HIGHWAY STATISTICS

Delaware Future Year 2035 Traffic Forecast

Mike DuRoss, a planner in DelDOT's Division of Planning, provides traffic forecasts for the department. The forecast traffic year for this HPMS submission is 2035, which is an extension of the 2030 horizon year used in last year's submission. The 2035 horizon year is consistent with the a horizon year used in the air quality conformity of the latest adopted long-range transportation plans for Delaware's two MPO's, the Wilmington Metropolitan Area Planning Council, and the Dover/Kent MPO. The Division of Planning's "Peninsula Travel Demand Model" produced the 2035 forecast traffic, Version "Clean Model 17" prepared by WRA in December, 2010. This is a standard five-step travel demand model in the CUBE Voyager software (Version 5.1.3, March, 2010) that covers Delaware's three counties but also includes the nine counties of Maryland's Eastern Shore.

The model described above was used to develop projections for the year 2035 in this year's new HPMS sample sections. Figures 1 and 2 provide illustrations of the coverage area and relative level of detail provided by the model. It was also used to review projections for all interstate, freeway and expressway samples as the projections on those sections tend to be very sensitive to the annual updating of traffic counting data. As with last year's HPMS submission, this submission included a review of traffic data for all samples in the HPMS universe. This comprehensive review used the latest version of DelDOT's travel model which also included updated population and employment data for all Traffic Analysis Zones in New Castle County as well as the nine Maryland counties, and was based upon an updated traffic assignment calibration using DelDOT's "2008 Traffic Summary". As noted above, this comprehensive review used the forecast horizon year from the 2035 planning horizon year of the WILMAPCO Long-Range plan for New Castle County and the Dover/Kent MPO Long Range plan for Kent County.

Due to the number of samples reviewed for traffic forecast growth factors in this year's submission, the HPMS console was not used because time constraints did not permit the traffic forecasting staff to learn the menu systems and other aspects of that particular software. It is again noted that use of the HPMS console is a recommendation for traffic forecasting for next year's HPMS submission. It is noted that the travel model was calibrated to the 2008 AADT's, the future year growth factors were derived from the 2005-2040 period and applied with manual adjustments as necessary. The travel model will be recalibrated to 2019 traffic counts in the summer of 2011. The travel model horizon year was extended to 2040 from the last HPMS submission for all counties in the model coverage, as the update of the WILMAPCO long range plan was completed in December, 2010 required that effort be completed to meet FHWA planning horizon regulations for long range plans.

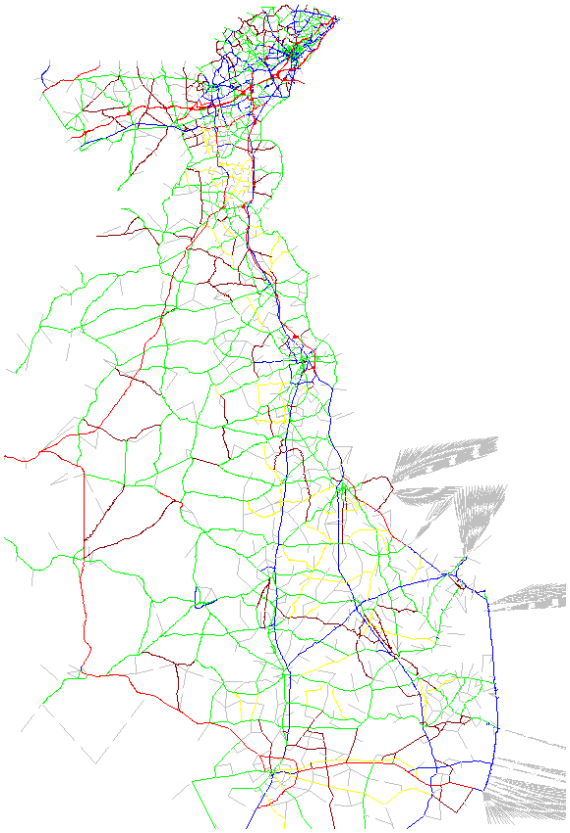

Figure 1. Diagram of DelDOT Regional Travel Demand Model Network.

Figure 2. Diagram of DelDOT Regional Travel Demand Model, Northern New Castle County Network.

It should be noted that for the HPMS 2011 submission DelDOT Planning may have available an additional travel demand modeling tool. The Division is currently working on developing a tax-parcel based network modeling structure which essentially provides estimates of travel behavior, traffic patterns, and travel demands at the individual residence and/or employment location level of detail. The process currently being developed provides a "traffic analysis zone" (or "TAZ") for each tax parcel. Each parcel is then assigned a land use code such as "single family residential", "multi-family residential", "retail", "industrial", or "medical office", from which trip generation rates may be applied in a trip generation step.

The process uses a "centerline file" type of structure in which nearly every road is able to be included in the travel demand modeling process and for which measures of effectiveness such as traffic volume, level of service, and delay, are able to be estimated. The tool is primarily being developed to provide the Division with a detail-based platform to examine comprehensive land use and street form scenarios.

Figures 3 and 4 provide illustrations of the model format.

The process is documented in a paper presented at the TRB National Planning Applications Conference in May 2011 entitled "*Development and Application of a Parcel Based Statewide Travel Demand Model for the Assessment of the Travel Impacts of Smart Growth strategies and Sidewalk Investments"*, by Scott Thompson-Graves (WRA), Michael DuRoss (DelDOT), and Li Li (WRA).

It is anticipated that the detailed modeling tool will be able to support the HPMS analysis by providing more detailed estimates of VMT on local roads, municipal streets, and subdivision roads.

The process is currently being developed and will be phased in over the next several years. It is anticipated to be a complement to the existing regional travel demand model and will be statewide in coverage. It will be used in HPMS as it becomes available, starting in spring of 2012.

