

Enhanced Inputs for Travel Demand Modeling:

Using Census with Land Cover Data

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ABSTRACT

Travel demand models require as input the value of various demographic and economic variables at Traffic Analysis Zones (TAZs) level, the spatial unit of analysis. These values are derived from Census data in one of two ways. In one approach, TAZs can be drawn to closely match Census boundaries. Then the the value the variable takes is a combination of its value in one or more Census units all of which lie wholly within the TAZ. However, Census boundaries may not produce the most meaningful TAZs, and so in the second approach TAZs are drawn independent of Census boundaries. Here the values associated with portions of different Census units that lie wholly or partially within the TAZ are aggregated based on area. This unrealistically assumes that values are uniformly distributed across a Census unit given that the entire population may be concentrated only in a part of the Census unit.

In this poster, we demonstrate how the above problem can be addressed using Land Cover Data to more effectively assign characteristics to portions of Census units. We show how demographic information for any configuration of TAZ can be derived from the Decennial Census. As a result, TAZs can be drawn without regard to Census geographies and the value of demographic variables can be computed on the basis of more realistic assumptions. This approach also serves as an effective way of linking transportation models with models of land-use change. We go on to demonstrate how the same method can be used with land-use change projected using the Land-use Evolution and impact Assessment Model (LEAM).