TOWN OF MOORESVILLE

TRANSPORTATION IMPACT ANALYSIS PROCEDURES MANUAL

TOWN OF MOORESVILLE, NORTH CAROLINA

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EXHIBITS

INTRODUCTION

The Town of Mooresville is committed to establishing an interconnected, multimodal transportation system that increases mobility, safety, connectivity, health, and quality-of-life for its citizens and business owners. A Transportation Impact Analysis (TIA) is one important tool for evaluating the incremental impacts that new development may have on the surrounding transportation system and it helps local decision-makers evaluate whether a development is appropriate for a site or identify mitigation measures that are necessary to maintain the integrity of the transportation system.

A TIA varies in detail and complexity depending on various factors such as project size, type, location, scope, recent development in the area, and other project-specific considerations. Upon initial submittal of the site-specific sketch plan, Town staff will determine the need for a TIA. If warranted, a Town-prequalified transportation consultant shall prepare the TIA to the requirements set forth herein and any other policies adopted by the Town's Board of Commissioners for fostering a sustainable transportation system. At the discretion of the North Carolina Department of Transportation (NCDOT) and the Town, a technical memorandum may be allowed for some developments in lieu of a full TIA report.

Payment for completing the transportation impact analysis is solely the responsibility of the applicant. Note that studies prepared outside of the process described herein will not be accepted by the Town or NCDOT.

PURPOSE OF THE TIA PROCEDURES MANUAL

The intent of this procedure's manual is to provide a consistent basis by which the Town, in coordination with NCDOT, evaluate transportation impacts within the Mooresville community. Included in this manual are minimum development thresholds that require a TIA, procedures for completing the TIA process, and requirements for data collection, analysis methodology, and report format. A TIA submitted in conformance with this procedure's manual shall satisfy the Town's requirements for identifying off-site mitigation; however, the NCDOT reserves the right to request additional information and/or subsequent analyses to satisfy their review requirements independent of the Town of Mooresville.

HOW TO USE THE TIA PROCEDURES MANUAL

This procedures manual moves from the general to the specific for completing a TIA in the Town of Mooresville. The document is organized into two main sections: 1) general information for the applicant within the subdivision plan review process and 2) expected content and methodologies to be used in the TIA. All users are expected to be generally familiar with the information presented herein; however, the transportation consultant is required to consult in detail those sections of the document most applicable to their roles in preparing the TIA.

SECTION 1: GENERAL INFORMATION FOR THE APPLICANT

The following information provides a general framework for TIAs in the Town of Mooresville.

Responsibility for Studies

Town staff shall determine whether a TIA is required as a part of the development review and approval process. When required, the TIA must be prepared for the applicant by a duly qualified and registered professional engineer in the State of North Carolina chosen from the Town of Mooresville's list of prequalified transportation consultants. The Town may, at its discretion, refer to the NCDOT prequalified consultants list for prequalified transportation consultants. In that case, a firm will be considered prequalified if it (or its subconsultant as appropriate) is prequalified for Traffic Data Collection, Capacity Analysis, and Traffic Impact Studies.

The TIA must be approved by the Town and NCDOT before the development application can move past the concept plan step in the land development process or be submitted to the Board of Commissioners for consideration of a rezoning or conditional use permit.

Minimum Thresholds for TIAs

A TIA shall be required for any site-specific sketch plan expected to generate traffic volumes that will significantly impact the capacity and/or safety of the transportation system. For the purposes of this document, significant impacts are defined for various levels of development activity – rezoning, preliminary and final plats, conditional use permit, or site plan – using expected gross trip generation defined and calculated using data published in the most recent edition of the *ITE Trip Generation Manual.*

A TIA shall be required to accompany a site-specific concept plan when expected gross trip generation is ***500 trips or more (entering/exiting combined) in a 24-hour period and 100 trips or more (entering/exiting combined) during either the adjacent road's peak hour(s) or the development's peak hour(s).*** This threshold for a TIA is an industry accepted standard from the *Institute of Transportation Engineers' (ITE) Transportation Impact Analyses for Site Development.* Notwithstanding the foregoing, and subject to all other requirements of this manual, a TIA for a plan involving redevelopment in the Town Center zoning district shall rely on NCDOT minimums as described in the latest edition of the NCDOT Policy on Street and Driveway Access. For the purposes of this manual, redevelopment is defined as the replacement, rehabilitation, or repurposing of existing improvements on an already developed site. Town Center (TC) shall have the same meaning as defined in the latest edition of the Town of Mooresville Zoning Ordinance.

