

PRIMEs for rider safety: a toolkit for motorcyclists approaching bends

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The problem in Scotland

- Scotland
 - a beautiful country
 - breath-taking roads!
- Motorcyclists (and passengers)
 - 18% of KSIs in 2017
 - 10% increase in fatalities during 2017
 - account for only 2.2% registered vehicles in Scotland
- Motorcycle collisions
 - left hand bends a particular problem
 - excess speed
 - motorcyclist at fault



Kopu-Hikuai, State Highway 25a
New Zealand

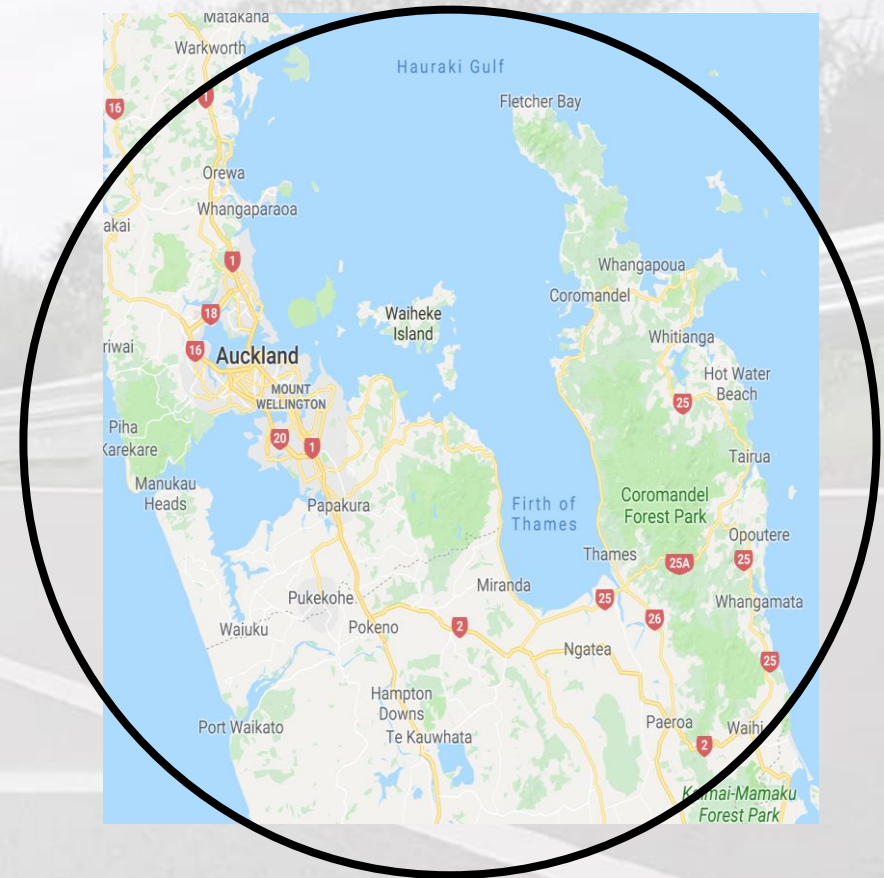
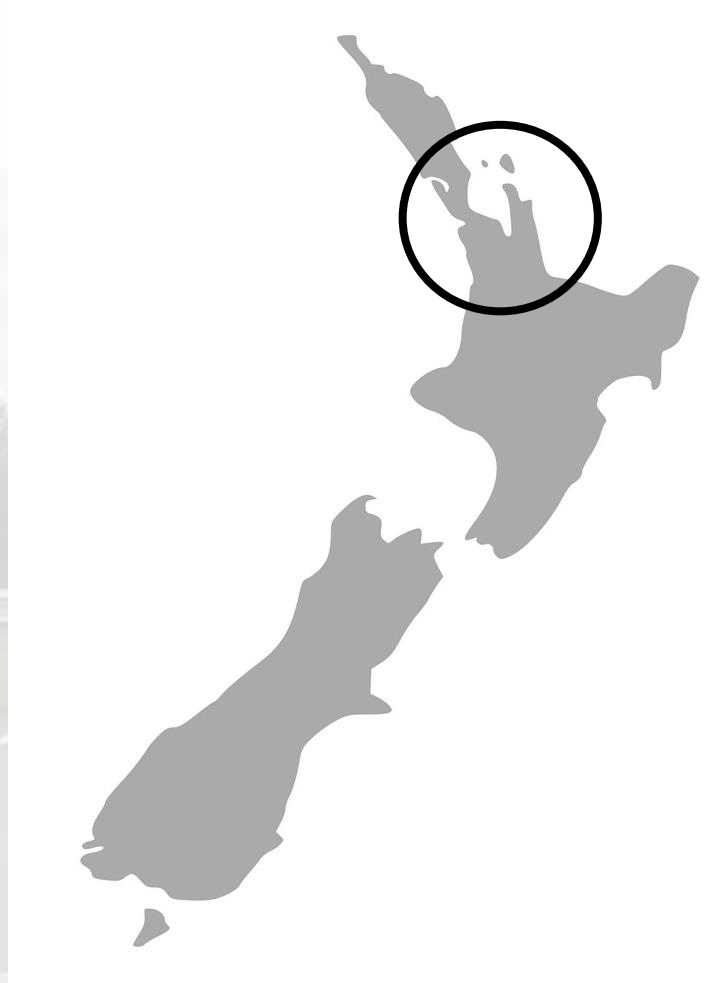
The challenge in Scotland

