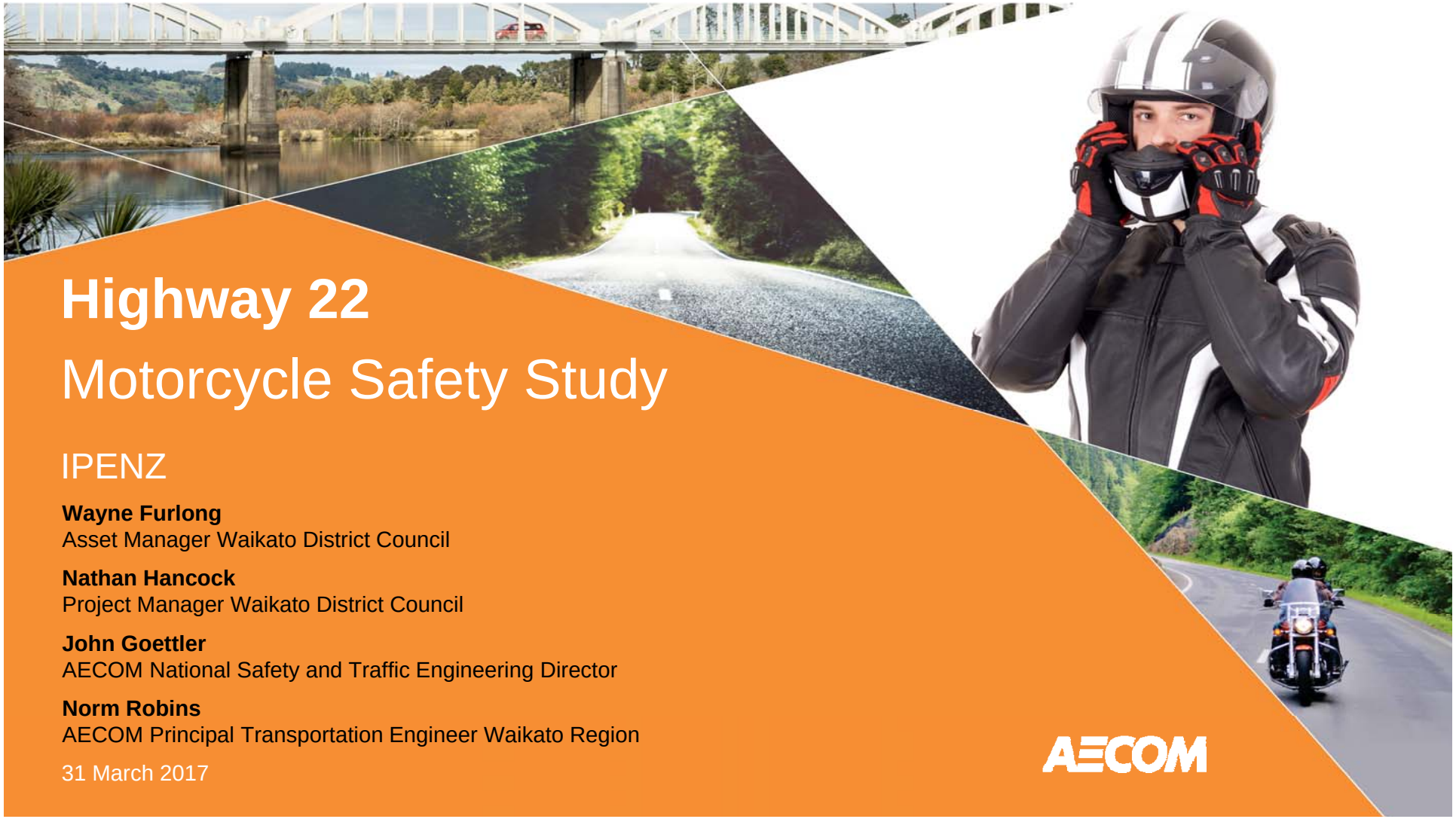


Highway 22

Motorcycle Safety Study

IPENZ

Wayne Furlong
Asset Manager Waikato District Council

Nathan Hancock
Project Manager Waikato District Council

John Goettler
AECOM National Safety and Traffic Engineering Director

Norm Robins
AECOM Principal Transportation Engineer Waikato Region

31 March 2017

AECOM

Slides for
IPENZ 2017

Network Safety Programme

Waikato District Council

Nathan Hancock Road Safety Engineer

Waikato District Council

BSc (Hons) (Civil)

