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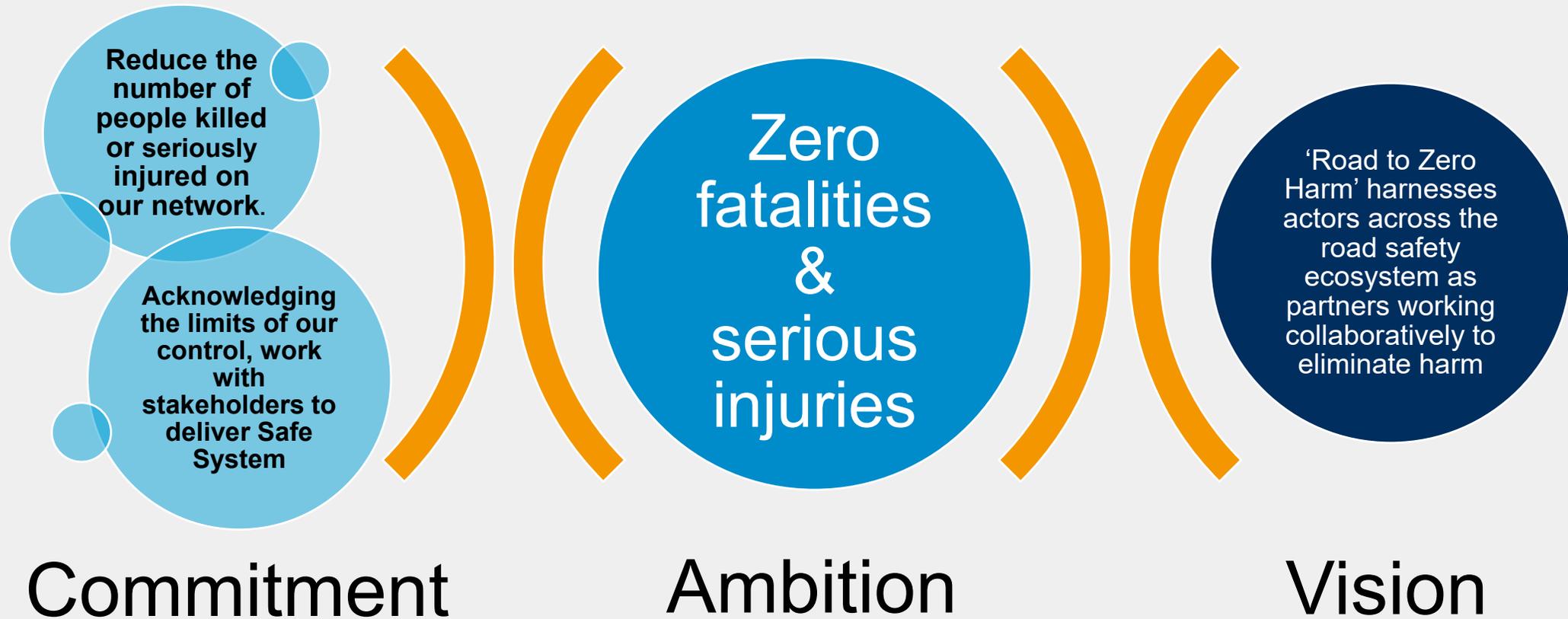


Road to Zero Harm

Strengthening the Evidence Base for
Safety Forecasting and Planning

Victoria Pyta – Joining the Dots (March 2026)

