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Surrounded by loved ones

After intervention, Utah gives bridges extra care they deserve

The thought of a rescue typically evokes the image of a sudden, dramatic intervention that saves something from certain peril.

Indeed, the Utah network of bridges needed an intervention. As late as 1998, one in five state-owned bridges was structurally deficient, and the highway infrastructure in urban areas was falling behind the demands of the exploding population. When it comes to operating a network of bridges, however, a sound bridge-management program cannot be implemented overnight. It requires years of work to implement a program that is meaningful, actionable and practical to measure and institutionalize use of the program for strategic and operational decision making.

Utah legislative leaders made the strategic decision to pursue a world-class transportation system in Utah. Significant-capacity projects were planned, designed and constructed utilizing only state funding. For several years, the federal funding provided around 30% of the total funds required to deliver UDOT's aggressive annual transportation program. UDOT leaders recognized early on that to improve the overall condition of bridges, the bridge-management program would have to leverage the capacity projects to address as many bridge deficiencies

bridge-management program currently allocates the majority of bridge funds toward the broad objective of bridge preservation. Bridge preservation includes preventive treatments on good- and fair-condition bridges as well as timely bridge rehabilitation for bridges that can be restored to an acceptable level of service. Bridge preservation requires a much more proactive approach to bridge management than simply reacting to the bridge condition after it has become deficient. To accomplish this, UDOT has refined data-collection efforts within the bridge-inspection program to enable

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bridge management and project funding decisions that are data-driven, objective and made with respect to the entire bridge network. Ultimately, UDOT will have a long-term plan for every structure on the state highway system. This plan utilizes accurate bridge condition data and a practical economic analysis to forecast future bridge deterioration. The bridge-management program then selects an appropriate preservation strategy to achieve the expected service life of the bridge.

The bridge-management program in Utah has reduced deficient bridges from more than 20% of the inventory in 1998 to less than 1% in 2014. By 2018, UDOT expects to have rehabilitated or replaced every structurally deficient bridge on the state highway system. While these numbers are very positive, UDOT understands that every bridge deteriorates slightly with each passing year and that the conditions of the past can easily return without effective bridge-management strategies. UDOT continues to actively pursue better bridge-assessment technologies, more effective bridge-preservation treatments, longer lasting and more durable bridge-preservation materials, more consistent bridge maintenance and innovative design details that facilitate high-quality initial bridge construction. **R&B**

Utah Bridges

Total number: 2,974

Structurally deficient: 117

Functionally obsolete: 320

Source: FHWA

as possible. In preparation for the 2002 Salt Lake City Winter Olympics, I-15 was reconstructed through Salt Lake County, including the construction of 144 bridges. Shortly after the 2002 Olympics, capacity projects were delivered in Ogden (15 new bridges), I-80 (14 new bridges), Utah County (17 new bridges) and St. George (12 new bridges). Recently, another 56 bridges were built with an entirely state-funded project that rebuilt I-15 through Utah County.

While the large-capacity projects have been key to improving bridge conditions in Utah, the bridge-management program continues to deploy strategies that are equally important. Making the best use of limited funds to meet performance objectives has sharpened UDOT's focus on bridge preservation. The

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