- Scottish Road Safety Framework (March 2016)
 - motorcyclists identified as a Priority Focus Area for 2020 casualty reduction targets
 - the Strategic Road Safety Plan includes a specific action

“to further develop and implement road safety measures specifically for motorcyclists as well as supporting education campaigns where appropriate”

- Motorcyclists are notoriously hard to reach
 - traditional methods do not work or have limited impact
 - need to find new ways to engage with riders

Research from New Zealand



Coromandel 'loops'
North = 120 miles and South = 80 miles

PRIMEs in New Zealand

- **PRIME** = Perceptual Rider Information for Maximising Expertise or Enjoyment
- Priming the right behaviours
 - developing innovative on-road rider tools
 - nudge psychology principles to aid better riding
 - user-centred = for motorcyclists by motorcyclists
 - counteract habituation effects
- Dangerous left-hand bends
 - speed
 - position
 - braking



Gateway PRIME

Road trial on the Coromandel

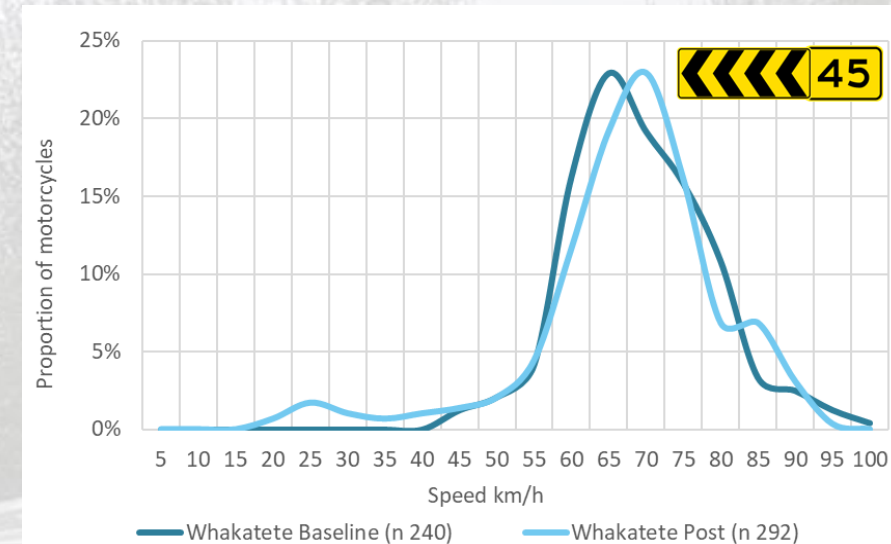


Analysing rider behaviour



Motorcycle speed and braking

- Speed on approach
 - similar profiles pre and post PRIMEs
 - slight increase in modal speed (5km/h increase)
 - higher speeds remained constant (riders didn't go faster)
- Braking on bends
 - generally low incidents of braking on bends (35%-37%)
 - reduced braking for lead/solo motorcycles with PRIMEs



