

Bancha Phitaksa 2009: Pavement Valuation Approach Based on Life Cycle Cost Analysis. Master of Engineering (Civil Engineering), Major Field: Civil Engineering, Department of Civil Engineering. Thesis Advisor: Associate Professor Sutharin Sthapitanonda, Ph.D. 145 pages.

Long before the beginning of the first national economic and social development plan in 1962, road transportation has become vital for the economic development of Thailand. Every year, its construction and maintenance expenditure, never cease to increase and with considerable proportion to the government annual budget. Nevertheless, for the concerned authority, there appears some queries and uncertainties on the appropriateness or effectiveness of the decisions made for the construction and maintenance of road under the agency's constraints.

This research has applied the pavement valuation technique based on Life Cycle Cost Analysis (LCCA) to assist prioritizing road construction and maintenance. All costs incurred during the asset service life, both agency costs and user costs, are considered. The agency costs include initial construction, rehabilitation, reactive maintenance, and salvage value costs. The user costs comprise of vehicle operating and time costs. The value of the pavement will reflect the pavement benefits to highway agency and the road users. This study has also developed a program to facilitate the assessment of the pavement valuation to road projects. A road network under the Samut Prakarn Department of Rural Roads has been selected and tested.

The results show that the pavement valuation program developed could effectively serve as a planning and improvement tool for the authority concerned.

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