



TECH BRIEF 2010-3

WHAT IS A TRAFFIC IMPACT STUDY AND WHEN IS ONE NEEDED?

A PRIMER FOR ELECTED OFFICIALS AS THEY CONSIDER APPROVING SITE PLANS

Site planning is an in-depth analysis of a proposed development, one that integrates the building, site circulation, parking, and access to the public roadway system. Transportation aspects of site planning include, but are not limited to, analysis of the traffic impacts of the development, the adequacy of the access drives and the suitability of the on-site circulation and parking.

Developers and their consultants, state highway agencies, municipalities, counties, elected officials, and the general public all have significant roles and interests in the site planning process. While developers want to have a successful and financially sound development, they also have significant responsibility to ensure the public's health, safety and welfare at their particular site.



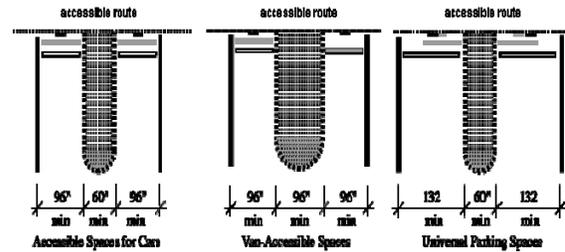
Government agencies and public officials have the responsibility to manage the development process in general. The site plan review and the approval process adopted by these agencies provide a mechanism to protect public health, safety and welfare. Appropriately written ordinances, policies, and/or guidelines are the most effective ways of addressing off-site and on-site traffic and other transportation

aspects of any major land development or redevelopment.

Site planning process includes traffic considerations and more. Generally, the site planning process should include:

- A financial feasibility study to determine the demographic and geographic suitability of the project;
- A Traffic Impact Study (TIS) to estimate site-generated traffic and assess its impact on the public street system and on the ultimate development. A TIS also identifies on-site and off-site improvements that might be needed as a result of the development; and
- A site plan review that considers the relationship of the development to the surrounding roadway network, the access location and design, interconnection and cross-access with adjacent properties, on-site circulation and parking. This review also should consider a variety of other site plan details including drainage, landscaping, utility locations, fire protection, loading docks and solid waste collection.

Because building location, on-site circulation and access are highly interrelated, traffic-related issues should be identified early-on, allowing better use of the site and the adjacent streets, and better planning for access and on-site circulation and parking. A preliminary traffic study prepared in conjunction with the market study will help avoid traffic problems that may limit the financial success of a proposed development. It is appropriate to begin the site planning and design process with tentative location of the buildings, a preliminary layout of the parking spaces and identification of the access locations.



When is a TIS needed? Many local governments have established guidelines, policies and/or ordinances that govern their site development and review process. Usually the requirement to perform a Traffic Impact Study is based on number of trips generated by the site, type and size of the development, and other development or area characteristics. Generally, the suggested baseline for requiring a TIS is when a development generates 100 new trips to the adjacent street network during the peak-hour of the adjacent street traffic. The content of a TIS varies depending upon the complexity of the proposed development. Not all proposed developments will need a full-blown TIS. Depending on the type and size of development, the TIS can range from a cursory review and letter of opinion from a qualified professional to a comprehensive analysis and report that includes the detailed study of the development, the area-wide transportation system and other approved or planned developments in the vicinity of the proposed development.

Connecticut State Traffic Commission - Major Traffic Generators

Section 14-311 of the Statutes requires that any development "generating large volumes of traffic" cannot be constructed until it obtains a certificate

of operation from the State Traffic Commission (STC). The Statute further states that to trigger the need for certification the development must either have a driveway on a state highway or abut or adjoin a state highway. Developments that do not have a driveway on a state highway or abut or adjoin a state highway which have been determined to significantly impact the traffic on a state highway would also trigger the need for STC certification. The STC regulations define a development "generating large volumes of traffic" as one providing 200 or more parking spaces or 100,000 square feet or more of gross floor area. Developments of this size are commonly referred to as major traffic generators or MTG's. A traffic impact study is required for MTG's as part of the STC certification or certification determination process. (for more information about Connecticut STC requirements, please visit: <http://www.ct.gov/dot>)

