

# Memorandum

**To:** Developers, Engineers, and Planners  
**From:** Gerald Green, AICP, MPC Executive Director (via Tarren Barrett, EIT, Transportation Engineer)  
**Date:** October 15, 2018  
**Subject:** Required Use of the ITE Trip Generation Manual 10<sup>th</sup> Edition for Traffic Impact Studies

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The purpose of this memo is to clarify that the 10<sup>th</sup> edition ITE Trip Generation Manual is now required for any Traffic Impact Study (TIS) submitted for a development reviewed by MPC. I am also clarifying when it is appropriate to use the fitted curve versus average rate, and the deadline for TIS submittal.

## **New ITE Trip Generation Manual 10<sup>th</sup> edition**

Appendix B of the Subdivision Regulations states that the latest edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual is the required source to determine trip generation rates for developments. ITE published the 10<sup>th</sup> edition of its *Trip Generation Manual* in September 2017. To allow other transportation engineers who use the manual for traffic impact studies time to purchase this update, MPC provided a 1-year grace period before requiring the use of the 10<sup>th</sup> edition. Therefore, September 2018 and forward the ITE Trip Generation Manual 10<sup>th</sup> edition must be used to determine trip rates for developments. The only land-use that still uses local trip generation worksheets is Multi-Family apartments. This requirement was communicated at a meeting with all area TIS preparers that was held in March 2018.

This manual is a reference tool for developers, engineers, planners, etc. to evaluate whether their development meets the requirements of a TIS in conformance with Appendix B of the Knoxville-Knox County Subdivision Regulations and the MPC Administrative Rules and Procedures. Per MPC Policy, “traffic access and impact studies shall be submitted along with applications for concept subdivision plan, use-on-review, and development plan requests which fall within the following 24-hr trip generation ranges.”

<b>24-Hr Trip Generation</b>	<b>Traffic Study Scope</b>
750-3000 ADT	Level I
3000-6000 ADT	Level II
>6000 ADT	Level III

**Clarification on the use of the fitted curve and average rate**

Most land uses contained in the ITE Trip Generation Manual list two methods for calculating trip rates – the “fitted curve” and the “average rate.” In comparing the fitted curve and average rate, the fitted curve looks at the “best fit” through the data points and the average rate is a weighted linear relationship between trips and the independent variable. Fitted curves are preferred over the average rate when an equation is given and at least 20 data points are provided. The average rate is preferred when there is no equation given and the standard deviation is less than or equal to 55 percent of the average rate. The R<sup>2</sup> value should be at least 0.75, if using the fitted curve, “because it indicates the recommended acceptable level of correlation between trips generated by a site and the value measured for an independent variable” (ITE Trip Generation Handbook, 3<sup>rd</sup> edition). As the R<sup>2</sup> value increases toward 1.0, the better the data fits to the equation.

As an example, 71 lots of Single-Family Detached Housing yields 759 trips with the fitted curve and when a traffic impact study would be warranted for this land use, whereas 71 lots yields 670 trips using the average rate. The fitted curve is preferred in this instance because the coefficient of determination (R<sup>2</sup>) is 0.95, which is higher than 0.75, and means the data from the equation is more reliable.

**Traffic Impact Study deadline**

In addition, it is stated twice (in both the Subdivision Regulations, pg B-2 to B-3, and the Administrative Rules, pg 33-34) that applicants should conduct a preliminary trip generation assessment well in advance of the submission of plans to MPC. Below are those statements.

“Applicants should conduct a preliminary trip generation assessment of any proposed concept plan, use-on-review, or development plan to determine if a traffic study will be required. This preliminary assessment should be conducted well in advance of the actual submission of plans.”

“Note: Since a completed traffic study must be submitted at the same time as the application for a development, it is critical that the applicant conduct steps 1-3 early in their planning of a proposed development. Failure to submit a traffic study, or submission of an inadequate study, is likely to slow the review process and may lead to postponements.”

As mentioned in Section 3 & 4 of the Subdivision Regulations and the MPC Administrative Rules, “the completed draft traffic study shall be submitted along with the development application and all other materials required for submission.”