OKLAHOMA Transportation RESEARCH

HIGHLIGHTER

ASSET VALUE PRACTICES AND FUNCTIONALITY

May 2020

PROJECT TITLE
ASSET VALUE PRACTICES AND FUNCTIONALITY

FINAL REPORT ~
FHWA-OK-19-07
ODOT SP&R 2283

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INVESTIGATORS
Jason Bittner, PMP, Principal
Dr. Hannah Silber, Staff Engineer
Applied Research Associates, Inc.

ODOT SPONSORS
Matthew Swift, P.E.
ODOT SAPM Division Engineer
Chelley Himes
ODOT Director of Finance and Administration

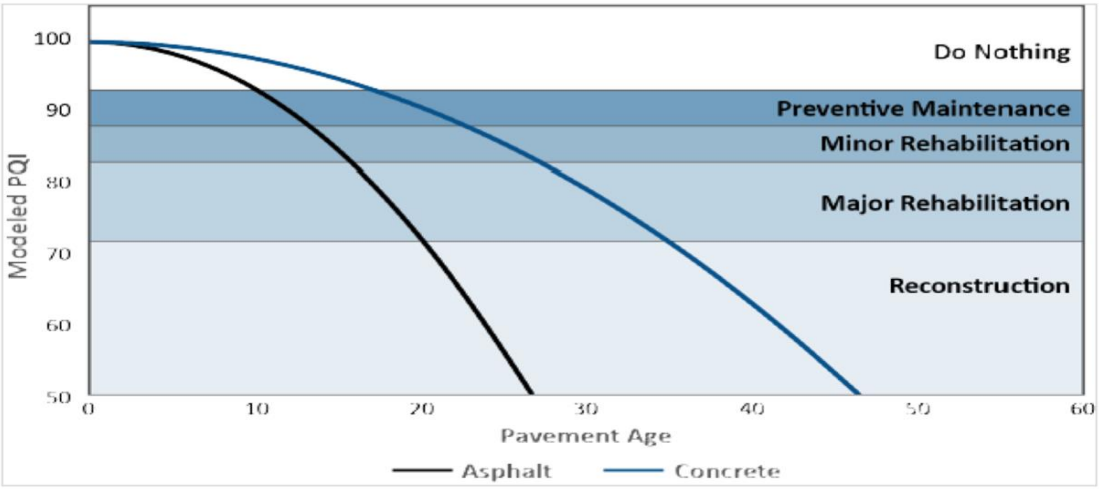
Office of Research & Implementation

Oklahoma Department of Transportation
200 NE 21st Street,
Oklahoma City, OK
73105-3204

Implementation of Research for Transportation Excellence

MORE INFORMATION
odot-spr@odot.org

OVERVIEW Providing better understanding of the value of the State of Oklahoma's transportation assets as well as the maintenance activities necessary to keep them in a state of good repair is a key component of sustainable long-term asset management (for example, pavement condition over its lifecycle, as illustrated in the figure). Appropriately applying concepts of valuation and functionality allows agencies to manage individual transportation assets effectively. For capacity and efficiency, functionality must be maintained in a proactive manner to ensure safety, reduce unplanned maintenance activities, and protect infrastructure value. Effective management requires functionality to be considered at every stage of an asset's lifecycle including planning, construction, maintenance and operations. Practitioners use various approaches for determining network valuation, which ultimately promotes a question of whether or not the incoming investment is sufficient to maintain or increase that valuation. The asset valuation practice is designed to serve as a management decision-making tool, one that can be readily communicated to the traveling public and stakeholders.



ODOT deterioration models and treatments (ODOT, 2018).

RESULTS This project facilitated the Oklahoma Department of Transportation in its asset management planning efforts by providing a variety of approaches to valuating its transportation assets with the goal of assisting the agency in meeting federal requirements. Losses to state highway functionality over time were categorized and examined to assess what actions can help preserve, reestablish, improve and enhance functionality in the future to also evaluate the

transportation network. The following table provides an example of pavement asset condition with corresponding functional performance measures, indicators and treatment categories.

Pavement Asset Condition	Functional Performance Measures	Indicators	Treatment Category
Good	Capacity	No road or lane closures due to pavement condition, no on-road work zones to correct pavement issues	None
Fair	Capacity	Few road or lane closures due to pavement condition, few on-road work zones to correct pavement issues	Preventative Maintenance Minor Rehabilitation
Poor	Capacity	Excessive road or lane closures due to pavement condition, multiple on-road work zones to correct pavement issues	Major Rehabilitation Reconstruction
Good	Operational Efficiency	Travel times and average speeds unaffected by pavement condition	None
Fair	Operational Efficiency	Travel times and averages speeds mildly affected by pavement condition	Preventative Maintenance Minor Rehabilitation
Poor	Operational Efficiency	Travel times and average speeds highly affected by pavement condition; average trip length increased due to pavement issues	Major Rehabilitation Reconstruction

The project also included a state of the practice review, a literature assessment, and a workshop and training overview of how to apply a variety of valuation approaches. The primary findings associated with the workshop included:

- There is a desire to use valuation in a manner that demonstrates a large value to decision makers, stakeholders, and the traveling public.
- There is a desire to use valuation to gauge the investment in the network from a monetary perspective.
- There is limited interest in pursuing a functionality-based assessment of the highway infrastructure at the current time.
- More information on the experiences in states including Colorado and Utah will be used to model the ODOT approach to asset management.

In Oklahoma, current management strategies are founded on demonstrating consistent values for the transportation network. Several different values are regularly reported, depending on the context and intent. The research findings, coupled with the workshop results, demonstrate that using a combination of use values and accounting for developmental land value costs is critical for providing a value that all parties can begin reporting consistently. Further research is needed to determine if the new approaches would be worth the level of effort to launch new business practices in Oklahoma.

POTENTIAL BENEFITS This project identified ways to influence functionality of Oklahoma transportation assets, enhance safety and reduce future maintenance and investment expenditures. Detailed alternative approaches to business processes were presented with respect to asset management strategies and practices. Results provide a better understanding of the value of Oklahoma's transportation assets and the maintenance activities necessary to keep them in a state of good repair. The effort provides asset management planning enhancements, ultimately better meeting Federal requirements.