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PROACTIVE RISK MANAGEMENT IN WINTER MAINTENANCE

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Content of presentation

- Aim of proactive risk management in winter maintenance
- Proactive risk management process
- Utilization of results from research programs
- Application: economic risk sharing in winter maintenance

Aim of proactive risk management in winter maintenance

- Traffic safety, fluency of traffic and road-user satisfaction
  - adaptation to changing weather conditions in winter maintenance
  - preparation to change planning and construction practices

- Equal share of economic risks between client and contractor

Proactive risk management process

- Identification of hazard and risk factors
  - by using risk maps in planning, tendering and implementation phase
- Assessment of importance of risks
  - description and consequence of risks are recorded on risk management plan
  - the degree of risk is determined in risk matrix on basis of likelihood and severity of consequences
- Determination of risk management measures
- Risk monitoring and measurement

Proactive risk management process

- Risk matrix:

		Consequence of event				
		None	Minor	Severe	Very severe	Extreme
Likelihood of event	Very common	Low	Moderate	Major	Intolerable	Intolerable
	Common	Insignificant	Low	Moderate	Major	Intolerable
	Occasional	Insignificant	Low	Moderate	Moderate	Major
	Rare	Insignificant	Insignificant	Low	Low	Moderate
	Very rare	Insignificant	Insignificant	Insignificant	Low	Low

Utilization of results from research programs

- Finnish Transport Agency has participated in several research programs and projects

  - European research project IRWIN

    (Improved local winter index to assess maintenance needs and adaptation costs in climate change scenarios)

Utilization of results from research programs

- Aim was to create local winter index taking into account impact of global climate change on various weather parameters and further to assess the change of future maintenance actions

- The new winter indexes can be linked to maintenance costs enabling cost/benefit analyses on separate areas in present and future situations

Application: Economic risk sharing in winter maintenance

- There has been an economic compensation model for hard and mild winters
  - after several mild winters most contractors wanted to abandon the model
  - following two hard winters contractors had to bear the economic risk
- New economic compensation model was created
  - equal share of economic risk between client and contractor
  - takes into account climate change

Conclusions

- Winter maintenance risk management is easily adaptable
- Provision for future risks requires
  - expertise on different phenomena
  - cooperation with other authorities and experts
  - follow-up in different research programs and projects
- Development of practical applications requires understanding of
  - winter maintenance
  - risk management
  - phenomena behind future risks