

6.4.1

Case Study | Designing and Implementing a GIS-Centric Pavement Management System for the City of Alexandria, Virginia

Presenter

Craig Schorling
Business Development Manager
Transmap Corporation
cschorling@transmap.com

Co-Presenter

L.A. McCracken
City of Alexandria, VA

Situated six miles south of Washington, D.C. along the western bank of the Potomac River, the City of Alexandria is home to approximately 140,000 residents (2007 census estimate). With 15.2 square miles of land area and a resulting population density of 9,200 persons per square mile, the City of Alexandria can be classified as a dense urban city. To support its residents, businesses, and visitors vehicular transportation needs, the City's Department of Transportation & Environmental Services maintains approximately 270 centerline miles of paved roadways and alleys.

This case study will present: 1) the efforts the City of Alexandria undertook to implement its GIS-centric Pavement Management System, 2) how the City and its consultant team adapted industry standard software applications and inspection approaches to accommodate several unique characteristics of the City's street network, associated traffic patterns, and localized M&R strategies, and 3) and how the MicroPaver PCI results were adapted and interpreted to develop a multi-year M&R strategy. Project strategies, critical success factors, outcomes, and lessons learned will be discussed.

Key discussion topics will include:

- Leveraging industry standard / open architecture technology tools and inspection methodologies
 - ESRI ArcGIS (linear reference system, pavement network definition, inspection areas)
 - MicroPaver (distress analysis and PCI calculations)
 - ASTM D 6433 - 07 | Standard Practice for Roads and Parking Lots Pavement Condition Index Surveys
- Developing a consistent / repeatable inspection methodology
 - definition of pavement network (routes, sections, branches) (Network, Branches, Sections)
 - definition of inspection areas (program level vs. project level, locating inspection buffers)
- Establishing inter-rater / reviewer inspection consistencies
- Leveraging High Definition (resolution) and high accuracy (positional location) imagery to support pavement distress detection and evaluation
- Maintaining flexibility in adjusting standard inspection approaches and interpretation of PCI values to accommodate local conditions (road geometry, traffic patterns) and M&R strategies