Due to the variety of special circumstances associated with redevelopment, expansion, upfits, and/or change of use applications, Town staff will determine the appropriate TIA trip generation threshold calculation method for each case. In general, trip generation shall be measured as the net new base trips generated by the proposed use as compared to trips generated by the current, active use(s) on the site within the most recent six months. Development approvals within the most recent five-year period will be included in the trip generation for the current application unless a separate TIA was performed for the previously approved development.

Notwithstanding the threshold values above, a TIA shall be required for a site-specific concept plan if Town staff determines that one or more of the following conditions exist:

- Traffic generated from a non-residential development will significantly impact adjacent residential neighborhoods.

- Traffic operation problems for current and/or future years on nearby streets are expected to be substantially aggravated by traffic generated by the proposed new development.
- Affected major thoroughfares and minor thoroughfares identified in the Town of Mooresville Comprehensive Transportation Plan are experiencing noticeable delay.
- Traffic safety issues exist at intersections or streets that would serve the proposed new development.
- The proposed land use differs significantly from that contemplated in the adopted Comprehensive Land Use Plan.
- The internal street or access system is not anticipated to accommodate the expected traffic generation.
- The proposed site plan includes a building with a fast-food drive-through window. Other drive-through window uses (e.g. pharmacy or bank) shall be determined by Town staff based on the overall development plan application.
- The amount or character of traffic (existing or proposed) is significantly different from an earlier approved study and more than 24 months have passed since completion of the previous transportation study.

Mandatory Scoping Meeting

A mandatory scoping meeting is required, prior to beginning the TIA, to discuss the requirements and strategies for a TIA specific to the site and the proposed development program. Town staff, NCDOT staff, the applicant's transportation consultant, and the applicant or his representative should attend the mandatory scoping meeting. The applicant shall schedule the meeting and may invite additional members of his development team as needed.

Prior to the meeting, the applicant shall provide a copy of any previous transportation studies prepared for the site and a sketch plan showing the site location and land use(s), proposed internal circulation, and access point(s) in relation to adjacent properties and public roads. Approximate timelines for project phasing should also be communicated. The information provided will be the basis for discussion during the scoping meeting.

During the scoping meeting, discussion will include confirmation of land use, project phasing (as it relates to the phasing of off-site improvements), internal circulation, and site access; general distribution of project traffic to the site; proposed internal capture or pass-by capture rates; proposed multi-modal split (if appropriate); determination of the study intersections and the base condition assumptions for the future year, including committed development and transportation projects; and available traffic data and studies.

A memorandum of understanding (MOU) shall be prepared by the transportation consultant documenting the understood scope of the project. The MOU shall be signed by the applicant, Town staff, and the NCDOT Division 12, District 2 Supervisor, or his designee, before the transportation consultant can being work on the TIA. Failure by the applicant to provide accurate information or failure by the transportation consultant to follow the MOU shall result in disapproval of the TIA or a request for additional information.

Mitigation Measures Agreement

Upon completion of the TIA by the transportation consultant, Town staff will prepare the Mitigation Measures Agreement to summarize the development plan, phasing, and site access and the improvements required to adequately mitigate the site-specific impacts to the public transportation system. Any ongoing or additional considerations for the development as it moves forward shall be described in this document. The agreement shall be signed by the applicant, Town staff, and the NCDOT Division 12, District 2 Supervisor, or his designee, which completes of the Town's TIA process.

Any deviation from the development features as described in the final TIA, including but not limited to land uses and site access, must be submitted to the Town Staff in writing who will then determine if a TIA revision will be required.

All mitigation measures included in the executed Mitigation Measures Agreement must be implemented prior to receipt of any certification of occupancy or final plat approval, whichever is appropriate, unless otherwise provided for in a phasing plan that is included in the approved TIA.

SECTION 2: CONTENTS AND METHODOLOGIES FOR A TRANSPORTATION IMPACT ANALYSIS

The following outline shall be used for all TIA reports submitted to the Town of Mooresville. All of the required data and information must be clearly identified in the appropriate sections of the report. Text contained in the required chapters shall be comprehensive and complete. Exhibits illustrating acceptable table and figure formatting requirements are provided.

A detailed summary of the expected content and methodologies to be used in the TIA are discussed below. The MOU shall be included in the appendix of the TIA report.

