TRAFFIC IMPACT ANALYSIS GUIDELINES

TOWN OF ADDISON, TEXAS

OVERVIEW

The purpose of a Traffic Impact Analysis (TIA) is to identify the effects of a development proposal on the operation of the roadway system in the area surrounding it and any remedies necessary to address these issues. The transportation network in the Town of Addison is largely built-out, but the city continues to be a desirable place to live and do business, so there is demand for:

- New development on the few remaining vacant parcels
- Redevelopment on properties that are under-utilized or not performing well in the marketplace
- Changes of use in existing buildings

Any of these scenarios could potentially lead to unacceptable impacts on the transportation system. The City and the developer must have an understanding of both these impacts and the tools and techniques necessary to address them.

The purpose of a TIA, and the City's goal, is to:

- Evaluate the effects of new development/redevelopment on the existing and planned transportation network
- Ensure that city streets operate as safely and efficiently as possible after development or redevelopment occurs
- Balance and coordinate the proposed land use with the city's transportation network
- Provide safe and adequate site access
- Ensure connectivity of the development with the existing and proposed transportation system
- Minimize traffic delays
- Prevent vehicle conflicts/crashes to the extent possible
- Reduce emissions that pollute the air
- Minimize cut-through traffic in neighborhoods
- Identify measures that can help mitigate any negative impacts
- Provide information to city officials and developers about these impacts and possible mitigation measures so that informed decisions can be made on development applications
- Protect the community's investment in the transportation system

Negative impacts on the City's transportation network must be addressed not only to preserve the safety and efficiency of the system, but also to maintain the overall quality of life in the community and the attractiveness of Addison for new commercial and residential development and redevelopment.

The determination of the requirement for a TIA will be made by the Director of Development Services at the pre-submittal conference. The level of detail required will be determined by the Director based on information provided at the pre-submittal conference, in particular, trip generation for the existing and proposed development and capacity of the existing and proposed transportation system.

The City and the applicant must consider many factors in a thorough assessment of the traffic impacts of a development:

- The character of the existing and future roadway system
- Existing and projected traffic volumes in the area of impact
- Traffic that will be on the roadway regardless of the outcome of the development application (background traffic)
- Traffic generated by existing and proposed development
- Full build-out conditions of the City
- Improvements required under the City's Transportation Plan
- Improvements included in the City's Capital Improvement Plan

Some applications will not meet the requirements for a TIA. Others, such as the conversion of space or the development of a use that has unique traffic flow characteristics, may require a fairly simple analysis. A new development on vacant land or the redevelopment of property at a higher density than the previous use or other proposals that could create additional or significant traffic changes to existing traffic conditions could require modeling. Where an applicant feels that a proposal does not meet the criteria for a TIA, or where the criteria are met but there are unique circumstances, that applicant may request a waiver to the requirement (see below).

Often, relatively small improvements or mitigation measures—the construction of dual left-turn lanes, free-moving right-turn lanes or acceleration/deceleration lanes, driveway or median modifications or the use of traffic calming techniques—can be very effective in addressing negative traffic impacts. In other cases, the construction of new streets or the installation of new traffic control devices may be necessary to maintain desirable operating levels on city streets. The end product of the TIA will be a report and recommendation of the measures necessary, if any, to preserve or improve the operation of the local transportation system.

DEFINITIONS

Access Management – A system which controls the number and spacing of driveways and median openings to minimize traffic conflicts and reduce the number of traffic accidents.

Accident Analysis – A summary of the accident history on a roadway during a specified period of time.

Background Traffic – The volume of through traffic existing or projected on a roadway exclusive of the traffic from the development proposal under study.

Capacity – The maximum number of vehicles that can pass a given point during a one-hour time period under typical roadway and traffic conditions.

City Traffic Engineer – The City's appointed Traffic Engineer or his/her designee.

Directional Split – The percentage of traffic (based on the projected trip generation for the proposed use) entering or exiting a site from the north, south, east or west, as applicable.

Director of Development Services (Director) – The City's appointed Director of Development Services or his/her representative or designee.