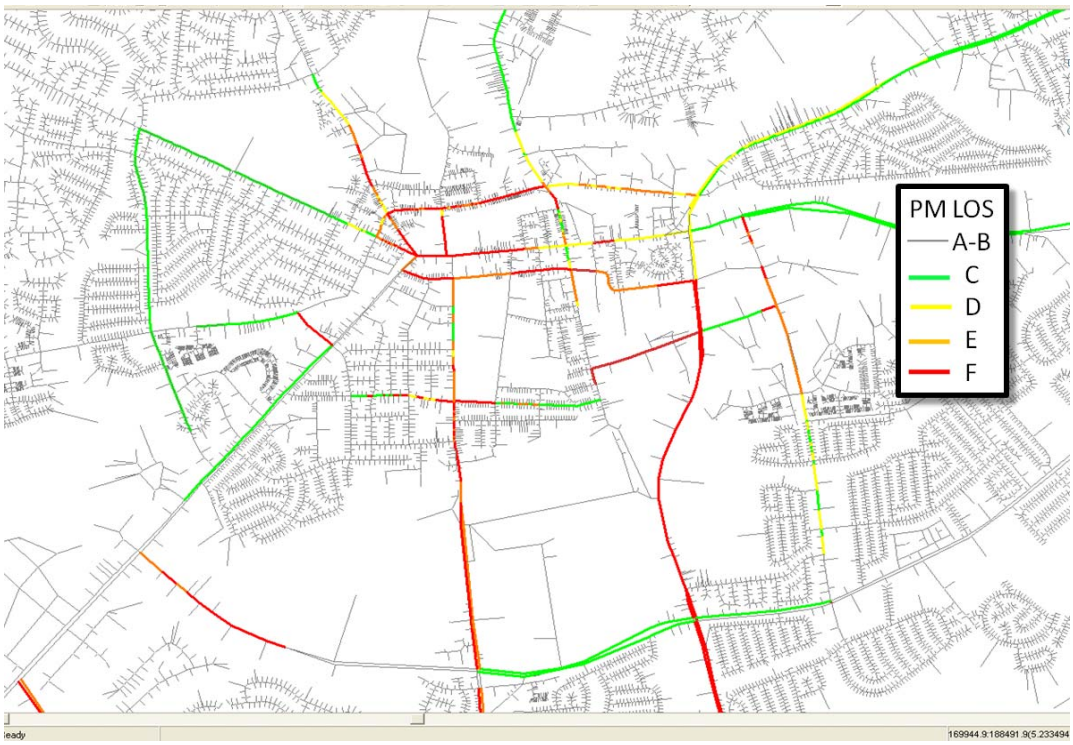

Figure 3. Diagram of DelDOT Detailed Travel Demand Model Network.

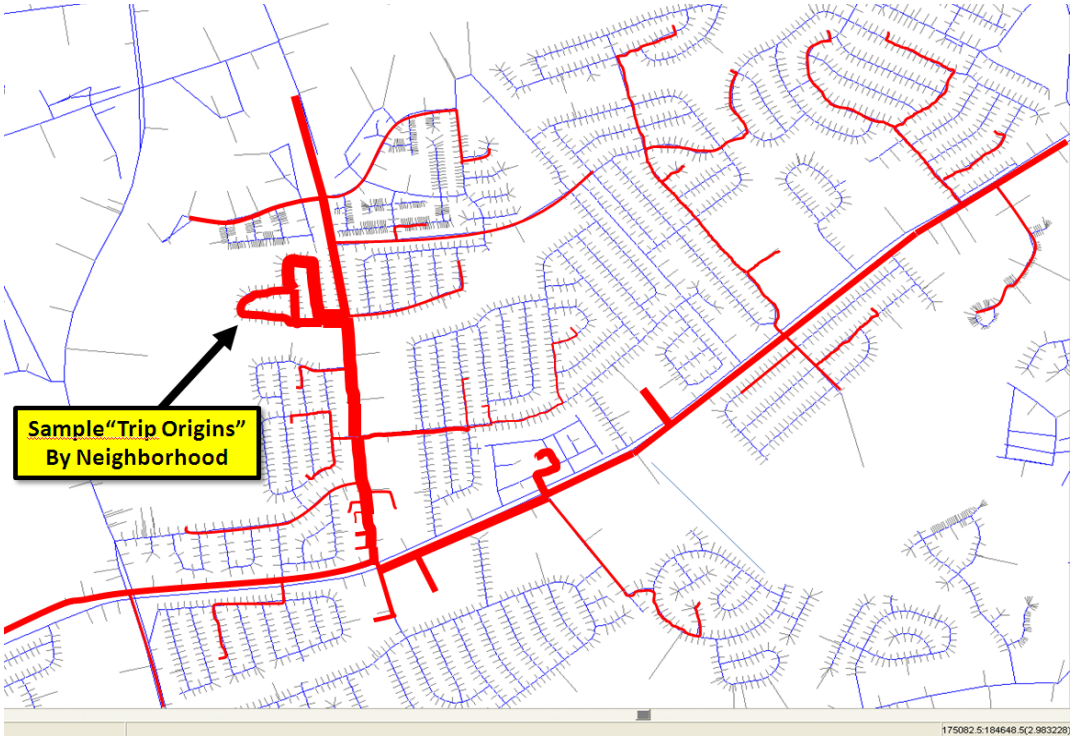

Figure 4. Diagram of DelDOT Detailed Travel Demand Model Network.

The contact person in charge of forecasting traffic in DelDOT is:
Michael DuRoss, Planner
Planning - Statewide and Regional Planning
302-760-2110
Michael.Duross@state.de.us