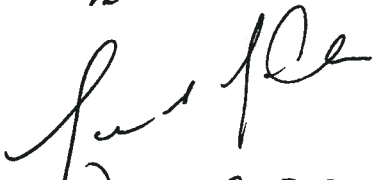


## TRAFFIC IMPACT ANALYSIS GUIDELINES

CITY OF TOMBALL, TEXAS  
DECEMBER 2008

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DIRECTOR OF EEP  
CITY OF TOMBALL

PURPOSE OF THE GUIDELINES

The City may require a traffic impact analysis (TIA) if it is determined a development could have a significant impact on the street system in the vicinity of the development.

The purpose of these guidelines is:

- To describe the purpose of the TIA
- To determine when a TIA is required, and
- To describe the minimum requirements of the TIA

PURPOSE OF THE TIA

A TIA is often necessary to define the magnitude of the projected impact of a proposed development on the traffic operations of the roadways and intersections in the vicinity of the development. If the impact of the development is significant, a TIA will also determine the improvements to the roadway system that are necessary to accommodate the traffic in the site vicinity.

WHEN A TIA IS REQUIRED

**TIA Trip Generation Worksheet**

A completed TIA Trip Generation Worksheet (included herein) shall be submitted with each plat and/or site plan that does not have an approved TIA on file with the City for the development. Upon review of this worksheet, the Engineering & Planning department will make the final determination regarding the need for a TIA. The Trip Generation Worksheet shall be completed using the latest edition of the ITE Trip Generation Manual.

If the type of development use is not known at the time of the submittal, the applicant should make assumptions based on the worst-case scenario for the site. If this is the case, the following items shall be evaluated at a minimum:

- The type of land use allowed by the city's zoning criteria for the site.
- The maximum amount of developable land based on setbacks and other restrictions (ie: detention, etc.)
- Logical assumptions by the developer
- Adjacent land uses

If the proposed development is not listed in the ITE Trip Generation Manual, a letter documenting the type of development and identifying the number of trips generated shall be submitted in lieu of the Trip Generation Worksheet. This letter shall be written, signed and sealed by a professional engineer with adequate experience in transportation/traffic engineering.

### **TIA Requirement Thresholds**

The City may require a TIA for a proposed development under the following conditions:

- The development is projected to generate 1,000 or more vehicular trips in a 24-hour period.
- The development is projected to generate 100 or more vehicular trips in the peak hour.
- The development involves an area of 100 acres or more.
- The development is a proposed and/or modified school.
- The development is a shopping center of 100,000 square feet or more.
- Planned Development (PD) requests
- Rezoning requests
- If requested by the Director of Engineering & Planning, City Planner or the Planning and Zoning Commission.

If it is determined that a TIA must be performed, the Developer and their qualified consulting engineer shall schedule a meeting with the City's Engineering & Planning Department to determine the scope of the TIA and the requirements for the TIA content. Any work on the TIA completed prior to meeting with the City is at the applicant's risk and the City reserves the right to have the applicant revise the TIA without a formal review or comments.

### MINIMUM REQUIREMENTS OF A TIA

As a minimum, a TIA prepared for the City should include the following:

- ***Existing Conditions:*** a description of the study area including roadways and development and an analysis of the traffic operations at significant intersections. The study area shall be based on the characteristics of the surrounding area. The traffic engineer preparing the study shall determine the limits of the study area (including the intersections to be analyzed). The Director of Engineering & Planning must approve the limits of the study area prior to proceeding with the study.
- ***Proposed Development:*** a description of the proposed development, calculation of the projected trips generated by the proposed development, and the projected distribution of the generated trips to the roadway network.

