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GPS Mapping 70k Miles of Tennessee Local Roads in 5 Years

Presenter

John Hicks
GIS Tech. Mgr. 1
Dept. of Transportation
John.H.Hicks@tn.gov

Co-Presenter

Thomas G. Miller
GIS Resource Specialist Tennessee
Navstar Mapping Corporation
thomas_miller@navstarmapping.com

Tennessee DOT began development of GPS-based technology in 1994 to produce digital data to replace and automate the maintenance of their manually generated GIS network. This development work was completed in 1997 and the technology was used by TDOT inventory personnel during the 1998-2000 time period to collect new GPS-based data and expand the GIS control network to include the complete road network for the Department's 30,000 miles of State-Maintained and Functional Class Highways. Additional effort was funded by TDOT in 2001-2004 to develop and demonstrate an automated inventory update process that could be used for local roads. The resulting process provided simultaneous collection and processing of GPS data for the GIS network and logmile inventory update data for four database tables. Over a 2 to 1 improvement in productivity was demonstrated as compared to previous manual methods.

TDOT contracted with Navstar Mapping Corporation (NMC) in 2007 to implement this process using their automated data collection and data processing system. The contract period for updating the 70,000 + mile local road network spans five years utilizing two vehicles with a two person crew per vehicle. We are currently in the 5th and final year of the contract, and this presentation will describe the automated data collection system, processing steps used, and lessons learned. The transition from TDOT's manual method of data collection to the automated systems will be highlighted. The problems encountered and solutions that were implemented during the term of the contract will be summarized.