

## **Frequently Asked Questions: Material-Specific Discount Rate Inappropriate for Life-Cycle Cost Analysis**

### **What is LCCA?**

*Life-cycle cost analysis is an evaluation technique used in the determination of the lowest-cost way to complete a project. It takes into account the comparative costs of competing design alternatives and projects future costs expected during the usable life of a structure. LCCA is a cost-centric approach that compares preselected projects with a specific level of benefit that is assumed to be equal among project alternatives.*

### **Why is LCCA Important?**

*The Federal Highway Administration (FHWA) recommends that LCCA be used to help determine the total cost of investments necessary to keep an infrastructure project available to the public. LCCA makes predictable maintenance and rehabilitation costs part of the calculation when looking at project alternatives, instead of just the initial construction costs.*

### **How do LCCAs account for inflation?**

*FHWA recommends that LCCAs be conducted in constant dollars because "public sector project benefits should be dependent only upon real gains (cost savings or expanded output), rather than purely price effects." (FHWA, Life-Cycle Cost Analysis Primer, August 2002, <http://isddc.dot.gov/OLPFiles/FHWA/010621.pdf>)*

### **What does the CSH report propose doing differently?**

*The Concrete Sustainability Hub (CSH) suggests that for specific construction materials (and only those materials) an escalation rate be determined using Bureau of Labor Producer Price Indices. However, all other cost inputs for the LCCA would use constant dollars. The goal is to use past price information to calculate future price points for specific construction materials.*

### **Is a material-specific discount rate an accepted LCCA methodology?**

*In a word, no. The CSH-proposed methodology, which the report describes as a "computational workaround," is not accepted as valid by economists. In addition, the methodology uses recent price information to predict prices 50 years into the future; numerous studies have found that predicting future price trends for commodities such as oil beyond periods as brief as six months is no more accurate than using the last known price in perpetuity.*

### **Beyond methodology, what other problems were found in the CSH report?**

*The assumptions used by CSH for its modeled LCCA artificially inflate the life-cycle costs of an asphalt roadway. CSH assumed a 10-year repaving cycle,*

*which is more frequent than state DOTs actually experience. CSH also ignored both the increasing use of cost-savings technologies such as reclaimed asphalt pavement (RAP), recycled asphalt shingles (RAS), and warm-mix asphalt (WMA). Finally, CSH attributed 34.4 percent of costs for an asphalt pavement to liquid binder; FHWA assigns only 7.8 percent of costs to liquid binder.*

**Does NAPA oppose review of LCCA procedures?**

*No, NAPA supports periodic reviews of LCCA when conducted by knowledgeable economists in consultation with industry experts. What NAPA opposes is efforts to use legislation to mandate the adoption of an unproven, non-standard methodology that distorts the costs of one construction material.*