

Conference of European Directors of Roads (CEDR) Resources and implementation



**Conférence Européenne
des Directeurs des Routes**

**Conference of European
Directors of Roads**

Gordana Petkovic, Norwegian Public Roads Administration

Conference of European Directors of Roads (**CEDR**)

- The Road Directors' platform for cooperation and promotion of improvements to the road system and its infrastructure...
... as an integral part of a sustainable transport system in Europe.
- Its 28 members represent their respective national road authorities or equivalents and provide support and advice on decisions concerning the road transport system that are taken at national or international level.



“To help national road administrations keep ahead of the curve, anticipate future trends and prepare them to face new challenges.”

CEDR strategic objectives, 2016

Resilience - common challenges

- Aging infrastructure
- Budgets under pressure
- Consequences of climate change unknown for decision makers
- Dealing with uncertainty (e.g. sea level rise & heavy precipitation)
- Need for knowledge of risks, costs and benefits



The future brings more challenges

- Managing road networks in a changing climate AND:
 - population growth;
 - the growth in vehicular traffic;
 - the society's expectation regarding mobility and safety
 - environmental requirements.
- Mitigating climate change – the role of transport.

CEDR: research and dedicated working groups
addressing mitigation and adaptation to climate change.

2008 – first call

«Road Owners Getting to Grips with Climate Change»

- First cross-border funded joint research programme in ERA-NET ROAD (Coordination and Implementation of Road Research in Europe)
- Four interesting R&D projects – covering important themes for roads and climate change

2008 Road Owners Getting to Grips with Climate Change

- **IRWIN** “Improved local winter index to assess maintenance needs and adaptation costs in climate change scenarios»,
combined climate scenarios with spatial data observed by field stations in the Road Weather Information systems (RWIS).
- **P2R2C2** “Pavement Performance & Remediation Requirements following Climate Change”
looked at the impacts of CC on the moisture (water)/ice condition in the pavement/subgrade.

2008 Road Owners Getting to Grips with Climate Change

- **RIMAROCC:** “Risk Management for Roads in a Changing Climate”
Aimed at developing a common method for risk analysis and risk management with regards to climate change.
- **SWAMP** “Storm Water prevention”
focused on flooding, developed a method for identifying sections of road networks that are most vulnerable to flooding using GIS.
This brought drainage inspections and maintenance under the spotlight for road administrations.