Driveway Analysis - An evaluation of the turning movements at a particular driveway, including the number of turning movements, the direction of the turns, the time of day, etc.

Existing Traffic Volume – Recent traffic counts for existing thoroughfares and major intersections.

Horizon Year – 2035 or the date of NCTCOG's current Mobility Plan including amendments.

Level of Service – A qualitative measure of traffic operating conditions based on such factors as speed and travel time, freedom to maneuver, traffic interruption and delay, comfort and convenience and safety as determined by the current edition of the Transportation Research Board (TRB) Highway Capacity Manual, Special Report 209 and expressed as Level of Service A (operating at highest efficiency) through Level of Service F (operating at a very unacceptable level of service), including Level of Service E.

Mitigation Measures – Steps that can be taken or improvements that can be made to minimize the impacts of traffic from a proposed development on the adjacent street

Modal Split – The percentage of trips generated by a development using each of various modes of travel (automobile, bus, transit, bicycle, on foot).

Peak Period – the one hour during the two-hour period of time in the morning and in the evening of a representative weekday or weekend day during which the highest volume of traffic is generated by a site (peak hour of generator) or is present on the adjacent roadway (peak hour of adjacent roadway); for example, the peak hour of the adjacent roadway on a weekday is likely to occur in the 7:00-9:00 AM period (AM peak) and the 4:00-6:00 PM (PM peak), while the peak hour of a trip generator such as a movie theater may occur in the 7:00-8:00 PM period on a Saturday).

Queuing Analysis – An analysis of vehicle stacking and required lane storage lengths.

Study Area – The street network and land uses within a __-mile radius of the boundaries of the property under consideration, including the principal intersections, roadway segments and development, both existing and proposed.

Sight Distance – The length of the roadway visible to the driver.

Target Year – Year of completion of the project

Traffic Assignment – The assignment of site-generated traffic to specific roadways.

Traffic Control Device – A sign, signal, marking or other device erected or installed for the purpose of regulating, warning or guiding vehicular or pedestrian traffic movements.

Traffic Impact Analysis – An evaluation of the potential impacts of new development on the transportation system serving the site under consideration based on existing and projected traffic conditions and improvement projects, trip generation rates by land use type, etc. for the purpose of determining what, if any, mitigation measures may be required in order for the roadway network to function in a safe and efficient manner.

Traffic Modeling – The use of a computer model to provide detailed analysis of the interaction between traffic, roadway geometry and traffic control devices (sometimes referred to as a Traffic Simulation or Travel Demand Forecasting Model).

Travel Demand Forecasting Model – A computer model used to project travel demand based on the trip-generating characteristics of various land uses.

Trip Generation – The number of one-way vehicle trips related to a land use or development associated with such variables building size, use/type of activity, number of employees, land area, etc.

Turn Lane Analysis – An evaluation of the turning movements at a particular intersection, including the number of turning movements, the direction of the turns, the time of day, etc.

Vehicle Trip – A one-way movement of a vehicle between two points.

Volume/Capacity Ratio (V/C) – The ratio of traffic volume to the capacity of a roadway.

APPLICABILITY OF TIA REQUIREMENTS

A Traffic Impact Analysis will be required for a zoning or development proposals that meets the following criteria:

- An application that would generate 1,000 or more new vehicle trips per day
- An application that would generate 150 or more vehicle trips during the AM or PM peak hour
- An application for any of the following uses, which have unique trip generation and peak hour characteristics:
    - Public/Private school or child care facility (day nursery)
    - Restaurant with drive-through service

    - Movie theater
- An application for a development or land use change that provides ingress or egress to any of the following roadways within the Town of Addison:
    - Belt Line Road
    - Dallas Parkway service roads
    - Marsh Lane
    - Midway Road

Notwithstanding the above, the Director of Infrastructure and Development Services may require a TIA under any of the following circumstances if deemed necessary to ensure safe traffic flow or minimize congestion:

- Where traffic volumes on existing roadways within the Study Area are creating undue congestion
- Where accident rates have been historically high
- Where there are turn-lane, driveway or other operational issues involving the street network within the Study Area
- Where the Director, in consultation with the City Traffic Engineer, if appropriate, determines that unique situations or conditions warrant a TIA

WAIVER OF TIA REQUIREMENT

Where an applicant feels that a proposal does not meet the criteria for a TIA, the applicant may request a TIA waiver at the pre-submittal conference with the Director of Development Services. The request must be accompanied by sufficient information about the existing and proposed zoning and development for the waiver to be considered, including trip generation and other pertinent information. A TIA waiver may be granted or a simple TIA may be allowed, but is not required to be granted or allowed, under certain conditions, such as:

- If the proposal generates sufficient trips to require a TIA, but another recent TIA provides enough information for a determination to be made on the new proposal with a simple update
- If the proposal generates sufficient trips to require a TIA, but there is considerable unused capacity on the adjacent roadways both currently and as projected in the future
- At the Director's discretion, provided the waiver can be supported with the information provided

If the TIA is waived, the application for zoning/rezoning or development/redevelopment must include the approved waiver form, signed by the Director.

DATA SOURCES

The following generally accepted data sources should be used to prepare the TIA:

- Trip generation rates – ITE Trip Generation Handbook(s), 9th edition

- Horizon year traffic volume projections – Current NCTCOG Regional Mobility Plan (minimum 25-year plan horizon)
- Master Transportation Plan – Town of Addison
- Future land use assumptions – Town of Addison
- Transit mode share assumptions – Town of Addison in consultation with the applicant
- Auto occupancy rates – NCTCOG
- Percentage of horizon year daily traffic volume in the peak hours – NCTCOG
- Capacity analysis procedures – Current Transportation Research Board (TRB) Highway Capacity Manual, Special Report 209
- Signal warrants – Texas Manual on Uniform Traffic Control Devices (MUTCD)
- Signal timing procedures – Town of Addison's current signal timing model

RESPONSIBILITY FOR PREPARATION AND REVIEW

The TIA must be prepared by a Licensed Professional Engineer registered in the State of Texas for review by the City Development Services Department or designee.

TIA STANDARDS

The following standards will apply in the development of a TIA:

- Study Area boundaries consistent with the criteria herein, including the next major signalized intersection beyond the Study Area boundaries
- Target year for completion of the project
- Characteristics of the existing roadway
- Proposed/Planned transportation improvements that could affect the Study Area and the timing of those improvements
- Background traffic levels
- Traffic volumes associated with existing developments
- 100% build-out of the city
- .6 FAR for vacant land
- Volume/Capacity ratios
- Minimum acceptable Level of Service D
- ITE trip generation rates
- Traffic volumes during the AM and PM peak hours on the adjacent roadways
- Turning movement counts
- Town of Addison access management standards

- Accident analysis for the Study Area, if appropriate
- Modal split (automobile, transit, bicycle, pedestrian, etc.)
- Directional split

METHODOLOGY

The analysis will address all of the following in the final report unless waived by the Director of Development Services:

- Site location/characteristics
- Study Area boundaries
- Existing zoning
- Existing development
- Proposed zoning
- Proposed development
- Existing transportation system
- City's Master Transportation Plan
- Planned transportation improvements and timing
- Existing traffic volumes
- Projected traffic volumes
- Existing site trip generation
- Proposed site trip generation
- Net change in trip generation
- Trip distribution and traffic assignment
- Intersection/Turn lane analysis
- Driveway/Turn lane analysis
- Queuing analysis, if appropriate
- Level of service evaluation
- Traffic signal evaluation
- Proposed mitigation measures
- Conclusions
- Recommendations

REPORT FORMAT

The application must include a report of the findings and recommendations with the following components:

- Introduction
- Executive Summary
- Existing and Proposed Land Use
- Existing and Proposed Transportation System
- Site Traffic Characteristics
- Traffic Analysis
- Proposed Mitigation Measures
- Conclusions
- Recommendations
- Appendices

