### **Rail bridge resilience data**

#### Michael Keenan and Rudolph Kotze, KiwiRail



Transport Knowledge

- Transport Outcomes
- Asset base
- Risk-based Asset Management Framework
- Implementation
- Examples
- On-going systems initiatives







- Enhance the use of evidence (data, information, research and evaluation) to inform decision-making
- Provide a forum for people working across the transport sector to share, build, and maintain their transport knowledge
- Create a thriving transport research, data and evaluation community that delivers an evidence-based transport system that improves wellbeing and liveability.



#### Transport Outcomes

Inclusive access

education, and healthcare.

**Economic prosperity** 

connections, with efficient



Protecting people from transport-related injuries and harmful pollution, and making active travel an attractive option.



#### **Environmental sustainability**

Transitioning to net zero carbon emissions, and maintaining or improving biodiversity, water quality, and air quality.

Minimising and managing the risks from natural and human-made hazards, anticipating and adapting to emerging threats, and recovering effectively from disruptive events.





#### **Asset Base**



## **Risk-based Asset Management Framework**

#### Input

- Condition assessment
- Rating/strength
- Risks
  - Scour
  - Seismic
  - Fatigue
  - Foundations
- Standards
- Compliance/audit



#### Output

- Performance score
- Risk prioritisation
- 10+year investment plan

















#### Implementation – Lagging Indicator Test









### Implementation – Mind the gap



#### Implementation – The customer is always right!



## **On-going Systems Development**

- Data collection through mobility platforms
- Utilisation of inspection technologies
- Real-time instrumentation of at-risk bridges
- Integration of data into one asset management system













# Stronger Connections. Better New Zealand.

