

Towards a more resilient transport infrastructure

PIARC's Approach

Miguel Caso Flórez
PIARC Technical Director

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What is PIARC?

- **PIARC** is the **World Road Association**
- We were **founded in 1909** as a non-profit, non-political association
- Our goal is to **organise exchange of knowledge on all matters related to roads and road transport**
- We have **124 member governments**, as well as regions, groups/companies and individuals.
- It is the first global forum for the exchange of knowledge, policy and practice on roads and road transport.
- The Association mobilizes the experience and knowledge of **1,200 experts** from more than 80 countries in **25 Technical Committees and Task Forces**.

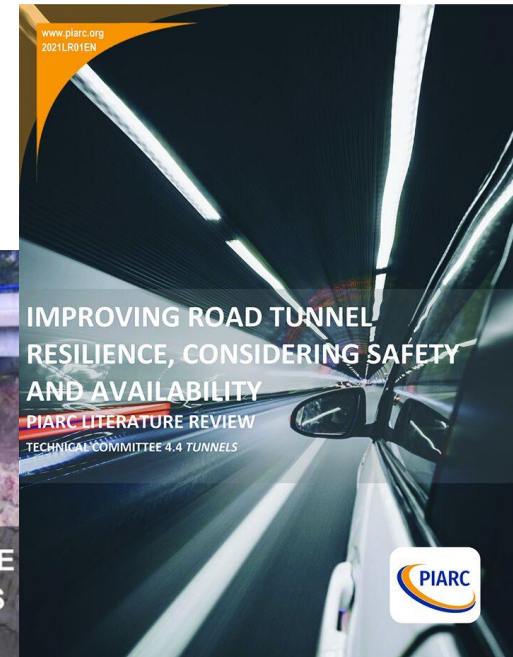
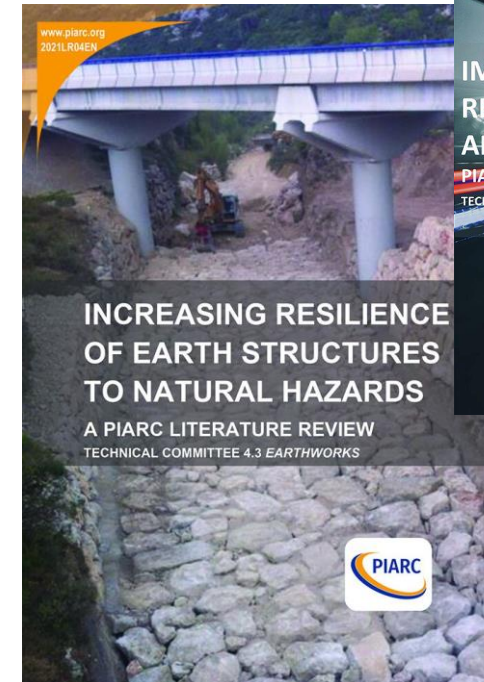


Resilience of the road infrastructure and the road transport

- 1. Outcomes of the XVI World Winter Service and Road Resilience Congress, 7-11 February 2022**
- 2. Road resilience and climate change adaptation**
- 3. Increasing resilience by transversal cooperation**
 - New road related data and how to use it
 - Multimodal approach.

XVI Winter World Service and Road Resilience Congress, 7-11 February 2022

- Resilience as a relevant and transversal topic for all countries, following over a century of Congresses and half a century of Winter Congresses.
- Presentation of PIARC work on resilience:
 - TC 1.4 Climate change and resilience of road network
 - TC 1.5 Enhancing resilience of Disaster Management
 - TC 2.4 Road network operations to increased resilience
 - TC 3.3 Incorporating resilience to Asset Management
 - TF 3.1 Security and resilience
 - TC 4.1 Resilient pavements
 - TC 4.2 Resilience of bridges to climate change and to seismic events
 - TC 4.3 Increasing resilience of Earth Structures to Natural Hazards
 - TC 4.4 Increasing tunnels resilience, considering safety and availability



Resilience PIARC Prize of the XVI WWSRRC

INCREASING RESILIENCE OF EARTH STRUCTURES ON ROADS IN NORTHERN SPAIN.
LESSONS LEARNED IN THE PERIOD 2011-2018.

