

Regulation #7

Adopted: 6/14/88

Effective: 6/14/88

SOUTH PORTLAND PLANNING BOARD

Submission requirements for Traffic Impact Studies

- (a) Traffic consultants are encouraged to discuss projects with the Site Planner prior to starting the study. Topics for discussion at such meetings might include:
- (1) Directional distribution of traffic
 - (2) Definition of study area
 - (3) Intersections requiring critical lane analysis
 - (4) Methods for projecting build-out volume
 - (5) Design year and growth factors of base traffic, including estimated year of projected buildout
 - (6) Other project traffic to be included in the base and projected condition from approved or pending applications in the study area.

This discussion will provide a base of cooperation and communication between the City, the developer, and his consultant in creating traffic patterns that are in the best interest of the community.

- (b) The traffic study shall include the following:
- (1) Executive summary
The first section of the report must be a clear, concise description of the study findings and recommendations. The summary must be written so that any lay person will understand the recommendations of the report.

(2) Introduction

(a) Land use, site, and study area boundaries

A brief description of the size of the land parcel, general terrain features, and the location within the City and the region will be included in this section. In addition, roadways that afford access to the site and are included in the study area must be identified.

The exact limits of the study area will be based on engineering/planning judgment and an understanding of existing and possible future traffic conditions at the site. In all instances, however, the study area limits shall be discussed by the developer, his consultant, and the Site Planner. A vicinity map that shows the site in relation to the surrounding transportation system must be included.

b. Existing and proposed site uses

The existing and proposed uses and zoning districts of the site shall be identified. In addition, the specific use for which the request is made must be identified. If specific uses are not known, the highest traffic generators within the category best fitting the proposed uses will be used as acceptable traffic generators.

c. Existing and proposed uses in vicinity of site

A complete description of the existing land uses and zoning districts in the vicinity of the site shall be included.

The applicant should also include the proposed uses for vacant land or land proposed to be redeveloped in the vicinity of the site and within the prescribed study area. Most of this information can be obtained from the initial meeting with the Site Planner.

This information is helpful in determining the overall inputs to the corridor and intersections in the study area, present and future.

d. Existing and proposed roadways and intersections

Within the study area, the applicant must describe the geometrics and traffic signal controls for existing roadways and intersections, as well as any improvements contemplated by the City, State, or private developer. This description should include the nature of the improvement project, its extent, implementation schedule, and the agency or funding source.

(3). Trip generation and design hour volumes

A summary table listing each type of land use, the area involved, the average trip generation rates used (total daily traffic and a.m./p.m. peaks), and the resultant total trips generated must be provided.

Trip generation shall be calculated from the latest data contained within the most recent Institute of Transportation Engineers' (ITE) Trip Generation Guide or a study of a similar trip generator in southern Maine that is acceptable to the Site Planner. In the event that data is not available for the proposed land use, the Site Planner must approve estimated rates prior to acceptance of the traffic study.

Site design hour volumes (DHV) approximating the peak hour volume used to determine improvements will be estimated by one of the following methods which are listed in order of preference:

- a. Traffic volume counts for existing uses
- b. Peak hour trip generation rates as published in the ITE Trip Generation Summary or acceptable local data referenced above
- c. By the formula:
$$DHV = 59.13 + (0.133 \times AADT)$$
 where DHV = Estimated design hour volume
AADT = Estimated annual average daily traffic

(4). Trip distribution

The vehicle direction approach for site generated traffic will be presented in this section. The technical analysis, basic methods, and assumptions used in this work must be clearly stated.

(5). Trip assignment

This section will describe the utilization of study area roadways by site generated traffic. The anticipated site traffic volumes must be combined with existing and projected area traffic volumes in Section (6) below to describe mainline and turning movement to volumes for future conditions with the site developed as proposed. Non-generated passerby traffic reductions in generation volumes may be considered, if applicable. All estimates of trip distribution, assignment, and modal split are subject to review and approval by the Site Planner.

(6). Existing and projected traffic volumes

Graphics should show:

- a. A.M. peak hour site traffic (in and out), including turning movements.
- b. P.M. peak hour site traffic (in and out), including turning movements.
- c. A.M. peak hour total including site (in and out) and through traffic, including turning movements for current conditions and 10 year projections and/or build out in all key intersections.
- d. P.M. peak hour total including site (in and out) and through traffic, including turning movements for current conditions and 10 year projections and/or build out in all key intersections.

All raw traffic count data, including hourly ADT and peak hour turning movements and analysis worksheets, shall be provided in the appendices. Computer techniques, and the associated printouts, can be used as part of the report.