Signature Page

The *Signature Page* summarizes the name of the project, project location, name of the applicant, contact information for the applicant, and date of the study. The name, contact information, registration number, signature, and seal of a duly qualified and registered professional engineer in the State of North Carolina are also required to appear on this page.

Table of Contents

The *Table of Contents* shall provide a list of all section headings, figures, tables, and appendices included in the TIA report. Page numbers shall denote the location of all information, excluding appendices, in the TIA report.

Executive Summary

The *Executive Summary* of the report represents a clear, concise description of the study findings. It should include a general description of the project scope, study horizon years, study locations, and mitigation measure recommendations. A figure summarizing recommended mitigation measures should be included. Technical publications, calculations, documentation, data reporting, and detailed design should <u>not</u> be included in this section. This section should be no longer than two pages.

I. Introduction

The *Introduction* to the report identifies the applicant's request. A scalable, 11" x 17" site plan illustrating the project as proposed at full build-out shall be included with the TIA report (*Figure #1 – Site Plan Map*). Information presented in the TIA report shall be identical in every respect to the site plan submitted for development approval.

<u>Site Description</u>

The *Site Description* should describe project location within the Town and region, the planning jurisdiction, existing zoning and use (and proposed use if applicable), and key physical characteristics of the site, including general terrain and environmentally sensitive or protected areas.

<u>Project Description</u>

The *Project Description* is a detailed description of the development, including the size of the parcel, development size, existing and proposed uses for the site, anticipated completion dates (including phasing). This information should include the square footage of each use or the number and size of dwelling units proposed.

<u>Site Access</u>

A complete description of the ingress/egress of the site should be explained and depicted. It should include number of driveways, their locations, distances between driveways and intersections, types of driveways (two-way, one-way, etc.), traffic controls, etc. Internal streets, parking lots, sidewalks and bicycle lanes, and designated loading/unloading areas should also be described. Similar information for adjacent properties should be provided to evaluate opportunities for internal connections.

The design, number, and location of access points to collector and arterial roadways immediately adjacent to the site must be fully analyzed. The number of access points should be kept to a minimum and designed to be consistent with the type of roadway facility.

Driveways serving the site should be designed in accordance with the NCDOT's *Policy on Street and Driveway Access to North Carolina Highways* (see Recommended Treatment for Turn Lanes, pgs. 78-79) and/or the Town's standards, as applicable.

II. Study Area

The limits of the *Study Area* shall be based on the location, size and extent of the proposed project, and an understanding of existing and future land uses and traffic conditions surrounding the site. The limits of the study area for the TIA shall be reviewed and approved by the Town, and NCDOT staff at the mandatory scoping meeting. At a minimum, the study area should include all streets and intersections where site traffic estimated for build-out of the project will constitute 10% or more of any intersection approach during the peak hour. Due to related impacts or current operational problems, the Town, and/or NCDOT staff may require other intersections be included in the study area.

A narrative describing the study area should identify the location of the proposed project in relation to the existing transportation system and list the specific study intersections and/or segments. Any unique transportation plans or policies applicable to the area (e.g., CATS commuter rail service) should be mentioned. A site location map (*Figure #2 - Vicinity Map*) shall be provided and should identify natural features, major and minor roadways within the study area, study intersections, and a boundary of the site under consideration.

III. Study Scenarios

This section identifies the base conditions to be used to build the transportation model.

<u>Existing Conditions</u>

A description of the *Existing Conditions* for the transportation system within the study area shall include a narrative and map that presents AM and PM peak hour turning movement volumes for all study intersections (signalized and unsignalized) (*Figure #3 – Existing Traffic Volumes*).

Traffic volumes shall be 15-minute interval weekday turning movement counts (Tuesday through Thursday) and no more than twelve months old. Typically, the required count timeframes are from 7:00-9:00 a.m. and 4:00-6:00 p.m., however site-specific conditions may necessitate different traffic counting hours or requirements. For example, 12-hour turning movement counts shall be required to complete the analysis if a traffic signal warrant analysis is required as part of the TIA. Town staff will determine if additional peak hours or weekend analyses shall be included in the TIA at the mandatory scoping meeting.

Traffic volumes should also represent weeks that have no observed federal, state, or local holidays and periods of the year when local schools are in session with standard operating hours. Traffic volumes may not be used when collected during a week with local race activities. In heavily commercial or retail corridors, traffic volumes may not be used between November 20 and January 1. The source of existing traffic volume information should be explicitly stated (e.g., Town counts, new counts collected by the applicant, NCDOT counts, etc.). Summary sheets for existing turning movement counts should be included in the appendix of the TIA report.

