

## APPENDIX A CONCURRENCY CALCULATION METHODOLOGY

### METHODOLOGY FOR CALCULATING PROJECTED DEMAND FOR CERTIFICATES OF CONCURRENCY

1. *Purpose.* The purpose of this Regulation is to set forth the methodology for calculating the projected demand of a proposed project described in an application for a Development Approval on Public Facilities and Services, in order to determine whether a Certificate of Concurrency should be issued so as to implement Article IV, Section IV-203 of the Zoning Code (1998).

2. *Facility/service demand calculations.* The following calculations shall be used to determine the projected demand of the proposed project described in an application for a Development Approval on the Public Facilities and Services. The calculations are listed by Public Facility and Service type. Whenever the term "City" shall appear herein, it shall mean the City Manager or his designee authorized to review calculations for the Concurrency Management System. The information necessary to enable the City to perform the Facility/Service demand calculations in Paragraphs 2(A) through 2(F) shall be provided by the applicant to the City.

A. *Potable Water.*

Adopted LOS = 200 gal/day/capita, see page U-3 in Utilities Chapter or Sarasota City Plan. (non-residential uses are included in the adopted LOS)

200 gal X 2.2 persons/household X \_\_\_\_\_ units = demand

B. *Wastewater.*

Adopted LOS = 200 gal/day/capita, see page U-3 in Utilities Chapter of Sarasota City Plan. (non-residential uses are included in the adopted LOS)

200 gal X 2.2 persons/household X \_\_\_\_\_ units = demand

C. *Stormwater Management (Drainage).*

Adopted LOS = 25-year, 24-hour storm event, see page U-4 in Utilities Chapter of Sarasota City Plan.

Drainage calculations shall meet the standards adopted in the City of Sarasota Engineering Design Criteria Manual and the Sarasota City Plan (1998).

D. *Solid Waste.*

Adopted LOS = 6.9 lbs/day/capita, see page U-4 in Utilities Chapter of Sarasota City Plan. (non-residential uses are included in the adopted LOS)

6.9 lbs X 2.2 persons/household X \_\_\_\_\_ units = demand

E. *Recreation.*

Refers to the Sarasota City Plan (1998), page CI-13 in Capital Improvements Chapter for the adopted level of service standards.

Project population = \_\_\_\_\_ units X 2.2 persons/household

Project population/LOS = demand

F. *Transportation.*

Refer to the Transportation Chapter of the Sarasota City Plan (1998), page T-4, for the adopted level of service standards.

(1) Determine the number of net new external trips generated by the proposed project during the p.m. or a.m. peak hour, using the output from the computer generated version of the most recent edition of the Institute of Transportation Engineers (ITE) Trip Generation or any other methods approved by the City Engineer to be generally recognized and accepted in the field of transportation engineering, with no adjustment for internal capture or pass-by trips. The analysis will be based on the most intense traffic generation use of the proposed land uses proffered by the applicant. Full credit for existing trips will be given to projects wherein the building was demolished within five (5) years relative to the most recent land use. For every additional year thereafter the credit shall be reduced by 20 percent per year.

(2) A "de minimis" impact is an impact that would not affect more than one (1) percent of the maximum volume at the adopted level of service of the affected transportation facilities as determined by the City, utilizing the most recent table of the generalized two-way peak hour volumes in the Florida Department of Transportation (FDOT), Level of Service Handbook. No impact will be de minimis if the sum of existing roadway volumes from approved projects on a transportation facility would exceed 110 percent of the maximum volume at the adopted level of service of the affected transportation facility. No impact will be de minimis if it would exceed the adopted level of service standard for any affected designated hurricane evacuation routes (as shown on page T-81 of the Sarasota City Plan.) If a proposed project is not deemed de minimis, a transportation study is required.

