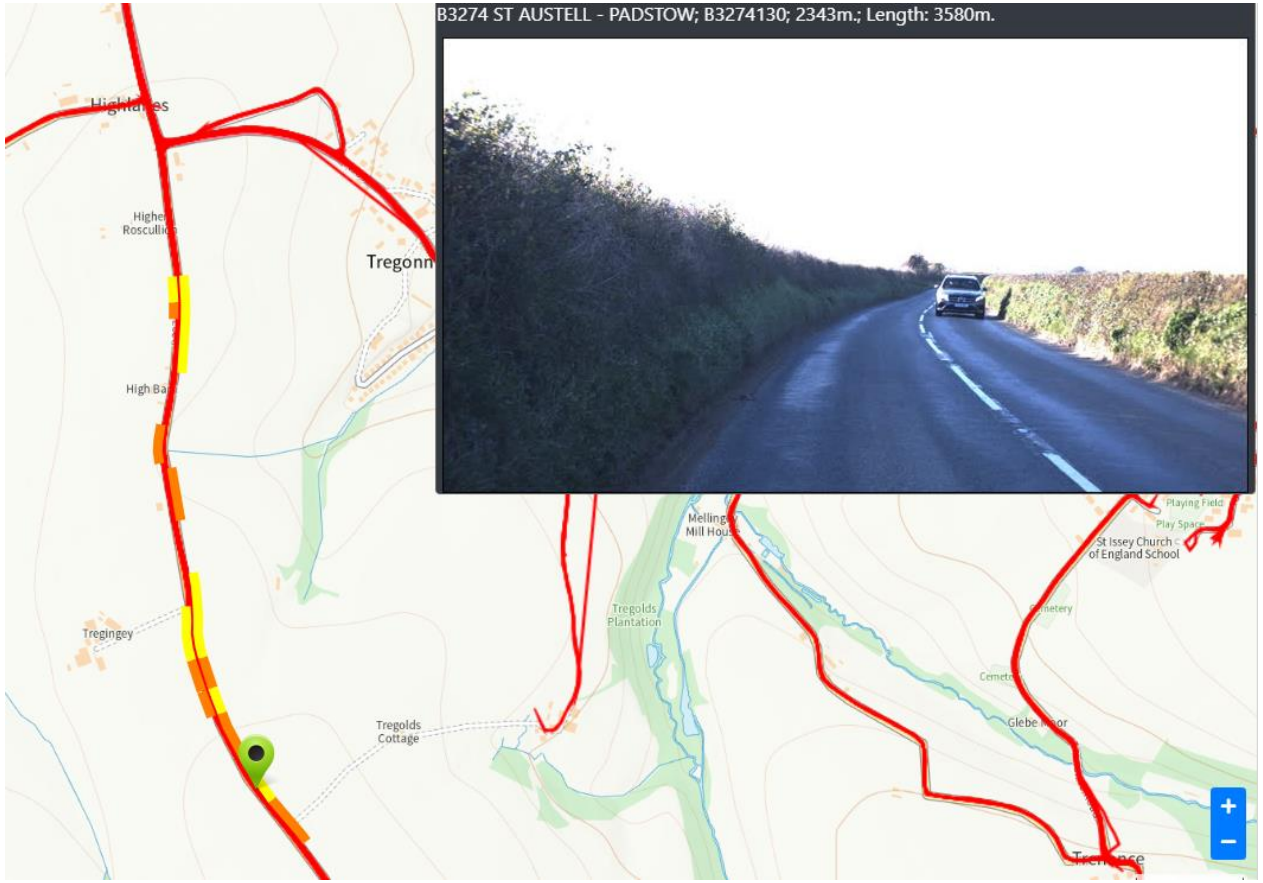

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Local Authorities in NZ

'Te Ringa Maimoa will work with the sector to develop national guidance to improve the quality and consistency of skid resistance data collection. This guidance will include when/where a TLA should look to collect this data, and how this data can be used to improve safety and skid resistance management'

- Worldwide evidence demonstrates a skid policy reduces crashes
- Less' engineered' roads show greater potential benefits
- There is a point on the hierarchy where the number of crashes reduces to a level where network monitoring is not appropriate
- WDM offer
  - Talk to us in the expo
  - We can offer survey service suited to LA requirements
  - We have international experience of implementing skid policy/ strategy

Condition Survey
Condition Survey
UDM