



MEMO

October 1, 2024

To: District Engineers

From: Jason Pike, P.E.
Director, Design Division

DocuSigned by:

Jason Pike

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Subject: Driveway Permitting: Form 2534 and Traffic Engineering Studies, Including Traffic Impact Analyses (TIAs)

The Texas Department of Transportation (TxDOT) is introducing an updated Form 2534, Minor Traffic Engineering Studies, and Traffic Impact Analysis (TIA) guidance for use in the driveway permitting process. The intent of this guidance, coupled with the recent release of the *TxDOT Traffic and Safety Analysis Procedures (TSAP) Manual*, will provide Districts with a more streamlined process to determine if a Traffic Engineering Study is needed, and the level of detail required.

The respective TxDOT District will always maintain the discretion to require a greater or lesser amount of detail with respect to these analyses and/or adjust traffic volume thresholds based on their experience with specific types of traffic generators, the level of development and density in the area, and the resultant safety and operational and mitigation impacts. The traffic volume thresholds below are recommended values; the District maintains the discretion to either require or waive the 2534 Form, a Minor Traffic Engineering Study, or a TIA.

Form 2534, Minor Traffic Engineering Studies and TIAs (Major Traffic Engineering Study)

Overview

Traffic Engineering studies or analyses can be used to assist in the evaluation of future access connections to the state highway system. In many cases, such as low volume or rural access connections, or where the projected generated traffic in the peak hour period is minimal, a traffic engineering study may not be needed. For locations where TxDOT is the permitting authority, the need for a traffic engineering study, and the level of detail, will be determined by the respective TxDOT District. The District may also consult with the Highway Safety and Operations Branch of the Design Division to resolve any questions in regard to the level of any needed traffic engineering studies.

The purpose of a traffic engineering study is to determine the safety, mobility, and operational impacts that the access connection will have on the highway system. While not applicable to TxDOT, municipalities may require that such studies also determine the compatibility between the proposed land use and the transportation network.

Change in Land Use at Existing Driveway

If a proposed change in an existing site or land use results in anticipated deleterious changes in traffic generated and/or traffic patterns the existing driveway permit will no longer be considered in effect. The development will have to submit a new request for driveway access. The reassessment will be done in accordance with the guidance provided below, as determined by the District. The District may waive the reassessment of the driveway permit and the procedures below if in their opinion the change in land use would not increase generated traffic and/or negatively change traffic patterns.

Early Coordination

As early as possible in the development process, applicants are encouraged to meet with the local TxDOT district staff, and the municipality (if applicable) to discuss specific requirements associated with obtaining access to the state highway system. This meeting, in addition to bringing all affected parties together regarding access connection issues, will also help to define the requirements of any needed traffic engineering study.

Form 2534 is Not Recommended

Driveway access and development that result in anticipated minimal trip generation (less than 20 vehicles per day) during the highest peak day period do not require the use of a 2534 Form. Examples may include a single residential development, single farm/ranch operation, or a utility maintenance access.

Form 2534 is Recommended

For proposed Commercial, multi-residential, and Industrial driveways, with anticipated 20 or greater vehicles per day, the Form 2534 provides an initial assessment from which a decision can be made (1) about the access request; (2) about whether additional location specific information is needed; or (3) about whether a Minor Traffic Engineering Study (Technical Memorandum) or Traffic Impact Analysis (TIA) must be conducted. Use of the 2534 Form does not require an engineer's seal. The 2534 Form is provided in Attachment A.

The latest edition of the *ITE Trip Generation Manual* is the standard for the determination of the number of trips generated in the highest peak hour period. Chapter 16 of the *TxDOT Traffic and Safety Analysis Procedures (TSAP) Manual* provides additional information with respect to the recommended practice with respect to trip generation including the use of internal capture, and pass-by-trips. Example typical land uses that generate approximately 50 – 100 trips in the peak hour period are provided in the Table below.

LAND USE	ITE TGM Code	50 TRIPS (approx.)	100 TRIPS (approx.)
Single Family Detached Housing	210	48 (DU)	100 (DU)
Multifamily (Low Rise)	220	70 (DU)	185 (DU)
Multifamily (Mid Rise)	221	130 (DU)	255 (DU)
Multifamily (High Rise)	222	156 (DU)	310 (DU)
Strip Retail Plaza (< 40K GLA)	822	7,500 (SF)	15,200 (SF)
Fast Food Rest. with Drive Thru Window (GFA)	934	1,100 (SF)	2,250(SF)
General Office Building (GFA)	710	24,000 (SF)	55,000 (SF)
Gas Station w/ Convenience Store (Fueling Positions)	945	3 (Fueling Positions)	6 (Fueling Positions)
Warehousing (GFA)	150	277,500 (SF)	555,000 (SF)

GLA: Gross Leasable Area; GFA: Gross Floor Area; DU: Dwelling Units; SF: Square Footage

Recommended Exempt from Minor Traffic Engineering Study

The data submitted in Form 2534 indicates the proposed development will generate fewer than 50 trips in the highest peak hour period. The District though, maintains the discretion to request a Minor Traffic Engineering Study if they determine possible safety and/or operational issues.