3. *Performance of transportation study.*

A. *Consultant Selection.* If a transportation study is required, it shall be accomplished by one of the City's transportation engineering consultants, at the applicant's sole expense. The City Manager, or his designee, shall select the consultant from a list of consultants retained by the City for this purpose and shall enter into an agreement with the consultant to perform the transportation study.

B. *Applicant Agreement.* The applicant shall enter into an agreement with the City and prepay the City for the total fee charged by the consultant to perform the transportation study, along with any City administrative costs.

C. *Pre-application Meeting.* A pre-application meeting between the City and the applicant is at the applicant's option. The purpose of this meeting will be to review the methodology, procedure, study area, and to determine the study period. This will usually be a p.m. peak hour analysis; however, other time periods may require analysis.

D. *Traffic Circulation Plan.* The applicant shall submit a traffic circulation plan, including ingress and egress from and to adjacent streets along with internal circulation, for automobiles, trucks and delivery vehicles, pedestrians, transit vehicles, and bicycles.

4. *Requirements of transportation study.* The transportation study shall be performed in accordance with the requirements set forth below.

A. *Study Introduction.* The introduction of the transportation study shall include:

- (1) Detailed description of project;
- (2) Study procedures and methodology;
- (3) Site location map;
- (4) Site plan;
- (5) Location and description of access driveways;
- (6) Date development will be fully occupied;

B. *Define Study Area.* The extent of the road network to be studied is defined as roadway segments impacted by the project traffic equaling at least 4.5 percent of Level of Service "D" peak-hour service capacity as determined by the Generalized Peak Hour Volumes, two-way tables of the Florida Department of Transportation (FDOT). The City may require a larger study area than defined above upon determining that the land uses of the proposed project or conditions to the road network warrant a larger study area.

C. *Existing Conditions.* "Existing Traffic" conditions shall be provided:

- (1) Description of the existing land uses including the ITE land use classification.
- (2) Description of the existing roadway and intersection conditions including the Thoroughfare Plan designation.
- (3) Traffic data supplied by the City of Sarasota and/or Sarasota County and/or FDOT, including:
  - (a) Existing directional peak hour traffic volumes and level(s) of service on all collector and arterial streets within the study area. The City Engineer may include other streets as he deems appropriate.
  - (b) Existing turning movement volumes at the impacted intersection(s) and level(s) of service of those intersection(s).

Notes:

- a) The above-required data shall be no older than the previous calendar year. Volumes shall be adjusted to reflect peak season conditions using current FDOT seasonal adjustment factors for Sarasota County or other adjustment factors approved by the city.
- b) The above-required level(s) of service for roadways shall be determined in accordance with current FDOT Generalized Peak Hour Volumes, two-way tables, procedures.

c) The above-required intersection capacity(s) shall be determined using the most recent update of computer software based on the most recent edition of the Highway Capacity Manual, (HCM, Transportation Research Board, Special Report 209).

D. *Project Traffic Generation.* "Project Traffic" shall be the net new external trips. The following procedures and information to determine "Project Traffic" generated by the project shall be utilized:

(1) Daily and peak hour (a.m. and p.m., if required by the City Engineer) traffic volumes generated by the project, using average rates or equations and land use classifications identified in the most recent edition of ITE Trip Generation or other agreed upon methodology.

(2) Full credit for existing trips shall be given to projects wherein the building is existing and/or was demolished within five (5) years relative to the most recent land use. Every year thereafter the credit shall be reduced by 20 percent per year.

(3) Trip rates may be obtained from studies of comparable sites in the City of Sarasota or using data from previous traffic generation studies, and are subject to the approval of the City.

(4) Reduction factors for internal capture of trips between land uses of a mixed-use project or for passby trips shall be justified and shall be in compliance with ITE's Trip Generation and FDOT's Site Impact Handbook. They shall not exceed the maximum allowable pass-by percentage of 10 percent of the adjacent roadway volumes.

(5) Pass-by trips shall be removed from the through traffic stream, becoming turns into the site, and finally turns out of the site to their original destination.