- 10 years' experience in roading and safety engineering
- Qualified Road Safety Auditor
- Experience in Safe System approach

Training:

- NZTA Road Safety Barrier Maintenance & Installation
- NZTA Road Safety Barrier Design
- Certified COPTTM L1 TC

Wayne Furlong Roading Asset Manager

Waikato District Council

BSc(Eng)Civil, PMP

- 20 years experience in asset management, design and construction
- Network safety strategy planning
- Planning integration with delivery
- Programme Optimisation

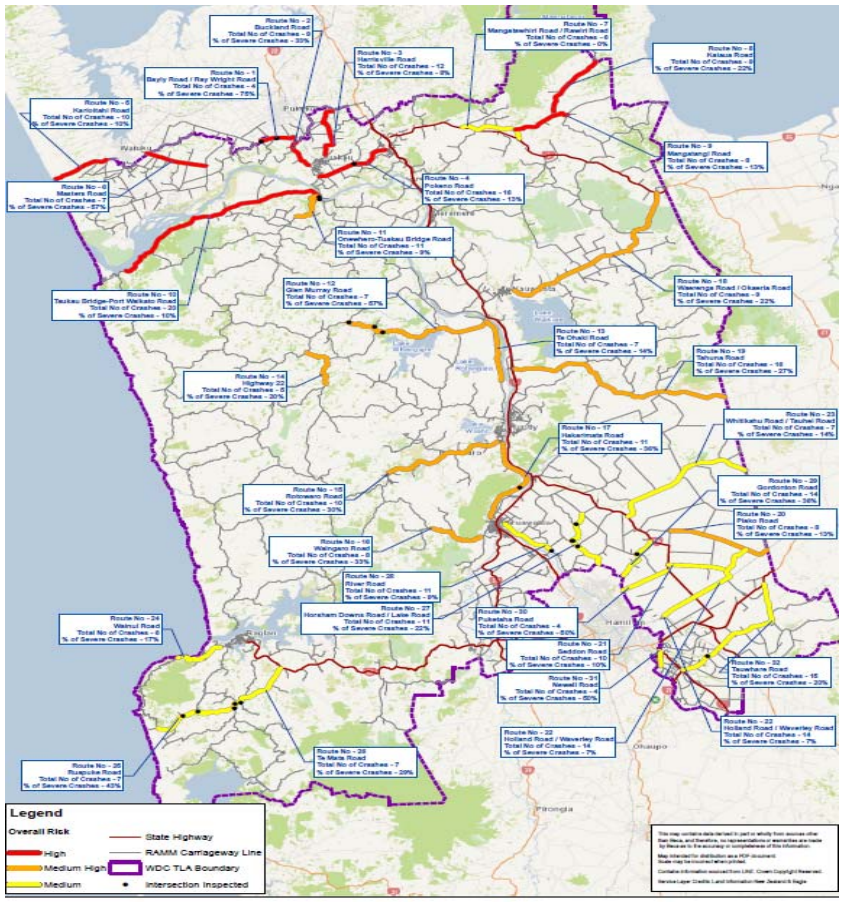
Training:

- STMS (NZIHT)
- MSAC Safety in Design Workshop

Context

- National and District focus on improving road safety, particularly high risk users such as motorcyclists
- On Waikato District Council's rural road network 88% of fatal and serious crashes occur in the rural environment
- 52% of Waikato serious and fatal crashes occur on 12% of our roads
- Fatal and serious crashes rarely occur at the same location.
- Therefore an holistic approach is required to treat routes or corridors to reduce the risk of fatal and serious crashes occurring in the future

Risk Mapping



- Network Wide Crash analysis
- Risk Mapping in GIS
- Priority Routes Identified
- Safety Treatment Plans Created
- Construction Underway

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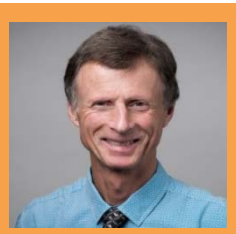
Outcomes