2012 – Second call

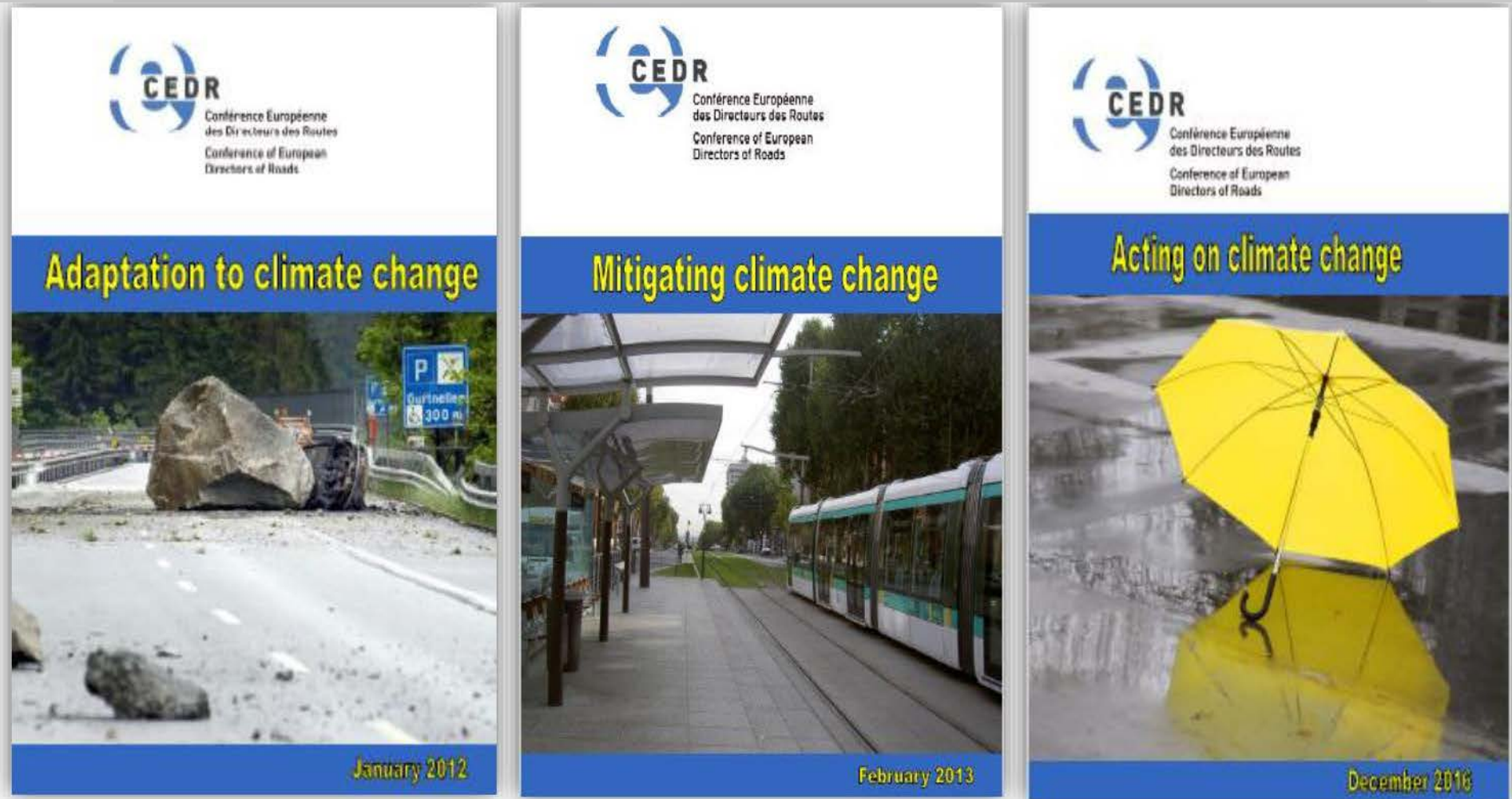
«Road Owners Adapting to Climate Change»

- This call aimed to provide road owners with adaptation technologies and the models and tools ..
.. to support decision-making, concerning adaptation measures for road infrastructure.

2012 Road Owners Adapting to Climate Change

- **CliPDaR:** “Design guideline for a transnational database of downscaled climate projection data for road impact models”
... addressed the need for review, analysis and assessment of existing (regional) climate change projections regarding the TEN-T network
- **ROADAPT:** “Roads for today, Adapted for tomorrow”
... built on the RIMAROCC project and a risk-based approach, addressing causes, effects and consequences of weather-related events, and identify the major risks and measures

CEDR Working Groups



2015 – Third call

«Climate Change - From Desk to Road»