A separate narrative and map shall be prepared to describe the characteristics of surrounding major roadways, including functional classification, number of lanes, posted speed limit, existing average daily traffic volumes, typical cross section, intersection control (signalized or unsignalized), and lineal distance between major roadways (*Figure #4 – Existing Geometrics*). Field notes for the existing conditions investigation may be included in the appendix of the TIA report.

Future No-Build Conditions

Future Year No-Build Conditions for a single-phase development is built out year + 1 year. If the development plan indicates that a multiple phase TIA is necessary, the scenarios should be completed in order, with any improvements specified by development included in the subsequent build scenarios. Specific analysis periods to include in the study shall depend greatly upon the development program, proposed project phasing plan, and significant improvements programmed for the transportation system.

The committed development and transportation projects to be included in the base Future Year Conditions for the transportation system within the study area shall be determined during the scoping meeting. Transportation improvements assumed in the base future year conditions analysis may include those with an expected completion date concurrent with that of the development and funded through either the Town of Mooresville Capital Improvements Plan, State of North Carolina Transportation Improvement Program, or indicated as a required condition of approval from another nearby development application. Only projects approved by Town staff at the scoping meeting may be included in the analysis as future existing infrastructure. Those improvements committed by other projects must be clearly identified in the report as approved offsite development road improvements. Adjacent development traffic information used in the development of the base Future Year condition should be included in the appendix of the TIA report. Unfunded, planned infrastructure projects may be mentioned but the description should specifically identify that these projects are not included in the base condition.

Future year traffic volumes shall be forecasted using historical growth rate information, regional models, and/or TIA reports for development approved by the Town but not yet built. A narrative and map shall be prepared that presents turning movement volumes for each peak hour for all intersections (signalized and unsignalized) identified for study (*Figure #5 – Future Year Traffic Volumes*). Future year base volumes, other development volumes, and site traffic volumes should be clearly separated, and combined, in the map.

Future Project Build Condition

Project Traffic shall be generated for the proposed development program using the traditional three step process of trip generation, distribution, and assignment. These steps are described in detail below.

Trip Generation

Base trip generation for the proposed land use(s) should be calculated using the latest data published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*. Data limitations, data age, choice of peak hour or adjacent street traffic, choice of independent variable, and choice of average rate versus equation shall be discussed at the mandatory scoping meeting.

Local trip generation rates may be acceptable if appropriate validation is provided by the applicant to support them. Any deviation from ITE trip generation rates shall be discussed in the mandatory scoping meeting and documented in the MOU if approved by Town staff and NCDOT.

The NCDOT Municipal School Transportation Assistance (MSTA) calculator should be used to calculate projected trip generations for school sites. Documentation of the approval by MSTA of calculations shall be included in the submitted TIA.

> *Internal Capture* - Base generation may be reduced by rate of internal capture when two or more land uses are proposed using methodology recommended in the most current *Trip Generation Handbook* published by the Institute of Transportation Engineers. Reductions greater than 10% require consultation and acceptance by Town staff and NCDOT. The internal capture reduction should be applied before pass-by trips are calculated.
>
> *Pass-by Trips* - Pass-by trips are those made as intermediate trips between an origin and primary destination (i.e., home to work, home to shopping, etc.). However, pass-by trips are not diverted from another roadway. Base trip generation may be reduced by rate of pass-by capture using methodology recommended in the most current *Trip Generation Handbook* published by the Institute of Transportation Engineers. Pass-by trips associated with the development program may not exceed 10% of the existing volume reported for the adjacent public street.

A trip generation table (*Table #1 – Trip Generation*) shall summarize all trip generation calculations for the project.

Trip Distribution
External trip distribution shall be determined on a project-by-project basis using one of several sources of information available to transportation professionals. Potential sources for determining project trip distribution may include the regional travel demand model, market analysis, existing traffic patterns, or professional judgment. Regardless of methodology, the procedures followed and logic for estimating trip distribution percentages must be well-documented in the TIA. Trip distribution percentages proposed for the surrounding transportation network should be discussed during the mandatory scoping meeting and shall be approved by Town Staff and NCDOT before proceeding with the TIA.

A map showing the percentage of site traffic on each street included in the study area should be included in the TIA (*Figure #6 – Trip Distribution*).

