CHAPTER 2

TRAFFIC IMPACT STUDIES

2.1 General Information

2.1.1 Purpose

The purpose of this section is to standardize Traffic Impact Study requirements and procedures in order to ensure consistency of information concerning the traffic impacts resulting from a proposed development. Generally, a traffic impact study will vary in detail and complexity depending on the type, size, and location of the proposed development. The submitted traffic impact study will assist TDOT in its evaluation of the impacts to traffic of a particular site and if necessary, identify appropriate mitigation measures to maintain the integrity of the surrounding transportation system.

2.1.2 Applicability

This document specifically applies to, but is not limited to, the following:

- All proposed new developments that meet minimum trip generation thresholds as defined in Table 2.1.
- All proposed redevelopment (i.e., proposed modifications to existing developments) that meet minimum trip generation thresholds as defined in Table 2.1.

Once a traffic impact study has been approved by TDOT, the approved traffic impact study shall be effective for a period of three years unless significant changes are made to the original proposed development and those changes result in additional impacts to the surrounding transportation system. Whether significant changes have occurred will be determined by the Regional Traffic Engineer. After the three-year period has elapsed, any proposed development seeking permits who have not demonstrated due diligence toward the completion of the project shall be re-evaluated by TDOT to determine the degree to which background traffic conditions have changed since the original traffic study was approved. Due diligence is generally defined as a project that has achieved at least 50% of the total proposed development's build out (e.g. in square-footage, units) by the end of the three-year period. If necessary, at the sole discretion of TDOT, a new traffic study may be required in order to provide information to help determine if any additional mitigation measures are necessary.

2.1.3 Prequalified Engineering Firms and Preparer Qualifications

All traffic impact studies shall be prepared by a registered P.E., or an individual under the supervision of a registered P.E. The P.E. shall have specific training in traffic engineering and be in good standing with the State of Tennessee. All traffic impact studies submitted to TDOT for final review shall be signed and sealed by the P.E.

2.2 Traffic Impact Study Parameters

2.2.1 Proposed Development Trip Calculations

The number of trips generated by a proposed development shall be calculated using land use codes published in the latest edition of the *ITE Trip Generation Manual*. If the type of proposed development is not addressed in the *ITE Trip Generation Manual*, then other rates may be used as long as they are published documents and pre-approved by TDOT. A trip is defined as a single, one-way movement either to or from the proposed development. For the purposes of redevelopment (i.e., proposed modifications to existing developments), the estimated number of trips generated shall be measured as the net number of new trips generated by the proposed development as compared to trips generated by the existing use(s) on the site. In all cases, the total number of trips generated will be based on 100% occupancy of the proposed development, whether by a construction phase approach or full build-out. The utilization of a reduction in generated trips for internal capture trips and pass-by trips is allowed and shall be conducted in good faith based on ITE-approved data and methodologies.

Internal Capture Trips

The base number of trips generated by a proposed development may be reduced by rate of internal capture trips when two or more land uses are proposed using the methodology recommended in the latest edition of the *ITE Trip Generation Manual*. Internal capture reduction percentages greater than 10% require pre-approval by TDOT for use in the traffic study. The internal capture reduction percentage shall be applied before the pass-by trip percentages are applied.

Pass-by Trips

The base number of trips generated by a proposed development may be reduced by rate of pass-by trips using the methodology recommended in the latest edition of the *ITE Trip Generation Manual*. A pass-by trip is considered an intermediate trip between an origin and primary destination and is not diverted from another roadway. Pass-by trip reduction percentages of the existing adjacent public roads greater than 10% require pre-approval by TDOT for use in the traffic study.

2.2.2 Traffic Impact Study Screening Evaluation Form

The developer of a proposed development, as part of the application process, shall submit a *Traffic Impact Study Screening Evaluation Form* contained in Appendix A. When the form is submitted for review, TDOT will determine the appropriate next step in the traffic impact study process – either granting a waiver or determining the type of traffic impact study required for evaluation.

2.2.3 Minimum Threshold Levels

Table 2.1 presents the minimum threshold levels for a traffic study and the typical study area required, depending upon the number of new trips generated by a proposed development.

