

## **Traffic Impact Study Guidelines Dickson County, Tennessee**

Traffic studies are an effective tool used to help Dickson County determine potential impacts to the operation of the surrounding roadway infrastructure. Two (2) types of traffic studies are described in these guidelines: 1) a Traffic Assessment and 2) a Traffic Impact Study.

The reviewing authority is the Dickson County Planning Commission (Planning Commission.) Written recommendations on the applicable traffic study will be provided from the Planning Director and consulting staff to the Planning Commission along with the applicable traffic study. As a preliminary step, a preapplication conference will be conducted between the Planning Director and applicant to determine the specifics of the assumptions for the applicable traffic study, including but not limited to: types of land uses to assume for trip generation, any access concerns, availability of traffic counts, and general familiarity with these guidelines and applicable land use controls used by Dickson County, and the processes involved.

A Traffic Assessment (TA) is designed to be a preliminary assessment at the potential impacts of a rezoning request but requires a reduced amount of effort to produce. This assessment will assist the Planning Commission in determining the amount of potential impact that exists for a proposed zoning change and included in its recommendation to the County Commission for final decision on the zoning change.

A Traffic Impact Study (TIS) is a more detailed assessment document, requiring additional investigation and analysis. The TIS is required at the time of submission of a site plan, concept subdivision plan, preliminary plat, preliminary master plan, or any development as so determined by the Planning Director. A traffic impact study may include other relevant traffic studies, including but not limited to: signal warrant analysis, speed study, and signalized intersection level of service.

Either study categories are required to be performed and stamped by a Licensed Professional Engineer with experience in Traffic Engineering.

### **1. Traffic Assessment (TA) Study**

A *Traffic Assessment* shall be required for all rezoning applications if:

- a. Such a request involves a parcel of land (or if multiple parcels are included, the collective parcels of land) that exceeds the minimum acreage for the proposed zoning class as described in Article V of The Zoning Resolution of Dickson County, Tennessee;

- b. proposed land use permitted in said zoning change that requires at least twice as much acreage than the minimum acreage for the zone; or
- c. Any zone change of a parcel or parcels of real property exceeding five (5) acres from a less intense land use class or category to a more intense class or category shall require a traffic assessment study. *Example:* a zone change from the A-1 zone to any Residential (R-1, R-2, R-3, or RPUD), Commercial (C-1 or C-2), or Industrial zone (M-1 or M-2.)

The Planning Commission reserves the absolute discretion to request a Traffic Assessment to be submitted, regardless of the minimum acreage or unit requirements, due to the location of the site to be rezoned, potential foreseeable impact on existing public infrastructure, or other potential factors deemed appropriate to require the Assessment.

A Traffic Assessment shall not substitute for the Traffic Impact Study requirement, but its findings may contribute to the waiving of a Traffic Impact Study if so determined by the Planning Commission.

A Traffic Assessment is typically an analysis that includes the following sections:

- *General Site Description*
- *Trip Generation*
- *Roadway Conditions and Access Potential*
- *Conclusions*

***General Site Description***—This section should describe the size of the site (acreage and shape) requesting to be rezoned and details of the surrounding land uses and roadway access(es). This section should also state the specific zoning change requested, including existing zoning of the property(ies) in question and the proposed zoning for said property(ies).

***Trip Generation***—This section should calculate the Average Daily Traffic, morning peak hour traffic, and afternoon peak hour traffic that could potentially be generated by full development of the land use change. The *maximum density* allowed by the proposed zoning classification must be used when calculating the number of potential generated trips. The traffic engineering professional conducting the Assessment shall use information and procedures described in the latest edition of the Institute of Transportation Engineers (ITE) Trip Generation manual.

***Roadway Conditions and Access Potential***—This section should determine the classification of all the roadways and public infrastructure surrounding the site as defined by the latest Major Thoroughfare Plan and the Subdivision Regulations of

Dickson County, Tennessee for roadway definitions (refer to Article VI, Definitions in the Subdivision Regulations.) The capacity and quality of the roadway(s) involved in the proposed development should have a roadway segment level of service calculation using the methods described in the latest edition of the Highway Capacity Manual. Traffic volumes may be acquired from Tennessee Department of Transportation (TDOT) annual counts. Any potential safety hazard(s) or access concern(s), including sight distance at intersecting roads, should be identified and calculated based upon approach speed on the adjacent road as well as and in addition to the procedures described in the latest edition American Association of State Highway Transportation Officials (AASHTO) manual.