Trip Assignment
Project traffic shall be distributed to the surrounding transportation system based on the site's trip generation estimates and trip distribution percentages. Future year traffic forecasts (i.e., future year background traffic plus project traffic) shall be presented in both tabular and graphic formats for AM and PM peak hour conditions at all intersections included in the study area *(Figure #7 – Future Year Traffic Volumes with Project)*. If the project will be built in phases, traffic assignments shall be reported for each phase. Pass-by traffic shall be included at the driveways and access points for evaluating driveway volumes.

IV. Capacity Analysis
The primary measurement for impacts to the transportation system is level of service (LOS), as defined by the most current edition of the *Highway Capacity Manual*. Levels of service for signalized intersections shall be determined using existing signal timing plans provided by either the Town of Mooresville or the NCDOT. Existing signal timing plans should be included in the appendix of the TIA report. If a traffic signal is part of a coordinated system, it must be analyzed as such under all conditions. Other standard practices and default input values for evaluating signalized intersections should be consistent with guidelines published by the NCDOT Traffic Engineering and Safety

Systems Branch, Congestion Management Unit ("*Capacity Analysis Guidelines*"). Town staff may also require safety, traffic simulation, gap and/or other analyses appropriate for evaluating a development application. Additional analyses required for the TIA shall be identified during the mandatory scoping meeting.

All TIA reports shall use Synchro Software for signalized and unsignalized intersections, Sidra Software for roundabouts, and SimTraffic consistent with policies released by the NCDOT. A narrative, table, and map shall be prepared that summarizes the methodology and measured conditions at the intersections reported in level of service (LOS A – F), approach delay for unsignalized intersections or intersection signal delay for signalized intersections for all intersections (*Table #2 – Summary of Level of Service Measurements, Figure #8 – Existing LOS, Figure #9 – Future LOS (No Build), Figure #10 – Future LOS (Build-out)).* Capacity analysis worksheets and turn lane warrants should be included in the appendix of the TIA report.

Capacity analyses shall be conducted to determine levels of service in each peak hour for all intersections (signalized and unsignalized) identified for study using methodologies contained in the most current edition of the *Highway Capacity Manual*. Capacity calculations should be included for existing, future year no build + 1-year, future year build phase(s), and future year build-out + 1-year conditions for all project phases. Impacts from the proposed project shall be measured by comparing the Future year build + 1 year and the Future year no-build + 1-year conditions. Unless otherwise approved by Town staff and NCDOT, the proposed project shall not degrade the overall intersection level of service for signalized intersections, or level of service for the critical movement of unsignalized intersections. Further, signalized or unsignalized intersections operating at LOS E or F within the study area may not experience increased delay (measured in seconds) as a result of the proposed project. The following text should be embedded into the report:

> *Mitigation is required when the Build condition exceeds the No-Build conditions by any of the following minimum thresholds:*
>
> 1. *The average delay at an intersection or individual approach increases by 25% or greater, or*
> 2. *The Level of Service degrades by at least one level, or*
> 3. *Level of Service is "F"*

Recommendations to mitigate development impacts back to the no-build condition shall be described in this section and documented with Build with Capacity Improvements capacity analysis.

V. Queuing Analysis

95th percentile and simulation analysis of future year queues shall be consistent with NCDOT's Traffic Engineering and Safety Systems Branch, Congestion Management Unit current practices and published *Capacity Analysis Guidelines*. Turn lanes for unsignalized driveways serving the site shall be identified using volume thresholds published in the NCDOT's *Policy on Street and Driveway Access to North Carolina Highways* (see Warrant for Left- and Right-Turn Lanes Nomograph, pg. 80). Recommendations for left and right turn lanes serving the site shall be designed to meet future year capacity needs identified in the TIA report. The following text should be embedded into the report:

> *Mitigation is required when the Build condition exceeds the No-Build conditions by any of the following minimum thresholds:*
>
> 1. *Increase of 50' or more in queue length*
> 2. *Left-turn and/or right-turn lane warrants (NCDOT's Policy on Street and Driveway Access to North Carolina Highway) are identified*
> 3. *Build with Capacity Improvements queue exceeds existing storage length*

For projects that include drive-through facilities or entrance gates, a queuing analysis may be required by Town staff to ensure that vehicle stacking will not adversely impact the public transportation system. The queuing analysis must be performed using accepted transportation engineering procedures. This analysis shall be required for all fast-food drive-through uses.