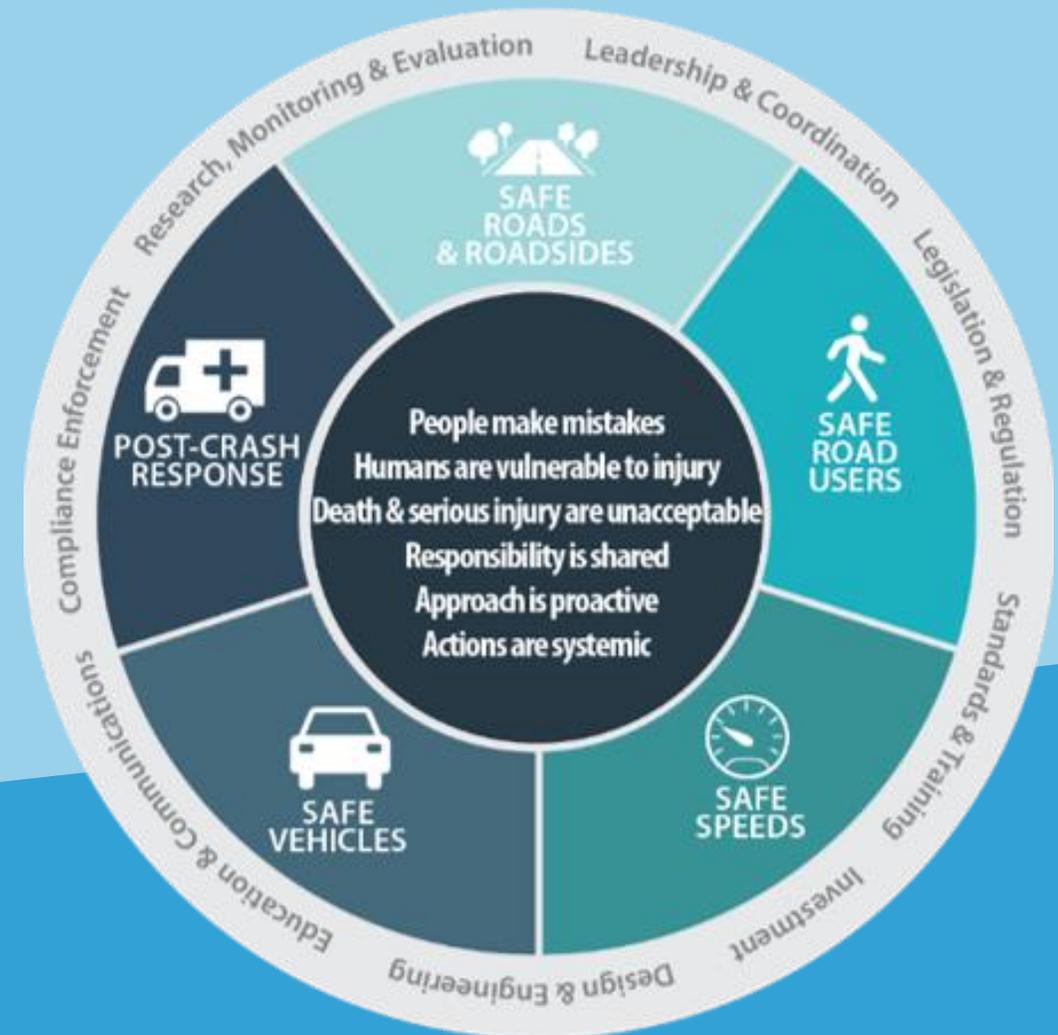
Road to Zero Harm: Working across the Safe System to eliminate fatalities and serious injuries on the SRN



Safe System: The vision

Using the levers available to us and our partners, we will work towards:

- **managing speeds** according to the design and uses of the road
- enhancing the in-built safety of **roads and roadsides**
- influencing the safety of **vehicles** using our roads
- supporting **road users** to interact safely with each other and the road environment
- influencing the timeliness and effectiveness of **post-crash care**
- continuously improving and adapting our **road safety management** by acting on insights from collision investigation and analysis, monitoring and evaluation, research and innovation.



