

Life-Cycle Cost Analysis in Pavement Design

Problem:

Life-cycle economic evaluation is not routinely considered in pavement selection. In the face of growing public scrutiny, transportation officials are under increasing obligation to demonstrate the cost-effective expenditure of public resources. Transportation agencies have traditionally lacked the guidance and resources to routinely compare competing pavement design alternatives in a systematic, comprehensive manner. As a result, costs associated with future rehabilitations often remain unknown and opportunities to mitigate excessive costs are not explored. Many transportation agencies are in need of economic tools that will help them choose the most cost-effective project alternatives and communicate the value of those choices to the public.

Solution:

Life-Cycle Cost Analysis in Pavement Design

Once a decision has been made to undertake a project, Life-Cycle Cost Analysis (LCCA) provides a tool to comprehensively evaluate costs among two or more alternatives.

Throughout the 1990s, the FHWA explored ways to use and incorporate LCCA in the decisions making process. In 1996, the FHWA initiated a technology transfer effort under Demonstration Project 115, “Life-Cycle Cost Analysis in Pavement Design.” This project resulted in a basic LCCA workshop that has since been delivered to over 40 State transportation agencies. In 1998, the FHWA

issued an “Interim Technical Bulletin on LCCA” that provided guidelines on the computation of agency and user costs. In addition, the guidelines greatly improved the existing methodology by introducing a “probabilistic” approach in the treatment of uncertain LCCA inputs. As a follow-up to the basic workshops and demonstration activities, the FHWA currently offers an advanced workshop that provides instruction on how to conduct LCCA and training in the use of the agency’s RealCost software. RealCost is a software tool developed by FHWA to conduct LCCA conforming to recommended practice.

Deployment Process:

The FHWA maintains national experts in life-cycle cost analysis to inform the FHWA division offices, State highway agencies, industry members, and other organizations and experts about recommended practices and procedures. Workshop training and technical support are routinely offered to States and division offices.

Additional Resources:

For more information about LCCA and to download the RealCost software, visit <http://www.fhwa.dot.gov/infrastructure/asstmgmt/lcca.htm>

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