Table 2.1 – Traffic Impact Study Minimum Threshold Levels

Traffic Study Level	Minimum Thresholds	Typical Study Area
1	50 to 99 new peak hour trips or 250 to 499 new daily trips, whichever is greater	All site access intersections to existing adjacent public roads and the existing adjacent public roads to the first control point* from all site access intersections.
2	100 to 249 new peak hour trips or 500 to 2,999 new daily trips, whichever is greater	All site access intersections to existing adjacent public roads, existing major public roads, and study intersections (signalized and unsignalized) within ¼ mile of all site access intersections.
3	250 to 399 new peak hour trips or 3,000 to 5,999 new daily trips, whichever is greater	All site access intersections to existing adjacent public roads, existing major public roads, and study intersections (signalized and unsignalized) within ½ mile of all site access intersections.
4	≥400 new peak hour trips or ≥6,000 new daily trips, whichever is greater	All site access intersections to existing adjacent public roads, existing major public roads, and study intersections (signalized and unsignalized) within ¾ mile of all site access intersections.

*Control points are intersections controlled by traffic signal or stop signs. For cases where a traffic control device does not exist within a ¼ mile of a site access intersection, TDOT will determine the extent of the study area.

The above minimum thresholds are calculated for both new peak hour trips and new daily trips. The minimum threshold is satisfied if the calculated number of new trips satisfies either condition. If the new peak hour trip and new daily trip calculations satisfy different traffic study levels, then the higher study level is required. If necessary, the typical study area limits for each level of traffic study may also be extended or shortened at the sole discretion of TDOT and the Regional Traffic Engineer. An applicant of a proposed development shall not avoid the intent of these traffic study requirements by submitting piecemeal applications or approval requests for subdivision plats, site development plans, building permits, etc.

2.2.4 Traffic Study Levels

As shown in Table 2.1, there are four (4) levels of Traffic Impact Studies. Level 1 Traffic Impact Studies are typically required for smaller scale projects that are anticipated to have a smaller impact on the surrounding transportation system, mostly at the site access intersections. Level 2, 3, and 4 Traffic Impact Studies are typically required for larger scale projects that are anticipated to have a greater impact on the surrounding transportation system.

2.2.5 Waiver

Utilizing the *Traffic Impact Study Screening Evaluation Form*, TDOT may grant a waiver for a traffic impact study if the applicant shows that the trips generated by the proposed development on the surrounding transportation system is insignificant. Insignificant is typically defined as less than 50 new peak hour trips and 250 new daily trips generated by the proposed development. The waiver request shall be made in writing and shall include the traffic data analysis necessary to support the proposed development. If a waiver is granted, TDOT will notify the applicant in writing.

2.2.6 Target / Horizon Year

The traffic study shall be developed for all target and horizon years, as set by TDOT. Typically, the horizon year will be five years after build out of the proposed development. If a construction phase approach is being planned, then traffic conditions for multiple target years shall be developed for each construction phase year, as determined by the developer. Final target and horizon dates are to be determined by TDOT.

2.2.7 Time Periods

The time periods for analyzing traffic impacts are typically based on the type of proposed development when the highest traffic volumes from the proposed development are expected. Additional considerations to help determine the necessary time periods to analyze shall be the weekday a.m. and p.m. peak hours of adjacent street traffic that the proposed development is accessing. Depending upon the type of proposed development, additional weekend or midday (i.e., lunchtime) peak periods may be required to analyze traffic impacts.