**Conclusions**—This section must offer an engineering opinion of the ability of the surrounding road network/infrastructure to support the potential traffic generated by the proposed zoning change and future development.

**Component of Rezoning Process:** Unless waived by the Planning Commission, the Traffic Assessment shall be considered part of a rezoning application process, per ART VIII, Section 8.090 of the Dickson County Zoning Resolution, at the time of the zoning application's final review and recommendation by the Planning Commission. Failure of the applicant to submit an approved Traffic Assessment or a written waiver shall result in the Planning Director and Staff's recommendation for Deferral of the rezoning petition. Deadline to submit to the Planning Director shall be no less than thirty (30) days prior to the date when the Planning Commission shall consider the rezoning request.

The Planning Commission may waive the requirement of a Traffic Assessment based upon one or more of, but not limited to, the following conditions:

- The commercial use (apartments, retail, office or industrial) remains the same, but the zoning is being changed to bring the zoning designation into conformance with the land use.
- The proposed rezoning results in fewer trips during the morning and evening road peak-hours at the entrances and key intersections along access routes compared to the same for the existing zoning.
- The proposed rezoning would result in less than an additional 100 trips in the peak hour at the driveway for the site compared to the existing zoning.

## 2. **Traffic Impact Study (TIS)**

A *Traffic Impact Study* shall be required for any of the following:

- a. Any development in excess of 25,000 square feet of floor space, or any subdivision of fifty (50) or more lots;
- b. Any development project reasonably foreseeable to add 150 or more new traffic trips per day to the existing roads providing access to and out of the proposed development;
- c. Any planned unit development;
- d. Major Subdivisions (as defined in Subdivision regulations) including but not limited to concept plan or preliminary plat when connecting to a state route with a speed limit greater than 30 mph; or

Waiver of Traffic Impact Study Requirement: Any traffic impact study required by these Guidelines may be waived by the Planning Director, subject to the review and consent of the Planning Commission, provided substantial evidence is presented in writing showing that the specific development proposed will not generate additional new traffic trips to warrant a Traffic Impact Study.

### **3. Traffic Impact Study Process**

- a. Whenever a traffic impact study is required by these guidelines and the corresponding regulations and ordinances, the applicant shall be provided a written copy of the Traffic Impact Study Guidelines. Deadline to submit to the Planning Director shall be no less than thirty (30) days prior to the date when the planning commission shall consider whichever review item the study is requested for per Section 2 above.
- b. Either the applicant or the Director Planning may request a traffic scoping meeting with the applicant and transportation engineer preparing the traffic impact study.
- c. The project's traffic impact study shall be submitted to Planning Commission with sufficient time for the Planning Commissioners to thoroughly read and analyze the traffic impact study prior to the Planning Commission's consideration of the application which required the traffic impact study for the project.
- d. A completed and approved traffic impact study shall be a prerequisite to final approval of the application which required the traffic impact study for the project. To that end, all traffic studies required by these guidelines and the corresponding regulations and resolutions must be completed and approved prior to or concurrently with approval of the application which required the traffic impact study for the project.

If the traffic impact study does not contain all the information provided in these guidelines, the applicant will be notified, and a revised study must be submitted. If after the study has been accepted but the proposed development is significantly altered, a revised study will be required for a new review.

#### 4. **Contents and Methods**

The Traffic Impact Study shall meet the following requirements:

- a. Project Description
  - i. Purpose and objectives of the study;
  - ii. Specific location including description and area mapping;
  - iii. Current site conditions and proposed use (number of lanes, lane widths including road shoulders, roadway classifications, speed limit, ditching or curb and gutter, sidewalks, zoning, proposed development size and type of development, availability of essential utilities, directional signage, etc.);
  - iv. Locations of existing and proposed access point(s), distances between each access and nearby driveways, etc.; and
  - v. Phasing and proposed timing of each phase.
- b. Examination of all signalized intersections within one-half (1/2) mile of the site, including major thoroughfares, which depending on the rural character of the area of the county the development is proposed, may require extending the radius to capture the first/nearest controlled intersection, and in circumstances where the radius overlaps into another local jurisdiction. List the Level of Service (LOS) for the overall intersection for signalized intersections and the LOS for all critical turning movements for unsignalized intersections. LOS calculations should be based on the latest Highway Capacity Manual (HCM)\*. For any intersections operating at LOS E or F, determine if there are feasible measures to improve the traffic operations.