Road to Zero Harm – developing the evidence base



“ A resilient and sustainable roadmap underpinned by a robust, transparent and explainable model of costs and impacts

Global Risks Landscape

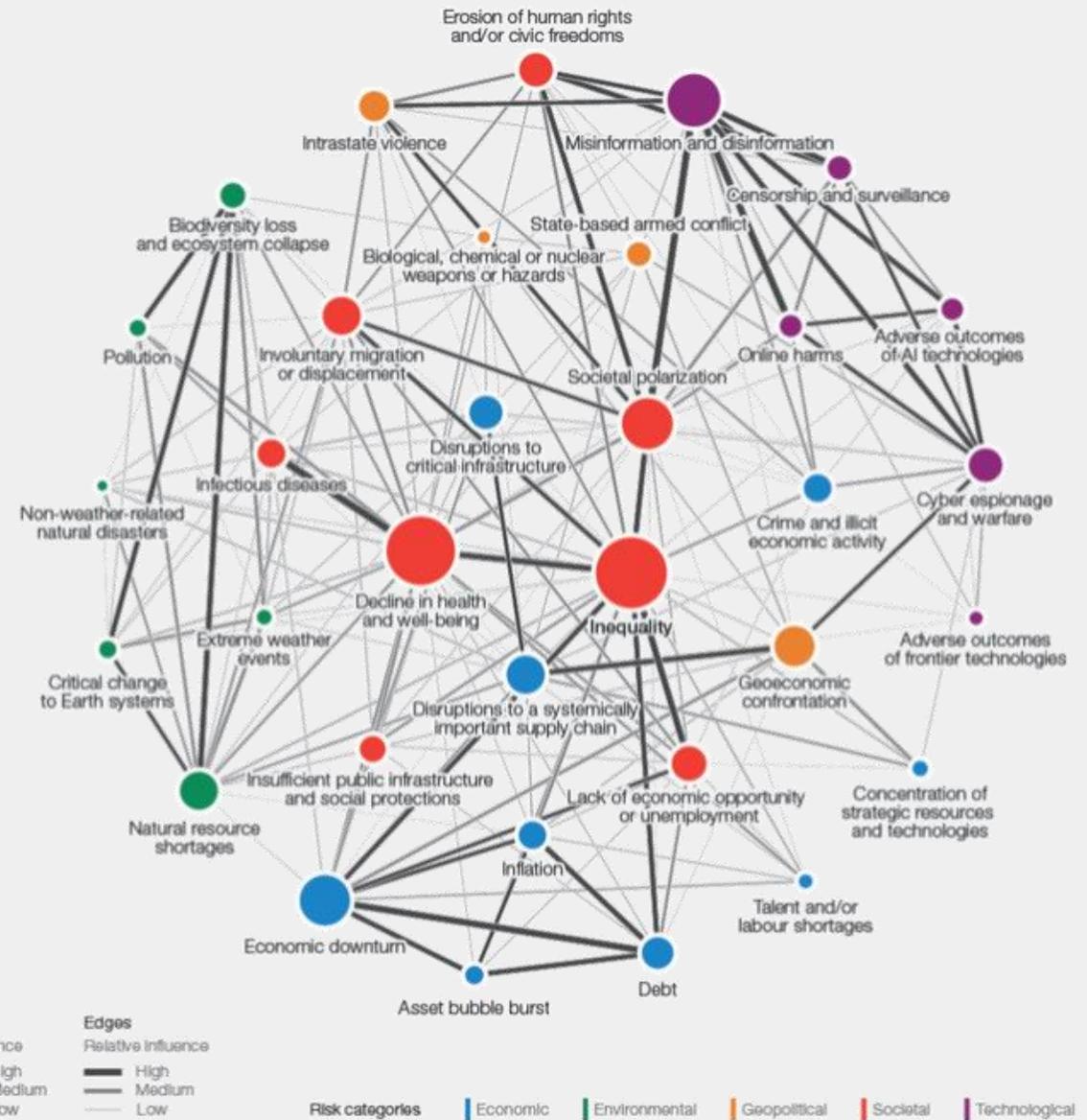
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A fractured global landscape with escalating geopolitical, environmental, societal and technological challenges.

