Project 5: additional costs caused by bringing forward or delaying rehabilitation procedures (VSS2004/715)

Einzelprojekt 5: Zusatzkosten infolge Vorund Aufschub von Erhaltungsmassnahmen

Funding: National (Switzerland)
Duration: Jul 2005 - Apr 2010
Status: Complete with results

Background & policy context:
Based on input results of preceding projects (VSS 2004/711-714), a model for additional-cost-benefit is developed, evaluating the effects on costs and benefit in consequence of the adjustment of standardized rehabilitation procedures.

Objectives:
The objective of this project is to define effects of time adjustments in the execution of roadways rehabilitation procedures on shifts of total costs and total benefits.

Methodology:
The additional cost-benefit model will to the professional and politically responsible decision-makers identify the impact of their actions in following dimensions:
- Direct costs of the decision (slides)
- Soft costs of decision (users) and the dimension
- The benefit or loss in relation to net asset value or its development

Related Projects:
Research organisation: Swiss Federal Roads Office; Research Roads-Bridges-Tunnels
Project number VSS2004/710
Project title Massnahmenplanung Fahrbahnen im Erhaltungsmanagement von Strassenverkehrsanlagen; Gesamtprojektleitung Project title (in English) Maintenance, Pavement-Management of Road Infrastructure; Projectmanagement and Controlling

Research organisation: Swiss Federal Roads Office; Research Roads-Bridges-Tunnels
Project number VSS2009/707
Project title Validierung des Kosten-Nutzen-Modells zur Bewertung von Erhaltungsmassnahmen mittels aktuellder Fallbeispiele

Research organisation: Swiss Federal Roads Office; Research Roads-Bridges-Tunnels
Project number VSS2010/702
Project title Aktualisierung von Grundlagen zur Kostenberechnung im Erhaltungsmanagement Project title (in English) Updated costing basis for road maintenance management

Parent Programmes:
ARAMIS - ARAMIS information system

Institute type: Public institution
Institute name: Swiss Government: State Secretariat for Education and Research
Funding type: Public (national/regional/local)

Partners:
Switzerland
Key Results:

Systematic action planning is a central and crucial process within the management of road maintenance. It demonstrates for a given observation period at what time which interventions for road maintenance are to be performed in order to attain the best cost-benefit ratio. The fundamentals for this planning and optimizing task have been compiled for Switzerland within the research package VSS 2004/710-716.

The close relations between the planning instruments – developed within individual research projects – could be worked out thanks to their integration into a research package. This enabled the optimized adjustment of the research results. The synthesis report of this research package demonstrates the main results of all individual research projects and their use for systematic action planning within the management of road maintenance.

Project 5 VSS 2004/715 “Additional costs caused by bringing forward or delaying of standard interventions for road maintenance” uses the results of the other projects and delivers a method to determine the optimal strategy for road maintenance with minimal life-cycle costs as well as the additional costs and benefits of road maintenance, when measures are implemented before or after the optimum term. It serves as a base for the optimization of action planning.

The findings from the theoretical analyses, which were performed on the basis of the developed models, and the sample calculations show that the execution of the measures at as late as possible a point in time within the possible area of application is ideal for the street operator. This does, however, reduce the benefit that a connecting section or network should generate. As a result, the costs for both users and third parties might potentially increase. The issue of which influence ultimately dominates must be examined in each individual case. Since the street, connecting section or network is being / has been built solely to generate macroeconomic benefit, purely operator-oriented cost minimization is not in the interests of the utilization. In this respect, the street operator should analyze the cost efficiency to also take sufficient account of the users' and third party costs.

Other results

Results of preceding projects (VSS 2004/711-714).

Documents:

- [21288_1282_Inhalt.pdf](21288_1282_Inhalt.pdf) (Final report)

STRIA Roadmaps: Other specified

Transport mode: Road transport

Transport sectors: Passenger transport, Freight transport

Transport policies: Societal/Economic issues

Geo-spatial type: Other