Sec. 118-46. Streets.

(y) *Traffic impact analysis.*

(1) *Requirements.* No master plan, plat, building permit or driveway access shall be approved unless a traffic impact analysis (TIA) worksheet or TIA report, as provided for in this section, is completed by the developer and approved by the city engineer. A TIA report may also be required by the planning director, the planning commission or the city council as part of a zoning change application.

If the specific land use is unknown, the land use shall be based on the future land use plan or roadway impact fee study with consideration of existing topography and comparable properties. Land use shall be based on the latest edition of the Institute of Transportation Engineers (ITE) *Trip Generation Manual.*

The TIA report shall be prepared, signed and sealed by a licensed, qualified and experienced professional engineer with specific training and experience in traffic and transportation engineering and planning. The TIA report shall meet the requirements established in this section and generally follow the methodology, thresholds and principles described in the ITE *Multimodal Transportation Impact Analysis for Site Development* recommended practice.

The applicant shall comply with the separate policies and procedures for submitting and processing TIA applications consistent with the provisions of this section, including, but not limited to, forms, worksheets, fee schedules, meetings, and other items.

(2) *Submittal type and study area.* The TIA submittal type and study area shall be based on the size of the development and the associated peak-hour trips projected to be generated by the proposed development. The peak-hour trips shall be based on the latest edition of the ITE *Trip Generation Manual* during the weekday a.m. or p.m. peak hour, whichever is greater. The submittal type and study area shall be established in the TIA Impact Area Table shown below. Additional areas and intersections may be added by the city engineer and Texas Department of Transportation (TxDOT) based on development size and specific site or local issues. For special situations where peak traffic typically occurs at non-traditional times, other peak hours may be used to determine the submittal type and study area.

TIA Impact Area Table

Peak-hour Trips	Submittal Type	Study Area
1—99	Worksheet	Site
100—199	Level 1	Site and area adjacent to the site boundary
200—499	Level 2	Site and area within 0.5 miles from the site boundary
500+	Level 3	Site and area within 1 mile from the site boundary

(3) *TIA report format.* The Level 1, 2 and 3 TIA report shall consist of the following information, at a minimum:

a. *Impact area.*

1. Land use, site and study area boundaries.
2. Existing and proposed site land uses.
3. Existing and proposed land uses for all parcels within the study area.
4. Existing and proposed roadways and intersections within the study area.

5. All major driveways and intersecting streets adjacent to the property will be illustrated in detail sufficient to serve the purposes of illustrating traffic function; this may include showing lane widths, traffic islands, medians, sidewalks, curbs, traffic control devices (traffic signs, signals, and pavement markings), sight distance, access spacing and a general description of the existing pavement condition.

6. Photographs of adjacent streets of the development and an arterial photograph showing the study area.

b. *Trip generation and design hour volumes.*

1. A trip generation summary listing each type of land use, units, ITE code, ITE unit, the average trip generation rates used (total daily traffic and a.m. and p.m. peak hours), and the resultant total trips generated shall be provided.

2. Generated vehicular trip estimates may be discounted in recognition of other reasonable and applicable modes, e.g., transit, pedestrian, bicycles. Furthermore, trip generation estimates may also be discounted through the recognition of pass by trips and internal site trip satisfaction.

c. *Trip distribution.* Provide the estimates of percentage distribution of trips by turning movements to and from the proposed development by site access location.

d. *Trip assignment.* Provide the direction of approach and departure of site traffic via the area's street system.

e. *Traffic volumes.* Peak hour and daily traffic volumes shall be provided for existing, background, site, and buildout (background and site) conditions. Additional traffic volumes shall be provided for phased developments based on background and the estimated phase buildout year. Each phase shall include phase, cumulative phases, and cumulative phases plus associated background traffic.

f. *Capacity analysis.*

1. A capacity analysis shall be conducted for all roadways, intersections and junctions of major driveways with public streets which are significantly impacted within the study area boundary as defined in this section as agreed to by the developer's engineer and the city engineer. The analysis shall be conducted for existing, background, buildout, and, if necessary, each phase traffic volumes.

2. Capacity analysis will follow the principles established in the latest edition of the Transportation Research Board's *Highway Capacity Manual* (HCM), unless otherwise directed by the city engineer. Capacity will be reported in quantitative terms as expressed in the HCM and in terms of traffic level of service (LOS). LOS for two-way stop-control is not defined for an intersection as a whole and shall not be represented in any such way in the TIA report.

3. Capacity analysis will include traffic queuing estimates for all critical applications where the length of queues is a design parameter, e.g., auxiliary turn lanes, and at traffic gates.

4. Roadway analysis will include maximum daily traffic for all local and residential collector streets, and HCM or planning level analysis for ~~all other~~ streets agreed to by the developer's engineer and the city engineer. Potential through traffic shall be included in the analysis.

g. *Site accessibility.* Provide an assessment of existing and planned future conditions of access management, site circulation, parking, goods movement delivery and pedestrian, bicycle and

transit connectivity to accommodate site demand on the street system. Provide a geometric and pavement design analysis for buildout and construction traffic, including vehicle design and traffic volumes, for all perimeter and approach streets that have an average pavement width of less than 24 feet to the area being developed. Provide a circulation route for construction traffic.

h. *Neighborhood traffic control plan.* Provide overall signing, marking, and signal traffic control plan for a new public street system in accordance with the *Texas Manual on Uniform Traffic Control Devices* (TMUTCD). Include recommended speed limit signs, stop signs and warning signs.

i. *School accessibility and traffic control plan.* Provide site circulation and overall signing, marking, and signal traffic control plan in accordance with the TMUTCD. Include recommended school routes, school crossings and school speed zones.

j. *Thoroughfare Plan street extension.* If the development is required to construct the extension of a street in accordance with the adopted thoroughfare plan, provide an assessment of the buildout traffic impact on adjacent neighborhoods, parks, schools, and historic districts. The assessment and mitigation shall be provided in accordance with an approved Thoroughfare Plan Design and Area Transportation Plan, or using neighborhood protection guidance provided in the ITE *Multimodal Transportation Impact Analysis for Site Development* recommended practice.