- Prioritised safety programme
- Targeted use of funding
- Safer roads



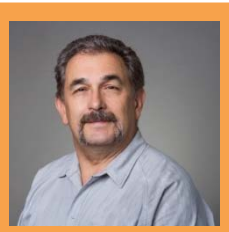
Norm Robins Principal Transport Engineer

B Eng (Hons) (Civil & Structural), MIPENZ, CPEng

- 35 years' experience in roading and traffic engineering
- A strong urban and local authority traffic engineering bias
- Safety work in particular has a rural roading focus

Training:

- Safe System in Practice Course (2013)
- NZTA Road Safety Barrier Maintenance & Installation (2013)
- Certified COPTTM L2/L3-NP



John Gottler National Safety &Traffic Engineering Director

TP, M&C UNSW Sydney, Australia, NZCE (Civil), Registered Australian RSA Team Leader, Registered Engineering Associate (REA), TMIPENT, Member of ASPACI, Vice President of TRAFINZ

- 42 years' experience in roading and traffic engineering
- One of Australasia's most experienced and knowledgeable transportation engineers
- Traffic management and control expert
- Safety specialist

Training:

- One of the original team that created the Safe System Workshop for New Zealand, CoPTTM and the RSA procedures
- Certified Temporary Traffic Management Coordinator COPTTM L2IB NP-R

BMW's vision for the future of motorcycling

http://brand.bmw-motorrad.com/en/stories/design/vision-bike.html

So what is the future for motorcycles

- BMW want a crash worthy motorcycle?
- You won’t need a helmet?
- You won’t need bug protection?
- The bike will not fall over?
- The bike will communicate with everything?
- The bike will provide rider enjoyment?
- This is really a safe system motorcycle…

First steps – Honda latest release

http://www.cycleworld.com/honda-self-balancing-motorcycle-rider-assist-technology

Highway 22 identifying the problem is the ***challenge***

What are the achieved outcomes?

- 44% of high severity crashes are on rural roads and occurred on a Saturday or a Sunday
- 3pm to 7pm is the most likely crash time for high severity crashes
- Objects were recorded as being struck, in 70% of rural crashes
- Loss of control is the most common movement type for rural crashes
- Motorcycle crashes are 18.6% of the high severity crashes