All total daily traffic counts should be actual machine counts and not based on factored peak hour sampling. Latest available machine counts from the Maine Department of Transportation or the Portland Area Comprehensive Transportation Study (PACTS) are acceptable if counts are done within the past two (2) years and conditions are determined not to have changed significantly.

(7) Traffic signals

Traffic signals will be proposed if required by

- a. warrants as discussed in the Manual on Uniform Traffic Control Devices,
- b. accident data as required in section (a) below, or
- c. professional considerations of City staff.

Traffic signals may be desirable in specific circumstances where they do not meet the warrant, for example, to provide breaks in traffic to allow the reasonable entry of side-street traffic. In no case will a signal be allowed if the Level of Service of the main roadway is reduced below Level "E". Chapter 10 of the Highway Capacity Manual, "Unsignalized Intersections", may not be required to meet the level of service specified in Section 8 below. Both E and F levels of service may be permitted for side street left turns and crossing maneuvers as long as minimum sight distance requirements are exceeded and signalization warrants and other criteria noted above are not met. Any recommended traffic signals must be approved by the Traffic Engineer, City Electrician, and Site Planner prior to final approval by the Planning Board. In addition, the developer must also obtain a letter from the City Manager agreeing that the City will pay for power and maintenance of any proposed traffic signal.

(8) Level of service

a. The following interpretations of "level of service" are provided from the ITE Handbook, Third Edition:

Level of Service A:

A condition of free traffic flow with low traffic density where no vehicle waits longer than one signal indication.

Level of Service B:

A continuous flow of traffic where only on rare occasions do drivers wait through more than one signal indication.

Level of Service C:

Still in the area of stable traffic flow, but intermittently drivers must wait through more than one signal indication and backups may develop behind left-turning vehicles.

Level of Service D:

Approaching instability; drivers are restricted in their freedom to change lanes and delays for approaching vehicles may be substantial during peak hours.

Level of Service E:

Traffic volumes are near or at the capacity of the roadway and long queues of vehicles may create lengthy delays especially for left-turning vehicles.

Level of Service F:

Congested condition of forced traffic flow, where queued backups from locations downstream restrict or prevent movement of vehicles out of the approach, creating a storage area during part or all of the peak hours.

INTERSECTION LOS

LOS	Signalized Intersection	Unsignalized Intersection	
	Delay	Delay	Reserve Capacity
A	5.0 seconds	Little or no delay	400
B	5.0 to 15.0	Short delays	300-399
C	15.1 to 25.0	Average delays	200-299
D	25.1 to 40.0	Long delays	100-199
E	40.1 to 60.0	Very long delays	0 – 99

ARTERIALS LOS

Arterial Class	I	II	III
Range of freeflow speed	45 to 35	35 to 30	35 to 25
Typical freeflow speed	35	30	25
LOS B	25	24	19
LOS C	22	18	13
LOS D	17	14	9
LOS E	13	10	7
LOS F	13	10	7

* Highway Capacity Manual, Special Report 209

Level of service designations as well as numerical figures, with and without the project impact, shall be presented in the traffic study as addressed in the ITE Highway Capacity Manual.

- b. Level of service C or better is the design objective, and level of service below D will not be acceptable for site and non-site traffic per PACTS standards. Except as noted in Section (7) above, in areas where level of service is decreased to capacity conditions by the project impact, corrective measures should be recommended to preserve the existing level of service with project impact in the design year specified using base study conditions. The design year is approximately five (5) years following construction or at projected build out of the project except as noted in Section (6) above.

(9) Traffic accidents

Traffic accident data shall be collected on the latest three (3) year totals available through the Maine Department of Transportation. If a critical rate factor of one (1.0) is established, then this area is defined as an accident problem area.

(10) Recommendations

In the event that analysis indicates unsatisfactory levels of service on study area roadways and intersections, a description of proposed improvements to remedy deficiencies shall be included. In addition, improvements to remedy accident problem areas must be included.

(a) Recommended improvements

This section shall describe the location, nature, and extent of proposed improvements to ensure sufficient acceptable roadway and intersection capacity using the methods of the most recent edition of the ITE Highway Capacity Manual. Accompanying this list of improvements should be preliminary cost estimates, proposed source of funding, timing, and likelihood of implementation.

(b) Volume/capacity analysis at critical points

Description of the volume/capacity analysis which demonstrates the anticipated results of making these improvements must be included in this section.

(c) Levels of service at critical points

As a result of the revised volume/capacity analysis presented in the previous section, levels of service for the highway system road lengths and intersections with improvements must be presented.

(11) Revisions to traffic study

Revisions to the traffic study must be provided as required by the Site Planner. The need for revisions will be based on the completeness of the traffic study, the thoroughness of the impact evaluation, and the compatibility of the study with the proposed access and development plan.