Minor Traffic Engineering Study (Technical Memorandum) is recommended

The data submitted in Form 2534 indicates the proposed development will generate between 50 – 99 trips in the highest peak hour period. In this case a Minor Traffic Engineering Study in the form of a technical memorandum would be recommended. The items recommended in the Technical Memorandum are shown in Attachment B. The technical memorandum is required to be signed and sealed by a Professional Engineer licensed by the State of Texas.

TIA (Major Traffic Engineering Study) is Recommended

The data submitted in Form 2534 indicates the proposed development generates 100 trips or greater trips in the highest peak hour period. In this case a formal TIA would be recommended; the recommended level of detail and analysis (including safety analysis), checklist, outline, and examples for the TIA are provided in Chapter 16 and Appendix Q of the *TxDOT Traffic and Safety Analysis Procedures (TSAP) Manual*. The TIA is required to be signed and sealed by a Professional Engineer licensed by the State of Texas.

The Table below encapsulates this guidance in total.

Peak Period Trip Generation Range	Actions	Documentation
Less than 20 vehicles per day	Form 2534 not recommended	None
20 vehicles per day through 49 vehicles per hour (vph)	Form 2534 recommended; No Minor Traffic Engineering Study or TIA are recommended	Approved Form 2534
50 vph- 99 vph	Minor Traffic Engineering Study recommended	Approved Form 2534, and Minor Traffic Engineering Study
100 vph or greater	TIA recommended	Approved Form 2534, and Reference TxDOT TSAP Manual Chapter 16 for TIA requirements

Note: The District always maintains the discretion to either require or waive the 2534 Form, a Minor Traffic Engineering Study, or a TIA.

The implementation timeline for this updated guidance is 6 months to allow for a normalization process to allow Districts to integrate into their procedures and will also allow for additional outreach and information sharing. This normalization period is to extend through March 31, 2025. Districts may implement this guidance sooner if desired.

District Engineers

5

October 1, 2024

The intent is that this updated guidance will provide Districts with additional tools to streamline the assessment of driveway permit applications. Additionally, Statewide webinar training and related FAQs will be provided on these updates. For any questions regarding this guidance please contact Kenneth Mora, P.E. (DES-PDS), (512) 416-2678.

CC: Lance Simmons, P.E., ADM
Carl Johnson, P.E., ADM
Mo Bur, P.E., ADM
Jessica Butler, P.E. ADM
Division Directors
TP&D Directors
Area Engineers
Directors of Maintenance
Maintenance Engineers
Traffic Engineers
Ed Burgos, FHWA
Ujval Patel, FHWA

ATTACHMENT A – 2534 FORM



Traffic Engineering Study Checklist

A Traffic Engineering Study for the proposed development(s)(Project) can be required based on the estimated trip generation for the site or at the discretion of the TxDOT District. The Applicant/Representative for the project shall submit this form along with the site plan and aerial map to the **Maintenance Office** who will then route it to the applicable Section to determine if a traffic engineering study is required. Once the applicant/representative is notified if a traffic engineering study is required based on the TxDOT Guidelines, then the applicant/representative should initiate the traffic engineering study scoping process.

The **approved 2534 Form** must be included in the Appendix of any traffic engineering study (minor or TIA) that may be required by the District.

Date: _____

Project Name: _____

Tracking Number (if applicable): _____

Property Address/Location:

District: _____

County: _____

Hwy Name: _____

Project Description: _____

Property Owner: _____

Property Owner Address: _____

Property Owner Email: _____

Property Owner Phone No.: _____

Applicant/Representative Name: _____

Representative Firm (if applicable): _____

Contact Address: _____

Contact Phone No.: _____ **Contact Email:** _____

Additional Comments:

Typical Land Use Sizes that Generate Approximately 50 and 100 Trips in a Peak Hour

