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Holding onto what's good

Kentucky executes more targeted bridge-preservation plan

It all comes down to money—or lack of it.

State transportation CEOs from across the nation were in agreement on that point in Louisville, Ky., site of the 2014 American Association of State Highway & Transportation Officials (AASHTO) Spring Conference. The federal Highway Trust Fund is headed for insolvency—soon. Money—or lack of money—is an all-consuming issue: money for new construction, for preservation and for improved highway safety. It's shaping up to be a long, hot summer.

Preserving the functionality of aging infrastructure is a challenge anytime, even in periods of relative stability for transportation funding. But when federal transportation funding is in jeopardy, state DOTs already operating on thin margins have to be inventive and single-minded about stretching a dollar. Sometimes—oftentimes—hard choices must be made.

There was a time when the Kentucky Transportation Cabinet (KYTC) tried to fix all bridges, regardless of condition. That was costly and largely inefficient. Today, the cabinet strives to preserve “good” bridges—those with longer remaining lives and higher sufficiency ratings—while opting for total replacement or continued maintenance of others.

The KYTC spends nearly \$60 million a year for bridge replacement and maintenance, equally divided between state and federal funds. As traffic increases and structures age, the cost grows.

The KYTC has inspection responsibility for more than 14,000 bridges, of which 29%—more than one in four—are structurally deficient or functionally obsolete. These bridges are inspected at least once every two years. Some are inspected more frequently, depending on age, type, design and safe load-carrying capacity. Annually, the cabinet inventories bridges in its 12 districts. Weighing several factors, including age, traffic, load bearing and overall condition, engineers review the list and decide which bridges in each district need the most attention.

Engineers work to preserve or replace parts of a structure to raise its condition rating. For example, the condition of a super- or substructure may be acceptable, while the deck or expansion joints are in poor condition. The cabinet will replace the deck, seal the expansion joints and paint steel trusses. Once repairs are complete, the sufficiency rating is improved.

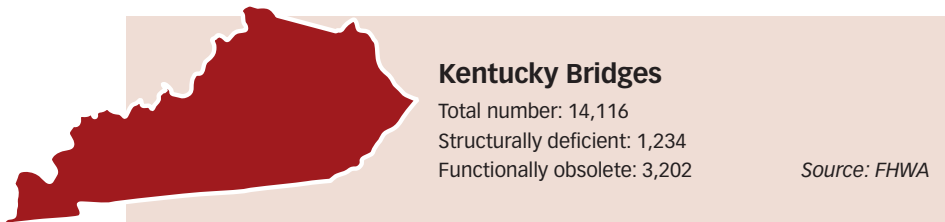
The John F. Kennedy Memorial (I-65) Bridge in downtown Louisville is a prime example.

The 50-year-old Kennedy Bridge has weathered many seasons due to the cabinet's conservation efforts. In 2007, contracted crews completed a \$59 million paint job of the steel trusses. In 2012, the concrete deck overlay was replaced. Furthermore, as part of the Ohio River Bridges Project, the Kennedy will receive a new deck in 2016. These maintenance efforts have improved the bridge's condition rating.

The Kennedy Bridge, too, is an unusual example, but the approach can be replicated for other bridges on a smaller scale.

As we look to the future, the cabinet will continue to use these methods and look for additional avenues of savings. One option is to have a dedicated funding source and personnel specifically for bridge preventive maintenance, without reducing current maintenance budget and staff.

The bottom line may be funding. But our bottom line is keeping Kentucky's transportation network safe and reliable. **R&B**



New bridges, obviously, are expensive—especially if they are large and long. Take for example the ambitious but much-needed Louisville-Southern Indiana Ohio River Bridges Project (see Busy Downtown, p 22)—two bridges, a tunnel and reconstruction of a massive interstate highway interchange. The project finally is under construction after 40 years of study, design, debate, more debate and ultimately a redesign that shrank the cost from the original \$4.1 billion to an attainable \$2.3 billion.

It's an admittedly extreme example, but if nothing else, it underscores the fact that transportation infrastructure is a gigantic public investment. And protecting that investment requires maintenance.

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For more information about this topic, check out the Bridge Rescue Channel at www.bridgerescue.com.