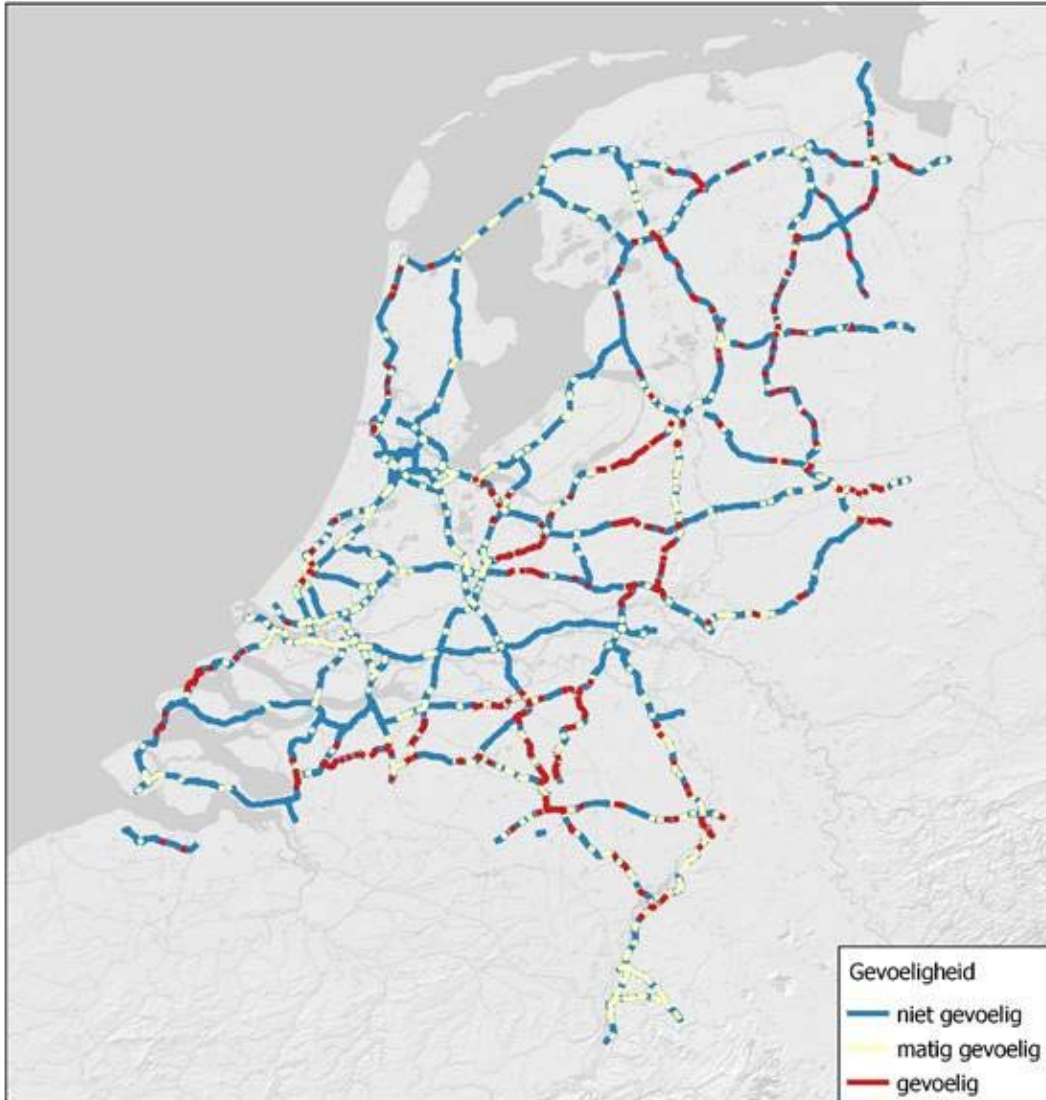
- The aim was to build on the outcomes of the 2008 and 2012 calls and provide research on *integrating* climate change into decision-making processes.
 - Economic issues
 - Embedding CC into practice and procurement
 - + transnational approach to water management + drivers' behaviour

- **DeTECToR** – “Decision support tools for embedding climate change thinking on roads”
 - .. addressed the economic costs associated with integrating climate change into decision making
 - .. and the issues surrounding embedding climate change into practice and procurement for national road administrations

- **WATCH:** “Water management for road authorities in the face of climate change”
... addressed the requirement for a transnational approach to water management in the face of climate change, and provides guidance on cost-benefit analysis to support implementation of the results.
- **MoDBeaR –Mobility Management and Driver Behaviour Research**
... considers issues relating to mobility management in the context of climate change.