Presenting a holistic and practical approach to increasing resilience of the road network

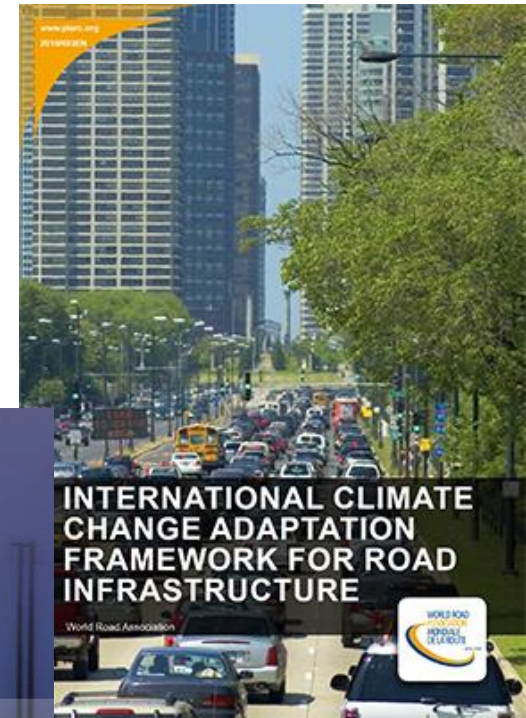
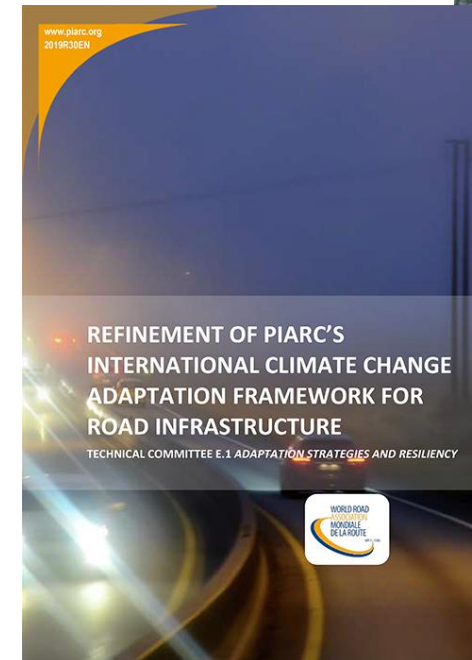


International Climate Change adaptation framework for road infrastructure

- Supporting countries to increase resilience of the road network against climate change. Including:
 - legal, regulatory and institutional measures;
 - promoting other transport modes;
 - introducing new, green technologies;
 - monitoring infrastructure to reduce risks of collapse, accidents and interruptions of service;
 - new methodologies and analytical tools to identify, assess and mitigate risks and thus increase resilience of the road infrastructure.

Available for free:

<https://www.piarc.org/en/order-library/31390-en-Refinement%20of%20PIARC%E2%80%99s%20International%20Climate%20Change%20Adaptation%20Framework%20for%20Road%20Infrastructure>



International Climate Change adaptation framework for road infrastructure

- Support member countries to adopt a consistent approach to analyze the effects of climate change on their road networks and develop measure to increase resilience.

- Guidance over four stages:
 1. Identifying scope, variables, risks and data (Stage 1);
 2. Assessing and prioritising risks (Stage 2);
 3. Developing and selecting adaptation responses and strategies (Stage 3);
 4. Integrating findings into decision-making processes (Stage 4).

International Climate Change adaptation framework for road infrastructure

- Current development for next publication, offer:

Uniform and holistic methodological approaches to climate change and other hazards resilience.