Casualty outcome in Waikato

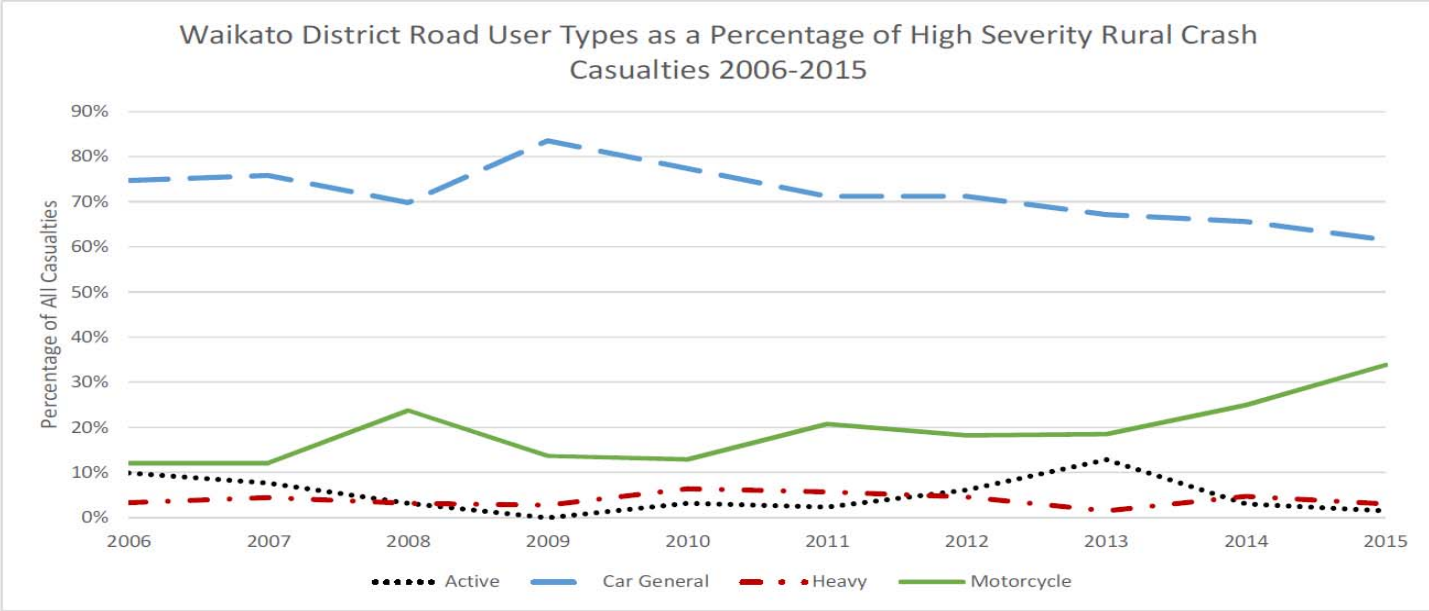


Figure 73: Waikato District Road User Types as a Percentage of High Severity Rural Crash Casualties 2006-2015

KiwiRap – Motorcycle risk for Highway 22

ERSA safety deficiencies:

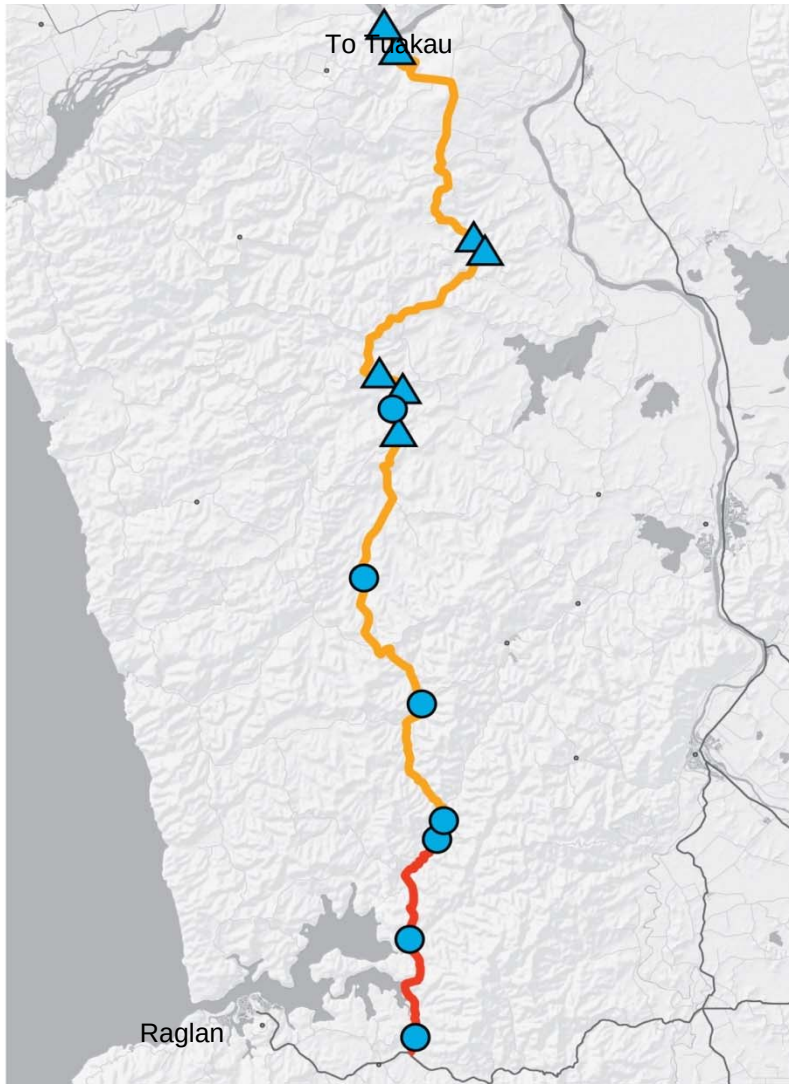
- Pavement width inconsistency
- Roadside hazards
- Pavement defects
- Signs and road markings
- Debris on the carriageway
- Temporary Traffic Management communication to user

Did not meet WDC asset requirements.