		Baseline		Post	
Bike type		Number observed	Percentage	Number observed	Percentage
Brake light active	Lead	26	15%	12	11%
	Following	29	17%	20	18%
	Groups	5	3%	9	8%
	Total	60	35%	41	37%
Total motorcycles		171	100%	109	100%

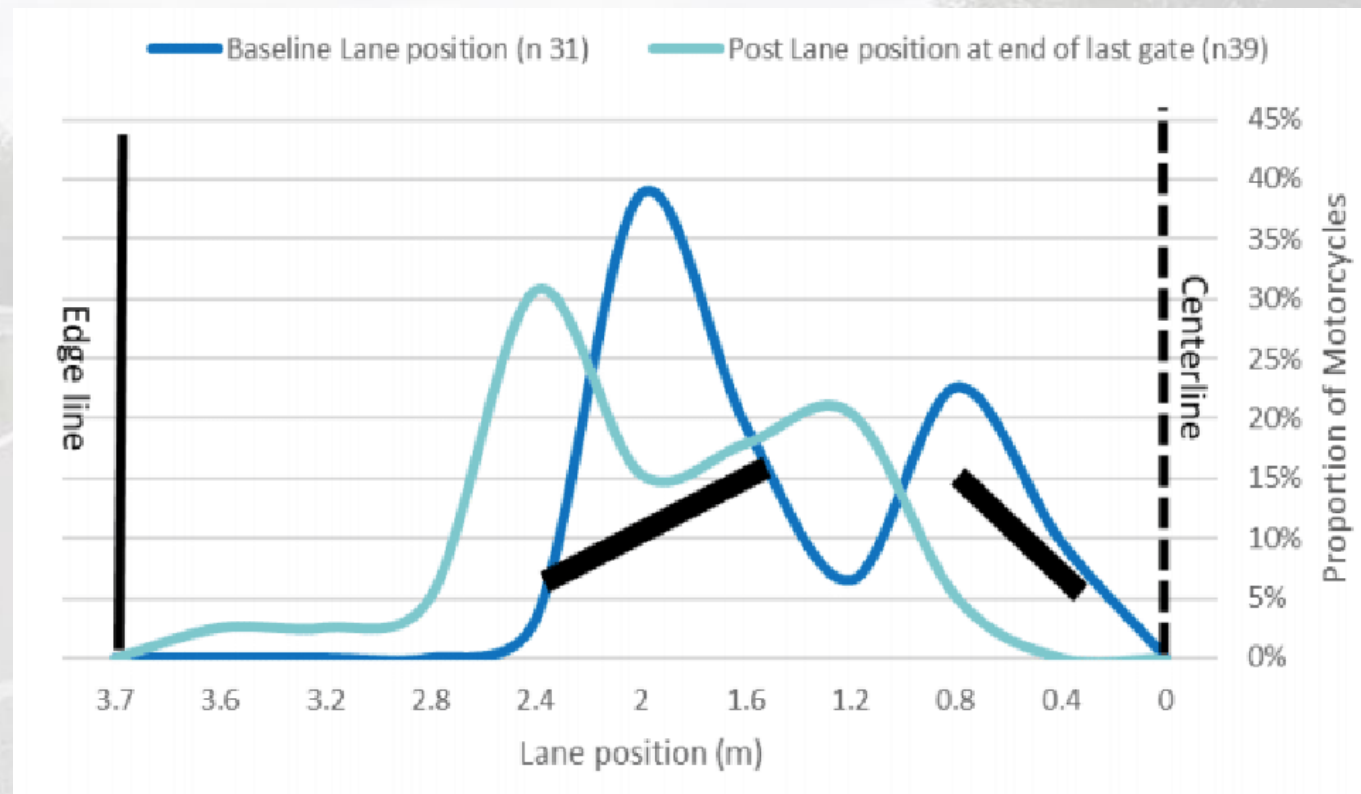
Lane position

- PRIMEs affected lane positions
 - P1 - shifting away from the centreline (going through the gate)
 - P2 - smoother profile (more motorcyclists taking similar lines through the bend)
 - P3 - fewer motorcycles going wide at the apex (and slightly less going for the apex)