The biggest risks – health, inequality, misinformation, societal polarisation, economic downturn.

Implications:

- Supply-chain shocks disrupt availability of materials, energy / fuel, technology (e.g., semiconductors).
- Cost volatility and procurement risks complicate road safety engineering programme delivery & maintenance.
- Increased risk of cyber attacks can directly cause injury and undermine public trust in technology (both in-vehicle and infrastructure-based).



Factors relevant to road safety

The headwinds and tailwinds

- Broader trends influencing KSIs and affecting feasibility and effectiveness of road safety interventions



Climate change



Technological disruption



Societal change



Global tensions



Communications challenges



Perennial issues

Sources -



Reflection

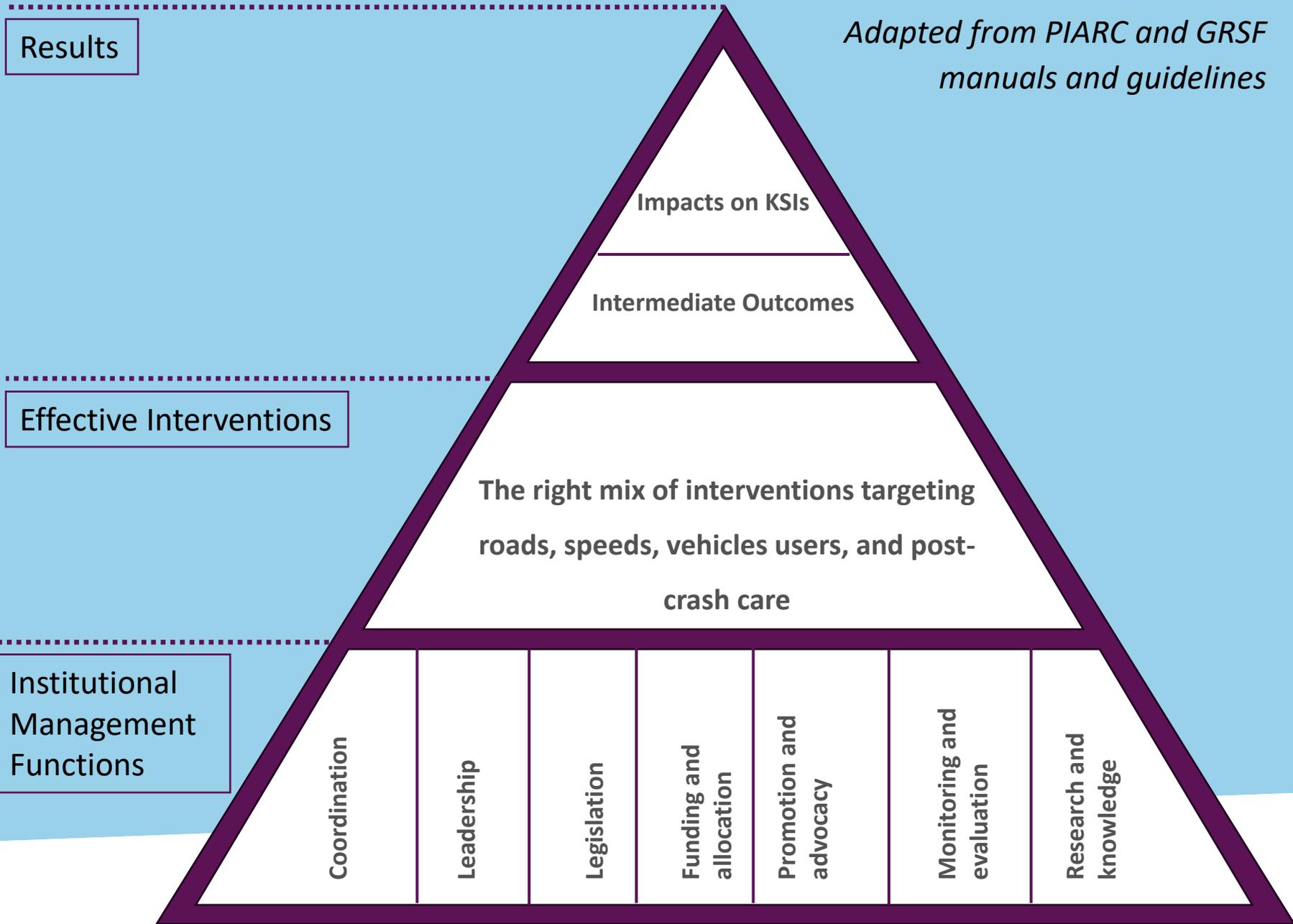


Discussion prompts

- Have we adequately captured the relevant headwinds and tailwinds?
- How would you rank them in terms of likelihood and impact?
- What other factors should we consider?

Navigating headwinds through strong system management

Effective road safety management depends on strong institutional functions that enable the right mix of interventions to drive results. In a world of headwinds and uncertainty, these functions are where we must focus our effort.



What does this mean for Road to Zero Harm?

Challenges

- Challenging to forecast – uncertainties are high, effectiveness of interventions can be difficult to measure, and policy is evolving
- Deployment, maintenance and renewal of physical and digital infrastructure solutions are vulnerable to supply chain disruption, cost-volatility and climate change
- Public perception is critical to success and vulnerable to misinformation and societal polarisation
- Political will may waver with increasing geopolitical tensions and economic pressure, impacting funding and commitments

Opportunities / responses

- Multiple scenarios need to be modelled to reflect range of possible futures, inform evidence-led prioritisation and smarter investment
- Innovation and research needed to identify new solutions that are more cost-effective, climate-resilient and climate-friendly