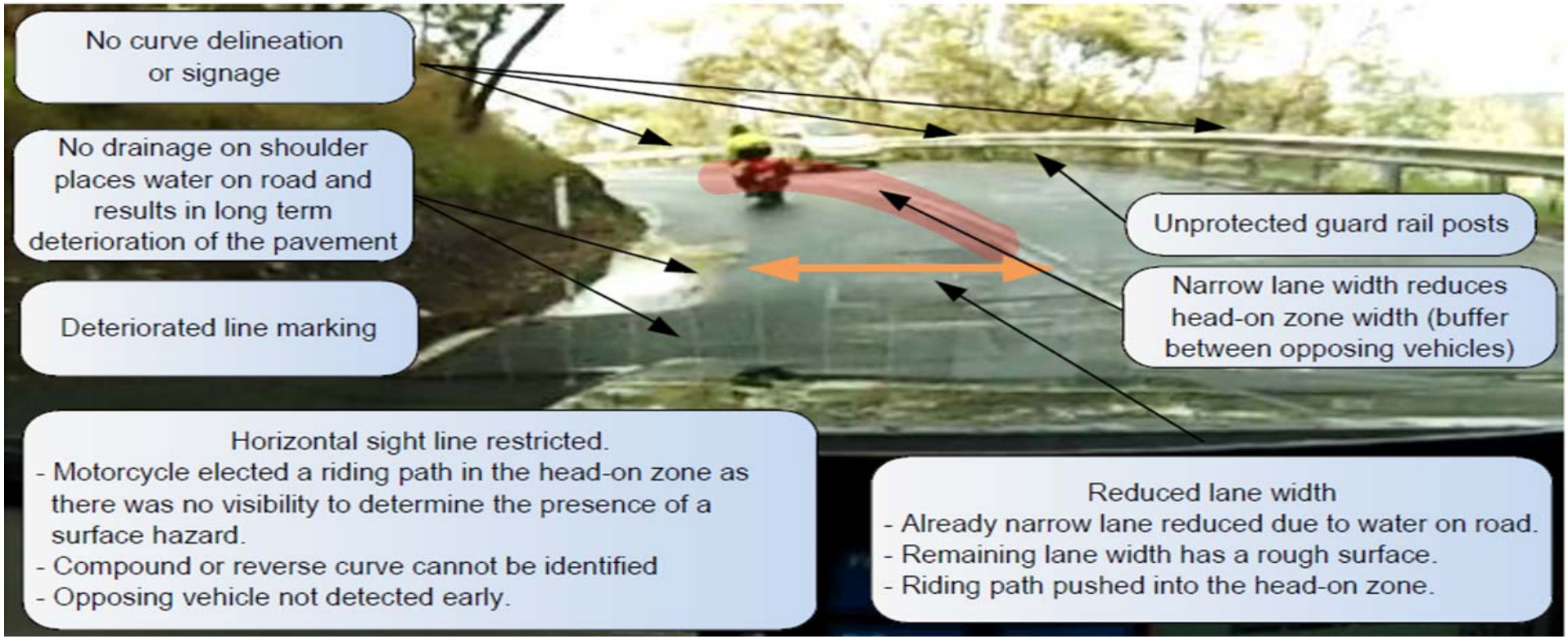
The crash study route outcomes

- The current motorcycle crash locations (reported)
- Are these maintenance ‘hot spots’?
- Is there a need for systematic intervention?
- WDC parameters:
  - Proactive within appropriate investment levels
  - Based on evidence
  - Flexible and adaptive change
  - Easy for the maintenance contractor to operationally deliver
  - Asset management focus for motorcycle safety