Who should conduct a TIS? A TIS should be prepared under the supervision of a qualified and experienced transportation professional who has specific training in traffic and transportation engineering and planning, and preferably with several years of experience with TIS preparation. In addition, all transportation operations and design work stipulated in the TIS recommendations should be completed under the supervision of a qualified and experienced professional engineer in conformance with state and local professional requirements.

Most review agencies require that the TIS report be sealed and signed by a registered Professional Engineer (PE) or

preferably a certified Professional Traffic Operations Engineer (PTOE), who is a professional engineer with specific expertise in transportation and traffic engineering. Review agencies should realize that if they mandate this, however, they will need to ensure that a PTOE is available for the review.

Regardless of whether your community has a requirement for a professional's seal on the TIS report, detailed reviews should be carried out by individuals with adequate training and experience in traffic and transportation engineering and planning. In cases where multiple transportation agencies are affected by the proposed development, all such agencies should be offered an opportunity to review the TIS.

Although study preparers and reviewers sometimes will have different objectives and perspectives, all parties involved in the process should adhere to established engineering ethics and all analyses and reviews should be conducted in an objective and professional manner.

A FEW WORDS OF CAUTION

A TIS should NOT:

- Include cost estimates for needed improvements.
- Attempt to assign responsibilities for needed improvements.
- Discuss economic benefits of proposed developments.
- Include any information whatsoever regarding the highest and best use, or market value of the subject property.
- Be subjective.



WHAT IS IN A TIS REPORT?

A full-blown TIS report should, at the minimum, address the following:

- State the purpose and scope of the report and identify the study area of the project.
- State all assumptions used in analysis and make reference to and/or include all supporting documents used to prepare the report.
- Describe, in detail, proposed land use type(s) and size(s).
- Identify number, location and type of proposed access drive(s) to the development site.
- Evaluate intersection sightline distances from proposed driveways.
- Provide a detailed summary of data collection efforts and results.
- Estimate number of trips generated by the development site.
- Identify most critical analysis period.
- Determine anticipated directional distribution of site-generated traffic.
- Intersection assignment of site traffic including through and turning movements.
- Internal circulation of site traffic and parking
- Need for turning lanes or bypass options at proposed driveway location(s)
- Traffic control needs and warrants
- Determine anticipated future non-site (background) traffic volumes.
- Identify other “nearby approved” developments within the study area.
- Evaluate “existing + site + nearby approved developments” traffic operating conditions to assess cumulative impact of traffic for pre-specified target year.
- Recommend on-site and/or off-site road improvements for each traffic conditions separately (i.e. “existing”, “existing + site”, “existing + site + nearby approved developments”, and “future long-term”).
- It is useful to address percent contribution to off-site road improvements by individual development sites (i.e. proposed and other nearby development site), based on number of new trips each and every one of these development sites generate and add to adjacent street network primarily during critical peak-hour.
- Include findings and recommendations using nontechnical jargon to help public officials with their decision making.

COMMON USES FOR TIS REPORTS

- **To provide developers or designers with recommendations regarding site selection, site transportation planning and traffic impacts.**
- **To assist public agencies in reviewing the attributes of proposed developments in conjunction with requests for annexation, land subdivision, zoning changes, building permits, or other development reviews.**
- **To establish or negotiate mitigation requirements where off-site impacts require improvements beyond those otherwise needed. Such reports also have been used by public agencies as the basis of levying impact fees or assessing developer contributions to roadway facility improvements.**

Excerpted and adapted with permission from an article in the Kansas LTAP Newsletter, a publication of the Kansas Local Technical Assistance Program.

**For information about the
Connecticut Technology Transfer Center, please visit us at:
www.T2center.uconn.edu**