E. *Project Traffic Distribution.* Distribution of project traffic shall be by one of the following:

- (1) If the project generates fewer than 100 peak hour trips, the distribution can be developed based up on similar projects.
  
- (2) For any project, the Sarasota-Manatee Area Traffic Study (SMATS) Florida Standard Urban Transportation Model Structure (FSUTMS) model network and socio-economic data files can be edited and used. Project trip distribution can be estimated based on the SMATS model select zone traffic assignment and observed travel patterns at the project site driveways.
  
- (3) For any project, manual gravity model distribution can be developed as described in Chapter 3 of ITE Transportation and Land Development shall be used.
  
- (4) For any project, computerized distribution model, such as FSUTMS or QRSII, can be developed subject to approval of the City Engineer and shall be generally recognized and accepted in the field of transportation engineering.

F. *Projection of Future Background Traffic.* "Future Background Traffic" volumes shall be the sum of the existing 100th design hourly traffic volumes, the "vested" traffic volumes and an increase in existing traffic to account for annual growth. Existing (background) volume(s) shall be projected for the year of the project completion. Volumes can be determined using one of the following procedures:

- (1) Multiply existing volumes by an annual growth factor provided by the City. Traffic generated by any major project approved since the traffic counts were conducted shall be included as background traffic.
  
- (2) Multiply existing volumes by an annual growth factor developed by the applicant and approved by the City. This growth factor must be based on data collected on three roadways in the vicinity of the project over the last three years. The "vested" traffic volumes expected to be generated by any major project approved but not realized shall be included as background traffic on the street segment.
  
- (3) Develop a computer model.

G. *Future With Project Traffic.* "Future With Project Traffic" volumes shall be the sum of the Future Background Traffic and the Project Traffic volumes. The study shall add the net new traffic estimated to be generated by the project ("Project Traffic") to the "Future Background Traffic" volumes to estimate future peak hour traffic volumes with the project ("Future With Project Traffic").

H. *Capacity Analysis.*

(1) An analysis of the peak hour(s) Existing, Future Background Traffic and Future With Project Traffic shall be conducted at each of the selected study intersections and study roadway segments. The analysis for the intersections shall use the unsignalized and signalized intersection analysis methodology found in the HCM. The analysis for the roadway segments shall use the generalized service volumes as defined in the most recent Sarasota County level of service tables or the analysis methodology found in the HCM, or any other software program as approved by the City Engineer which shall be generally recognized and accepted in the field of transportation engineering. The analysis on FDOT roadways shall be the FDOT analysis methodology.

(2) The level of service analysis shall be summarized in a table.

Note: The adopted level of service standards are different for properties within the Transportation Concurrency Exception Area (TCEA).

I. *Traffic Circulation Issues.* The study shall include a review of the traffic circulation plan, including ingress and egress from and to adjacent streets along with internal circulation, for automobiles, trucks and delivery vehicles, pedestrians, transit vehicles, and bicycles. The study shall recommend mitigation strategies for solving any circulation issues.

J. *Conclusions.* The conclusions of the transportation study shall be shown including a statement as to whether or not the project meets City of Sarasota transportation concurrency requirements. If it does not the study shall recommend methods of mitigation. The recommendations shall be presented in "bullet" format. The study shall identify transportation system improvements necessary for the project to meet the interim standards for the TCEA, if the project is within the TCEA. Recommended mitigation measures shall be illustrated graphically as required by the City Engineer.

K. *Appendix.* The appendix of the study shall include:

- (1) Sketches showing distribution of trips for the project only and for the project with background traffic.
- (2) Highway Capacity Software and pertinent calculation worksheets.

5. *Alternative demand calculations.* If the applicant claims the standards provided in the demand calculations are not applicable to the proposed project, the applicant shall submit appropriate documentation supporting the proposed alternative demand calculation to the City. Any alternative calculation standard shall be subject to the approval of the City Manager.

(Ord. No. 00-4196, § 4, 2-22-00)