- **Capacity Analysis** – Capacity analysis must be performed at each of the major streets and project site access intersection locations (signalized and unsignalized) within the study area. Signalized intersections in coordinated systems must be analyzed as a system. In addition, analysis must be completed for roadway segments considered sensitive to site traffic within the study area. The operational analysis and methodology in the current version of the “Highway Capacity Manual, Special Report 209” (Transportation Research Board, National Research Council, Washington, D.C.) should be used for analyzing existing conditions, traffic impacts, access requirements, or other future conditions for which traffic, geometric and control parameters can be established.
  - No-Build Traffic Analysis: an analysis of the projected traffic conditions in the study area at the build-out year if the proposed development is not developed. The “build-out year” is the anticipated opening year of the development, assuming full build-out and occupancy.
  - Build Traffic Analysis: an analysis of the projected traffic conditions in the study area at the build-out year if the proposed development is developed.

The recommendations of the traffic impact shall provide safe and efficient movement of traffic to and from and within and past the proposed development, while minimizing the impact to non-site trips. The current levels of service (as defined by the Highway Capacity Manual) must:

1. Be maintained if they are “C” or less, and
  2. Not deteriorate to worse than “C” if they are currently “A” or “B”.
- **Proposed Improvements:** a description of the proposed improvements in the study area, as necessary, and an analysis of the projected traffic conditions in the site vicinity with the improvements.
  - **Conclusions:** a summary of the key findings and recommendations in the TIA.

If the proposed development includes multiple phases of development, the TIA may need to analyze the no-build traffic conditions, the build traffic conditions, and the proposed improvements for multiple phases.

TIA reports shall be completed, signed and sealed by a professional engineer registered in the State of Texas with adequate experience in transportation/ traffic engineering.

Development abutting Harris County and/or TxDOT-owned rights-of-way may be subject to additional TIA guidelines, and shall adhere to the more restrictive guidelines.

## City of Tomball Trip Generation Worksheet

This form shall be completed as an aid to determine if the proposed development requires a traffic impact analysis (TIA).

Project Name:	
Location:	
Applicant / Contact:	
Contact Phone Number:	
Contact E-mail:	

Anticipated Land Use	ITE Code	Unit <sup>1</sup>	24-Hour		AM Peak Hour		PM Peak Hour	
			Rate <sup>2</sup>	Trips <sup>3</sup>	Rate <sup>2</sup>	Trips <sup>3</sup>	Rate <sup>2</sup>	Trips <sup>3</sup>
Total	-	-	-		-		-	

<sup>1</sup>Unit is the variable (dwelling units, square feet, employees, etc.) for which the anticipated land use is to be evaluated.

<sup>2</sup>All rates shall be the trip generation rates published in the latest edition of the ITE trip generation manual.

<sup>3</sup>The product of the unit and the rate equals the trips for each anticipated land use.

The thresholds used to determine when a TIA is necessary are contained in the City of Tomball Traffic Impact Analysis Guidelines which is available at:

[http://www.ci.tomball.tx.us/engineering-planning/development\\_docs/tiaguidelines](http://www.ci.tomball.tx.us/engineering-planning/development_docs/tiaguidelines).

Applicant's Signature: \_\_\_\_\_

Date: \_\_\_\_\_

For signalized and unsignalized intersections, LOS can be calculated using the methodology from the Highway Capacity Manual, Transportation Research Board, 2000. Each LOS corresponds to a range of delay. LOS worsens as delay increases. Corresponding LOS and ranges of delay for unsignalized and signalized intersections is listed in **Table 2** and **Table 3**, respectively.

**Table 2:** *Level of Service Criteria for Unsignalized Intersections.*

Level of Service	Control Delay Range (seconds)
A	$\leq 10$
B	$>10$ and $\leq 15$
C	$>15$ and $\leq 25$
D	$>25$ and $\leq 35$
E	$>35$ and $\leq 50$
F	$> 50$

**Table 3** *Level of Service Criteria for Signalized Intersections.*

Level of Service	Control Delay Range (seconds)
A	$\leq 10$
B	$>10$ and $\leq 20$
C	$>20$ and $\leq 35$
D	$>35$ and $\leq 55$
E	$>55$ and $\leq 80$
F	$> 80$