Highway 22 Safety

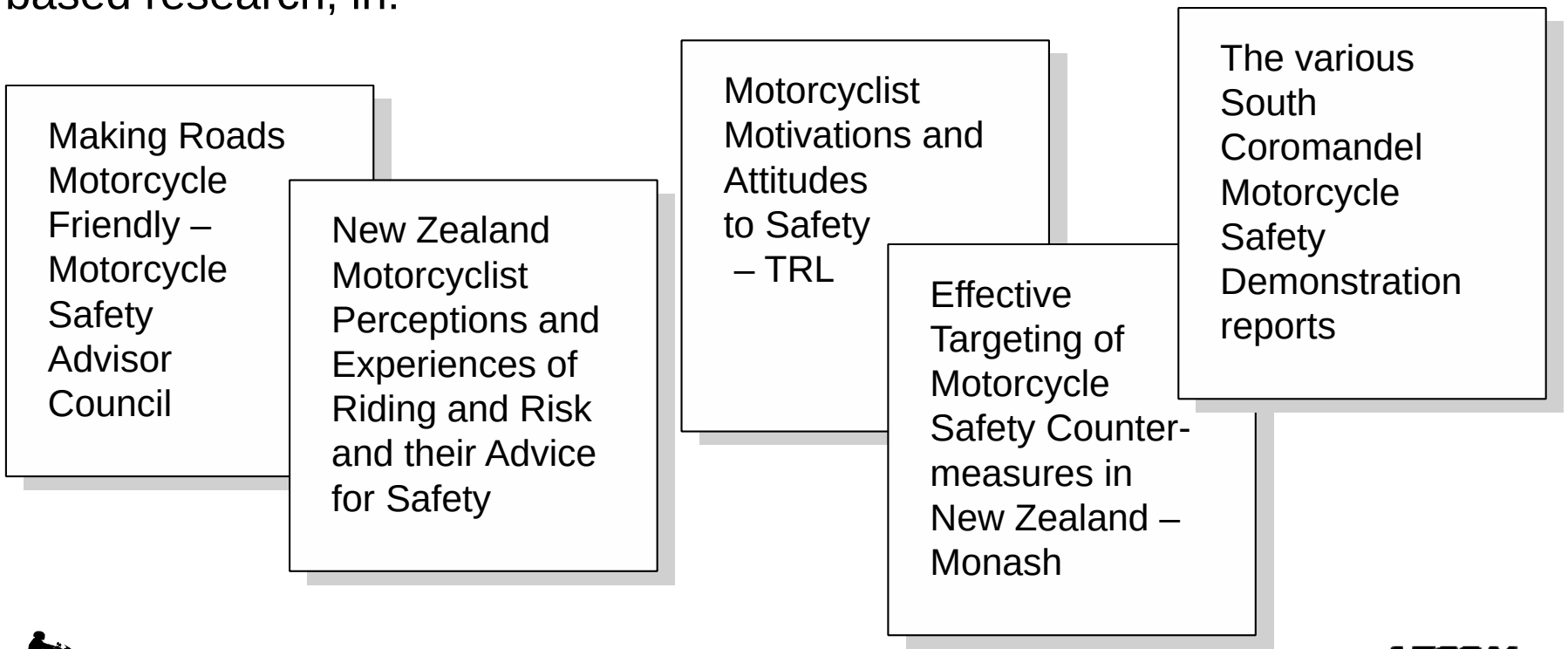


What are the motorcycle crash risks



We know the engineering solutions!