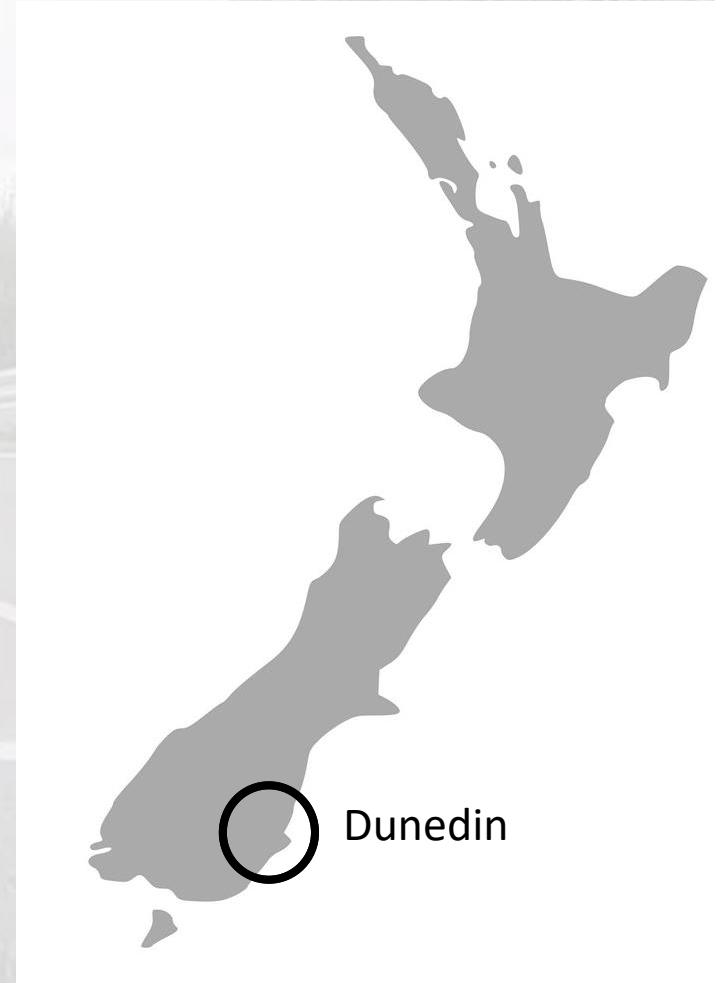
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Transport Scotland as a pioneer of PRIMEs

- Scotland and New Zealand



Profiling the problem

- For engineering measures to be effective
 - they need to be developed from a motorcyclist's point of view
 - evidence led interventions where they are most likely to make a difference
- Initial analysis by Transport Scotland of the Trunk Road Network
 - all motorcycle collisions from 2013 to 2017 = 660 cases
 - STATS19 data (from the Police) identified contributory factors
 - Scotland wide data identified the North West region as a priority
- In-depth analysis by BEAR Scotland (North West Unit)
 - 10 year dataset analysed to identify cluster sites
 - 15 sites identified in North West region



