RESEARCH PROBLEM STATEMENT

DATE: 09/15/2017  PROJECT AREA: Planning

TITLE: Vehicle Class Seasonal Factor Groups for ARDOT Traffic Information Systems

PROBLEM STATEMENT:
Annual Average Daily Truck Traffic (AADTT) and Vehicle Class Distribution (VCD) estimates are fundamental to the Mechanistic-Empirical Pavement Design Guide (MEPDG). Crucial to estimating AADTT and VCD are seasonal factors based on cluster analysis of short term, vehicle classification counts collected at Weigh In Motion (WIM) stations. "The North Carolina Department of Transportation (NCDOT) processes and reports class data by aggregated vehicle class groups (FHA Traffic Monitoring Guide, 2013)." ARDOT wants its own methods for using aggregated vehicle classes to develop and apply seasonal factors. This requires prior steps including Data Screening and generating basic statistics for WIM stations. Cluster analysis would be used to develop seasonal factors for truck volume in Arkansas.

OBJECTIVES:
Phase 1 is for principal components analysis of monthly VCD patterns; Phase 2 is for analysis of multi and single unit seasonal patterns. Generate Principal Components of Arkansas Monthly VCD. Estimate average daily truck traffic for each factor group. Establish Assignment Criteria of Portable Vehicle Classification (PVC) to Arkansas Seasonal Factor Groups. Address future needs to replicate analyses.

FORM OF RESEARCH IMPLEMENTATION:
Deliver to ARDOT something comparable to Traffic Data Input Resources which appear in Appendix G of the FHA Traffic Monitoring Guide, prepared by NC State University for NCDOT. Also to the extent possible deliver a spreadsheet to ARDOT for updating Vehicle Class Seasonal Factor Groups.

Estimated Project Duration: 12 months

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