

Introduction

As a consequence of climate change, extreme weather events such as storms, heavy rainfall and heat waves will increase and the road transport infrastructure has to be adapted to them. Thus the Federal Government of Germany passed the "German Adaptation Strategy to Climate Change (DAS)" and the "Action Plan to the German Adaptation Strategy to Climate Change".

The aim of the strategy is to create a national framework for action in order to prevent or minimize the adverse effects of climate change on the public, the natural habitats and the national economy.

Adaptation strategies to climate change

In 2009, the Federal Highway Research Institute (BAST) initiated a series of research projects related to climate change and developed an adaptation strategy. This strategy was implemented through a research program called "Adaptation of the Road Infrastructure to Climate Change (AdSVIS)".

Projects: finished

Impacts of climate change on road maintenance

Adaptation of pavement designs for asphalt and concrete constructions

Standardized asphalt pavements due to changing temperature boundary conditions

Projects: ongoing

Cross-linking of the AdSVIS projects

Development of climate impact models and design parameters for bridges and tunnels

Comparison of meteorological parameters near federal roads and grid data of climatologic prediction models

RIVA - Risk analysis of key goods and transit axes including seaports

Development of a model for estimating landslide risk areas and development of a national hazard map

Evaluation of the design of road drainage systems regarding climate change

Projects: planned

AdSVIS server

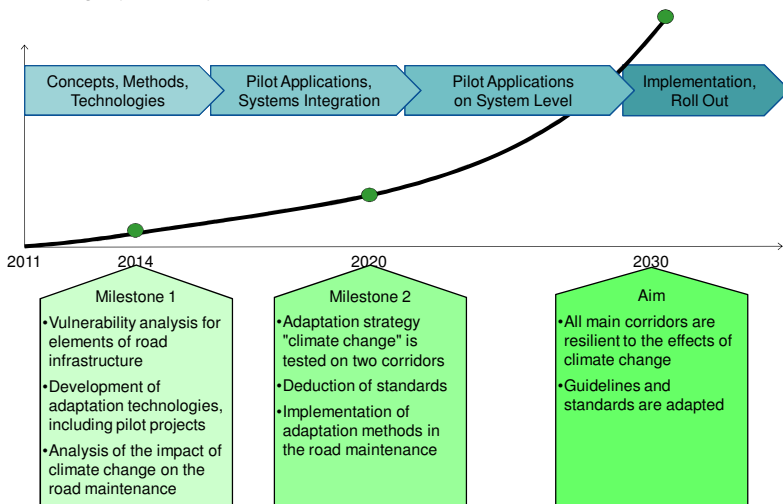
Inventory of road drainage systems in selected sections of the TEN-T

Impacts of weather extremes on concrete road pavements

Vulnerability analysis of bridges and tunnels

Analysis of measures to reduce the vulnerability of bridge and tunnel structures

Asphalt pavements and extreme temperatures



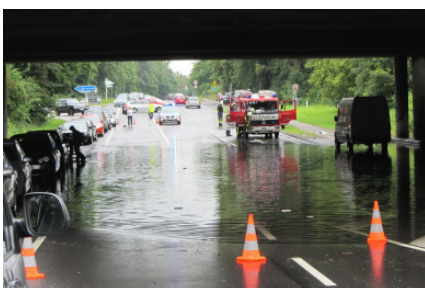
Milestones of the BAST roadmap to the adaptation of the road infrastructure to climate change

The AdSVIS-projects

Currently, AdSVIS consists of 15 projects, of which the project "RIVA - Risk analysis of key goods and transit axes including seaports" is the most important one. The aim of RIVA is the development of tools for the identification, analysis and assessment of risks due to the expected climate change. This way, risks for the infrastructure could be reduced and mitigated. Other projects of the AdSVIS program concern the adaptation of guidelines to climate change, in particular the adaptation of pavements and the design of drainage systems.

International cooperation

The Federal Highway Research Institute (BAST) in a leading role is also involved in several international programmes like "The Climate Change Resilient Road" in the Forever Open Road programme or in the CEDR call 2012 "Climate Change - Road owners adapting to Climate Change".



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