LAND USE	ITE TGM Code	50 TRIPS (approx.)	100 TRIPS (approx.)
Single Family Detached Housing	210	48 (DU)	100 (DU)
Multifamily (Low Rise)	220	70 (DU)	185 (DU)
Multifamily (Mid Rise)	221	130 (DU)	255 (DU)
Multifamily (High Rise)	222	156 (DU)	310 (DU)
Strip Retail Plaza (<40K GLA)	822	7,500 (SF)	15,200 (SF)
Fast Food Rest. with Drive Thru Window (GFA)	934	1,100 (SF)	2,250 (SF)
General Office Building (GFA)	710	24,000 (SF)	55,000 (SF)
Gas Station w/ Convenience Store (Fueling Positions)	945	3 (Fueling Positions)	6 (Fueling Positions)
Warehousing (GFA)	150	277,500 (SF)	555,000 (SF)

*Average Rate for the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition

SF: Square Footage

DU: Dwelling Units: a residential location such as a house, apartment, condominium, townhouse, mobile home, or manufactured home in which people may live.

GLA: Gross Leasable Area: The total floor area designed for tenant occupancy and exclusive use, including any basements, mezzanines, or upper floors, expressed in square feet and measured from the centerline of joint partitions and from outside wall faces.

GFA: Gross Floor Area: The sum of the area of each floor level of a building (expressed in square feet), including cellars, basements, mezzanines, penthouses, corridors, lobbies, stores, and offices, that are within the principal outside faces of exterior walls, not including architectural setbacks or projections.

Reference Chapter 4 of the ITE Trip Generation Manual for a full list of Definition of Terms.

Full Build Out Year

The full build out year should account for the development to be constructed and substantially occupied.

Build Out Year: _____

Annual Growth Rate

Provide the annual growth rate(s) that will be used for the analysis and the methodology for obtaining it.

Annual Growth Rate: _____

Methodology:

Adjustment Factor

Is an Adjustment Factor needed? Yes No

Provide the reason(s) for the adjustment factor and the methodology to determine the adjustment factor.

Adjustment Factor: _____

Methodology:

Phased Developments

Is the development going to be phased? Yes No

If so, how will it be phased?

Site Access

Is your Site Plan attached? Yes No

Is your Aerial attached? Yes No

Identify driveway widths, driveway radii, and access connections spacing, and posted speed limit on the site plan.

How many access connections are being proposed?

What type of access is being requested (e.g., Full access, right-in/right-out)?

What is the Average Daily Traffic (ADT) for the adjacent roadway?

ADT can be found using TxDOT Statewide Planning Map and/or TxDOT STARS II:

Statewide Planning Map: _____

TxDOT STARS II: _____

Planned Roadway Improvements

Have you reviewed the known TxDOT planned roadway improvements through Project Tracker? Yes No

Have you reviewed known non-TxDOT planned projects? Yes No

Identify all known local and TxDOT planned roadway improvements.

For TxDOT District Use Only

Project Name: _____

Tracking Number: _____

- An approved Form 2534 is required ONLY**
- A Minor Traffic Engineering Study is required
(See TxDOT Minor Traffic Engineering Study Technical Memorandum Format)**
- A TIA is required (See TxDOT TSAP Manual Chapter 16 for guidelines)**
- Rejected (See Additional Comments)**

Additional Comments:

TxDOT Traffic Engineering Study Checklist Approver Signature

Date

**ATTACHMENT B – MINOR TRAFFIC ENGINEERING STUDY
– TECHNICAL MEMO FORMAT**

MINOR TRAFFIC ENGINEERING STUDY -TECHNICAL MEMORANDUM FORMAT

Suggested Minor Traffic Engineering Study (Technical Memorandum Format)

Minor Traffic Engineering Studies are intended to be submitted in a brief technical memorandum format (typically 3-7 pages of text not including the Appendices). A table of contents and executive summary is not required. Appendices can be of any length. The District maintains the discretion to waive any elements of the technical memorandum that are not deemed necessary. The Technical Memorandum must be signed and sealed by a Texas PE. The suggested format for a technical memorandum includes:

1. Introduction
2. Proposed Development
3. Existing Conditions
4. Projected Traffic
5. Trip Generation/Distribution
6. Traffic Operations Analysis (Capacity Analysis (LOS)) Results (If needed)
7. Sight Distance/Turn Lane Analysis
8. Signal Warrants (if needed)
9. Safety Analysis (Reference *TxDOT TSAP Manual* Chapters 5, 6, and 16.)
10. Conclusions and Recommendations
11. Appendices
 - a. Project Site Plan,
 - b. Raw and summarized traffic data collected for the analysis,
 - c. Trip Generation and Distribution details,
 - d. Reports from TE software and any other software,
 - e. Site photographs, and documents
 - f. Relevant references to the study.
 - g. Approved 2534 Form