Research in Progress

Developing Massachusetts Specific Trip Generation Models for Land Use Projects

Research Need

Vehicle trip generation is used to identify potential transportation impacts associated with new development projects and to provide a substantive basis for determining appropriate impact mitigations and informing transportation infrastructure management, planning, and public involvement. In the U.S., trip generation estimation typically relies on the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). The ITE trip generation rates have been found to overestimate trips for sites that benefit from their proximity to public transportation and accessibility by walking and bicycling, and do not accurately reflect the current trip generation trends in Massachusetts. Over- and under-estimation of trip generation may result in either significant waste and unfair financial burden on developers or inadequate infrastructure to support the state's economic activities. Accurate trip generation models and automated data collection tools will significantly benefit MassDOT.

Goals/Objectives

This research is to assist MassDOT in developing trip generation models for high-priority land uses in Massachusetts. This research includes the development of accurate algorithm-based trip generation models for development projects in Massachusetts. It will also identify and study available innovative technologies such as Machine Learning (ML) models and video analytics that can be used to assist MassDOT's efforts to collect vehicular and multi-modal trip generation data. Such data can be used to further enhance and update the new trip generation models.

Methodology

1. Review of relevant federal, state and municipal efforts and national research projects
2. Development of models to derive trip generation estimates for some high-priority land-use categories
3. Development of guidelines for utilizing the new trip generation models
4. Comparing innovative artificial intelligence and video analytics methods for automating trip count data collection
5. Conducting a pilot project that evaluates the applicability of the method identified/developed above in Massachusetts