If a TIA is required for a new school site, the consultant must model the internal circulation and ingress/egress of the site using a "dummy signal" in the Synchro software as prescribed by NCDOT Municipal School Transportation Assistance (MSTA) department.

VI. Collision Analysis

A summary of crash data (type, number, and severity) for the most recent 3-year period at each study location is required. Traffic Engineering Accident Analysis System reports will be provided by Town staff and should be included in the appendix of the TIA report.

At a minimum, the proposed development features shall not contribute to factors potentially involved in collision rates. If contributing factors are identified, recommendations to eliminate these features shall be included.

VII. Traffic Signal Warrants

Town staff and NCDOT may consider potential signal locations at the mandatory scoping meeting. However, traffic flow progression is of paramount importance when considering a new traffic signal location. A new traffic signal should not cause an undesirable delay to the surrounding transportation system.

Installation of a traffic signal at a new location shall be based on the application of warrants criteria contained in the most current edition of the Manual on Uniform Traffic Control Devices (MUTCD) and engineering judgment. Traffic signal warrants should be included in the appendix of the TIA report. Additionally, spacing of traffic signals within the Town of Mooresville must adhere to guidelines published in the Town's Comprehensive Transportation Plan and/or NCDOT requirements. Pedestrian movements must be considered in the evaluation and adequate pedestrian clearance provided in the signal cycle split assumptions.

If a signal warrant analysis is recommended in the TIA, the Town and/or NCDOT may decide to defer a signal warrant analysis until after the development has opened in order to use actual turning movement counts at an intersection. The TIA recommendations must clearly state that this analysis shall occur at a specified date following the opening of the development. The applicant must issue a bond or letter of credit in the name of the Town or NCDOT as appropriate for the estimated cost of the signal warrant analysis and resulting signal prior to final approval of the TIA. The cost shall be established based on an engineer's estimate provided by the engineer of record for the applicant, however final approval of the dollar amount rests with the Town.

VIII. Compliance with Adopted Transportation Plans

All TIA reports must include a statement of compliance with plans, programs, and policies adopted by the Town of Mooresville for maintaining a safe and efficient multimodal transportation system. Town staff shall provide the applicant with information to consider for improving bicycle and pedestrian circulation and/or access to the site at the mandatory scoping meeting.

IX. Recommendations

This section of the report shall provide a clear, concise description of the study's findings regarding impacts of the proposed project on the existing and proposed transportation system and describe the location, nature, and extent of all mitigation measures recommended to the applicant to improve

and/or maintain the future year no build level of service (LOS) conditions through phasing and build-out of the project. The applicant is only required to mitigate transportation deficiencies for their development and not unacceptable background conditions, or other deficiencies caused by off-site development within the defined study area.

For multi-phase developments, the capacity analyses scenarios shall address the phasing of improvements required to provide an acceptable level of service with each phase. A narrative and table shall be prepared that summarizes the methodology and measured conditions at the intersections reported in level of service (LOS A – F) and seconds of stop delay (*Table #3 – Level of Service with Mitigation*). A narrative and map shall also be prepared that describes and illustrates recommended mitigations, by phase if necessary, for maintaining the integrity of the transportation system (*Figure #11 – Recommended Roadway Laneage).*

Timing, scope, and transportation consultant cost of any deferred analysis should be clearly described.

The recommendation should end with a statement by the duly qualified and registered professional engineer in the State of North Carolina responsible for the TIA that indicates whether or not the proposed project will meet minimum standards described herein through build-out of the project.

Town staff and NCDOT will review the recommendations in the final version of the TIA and will have the ultimate determination in the scope of the required mitigation measures. The TIA shall be approved if the recommendations from the report will adequately mitigate the site-specific impacts to the public transportation system.

Final mitigation measures shall be the responsibility of the applicant unless otherwise determined by Town staff and NCDOT.

Appendices

The *Appendix* of the TIA shall contain in following information (if applicable), in the order provided below:

- Approved Memorandum of Understanding (MOU) from the mandatory scoping meeting
- Traffic Counts Worksheets
- Field Investigation Notes
- Adjacent Development Traffic Information
- Traffic Signal Plans
- Capacity Analysis Worksheets
- Synchro/SimTraffic Output Files
- Turn Lane Warrants
- Traffic Engineering Accident Analysis System (TEAAS) Report
- Traffic Signal Warrants
- Email and Written Correspondence