2.2.8 Traffic Impact Study Scoping Meeting

Before beginning a Traffic Impact Study, the developer of a proposed development and/or his traffic consultant shall meet with the TDOT Region Traffic Engineering Office in the region where the property is located to verify the type of study that is to be conducted and to determine the scope of the traffic impact study. The traffic impact study scoping meeting shall be coordinated with TDOT for time and location. The following items may be discussed during the scoping meeting:

- Traffic Impact Study Screening Evaluation Form
- Level of traffic impact study required
- Extent of the study area limits, including the existing adjacent public roads and the major study intersections (signalized and unsignalized) to be analyzed
- Trip generation, distribution, and assignment methodology
- Assumptions for pass-by and internal capture trip reductions
- Assumptions for background growth rates
- Traffic analysis target and horizon years for the proposed development
- Traffic analysis time periods (a.m. peak hours, p.m. peak hours, weekend peak periods, etc.) for the proposed development
- Necessity of additional analyses, such as traffic signal warrant, safety, intersection sight distance, gap, and traffic simulation
- Other current and/or proposed transportation improvement projects within the vicinity of the proposed development site
- Consideration of pedestrian, bicycle, and ADA accommodations.
- Analysis software and reporting requirements

The minutes of the traffic study scoping meeting shall be prepared by the developer of a proposed development and/or his traffic consultant. Some meeting items may require follow up after the traffic study scoping meeting. When ready, the prepared minutes shall be submitted to TDOT for approval. Written approval from TDOT shall be obtained prior to initiating the traffic impact study.

2.3 Development of Traffic Conditions

2.3.1 Existing Traffic Conditions

Existing traffic conditions are considered the characterization, in the current year, of the surrounding transportation system within the study area limits and without the proposed development. If available, existing peak hour traffic volumes may be utilized if they are within two years from the date of the traffic study scoping meeting. If not available, the developer of a proposed development shall be responsible to collect the required traffic volume data at study intersections within the study area limits. Additional required geometric data to be collected include functional roadway classifications, traffic control devices at intersections including traffic signal phasing and timings, linear distance between intersections, posted speed limits, sight distance measurements from all site access intersections, identification of bicycle and pedestrian facilities, lane usage including lane width for roadways and intersections within the study area limits. Also, any driveways across from or adjacent to site access intersections shall be located. An analysis of the existing traffic conditions within the study area limits is important in order to determine existing deficiencies in the surrounding transportation system. The schedule for collecting new traffic volume data should consider area schools or seasonal peaks.

2.3.2 Background Traffic Development and Growth Calculations

For each target and horizon year, background traffic development and growth are defined as the increased traffic volumes of the surrounding transportation system within the study area limits without the proposed development. Projects that have an opening date at least one year out from the preparation of the traffic study will be impacted by natural background traffic volume growth (e.g. traffic from approved projects, population growth, etc.). The background traffic development and growth are developed by applying a background growth rate to the traffic volumes contained in the existing traffic conditions for each target/horizon year. The background growth rate is typically based on historical traffic count information from AADT counts located in the vicinity of the study area limits. Additional consideration shall be given to the likelihood for future growth in the study area and shall include traffic from other approved developments where applicable. In all cases, the background growth rate shall be pre-approved by TDOT.

2.3.3 Future Traffic Conditions without Project

Future traffic conditions without project are considered the characterization, for all target and horizon years, of the surrounding transportation system within the study area limits and without the proposed development. The future traffic conditions without project are simply developed by adding the traffic volumes contained in the existing traffic conditions together with the background traffic conditions for each horizon year. An analysis of the future traffic conditions without project within the study area limits is important in order to determine

future deficiencies in the surrounding transportation system and to compare it against future traffic conditions with project.

2.3.4 Site Traffic Conditions

Site traffic conditions are considered the characterization, based on 100% occupancy of the construction phase or full build-out, of the total number of trips generated by the proposed development of the surrounding transportation system within the study area limits. The estimated number of trips generated by a proposed development shall be calculated in accordance with Table 2.1 of this document. During the analysis of the site traffic conditions, internal circulation shall be evaluated including the location of all site ingress/egress access intersections to existing adjacent public roads. The number of access points should be kept to a minimum and designed to be consistent with the type of existing adjacent public roadway facility. A directional trip distribution percentage model of the new trips generated by the proposed development should be based on an acceptable trip distribution methodology including, but not limited to, existing traffic patterns on adjacent public roads, population centers, and employment centers of the surrounding transportation system within the study area limits. If the proposed development is a mixed-use development, each land use shall justify a separate directional trip distribution percentage model. Typically, the same directional trip distribution percentage models are utilized for each construction phase or full build-out. Once a directional trip distribution percentage model is developed, the total number of trips generated by the proposed development is assigned throughout the surrounding transportation system within the study area limits by multiplying the total number of trips by each directional trip distribution percentage model. If multiple directional trip distribution percentage models are utilized to develop the site traffic conditions, then the trip assignment for each land use and/or construction phase shall be developed separately and an overall total trip assignment generated by the entire proposed development shall be prepared to summarize all of the directional trip distribution percentage models.