*\*It is recommended to use the most current Highway Capacity Software (HCS), however, other traffic software packages such as Synchro, CorSim, and Sidra, so long as results from other applications are reported in HCM/HCS or Synchro formats.*

- c. Baseline Traffic Counts (i.e., existing traffic counts) shall be based on actual field data of current trip counts as follows:

- i. A typical weekday not on a state or federal holiday, and not during any period of uncommon circumstances that may render the base line traffic erroneously high or low compared to a typical weekday;
  - ii. If any school or schools are located within one-half ( $\frac{1}{2}$ ) mile of the site or within one-half ( $\frac{1}{2}$ ) mile of a signalized intersection within the site traffic impact study area, then in addition to all other applicable requirements traffic counts shall be taken on a day when such schools are in session;
  - iii. AM Peak 6:00 am to 9:00 am;
  - iv. Noon Hour 12:00 pm to 1:00 pm; and
  - v. PM Peak 4 pm to 7:00 pm.
- d. Project generated traffic shall be determined using the data and methodology defined in the Institute of Transportation Engineers (ITE) "Trip Generation Manual", 10<sup>th</sup> Edition or latest editions.
- e. Traffic forecasts for nearby projects planned or under construction within one-half ( $\frac{1}{2}$ ) mile of the site for a more cumulative impact analysis for the forecast. See also part g. below for cumulative impact expectations.
- f. Horizon Date, i.e., future date when proposed project is anticipated to become operational:
  - i. Three (3) and five (5) year forecasts for existing and project generated traffic provided by the Tennessee Department of Transportation (TDOT) for the five (5) counting periods prior to the study year. If such counts are not available, projections shall be based on special counts factored by an increase of three and one-half percent (3.5%) per year to reach the required projection year;
  - ii. A traffic impact study shall be updated with a new revised horizon date whenever the proposed project is not fully operational by the end of the latest Horizon Date set forth in the project traffic impact study.
- g. Cumulative Impacts: Reasonably foreseeable traffic impacts generated by previously approved projects or projects under construction in the study area that are not yet operational but which are expected to be operational within the Horizon Date of the proposed project.
  - i. *Cumulative Projects List*: At the time of the preapplication conference, the Planning Director shall provide the applicant a list of all recently approved projects and projects under construction within the traffic impact study area of the proposed project, and assist the applicant in obtaining an identical list from any other municipal jurisdictions within the study area; and

- ii. The cumulative project trip generation shall be the existing baseline trips, project-related trips, project future growth trips, and trips generated by all projects on the Cumulative Projects List.

*h. Passenger Car Equivalency Calculations*

- i. In counting project-generated traffic trips and cumulative project traffic trips, busses, construction-type trucks, three or more axle trucks, and/or any other vehicles that have greater per-vehicle traffic impacts than the per-vehicle impacts of passenger cars shall not be counted equal to passenger car trips.
- ii. Traffic studies shall employ passenger equivalency calculations of not less than 2 to 1 and adjustments to the trip calculations and impact assessments to account for the greater per-vehicle impacts of busses, construction-type trucks, three or more axle trucks, and/or any other vehicles that have greater per-vehicle traffic impacts than the per-vehicle impacts of passenger cars.

*i. Conclusions and Recommendations*

Identify and include of the following details provided by this traffic impact analysis:

- i. Any recommended roadway improvements, including roadway widening, turn lanes/deceleration lanes, new roadway connections and extensions, etc. Specify turn lane storage lengths, taper and transition lengths, and lane widths.
- ii. Any modifications to existing or additions of new traffic control devices. Include from the LOS analysis if there are prescribed measures to improve the LOS.
- iii. A list of site access evaluations and recommendations.
- iv. Scheduled improvements to be performed by a governmental entity. Clearly identify the funding sources for these improvements.
- v. Timing for the completion of the recommendations. Timing should be based on logical construction phasing for buildout schedule and when the improvements are needed.