



Florida Department of Transportation Research

Trip Generation Characteristics of Special Generators

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Transportation planners use the Florida Standard Urban Transportation Model Structure (FSUTMS) to estimate vehicle trips generated by development type. FSUTMS uses special generators to analyze certain developments not fully captured by the trip generation model. Facilities requiring special generators include military bases, universities, hospitals, and major shopping malls. Special generators have different trip generation characteristics and cannot be treated as regular employment generators. If treated like regular employment generators, the demand models they create can overwhelm nearby roads.

Researchers from the Transportation Research Center, University of Florida recently examined two modeling approaches for performing traffic impact analyses: the link distribution percentage method and the special generator method. Researchers used the Gainesville Metropolitan Transportation Planning Organization (MTPO) area as a test area and created scenarios to estimate potential vehicle trips from two hypothetical developments.

To test the link distribution method, researchers estimated the number of dwelling units and employment generators and inserted the information into a trip generation input file. Then they derived the development traffic percentage of each link in the impact area. The percentages were applied to the standard Institute of Transportation Engineers (ITE) trip generation of the development to determine traffic impact. To test the special generator method, researchers estimated trip generation based on the ITE trip generation manual and adjusted the estimate so that the trips reported in the model matched the ITE-based trip generation amounts. They then



Transportation planners estimate vehicle trips to plan for impacts to roadway capacity.

ran the traffic assignment model to quantify the impact of the development on the traffic network.

Researchers found that the two methods produced fairly consistent estimates of traffic impact. They found that while the link distribution method assumes the percentage pattern will remain relatively the same if a development generates more trips, the assumption may not be valid if the roadway network is congested, and if the FSUTMS and ITE estimates are substantially different. However, researchers found this assumption mostly held in various numerical experiments. Researchers also found that the link distribution method was easier to implement than the special generator method. Therefore, based on findings that demonstrate little difference in the results of the two analysis methods, researchers recommend that transportation planners use the less cumbersome link distribution percentage method to analyze traffic impacts of new developments.