~~j~~k. *Conclusions and requirements.* Provide a narrative describing mitigation measures, conclusions and recommendations consistent with this section.

(4) *Mitigation.* If the TIA report's determination for roadways and intersections indicates that the proposed development would cause a reduction in the level of service for any roadway or intersection within the impact area that would cause the roadway to fall below (1) LOS D if the background traffic operates at LOS D or better, (2) LOS E if the background traffic operates at LOS E, and (3) LOS F if the background traffic LOS threshold exceeds ten percent for LOS F, the proposed development will be denied unless the developer agrees to one of the following conditions:

a. The deferral of certificate of occupancy until the improvements necessary to upgrade the substandard facilities are constructed; or

b. A reduction in the density or intensity of development; or

c. The dedication or construction of facilities needed to achieve the level of service required herein; or

d. Escrow with the city an amount equivalent to the cost of the improvements necessary to mitigate the adverse traffic impact; or

e. Execute a development agreement with the city in accordance with this chapter; or

f. Any combination of techniques identified herein that would ensure that development will not occur unless the levels of service for all roadways and intersections within the traffic impact analysis study are adequate to accommodate the impacts of such development.

Additionally, the developer is responsible for mitigation identified as part of the site accessibility, neighborhood traffic control plan and school accessibility and traffic control plan as required in this section.

(5) *Implementation.* For phased construction projects, the TIA report shall include the phase and corresponding peak hour trip for implementation. Implementation of these traffic improvements must be accomplished no later than the completion of the project phase for which the capacity analyses show they are required. Plats for project phases subsequent to a phase for which a traffic improvement is required may be approved only if the traffic improvements are completed or secured as approved by the city engineer.

(6) *Traffic mitigation concepts.*

a. Voluntary efforts, beyond those herein required, to mitigate traffic impacts are encouraged as a means of providing enhanced traffic handling capabilities to users of the land development site as well as others.

b. Traffic mitigation concepts include, but are not limited to, pavement widening, turn lanes, median islands, access controls, curbs, sidewalks, traffic signalization, traffic signing, pavement markings, etc.

(7) *Traffic signal warrants analysis.* A TIA report that contains a traffic impact mitigation for installation of a new traffic signal location shall include a traffic signal warrants analysis satisfying the requirements of the TMUTCD. If a traffic signal is required to mitigate level of service but not warranted, the mitigation of the traffic signal shall meet the mitigation requirements of this section.

(8) *Turn lane requirements.* Turn lanes are exclusive deceleration and storage lanes that allow ~~for~~ vehicles to turn left and right at intersections outside the through lane. Turn lanes on city streets are required at all driveways and street intersections with buildout traffic turning movements of 500 daily trips or 50 peak hour trips. Turn lanes on the state highway system are required in accordance with the latest TxDOT requirements. The guidelines for the ~~application and~~ design of ~~deceleration~~ turn lanes for city streets and the state highway system shall be in accordance with the latest TxDOT requirements.

a. The existing and new pavement for turn lane improvements shall be designed based on the development traffic loads and may include rehabilitation. At minimum, a surface course treatment is required for the full improvements including taper and pavement marking area.

b. The construction of turn lanes may be limited due to topographic conditions or need to obtain right-of-way from adjacent property owners. The applicant must show that all reasonable efforts have been made to implement turn lanes required by the TIA report or this chapter. This may include relocating driveways or streets to allow for the construction of turn lanes or alternate design options.

(9) *Expiration*. The approval of a TIA worksheet expires two years from the date it is approved by the city. The approval of a TIA report expires three years from the date it is approved by the city if progress toward completion is not being made, as specified in section 118-22 (e) (1-5), or if the actual buildout year or an actual phase buildout year is greater than two years from what is analyzed in the approved TIA report. Prior to the expiration date, the city engineer may extend the TIA report approval upon application by the developer for one or more year periods.

(z) *Street signs.* Street signs shall be installed, at the cost of the developer and at no cost to the city, in accordance with approved construction plans.

(aa) *Streetlights.* Streetlights shall be installed, at the cost of the developer and at no cost to the city, at all intersections, at the end of a cul-de-sac, and throughout the subdivision as required by NBU in accordance with standards published by NBU in accordance with section 118-18.

(Ord. No. 2006-84, § 1(Exh. A), 9-11-06; Ord. No. 2008-44, § 1, 7-14-08; Ord. No. 2008-55, § 1, 8-11-08; Ord. No. 2013-34, § 1, 6-10-13; Ord. No. 2017-18, § 1, 2-13-17; Ord. No. 2017-63, § 1, 9-11-17; Ord. No. 2019-49, § III, 7-22-19; Ord. No. 2019-89, § 1, 12-9-19; Ord. No. 2020-74, § 1, 12-14-20; Ord. No. 2023-92, § I, 12-11-23; Ord. No. 2024-20, § 1, 2-26-24)