

through the use of the current edition of the Trip Generation Report published by the Institute of Transportation Engineers.

- (f) Trip assignment. Assignments of post-development twenty-four-hour and peak-hour volumes to the arterial streets and collector streets and other streets that will serve the proposed development based upon the projections of increased traffic volumes within the traffic impact area. In making these estimated assignments, consideration shall be given to other developments approved but not yet constructed and to development trends.
- (g) Design year post-development traffic volumes. Design year post-development traffic volumes shall be included for the time periods and locations specified in § 119-32C(5)(b), in addition to all proposed site access points onto the existing roadway network.
- (h) Capacity analysis.

- [1] Existing levels of service and levels of service projected for the design year without the impacts of the proposed development on all abutting streets and all major intersections within the traffic impact area. Level of service shall be computed in accordance with the 2010 Highway Capacity Manual, published by the Transportation Research Board, or any subsequent revision of such manual.
- [2] Capacity and level of service analysis on all abutting streets and all major intersections which will be impacted by the additional volumes generated by the development, including post-development capacity and level of service and degradation of capacity and level of service.
- [3] Levels of service by lane group and overall intersection shall be summarized in matrix form to compare existing conditions, design year pre-development conditions, and design year post-development conditions.

(i) Mitigation analysis.

- [1] If the level of service on an abutting street, major intersection, or lane group of any major intersection within the TISA is presently "D" or worse or is projected to be "D" or worse in the design year and the traffic impact study determines that the level of service shall be reduced, or if the level of service is projected to be "F" and the delay increases, then descriptions of the street improvements and traffic control devices then will be required to restore the level of service to that level of service and delay existing prior to the development of the tract. The applicant shall specify whether such improvements are programmed within the Township's adopted Roadway Sufficiency Analysis and Transportation Capital Improvements Plan. **If the necessary improvements are programmed by the Roadway Sufficiency Analysis and Transportation Capital Improvements Plan, the applicant may consider those improvements as to be constructed by others.** If the necessary improvements are not programmed within the Roadway Sufficiency Analysis

and Transportation Capital Improvements Plan, the applicant shall address whether the levels of service may be maintained by revising traffic regulations, reducing the level of intensity of the proposed development or by any other means.

- [2] If the development itself does not decrease the level of service of abutting streets or intersections, an allocation of the effect of the proposed development. For example, if the effect of the proposed development when combined with other development would require the installation of a traffic control device at a major intersection, the percentage of the traffic increase which would require that such an improvement shall be allocated to the proposed development.
- [3] Description of street improvements and traffic control devices that will be required to:
 - [a] Mitigate traffic congestion which will be caused by the proposed development;
 - [b] Mitigate traffic safety hazards which will be caused by the proposed development; and
 - [c] Avoid problems of traffic congestion and safety.
- [4] Cost estimates of the street improvements and traffic control devices indicated in Subsection C(5)(i)[3] above shall be provided.
- [5] Description of existing and planned public transportation services in the Township and the potential of such public transportation to serve the proposed development.
- [6] Descriptions of any actions proposed or offered by the applicant to alleviate the impact of the proposed development on the Township's transportation network.

(j) Site access evaluation.

- [1] The applicant shall demonstrate that the road network included in the TISA area providing access to the site can accommodate the volume of traffic reasonably expected to be generated by the proposed use in a safe and convenient manner. **If improvements required to provide safe and convenient access to the site are programmed to be completed by the Township's Roadway Sufficiency Analysis and Transportation Capital Improvements Plan, the TIS shall consider such improvements in determining whether safe and convenient access to the site is possible and may consider such improvements as ones which will be done by others.** If improvements required to provide for safe and convenient access to the site are not programmed to be completed by the Township's Roadway Sufficiency Analysis and Transportation Capital Improvements Plan, the applicant shall identify whether the applicant will make any improvements necessary to the road

network to provide for safe and convenient access to the site and/or whether the steps can be taken to provide safe and efficient access, including, but not limited to, reduction of the intensity of the proposed development, changes in speed or traffic limitations.

- [2] The applicant shall demonstrate that the horizontal and vertical alignments and grades of the existing road network included within the TISA and the proposed streets or accessways to the site permit safe and convenient access to the site. **If improvements to the horizontal and vertical alignments and grades of the existing road network required to provide safe and convenient access to the site are programmed to be completed by the Township's Roadway Sufficiency Analysis and Transportation Capital Improvements Plan, the TISA shall consider such improvements in determining whether safe and convenient access to the site is possible and may consider such improvements as ones which will be constructed by others.** If the TISA concludes that safe and convenient access to the site requires changes in horizontal and vertical alignments and grades of the existing road network included within the TISA which are not included within the Roadway Sufficiency Analysis and Transportation Capital Improvements Plan, the applicant shall address what steps can be taken to provide safe and efficient access, including, but not limited to, reduction of the intensity of the proposed development, changes in speed or traffic limitations, and/or improvements to the road network.
- [3] The applicant shall demonstrate that access to neighboring properties shall not be made unsafe or inconvenient or shall propose improvements, acceptable to the affected property owners, to ensure that access to all neighboring properties shall be maintained at a level of convenience and safety which is at least equal to that without the proposed use or development.
- [4] The applicant shall demonstrate that the proposed use will not create unusual traffic patterns or movements which will jeopardize the traveling public.
 - [a] Stacking and/or turn lanes of sufficient length shall be provided on the site or shall be added to existing streets providing access to the site to ensure that there shall be no blockage of through traffic. The design and length of the stacking lanes shall be justified and supported by computer optimization analyses which determine queue capacities and minimum storage lengths at existing intersections abutting the proposed development and at new intersections within the development.
 - [b] Accessways to and within the site shall be located in a manner that blockage of through traffic by vehicles attempting to enter or exit an accessway will not occur.
 - [c] The applicant shall demonstrate that the proposed streets or accessways to the site are designed and located in a manner that will provide the least detrimental impact with regard to traffic capacity, level of service and safety upon abutting roads. The applicant shall install all traffic control