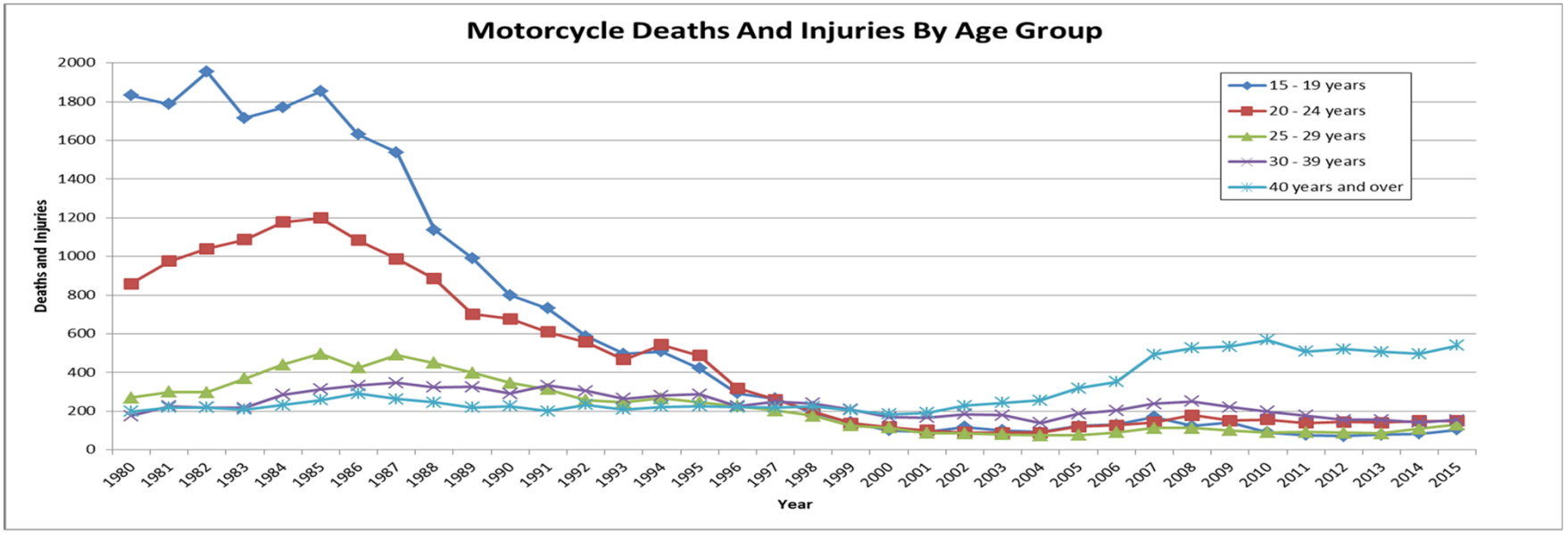
WDC, safety partners, motorcyclists and contractors know that engineering solutions have already been proven through evidence based research, in:



Mitigation Measures – to assist riders

- **Road alignment:** readable and consistent horizontal and vertical geometry
- **Sight distance:** clear visibility over a crest and through a curve
- **Cross-section:** lane consistency that is wide enough to provide width for safe riding path selection
- **Overtaking provisions:** frequent, safe and legal passing opportunities
- **Surface friction:** the wearing course should provide an appropriate level of surface friction in wet and dry conditions
- **Surface condition:** the road surface should be smooth, consistent, predictable and clear of debris
- **Roadside hazards:** the berm should be hazard free and energy absorbing
- **Temporary Traffic Management and control:** surprises

Who are the motorcycle deaths and injury group to be target?



Can motorcyclist contribute to safety through responsibility?

- Ride to survive
- Recreational rest areas as part of the experience
- Supporting and promoting motorcycle training to enhance skills and rider capability
- Education, protective wear and motorcycle maintenance
- Positive self enforcing and Police safety enforcement
- Facilitating emergency response though mobile technology
- Creating a recreational meeting destination/place

Asset Management

- Policy
  - Motorcycle safety needs
- Motorcycle investment programmes:
  - Pavement surface quality and widths consistency
  - Elimination of roadside hazards and unsealed driveways
  - Provision of minor safety improvements
  - Management of slips and pavement surprises
  - Remove of debris and vegetation management
  - Provision of quality road marking and delineation
- Road Safety Partners
  - Safety awareness and responsibility
  - Enforcement and maintenance
  - Education initiatives
- Continuous improvement – monitoring tools