2.3.5 Future Traffic Conditions with Project

Future traffic conditions with project are considered the characterization, for all target and horizon years, of the surrounding transportation system within the study area limits and with the proposed development. The future traffic conditions with project are simply developed by adding the traffic volumes contained in the future traffic conditions without project together with the site traffic conditions for each target/horizon year. An analysis of the future traffic conditions with project within the study area limits is important in order to determine future deficiencies in the surrounding transportation system and to compare it against future traffic conditions without project.

2.4 Traffic Impact Study Analyses and Mitigation Measures

2.4.1 Capacity Analyses

Capacity analyses shall be conducted by using the most recent version, including updates, of HCS software for all study roadway segment and intersections as determined during the traffic impact study scoping meeting. Although other measurements may be considered, the primary measurement for determining traffic impacts of the surrounding transportation system within the study area limits is LOS, as defined in the latest edition of the HCM. Capacity analyses for each target/horizon year and time period shall be conducted for the following three traffic conditions:

- Existing Traffic Conditions + *Background Traffic Conditions* =
- Future Traffic Conditions Without Project + *Site Traffic Conditions* =
- Future Traffic Conditions with Project

Other traffic software packages such as Synchro, CorSim, and Sidra are not required, but may be utilized in the traffic impact study analyses. Results from any traffic software shall be reported in HCM/HCS, Synchro, or as approved by TDOT.

Signalized Intersections**

LOS for existing signalized intersections shall utilize existing traffic signal timing plans provided by signal owner as a base for evaluation. Additional traffic signal phases and adjustments in existing traffic signal timings may be evaluated as long as there is not a decrease in LOS for all lane group movements within an intersection. All signalized intersections that are part of a coordinated traffic signal system shall be analyzed as such under all traffic conditions. The analysis results shall be provided in the Full Report format, including the letter grade and delay (in seconds). Unless field data is collected otherwise, the following defaults are to be used in the HCS software:

- Analysis Type = Operational
- Analysis Period Duration = 0.25
- Multiple Period Analyses (in 15-minute increments beginning from an uncongested time period before the peak period to an uncongested time period after the peak period)
- Peak Hour Factor (PHF) = As provided by TDOT or 1.00
- Right-Turn of Red (RTOR) Reductions = As provided by traffic analysis software or as recommended by TDOT
- Cycle Length Range = 60 to 90 seconds for 2 phases, 70 to 120 seconds for 3 phases, 80 to 150 seconds for 4 or more phases (if the traffic signal

is located within a coordinated traffic signal system, then the actual coordinated cycle length shall be used)

- Base Saturation Flow Rate = 1,900 passenger cars/hour/lane
- Arrival Type = 3 for isolated traffic signals or 4 for coordinated traffic signals
- Lane Width = 12 feet
- Upstream Filtering Adjustment Factor = 1.0
- Percent Heavy Vehicles = As provided by TDOT or 3% (minimum). A *heavy vehicle* is defined as any vehicle with three or more axles.

***An Intersection Control Evaluation (ICE) may be required if signalized intersections are being considered for addition or improvements. As of 5/1/2018, TDOT has yet to finalize standards and guidance for ICE, however once these standards are implemented additional evaluation may be required.*

Unsignalized Intersections

LOS for unsignalized intersections evaluated with an overall LOS E or a lane group movement with LOS F shall also be evaluated to determine which control type may be best.

2.4.2 Level of Service (LOS) Goals

The minimum LOS goals for each study roadway segment and intersection evaluated shall be in accordance with Table 2.2.

