

ENGINEERING SEMINAR

New Technologies for Bridge Maintenance and Bridge Management

Abstract

One of the most significant challenges facing engineers today is maintaining a vast, aging inventory of assets with limited funding. The problem is particularly acute for bridges. Many of the bridges built during the interstate highway construction boom of the 1960s and 1970s are reaching a “tipping point” and require action. Engineers, through training and culture, often reflexively recommend replacement when a bridge approaches the end its service life. However, with the current funding environment this is a highly impractical approach.

Even in states with a robust funding program, the cost to replace all bridges at the end of their service lives exceeds available funding by factors of eight or more. Simply put, there is not, nor will there be, enough money to replace existing structures at the end of service life. Therefore, the task for today’s engineers is to use innovation, technology and planning to maximize the lives of these assets with the money that is available.

Fortunately, a suite of new materials, techniques, evaluation technologies and management tools are now available. This discussion focuses on trends in bridge engineering that will enable bridge engineers to meet the new challenge.

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As an Assistant State Structure and Bridge Engineer for Bridge Maintenance, Mr. Matteo is responsible for establishing policy for the maintenance of over 19,000 of Virginia’s highway bridges and large culverts. He has 30 years of engineering experience in structural design, bridge maintenance and construction management. Before joining the Virginia Department of Transportation (VDOT), he worked as an engineering consultant, where he was responsible for the management of an office that performed bridge design, bridge inspection and bridge maintenance services in the mid-Atlantic region.

Mr. Matteo received a Bachelor of Science in Civil Engineering from the University of Virginia in 1984. He completed a Master of Science in Civil Engineering at the Massachusetts Institute of Technology in 1993, and licensed in both Virginia and California.

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