- Monitoring and evaluation of real-world impact of interventions is critical, but we also need lead safety indicators in the mix to help us be more alert and responsive to evolving risks
- Communications must provide a robust, up-to-date and transparent source of truth on actions and asset condition

Research aims

1

A-roads – delineation and junctions

Improve understanding of how low-cost longitudinal treatments (e.g. Central Hatching, Audio-tactile Edge Markings and Raised Profile Centre Lines) **influence driver behaviour, collision likelihood and severity.**

Improve understanding of **collision patterns and application of safety interventions aimed at reducing collision at Junctions on A-roads.**

Enable greater application and cost-benefit by improving understanding of how and where these treatments work best.



2

Shunt collisions

Improve understanding of how shunt collisions are initiated, what influences their severity, and what measures we can take to reduce their number and severity.

Improve the representativeness and accuracy of iRAP model for use on the SRN by including the shunt crash type.



3

In-vehicle safety technologies

Quantify future **KSI savings from vehicle safety technologies on the SRN.** Forecast uptake, use and KSI savings under different scenarios for input.

Actionable evidence-based recommendations for interventions to influence uptake of in-vehicle technologies that will make the biggest difference to KSI outcomes on the SRN.



4

Communications

Advise if and how road safety communication campaign outtakes can be linked with behaviour change outcomes and subsequently safety impacts (such as reductions in deaths and serious injuries). Identify and outline how other factors influence effectiveness of road safety campaigns. Establish an appropriate method to estimate safety improvements attributable to road safety communication campaigns.



Initial results

A-roads

Low-cost longitudinal measures

- Literature review – central hatching, audio-tactile centre and edgeline markings. Effective in reducing KSIs on high-speed single carriageway environments.
- Some disbenefits e.g. noise and maintenance costs.