POTENTIAL MITIGATION MEASURES

Where existing or potential traffic problems are identified in the TIA, the report must include possible mitigation measures that will help maintain safe and efficient traffic flow on Addison streets. These measures may include, but are not limited to:

- Modification of the zoning/rezoning or development/redevelopment proposal
- A plan for the staging of construction to coincide with the completion of traffic improvements necessary to accommodate the development
- The construction of off-site improvements (intersection modifications, acceleration/deceleration lanes, traffic control devices, median closures or modifications, etc.)
- The construction of on-site improvements (changes to the internal site circulation to minimize impacts on the adjacent roadway, elimination or consolidation of driveways, etc.)
- Other reasonable measures not listed herein

ADMINISTRATION

Based on the results of the TIA, the City may take one or more of the following actions:

- Approve the development application
- Approve the development application subject to a phasing plan tied to the completion of specific traffic improvements or other pertinent criteria
- Recommend/Request revisions to the TIA and/or the development proposal to address the impacts of the proposed development on the adjacent roadways

- Recommend review of the Master Transportation Plan prior to approval of the development application
- Recommend amendment of the Capital Improvements Plan to include the improvements necessary to accommodate the proposed development
- Deny the application

COST OF TIA PREPARATION AND FEE FOR CITY REVIEW

The applicant will be responsible for:

- All costs associated with the preparation of the TIA
- Please refer to the fee schedule for the administrative fee for the TIA

REPORT CHECKLIST

The attached checklist has been provided to assist the engineer in preparing the TIA.

SUBMITTAL REQUIREMENTS

Each application for zoning/rezoning or development/redevelopment requiring a TIA must include the following:

- Completed application form and checklist provided by the City
- Review fee (see fee schedule)
- 3 hard copies of report prepared according to the requirements herein
- 3 hard copies of any supporting documentation
- Electronic file(s) of the report and supporting documentation

An application for zoning/rezoning or development/redevelopment will be considered incomplete until the TIA is submitted, if required.

APPLICATION FOR TIA REVIEW

To be completed by Town of Addison staff:

Application date: _____ Application/Fee Received:_____ Fee Paid:_____

APPLICANT/PROJECT CONTACT

I hereby certify that the information is this application is true and correct to the best of my knowledge.

Name (printed) :_____

Company name: _____

Address: _____

Phone: _____

Email: _____

Applicant's Signature: _____

PROPERTY OWNER

I hereby certify that the information is this application is true and correct to the best of my knowledge.

Name (printed): _____

Company name: _____

Address: _____

Phone: _____

Email: _____

Owner's Signature: _____

PROPERTY DESCRIPTION

Project name: _____

Address or location: _____

Acreage: _____

Legal description: _____

Proposed subdivision name (if applicable): _____

Existing zoning: _____

Existing use(s): _____

Proposed zoning (if applicable): _____

Proposed uses and square footages (or other appropriate measure) of each:

DESCRIPTION OF PROPOSED USES AND TRAFFIC VOLUMES

Use	Proposed SF (or other measure)	Trip Generation per ITE rates	Existing Volume of Adjacent Roadway

TIA CHECKLIST

Administrative Items:

_____ Completed application form, including TIA waiver request form, if applicable

_____ Review fee

Report:

_____ Site location/characteristics

_____ Study Area boundaries

_____ Existing zoning

_____ Existing development

_____ Proposed zoning

_____ Proposed development

_____ Existing transportation system

_____ City's Master Transportation Plan

_____ Planned transportation improvements and timing

_____ Existing traffic volumes

_____ Projected traffic volumes

_____ Existing site trip generation

_____ Proposed site trip generation

_____ Net change in trip generation

_____ Trip distribution and traffic assignment

_____ Intersection/Turn lane analysis

_____ Driveway/Turn lane analysis

_____ Level of service evaluation

_____ Traffic signal evaluation

_____ Proposed mitigation measures

_____ Conclusions

_____ Recommendations

Documentation:

_____ 3 Hard copies of report

_____ 3 Hard copies of any supporting documentation

_____ Electronic file(s) of the report and supporting documentation