Examples

The Netherlands: Highway Stresstest



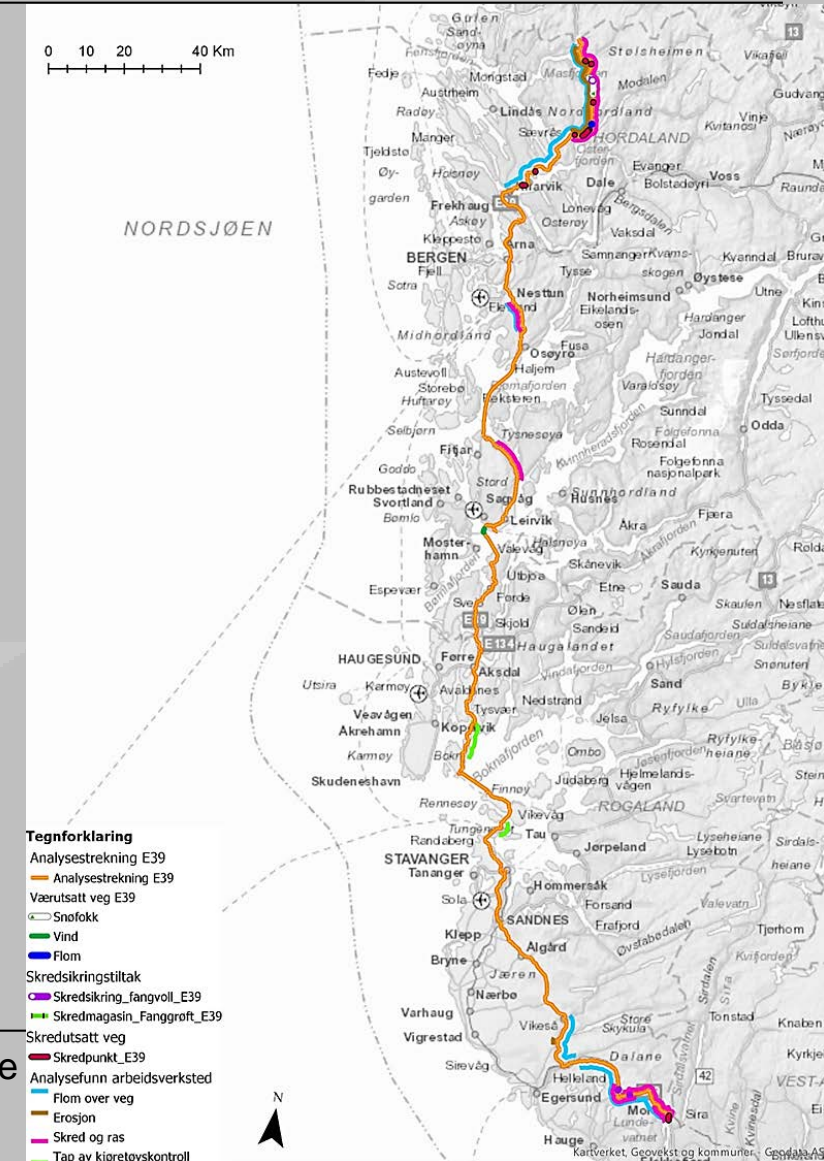
Application of ROADAPT methodology,
further developed by Deltares

The vulnerability of road embankments to erosion as
a result of extreme rainfall.