Table 2.2: Minimum LOS Goals

		Future Traffic Conditions LOS (Without Project)[1,2]					
		A	B	C	D	E[2]	F[2]
Future Traffic Conditions LOS (With Project)[1,2]	A	-					
	B	B	-				
	C	B	C	-			
	D	B	C	C	-		
	E[3]	B	C	C	D	-	
	F[3]	B	C	C	D	E	-

[1]LOS values are for all lane group movements within a specific roadway segment and/or intersection.

[2]If the volume to capacity (v/c) ratio is equal to or greater than 1.0, then the LOS is F regardless of the calculated LOS value.

[3]Signalized or unsignalized intersections operating at LOS E or F in Future Traffic Conditions without Project shall not experience increased vehicular delay greater than 10% (measured in seconds/vehicle) when compared to the Future Traffic Conditions with Project.

A summary of Table 2.2 indicates that:

- When the LOS without the proposed development is LOS A, the minimum LOS goal shall be LOS B for all lane group movements within a specific roadway segment and/or intersection.
- When the LOS without the proposed development is LOS B, the minimum LOS goal shall be LOS C for all lane group movements within a specific roadway segment and/or intersection.
- When the LOS without the proposed development is LOS C, D, E, or F the minimum LOS goal shall be equal to the LOS without the proposed development for all lane group movements within a specific roadway segment and/or intersection.

The LOS values contained in Table 2.2 are considered goals and not regulatory requirements. Instead, these LOS goals shall be utilized primarily as a screening

tool to assist in the determination of whether or not the traffic impacts resulting from a proposed development require mitigation. Proposed developments whose study roadway segments and intersections that satisfy the conditions in Table 2.2 may not be required to provide mitigation beyond their site ingress/egress access intersections to existing adjacent public roads and/or improve motorist's safety concerns adjacent to the proposed development.

2.4.3 Queuing Analyses

Queuing analyses shall be conducted at all signalized and unsignalized intersections for left turn and right turn lanes to determine the calculated storage length of the turn lanes in order to manage queue spillover. For proper queue evaluation, the queue storage ratio shall be less than 1.0. The HCS 95% percentile queue model shall be utilized to determine the appropriate vehicle queue length in feet and shall be rounded up and reported in 25-foot increments. If the 95^{th} percentile queue model cannot be achieved due to physical and/or geometric constraints currently existing within the surrounding transportation system, then the reduced queue model percentage shall be reported along with an explanation why there is a need to reduce the queue model percentage. Any reduction from the 95% percentile queue model percentage shall require prior approval from TDOT.

2.4.4 Mitigation Measures

Mitigation measures are defined as modifications to the existing surrounding transportation system within the study area limits and may be required based on the comparison results of the Future Traffic Conditions without Project and the Future Traffic Conditions with Project. In the event that the LOS results are below the LOS goals presented in Table 2.2 (i.e., transportation system deficiencies), mitigation measures for the transportation system deficiencies shall be identified to determine necessary transportation system improvements necessary to satisfy the minimum LOS goals in order to maintain the future background traffic conditions at their current level before the construction of the proposed development. To be considered an adequate proposed solution, mitigation measures should be specific. Mitigation measures for proposed developments that result from alleviating traffic impacts directly caused by the proposed development shall be identified for which the developer would be 100% responsible for the implementation of the mitigation measure. Mitigation measures for proposed developments that result from alleviating traffic impacts indirectly caused by the proposed development shall be identified for which the developer would be responsible for an equitable share payment to TDOT. The proposed development's equitable share is defined as its highest percentage of the facility's total traffic volumes during any target/horizon year and time period included in the traffic analyses. Mitigation measures may also include a reduction of the proposed development's size in order to reduce the number of peak hour trips that are generated. For proposed developments with multiple construction phases, a construction phasing plan of the mitigation measures is acceptable. Unless a construction phasing plan is being proposed, all mitigation measures

that are 100% responsible for by the developer shall be implemented prior to receipt of any certification of occupancy or final plat approval, whichever is appropriate. Examples of possible mitigation measures are presented in Table 2.3.

