

## **Deliver on the Promise of Life-Cycle Cost Analysis: Mandates Proven Not to Work; LCCAs Need Improved Data Resources to Save Money**

As Congress prepares to reauthorize the FAST Act, the proper role of life-cycle cost analysis (LCCA) is frequently discussed. An LCCA, when performed correctly, is an economic decision-support tool used by transportation agencies to help identify the most beneficial and cost-effective project alternatives. While the benefits of LCCA for improved decision-making and potential cost savings are well documented, beyond its application in the pavement design process, the use of LCCA on infrastructure projects is varied and limited. Simply mandating LCCA will not solve the problem. In 1995, states were ordered to conduct LCCA and Value Engineering Analysis for every National Highway System (NHS) project costing \$25 million or more. The mandate was removed in 1998 because states could not meet the requirements<sup>1</sup>.

Instead of mandates, NAPA supports federal legislation and policies that focus on:

- Strengthening existing use of performance evaluation in the planning process;
- Tying funding to performance to encourage and incentivize state and local agencies to use existing tools, including LCCA, to optimize performance;
- Ensuring consistent and accurate data for use by states and local agencies; and
- Funding education for conducting and implementing economic analyses.

As noted by the ASCE/Eno report<sup>2</sup> and a Transportation Research Board report<sup>3</sup>, ***the major inhibitor for expanding LCCA use in transportation infrastructure is the lack of quality data – a critical input for LCCA.*** Real data based on local conditions, materials, and experiences are essential for an accurate and unbiased LCCA. The literature and case studies consistently point to the lack of quality data as a significant barrier to the effective use of LCCA.

***Relying on generalizations and estimates will provide incorrect and unrealistic results, which will negatively impact project delivery times and siphon funds from already limited agency budgets.*** LCCA requires many predictions and estimates — initial prices, quantities, maintenance, rehabilitation, the time-value of money, and more. A change in any one factor can significantly change the result, which makes LCCAs inherently malleable. While the accuracy of any prediction spanning decades is questionable, with bad data, bad predictions are a certainty. This is an important concern because bad infrastructure decisions on the front end can limit flexibility in the long-term.

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<sup>1</sup> American Society of Civil Engineers (ASCE), Eno Center for Transportation, [Maximizing the Value of Investments using Life Cycle Cost Analysis](#), 2014

<sup>2</sup> Ibid.

<sup>3</sup> NCHRP Synthesis 494, [Life-Cycle Cost Analysis for Management of Highway Assets](#), 2016

Rather than require a new unfunded federal mandate on the states, there are better ways to ensure Americans get the best infrastructure value for their investment. ***What is needed are better data resources for agencies to carry out LCCAs effectively and accurately.***

Improved data resources are needed to determine service life under different loadings and in different climates, predict maintenance and rehabilitation, estimate user delays, and evaluate options when uses change or materials must be replaced or recycled.

Recognizing this challenge, NAPA strongly supports the creation of data collection standards and retention policies for this sorely needed data. LCCA is a complex, data- and labor-intensive process that must be performed using statistically valid, transparent inputs to be effective. Therefore, NAPA calls on Congress to include the following provision in the next reauthorization bill:

***LIFE-CYCLE COST REDUCTION*** — *In order to most effectively reduce the life-cycle cost of transportation infrastructure in design, construction, maintenance and operations, the Federal Highway Administration (FHWA) must lead in addressing the greatest challenge to performing effective life-cycle cost analysis (LCCA): the lack of resources to collect and maintain high-quality data on costs, maintenance, deterioration, user costs, service life, and salvage value. FHWA is directed to update its LCCA guidance to ensure agencies appropriately apply LCCA for highway infrastructure with accurate input data. Congress also directs FHWA to establish a data registry clearinghouse for extraction and analysis of data for use in LCCA.*

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