Examples

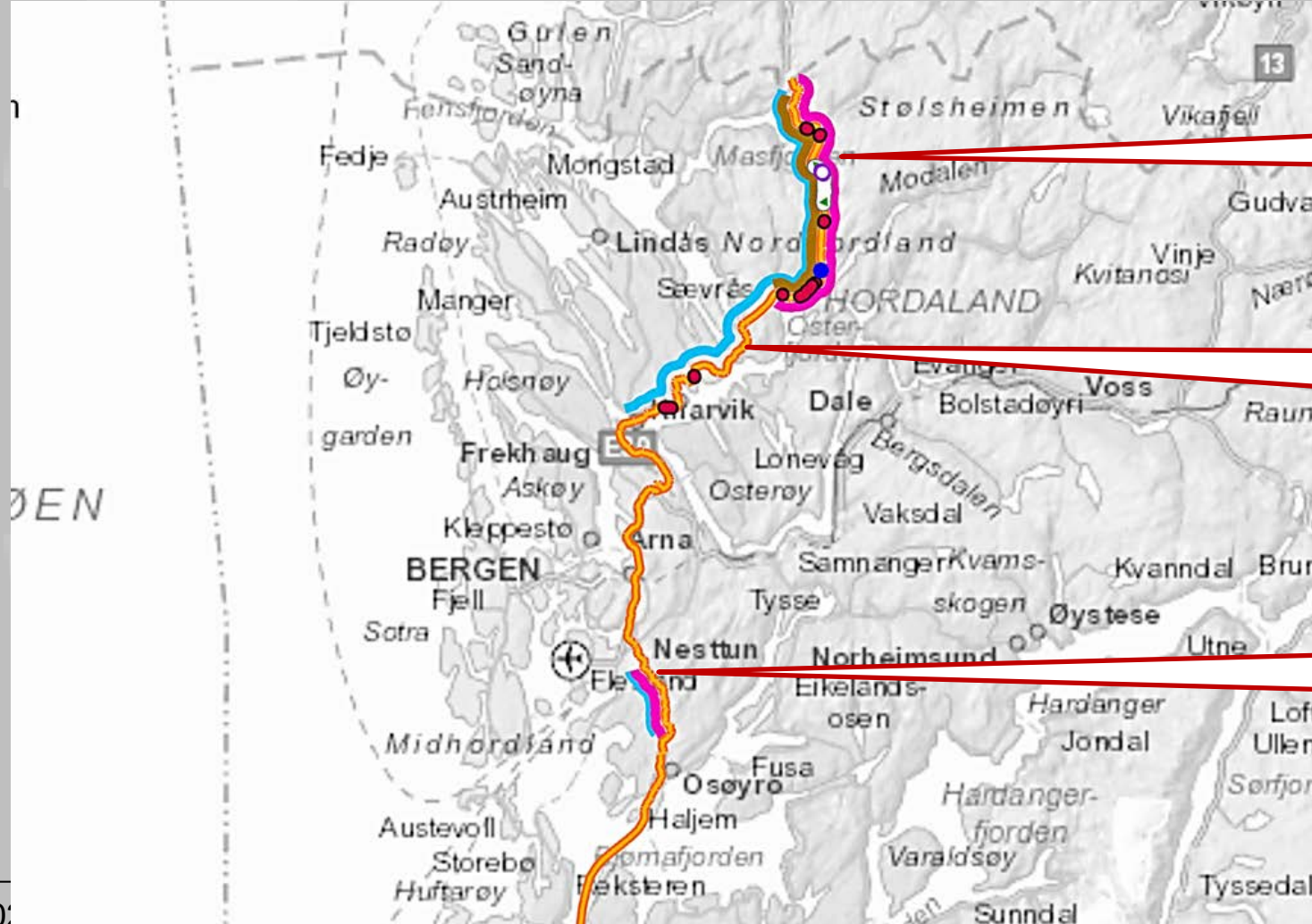
Norway: Risk assessment E39

- A modified QuickScan method was applied for assessing and prioritizing risks, including effects of climate change



Examples

Norway: Risk assessment E39



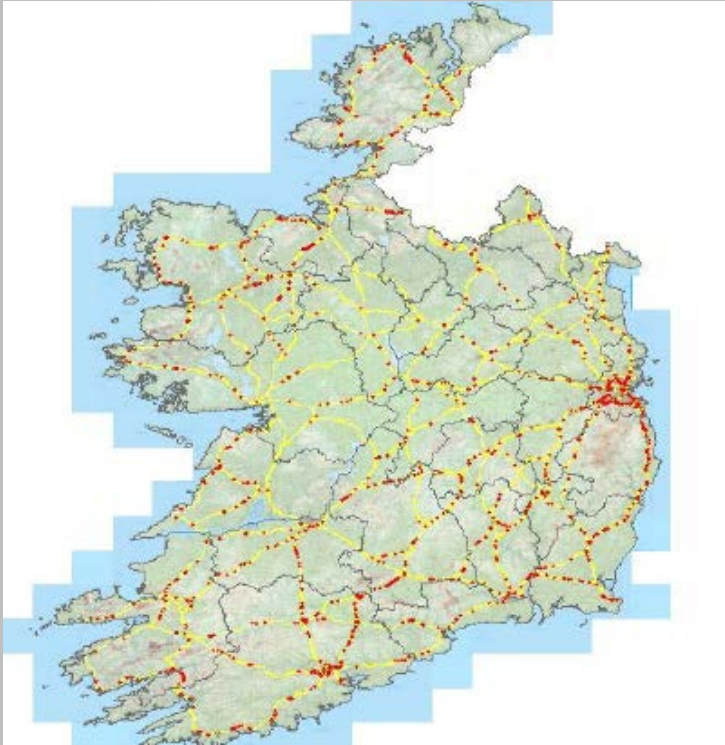
Replacment of culverts
Cost:
Cost /Benefit:

Erosion protection
Cost:
Cost /benefit:

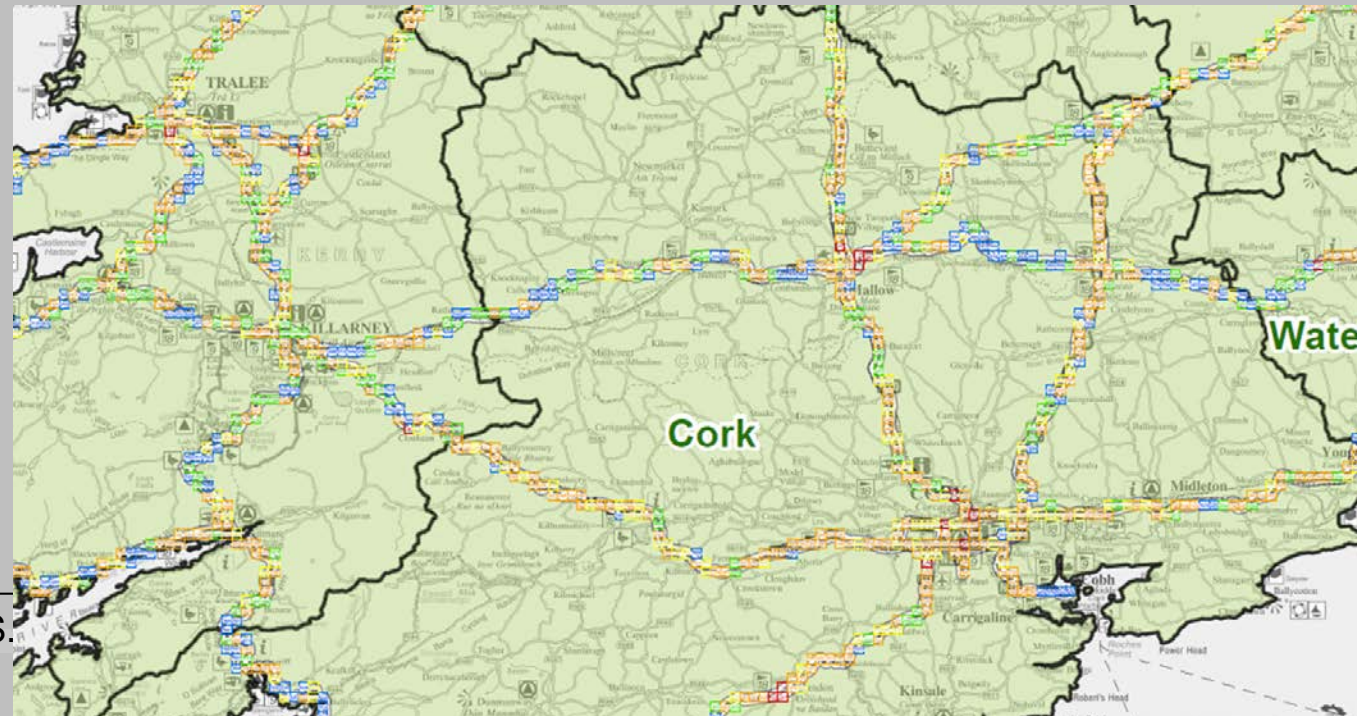
Landslide protection
Cost:
Cost /benefit:

Examples

Ireland: Flood-risk maps

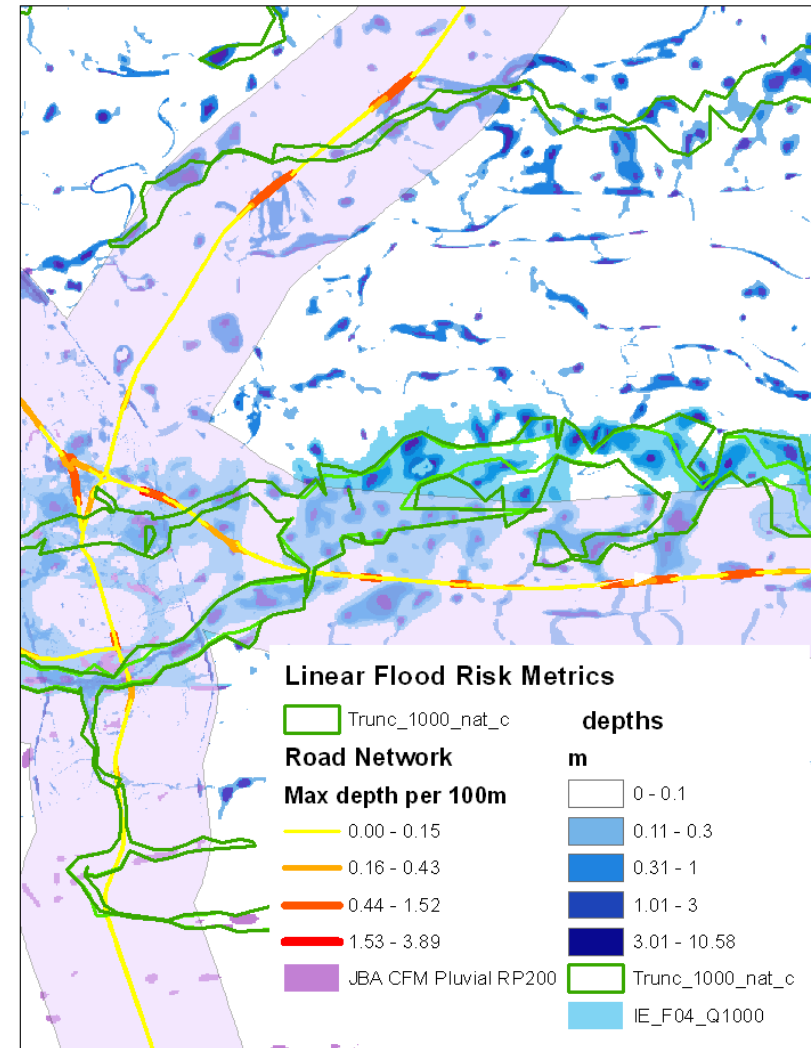
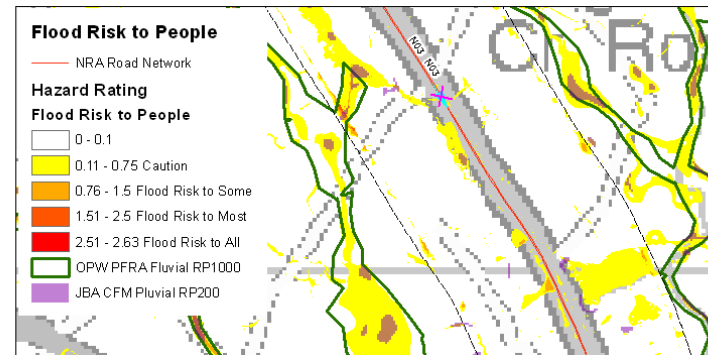
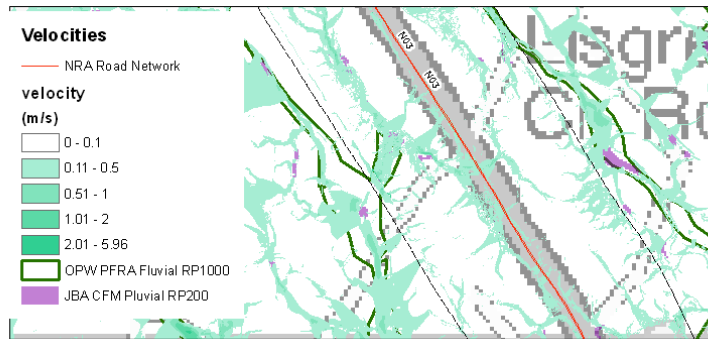
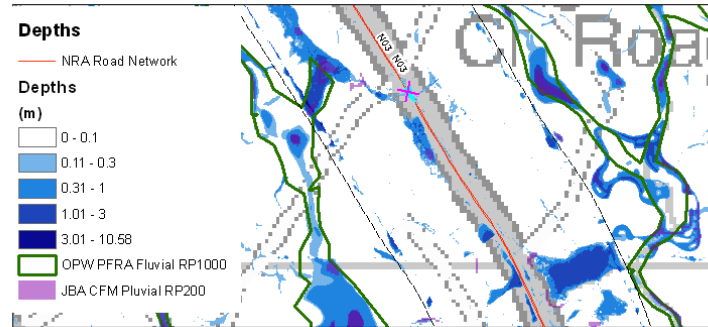


- basis for a general approach to climate change for TII
- development of flood-risk maps for the entire national road network
- development of a protocol for dealing with specific flood events



Examples

Ireland: Flood-risk maps



Implementation is important

- First step of deployment is **dissemination**
- **Implementation** – adaptation to national frameworks and requirements
- CEDR is following how the results of transnational research are implemented

Thank you!

