PROJECT

Total benefit - Benefit-cost-ratio of standard interventions for road Maintenance (VSS2004/714)

Gesamtnutzen - Nutzen-Kosten-Verhältnis von standardisierten Massnahmen der Fahrbahnerhaltung

Funding: National (Switzerland)
Duration: Jul 2005 - Nov 2009
Status: Complete with results

Background & policy context:

The systematic planning of interventions is a central and crucial process within the management of road maintenance. It determines the type and time of interventions to be performed in order to attain the best benefit-cost ratio. The foundation and instruments to be used for this planning, and the determination of the optimal interventions, is provided for Switzerland by the individual projects in research package VSS 2004/710-716.

Objectives:

Establishment of methods and benchmarks for the comprehensive determination of monetary benefits for standard maintenance interventions on roads, for application in the cost-benefit analysis.

Methodology:

Following steps will be provided during the project:

- Evaluating existing effect models
- Correlation analysis of road conditions, maintenance expenses, travel behavior and accident rates on selected national road sections
- Definition and test of KNA-valuation models for defined application examples and conservation measures
- Workshops with the Advisory Group and interested parties

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
Swiss Federal Roads Office
R+R Burger und Partner AG

R+R Burger und Partner

Organisation: AG
Address: Haselstrasse 1
Zipcode: 5401
City: Baden
Contact country: Switzerland

Key Results:
The interventions considered in Project 4 were preservation interventions, i.e., interventions that restore the condition of a road section up to but not beyond its original condition, and are performed when the condition of a road section, normally assessed through the surface condition of the pavement, reaches a specified threshold. The resulting changes in routine maintenance interventions, i.e., small local interventions were considered as a (positive or negative) benefit of the intervention with respect to a reference case. Small local interventions, such as crack and pothole filling, are required to prevent the unnecessary acceleration of deterioration processes and unnecessary decreases in safety, but do not improve the condition of a road section, and are performed when it is not desired, or in waiting, to perform a preservation intervention.

In the results proposed in project 4, it is considered that the benefits of interventions can be attributed to the operator, user or the public. The main benefit of the operator is seen as the reduction of maintenance costs, e.g., the performing of a preservation intervention today can reduce the cost of routine maintenance in the coming years, while always providing an adequate level of service. The benefits of the users are seen as the reduction of travel time, discomfort, vehicle operating costs, and accident costs. The benefits of the public are seen as the reduction of accident costs and environmental costs, including noise, air pollution and climate costs.

It is proposed that the benefits be considered to be the positive difference between the costs incurred with performing an intervention, including the temporary perturbations to traffic flow, when compared with not performing that intervention, while a reference intervention strategy is being followed over a certain period of time.

**Related Projects:**

Research organisation: Swiss Federal Roads Office; Research Roads-Bridges-Tunnels
Project number VSS2004/710
Project title Massnahmenplanung Fahrbahnen im Erhaltungsmanagement von Strassenverkehrs anlagen; 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 aktueller Fallbeispiele

Documents:

- [VSS2004/714](#) (Final report)

**STRIA Roadmaps:** Network and traffic management systems
**Transport mode:** Road transport
**Transport sectors:** Passenger transport, Freight transport
**Transport policies:** Societal/Economic issues
**Geo-spatial type:** Other