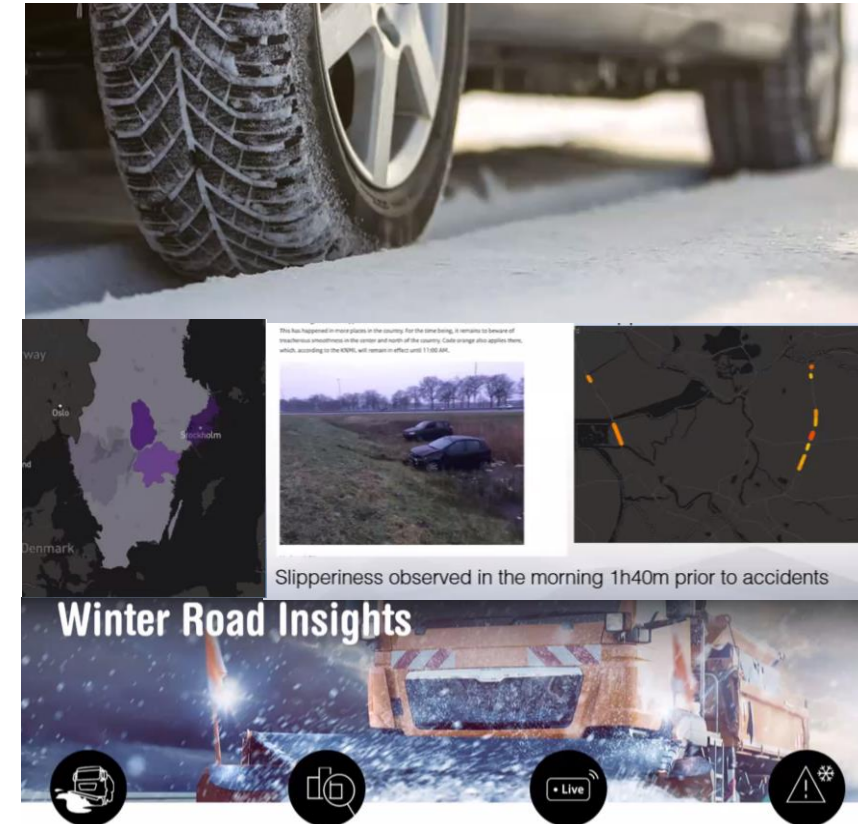
New road related data and how to use it

Use of new data increases the resilience of:

- Infrastructure: monitoring the state of the assets
 - Use of CAVs and smartphone sensors for early detection of potholes.
- Operation: providing real time accurate information
 - Friction alerts of CAVs during Winter Service: Trafikverket intervention in less than 10 minutes to avoid car accident in 30-90 minutes.

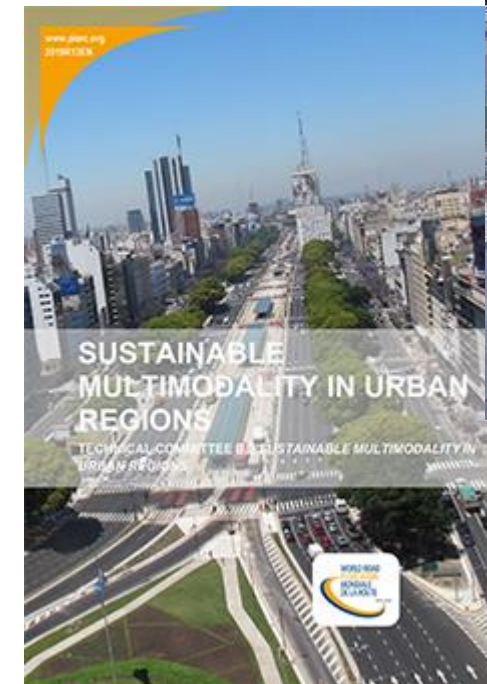
Principles:

- Share data and re-use data.
- Ownership: your device, your data.
- Regulate and partner to produce data: European regulations related to Safety-Related Traffic Information (SRTI) (No 886/2013), sharing of safety critical data is mandated. Pilots 5 nations with multiple OEMs www.dataforroadsafety.eu
- PIARC report: <https://www.piarc.org/en/order-library/34599-en-Road%20Related%20Data%20and%20How%20to%20Use%20it>



Multimodality for resilience

- PIARC Technical Committees:
 - Sustainable multimodality in urban regions
 - Freight transport
- Looking for resilience by cooperation and coordination outside the road sector.
- Intelligent use of road infrastructure in urban areas.
- Optimization of all transport modes: resilience, efficiency, improved service and reduced environmental impacts



Urban regions report: <https://www.piarc.org/en/order-library/30850-en-Sustainable%20Multimodality%20in%20Urban%20Regions>

Freight report: <https://www.piarc.org/en/order-library/31319-en-National%20Policies%20forMulti-Modal%20Freight%20Transport%20and%20Logistics>

Thank you for your attention!



Miguel Caso Flórz

PIARC Technical Director

Miguel.caso-florez@piarc.org

@miguelcasof

World Road Association (PIARC)
Grande Arche – Paroi Sud – 5^e étage
92055 – La Défense Cedex – France



@PIARC_Roads



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