North West Unit Motorcycle Accident Investigation



Scheme Ref: 18/NW/0801/042

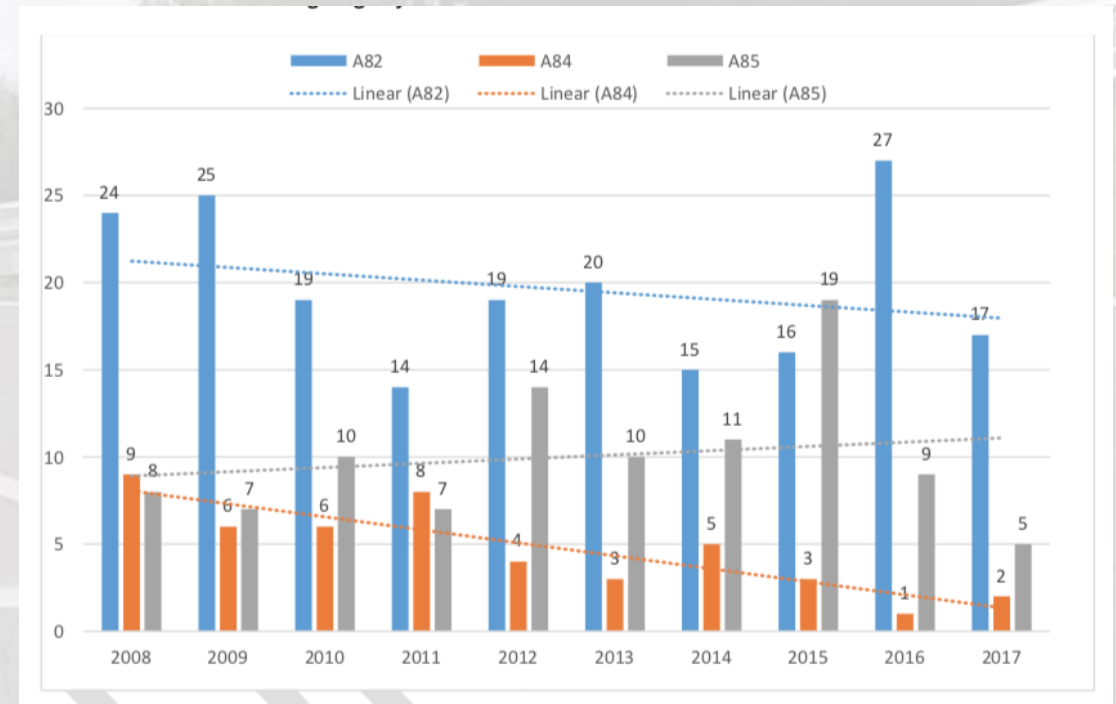
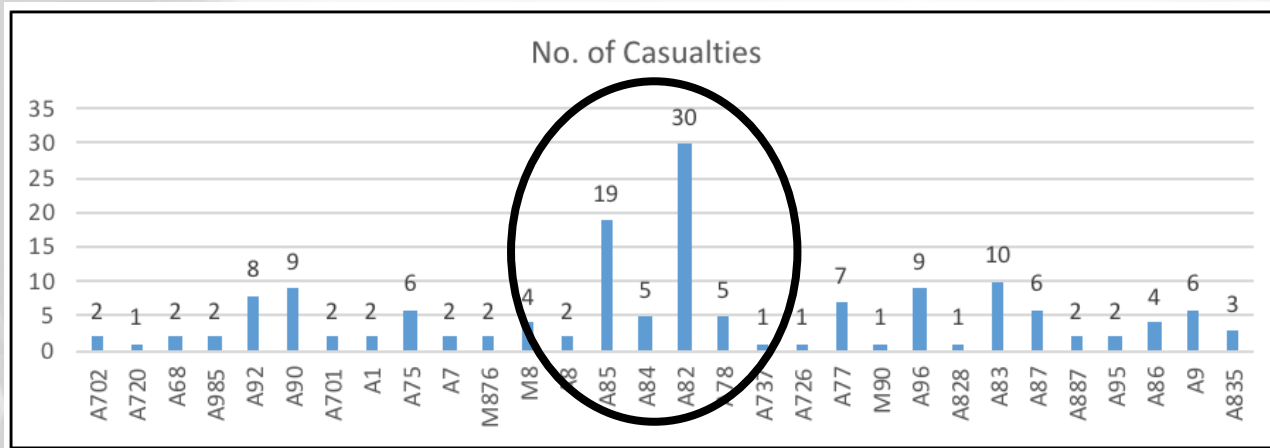
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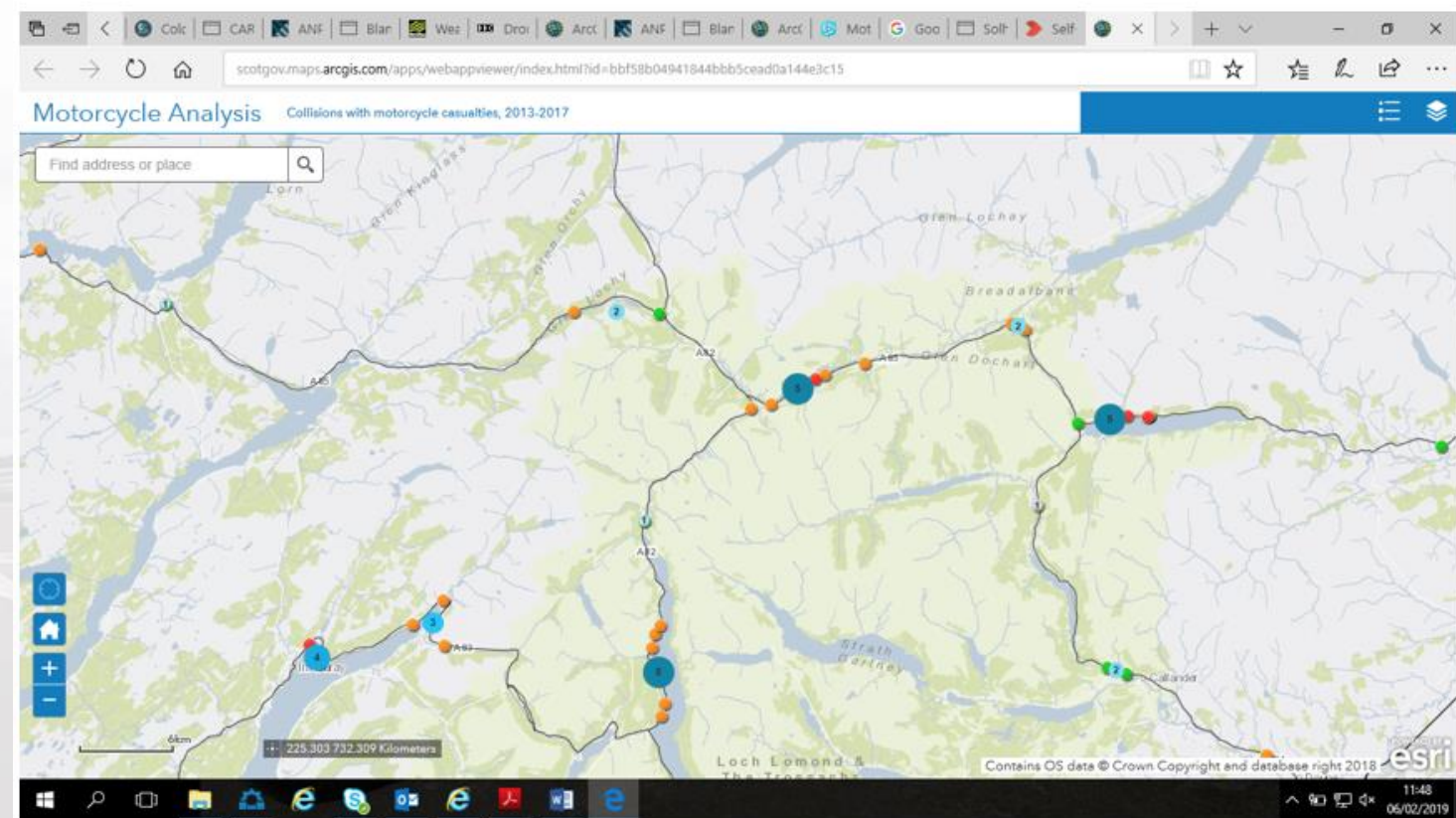
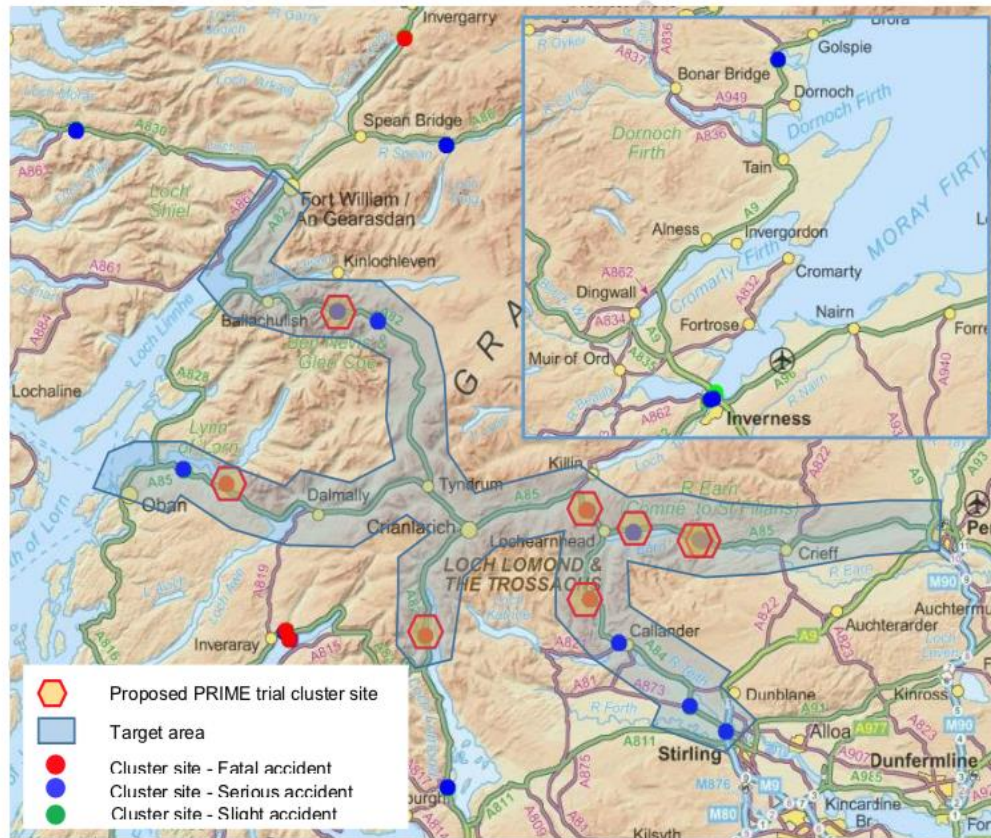
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Identifying hotspots

- 156 casualties - 16 fatal, 67 serious and 73 slight



Potential trial sites



Pilot trial site at Appin House

- BEAR Scotland and Transport Scotland
 - A828
 - three personal injury accidents in 2018 alone
 - complex tightening bends
 - descents and inclines
 - technical riding
- Recent improvements
 - resurfaced
 - motorcycle friendly infrastructure in place
- Following the New Zealand approach
 - same design for gateway PRIME



Appin House Northbound



Appin House Southbound



Moving forward

- Road marking and roadside design/approvals in place
 - Transport Scotland are keen to develop their bespoke designs in due course
- Expert review of pilot trial markings at Appin House
 - allowing Transport Scotland to develop specification and evaluation criteria for wider trials
- Transport Scotland Road Safety Trust funding application
 - to allow for large-scale trials for up to 15 sites in Scotland
- Transport Scotland rider workshop in Nov/Dec 2019
 - to engage with riders and to understand their requirements
- Transport Scotland pilot trial planned for Spring 2020
 - to provide initial data on effectiveness of PRIMEs in Scotland

Thank you

- Forget BREXIT ... it's ALEXIT!
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