Operational Maintenance

Motorcycle operational maintenance

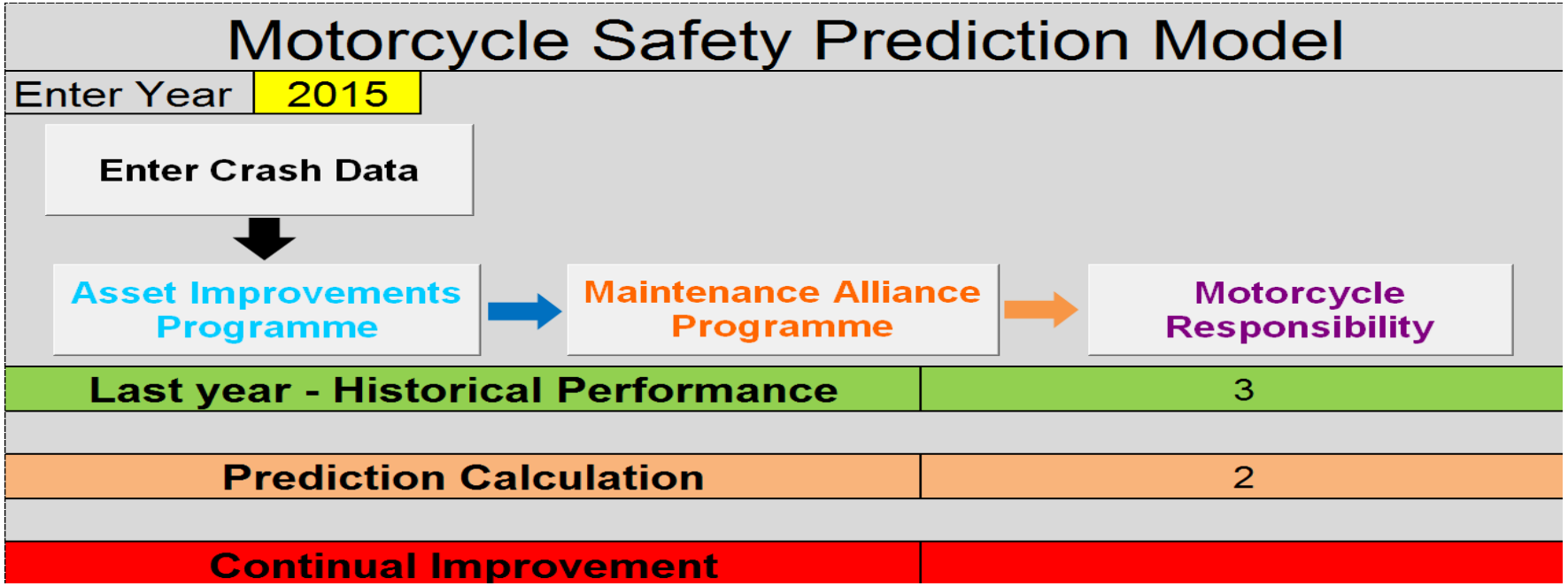
- Road marking and signage for the summer
- Prioritising resealing and pavement repairs to be complete by summer
- Route checked and debris swept
- Inspection reports on proactive motorcycle safety issues
- Temporary Traffic Management checks for motorcycles
- Signage checked and maintained in optimum condition for motorcycle safety in summer
- Stock management on road in summer
- Vegetation check and management for motorcyclist over summer

“Built to deliver a better world”

Study findings: What is important for motorcycle safety

- Provision of a safe system motorcycle route when motorcyclists use the route
- Investment that recognises motorcycle needs for:
  - Safety within the transportation asset
  - Proactive route operational maintenance delivery
  - Motorcyclists taking responsibility for their safety
- RCA's, partners and agencies that proactively drive:
  - The safety of the asset for motorcyclist users
  - Operational maintenance for motorcyclists
  - Motorcyclist responsibility for their safety
- Evidence based continuous improvements

The beginnings of a motorcycle safety predictive tool



Actions plans at this stage of the study

- Maintenance Contractors
  - Operational summer motorcycle maintenance programme
  - Planned and unplanned procedures process
  - Feedback to the new Tool and a focus on motorcycle safety
- Asset Management Policy
  - Requirements and procedures policy guidance
  - Investment programmes and design
  - Feedback to the new Tool and a focus on motorcycle safety
- Motorcyclist responsibility
  - Safety Partners collaboration
  - Investment programmes opportunities and benefits
  - Feedback to the new Tool and a focus on motorcycle safety
- AECOM support of the predictive tool that will drive proactive motorcycle safety on this route

Thank You

We look forward to working with you through innovative initiatives that work, transparently as a partner, challenging what we do collectively, communicating our experiences under an ‘outcomes led approach’ to create excellence in the delivery of motorcycle safety as a collaborative expert team.

John Goettler
AECOM National Safety and Traffic Engineering Director

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