Table 2.3: Examples of Possible Mitigation Measures

Mitigation Category	Possible Mitigation Measure*
Roadway Improvements	• Improving sight distance • Repaving and/or re-striping • Realigning streets to eliminate offsets • Adding new travel lanes such as thru lanes and center two-way, left turn lanes • Constructing new roadways • Constructing acceleration/deceleration lanes • Improving pedestrian/bicycle access and/or circulation, including sidewalks and/or bike lanes
Intersection Improvements	• Extending or constructing left turn and/or right turn lanes • Modifications to control type based on intersection control evaluation • Modifying traffic control devices • Modifying traffic signal timing or phasing • Improving traffic signal progression • Improving pedestrian/bicycle access and/or circulation, including sidewalks and/or bike lanes
Access Management Improvements	• Increasing driveway spacing • Reducing the number of driveways • Relocating driveways or intersections • Constructing shared access driveways • Installing divided medians
Site Plan/Land Use Improvements	• Reducing the proposed development size • Adjusting construction phasing plan • Increasing driveway queue length • Improving internal circulation • Revising service vehicle/truck access and/or circulation • Improving pedestrian/bicycle access and/or circulation, including sidewalks and/or bike lanes • Improving way-finding to destinations through directional signs and pavement markings

*Including but not limited to.

2.5 Traffic Impact Study Report Format

2.5.1 General Information

The following traffic study report format is considered a recommended outline in preparing a traffic study for review by TDOT. A summary of this outline is contained in Appendix A. Most traffic studies can be documented using the sections in this outline, but additional sections may be required based on more complex proposed developments. In contrast, some of the following sections in this outline may be excluded if they are not applicable. The text contained in the traffic impact study shall be comprehensive and complete. All of the required data and information contained in the traffic impact study shall flow in an orderly manner and be clearly identified in the appropriate sections of the report including appendices.

2.5.2 Title Page

The title page is the first page of the traffic impact study and summarizes the name and location of the proposed development, name of the applicant, contact information for the applicant, and date of the study. If the traffic study was prepared by a consultant, their name and contact information is included on the title page. In addition, the professional engineer in responsible charge along with their Tennessee P.E. registration number, signature, and seal shall also appear on the title page.

2.5.3 Table of Contents

The table of contents shall provide a list of all sections, figures, and tables included in the traffic impact study report. Page numbers shall denote the location of all items listed in the table of contents. A list of all appendix headers shall also be provided in the table of contents.

2.5.4 Executive Summary

The executive summary represents a short, clear, concise description of the study findings and recommendations. The executive summary should include a general description of the proposed development scope, target and horizon years, time periods analyzed, existing and future conditions including a summary of the capacity analyses, identification of transportation system deficiencies including their mitigation measures, conclusions, and recommendations. Technical publications, calculations, documentation, data reporting, and detailed design should not be included in the executive summary.

2.5.5 Introduction

The introduction identifies the applicant's request including the need and purpose for the proposed development. The introduction provides a brief description of the proposed development's location including a figure showing a location map and a detailed description of the proposed development including the current zoning classification, the size of the parcel, anticipated completion year (or years if multiple construction phases are being planned), and the existing and proposed uses for the proposed development (e.g. square footage of each use, the number and size of dwelling units of each use, etc.). The introduction shall also identify other transportation improvement projects, other proposed roadway improvement projects, and other approved, but unconstructed, development projects in the vicinity of the proposed development site. The recommended manuals, software, and other tools used in the traffic impact study analyses shall be provided in the introduction. The traffic impact study scoping meeting shall be summarized in the introduction. The minutes from the traffic study scoping meeting including the *Traffic Study Screening Form* shall be contained in the appendix.

2.5.6 Study Analysis Considerations

The study analysis considerations shall describe the study area limits that were evaluated in the traffic impact study and identify the location of the proposed development including a figure showing the study area limits. The study analysis considerations shall also describe the surrounding transportation system within the study area limits and identify the horizon year (or years if multiple construction phases are being planned), peak hours, background growth rates, and transportation modes such as accommodations for pedestrians and bicycles.

