RESEARCH PROJECT DESCRIPTION FORM

Feasibility Study of Integrating WVDOT Linear Referencing System Center Line with Statewide Addresses and Routing Information

Primary Investigator Contact Information
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Project Objective:
The objective of the proposed study is to review technical issues regarding the feasibility of road network integration in West Virginia which incorporates linear referencing, addressing, and routing capabilities. This study will (1) identify and review existing transportation models, as well as DOT data needs; (2) create an integrated road network pilot; and (3) identify requirements for data integration.

Abstract:
State DOTs use road centerlines to manage extensive transportation system data such as road physical conditions, traffic measurements, and highway projects. The WVDOT has recently completed a GIS base map project to create a linear referenced road centerline, and wants to develop a single , comprehensive, statewide road centerline dataset that can serve the entire DOT GIS needs. The objective of this project is to review technical issues regarding the feasibility of road network integration in West Virginia which incorporates linear referencing, addressing, and routing capabilities. This study reviews existing transportation models and identifies implementation issues as well as DOT needs. The study shows that the revised/improved UNETRANS data model can be successfully implemented accommodating WVDOT RIL system requirements. Using the advantage of Edit and Publish geodatabase design practices, the DOT can continuously develop and perfect the data model and migrate from the old system in stages. Creating and maintaining a statewide dataset that includes the attributes (e.g., one way roads, turn restrictions, etc.) required to support full automated routing (traversing) would be challenging and costly. The DOT should approach the routing requirement as a long-term project and develop an action plan.

Task Descriptions:
Task 1 – Identify and review existing transportation data and models, as well as DOT data needs, to develop a shared road network.
Review and assess federal, state, regional, local, and commercial transportation data to determine opportunities for cost-savings, to identify best practices and lessons learned, and to review existing transportation data models.
Where necessary, seek advice from transportation experts of the public and private sectors to assist in developing a shared road network model for West Virginia.
Task 2 – Create an integrated road network pilot
Using information compiled from Task 1, develop a sample road network in West Virginia which shares the same geometry and combines linear referencing, addressing, and routing capabilities from the best available transportation databases. This task will result in an enhanced LRS data model that incorporates additional data and functionality.
Task 3 – Identify requirements for data integration
Identify minimum requirements necessary to create a shared road network. The seamless, comprehensive network will include all roads and support linear referencing, addressing, and routing. Integrated solutions may incorporate transportation data from both public and private sources.

Yearly and Total Budget: $27,891.04