Shunts

Key risk factors:

- Element of “surprise” combined with speed differential affects likelihood and severity
- Cognitive load (too high or too low) affects driver response
- Clear link with proximity to motorway on and off-ramps and junctions on A-roads
- Some novel data and analytical approaches are unlocking our ability to model effects of road and traffic attributes

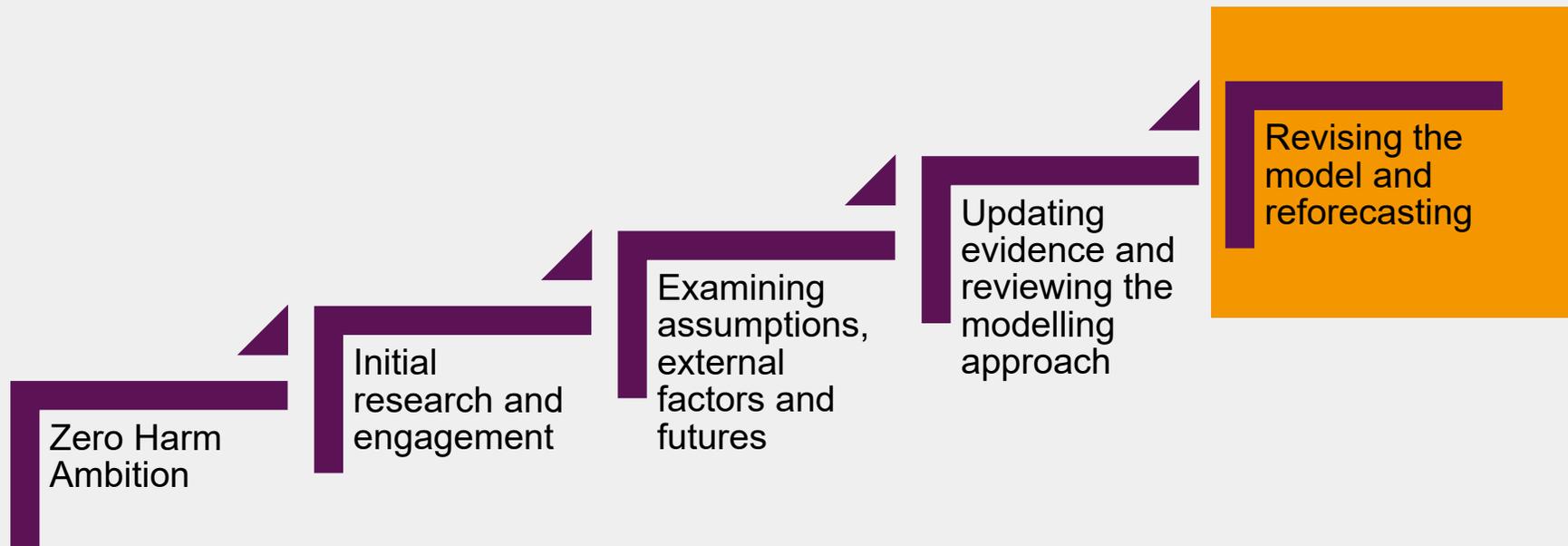
Vehicle safety tech

- By 2040 we expect nearly all GSR technologies to be in $\geq 90\%$ vehicles travelling on the SRN (based on miles travelled)
- However, our initial RTZH work estimated potentially only 30% of the total KSI savings from vehicle technology
- Industry engagement suggests technologies currently have limited impact on insurance premiums
- The anticipated safety benefits/disbenefits of both CAV and ADAS are still to be fully understood

Communications

- Communications have evolved to decentralised and social-media driven which challenges traditional evaluation methods
- Need for more standardised ways to categorise interventions, intentions and behaviours
- Role of comms and need for longer term thinking

Road to Zero Harm – next steps



“ A resilient and sustainable roadmap underpinned by a robust, transparent and explainable model of costs and impacts



Reflection



Discussion prompts

- What other research do you think needs to happen?
- What further opportunities can you see for us to improve safety outcomes?

Thank You.



Updates will be published here:

<https://nationalhighways.co.uk/about-us/what-we-do/road-to-zero-harm/>

This work is supported by analytical, engineering, behavioural and road safety experts across National Highways and our supply chain