2.5.7 Existing Traffic Conditions

The existing traffic conditions, as discussed in Section 2.3.1, shall consist of describing the existing geometric characteristics of the surrounding transportation system within the study area limits including figures showing the geometric characteristics. Such characteristics shall include acceleration, deceleration and weaving lanes. The existing traffic conditions shall also consist of developing existing year traffic volumes including figures showing the peak hour traffic volumes. The capacity and queuing analysis results of the existing year traffic volumes shall be included in this section. Any deviation from the HCS default values shall be documented. The existing traffic counts used to develop the existing year traffic volumes and the HCS computer printouts for the existing year analyses shall be contained in the appendix.

2.5.8 Background Traffic Development and Growth Calculations

The background traffic development and growth calculations, as discussed in Section 2.3.2, shall consist of documenting the development of background growth rate being applied to the current year traffic volumes for each horizon year of the proposed development.

2.5.9 Future Traffic Conditions without Project

The future traffic conditions without project, as discussed in Section 2.3.3, shall consist of developing the future traffic volumes resulting from the combination of existing year traffic volumes and the background traffic growth for each target/horizon year of the proposed development, including figures showing the peak hour traffic volumes. The capacity and queuing analysis results of the future year traffic volumes without project shall be included in this section. Any deviation from the HCS default values shall be documented. The HCS computer printouts for the future traffic conditions without project analysis shall be contained in the appendix.

2.5.10 Site Traffic Conditions

The site traffic conditions, as discussed in Section 2.3.4, shall consist of describing the proposed development, including internal circulation and the location of all site ingress/egress access intersections to existing adjacent public roads. The trip generation, distribution, and assignment methodologies shall be documented in the site traffic conditions, including tables and figures showing the development of the number of trips for the proposed development. If multiple construction phases are being planned, the trip generation, distribution, and assignment methodologies shall be documented separately for each construction phase. Support information for the proposed development shall be contained in the appendix.

2.5.11 Future Traffic Conditions with Project

The future traffic conditions with project, as discussed in Section 2.3.5 shall consist of developing the future traffic volumes resulting from the combination of future traffic conditions without project traffic volumes and the site traffic volumes for each target and horizon year of the proposed development, including figures showing the peak hour traffic volumes. The capacity and queuing analysis results of the future year traffic volumes with project shall be included in this section. Any deviation from the HCS default values shall be documented. The HCS computer printouts for the future traffic conditions with project analysis and any other related traffic analyses required in this study (e.g. multi-way stop control warrants, traffic signal warrants) shall be contained in the appendix.

2.5.12 Summary of Findings

The summary of findings shall document the comparison of the Future Traffic Conditions without Project and the Future Traffic Conditions with Project, including a table presenting the comparison results. The summary of findings shall consist of providing any transportation system deficiencies, including their proposed transportation improvement mitigation measures, as discussed in Section 2.4.4, required to maintain minimum acceptable LOS standards, as discussed in Section 2.4.2, for the surrounding transportation system within the study area limits.

2.5.13 Recommendations

The recommendations shall document in a clear, concise way any transportation improvements contained in the traffic impact study. These transportation improvements describe the mitigation measures, including the percentage of responsibility for the implementation of each mitigation measure between TDOT and the developer. The recommendations shall separate the mitigation measures into groups if multiple construction phases are being planned. The recommendation should end with a statement indicating whether or not the proposed development will meet minimum acceptable LOS standards described herein through the completion at horizon year. Proposed mitigation measures as well as road or signal improvements may also require completion target dates if the project is to be completed in a phased approach.

2.5.14 Submittal Requirements

For each traffic study review by TDOT, the consultant shall include an electronic copy of the traffic study, including data analysis files that match the data analysis presented in the traffic study. Submittal shall include two (2) signed and sealed printed copies along with the electronic final versions of the traffic study data in PDF format. Analysis files that match the data analysis presented in the approved traffic study shall also be included. Submittals shall be made to the Regional Traffic Engineering Office in the region where the property is located.