

## **TRANSPORTATION IMPACT ANALYSIS PROCEDURES & REQUIREMENTS**

(Revised 04/01/2023)

### **PURPOSE:**

These procedures are intended to outline and regulate the requirements for performing Transportation Impact Analysis (TIA) for all developments in Osceola County.

### **PROCEDURES:**

- a) Prior to conducting either a Tier 1 or Tier 2 study, a written County Methodology Form shall be completed and submitted by the applicant for review by County Traffic Operations Engineer (CTOE) for determination of which study tier will be required. The purpose of this Form is to establish all assumptions, research extents, and methodologies prior to the start of the Traffic study. The CTOE may require the inclusion of proposed or anticipated traffic elements in the future conditions analysis. These elements may not exist in the “existing condition”. A revised Methodology Form shall be submitted based on CTOE comments. Traffic studies will not be accepted prior to an approved Methodology Form. The Methodology Form can be found in Appendix A.
- b) The requirements for TIAs are based on the impact analysis of the net external AM and PM peak hour trips for the project and must be submitted at the designated time during the development review process as determined by Table 1. For multi-phase developments, the trip thresholds are based on project buildout, not per phase.
- c) The level of analysis shall include, at a minimum, the estimated total net external AM and PM peak hour trips for the project as established in these procedures. Net external AM and PM Peak Hour Trips shall be defined as whichever is greater of those two-way trips within the AM peak hours (approximately 7-9 AM) or the PM Peak Hours (approximately 4-6 PM) that are considered new trips to the project. The ITE Trip-Gen Time Period used shall be peak hour of Adjacent Street Traffic for standard developments, and Peak Hour of Generator for developments with peak traffic outside the hours listed above (for example: schools, churches, movie theaters, etc.)
- d) An evaluation of alternate modes of transportation such as transit, bicycles, and sidewalks for pedestrians, etc., shall be included to measure and monitor the functional effectiveness of these alternative modes of transportation.
- e) The Transportation & Transit Department shall be responsible for the review and approval of TIAs.
- f) In cases of redevelopment, external trips shall be based upon the new or proposed land use as compared to the existing land use at the time of redevelopment, as well as analysis of operational improvements. Credit for prior use must be utilized in connection with a redevelopment of the site within two (2) years following the demolition of the existing structure or termination of the existing use, whichever first occurs.
- g) For developments producing less than 10 vehicle trips in the peak hour, no TIA will be required.

**Table 1. TIA Requirements**

	<b>Tier 1 – “Minor Traffic Memo”</b>	<b>Tier 2 - "Major Development Traffic Study"</b>
<b>Maximum AM and PM Peak Hour Two-Way Trips (whichever is greater)</b>	10 ≤ 50 Trips	≥ 51 Trips
<b>Committed Improvements</b>	5-Year TIP/WP/CIP/CIE: (Projects with construction funds allocated within the first three years)	
<b>Signed by Florida PE</b>	YES	
<b>FDOT Review</b>	NO	YES, if the project trips are > 5% significance on a state roadway and more than 3% significance on SIS.
<b>Segment Analysis</b>	Adjacent Street(s) [Immediately in front of project]	All segments within a 2-mile radius and as directed by the CTOE. Significance testing will not be used to limit segment analysis.
<b>Study Intersections</b>	Driveway Access Points & Intersections as determined by the CTOE	All Signalized and Major Unsignalized within a 2-mile radius and as directed by the CTOE. Significance testing will not be used to limit segment analysis.
<b>Background Traffic</b>	Current Year – Existing Traffic	Background traffic from available AADT data from County/FDOT of that year, and growth rates will be calculated from: approved and submitted projects within the TIA boundary, County/FDOT AADT historical growth rate or 5% increase (whichever of those are greater). Please use a minimum 2% historic growth rate on infill areas of fully built-out situations, and a minimum 5% historic growth rate for suburban/urban expansion areas with tracts of developable acreage.
<b>TIA Requirements</b>	Trip Generation (Daily AM and PM Peak-Hour) Driveway Peak-Hour Analysis	<p><b>-1.0 Introduction to include:</b> Executive summary, Purpose of the project, Project Description, Site Location, Site Plan, Study Area/Area of Influence, Planned and Programmed Improvements and Committed Development in the area.</p> <p><b>-2.0 Existing Roadway &amp; Intersection Conditions:</b> Pertinent existing roadway information, Existing roadway segment geometry, Existing intersection geometry, Existing traffic volumes and Existing LOS.</p> <p><b>-3.0 Future Roadway &amp; Intersection Conditions:</b> Pertinent Future Roadway Information, Future Roadway Segment Geometry and Future Intersection Geometry</p> <p><b>-4.0 Future Traffic Conditions (if appropriate):</b> Background Traffic, Trip Generation, Trip Distribution and Assignment and Future Traffic Volumes. Each of these should be clearly displayed in figures.</p>

<p style="text-align: center;"><b>TIA Requirements (Continued)</b></p>	<p style="text-align: center;">Trip Generation (Daily AM and PM Peak-Hour) Driveway Peak-Hour Analysis, Including auxiliary lane warrant analysis per LDC 4.4.3.</p>	<p>-Transportation Assessment: Segment Analysis (v/c ratio), Intersection Analysis, On-site Turn Lane Analysis (based on Section 4.4.3.E of County's Land Development Code; 95<sup>th</sup> percentile queue analysis for all movements at all study intersections including site access) (for special uses that exhibit peak hours outside of the traditional AM &amp; PM Peak hours, queue analysis should be based on the project's peak hour trip generation) and Access Analysis, Analysis of future scenario/conditions per development phasing (based on projected AM/PM Peak-hour trips).</p> <p>-If there is any proposed access onto a County Maintained Framework Road that is not up to County Standards as defined by the TRN Maps of the Comprehensive Plan, the Southeast Area Transportation Study (SEATS), or another County approved Concept Plan, the analysis should identify the number of lanes needed on the Framework Roadway to serve the development.</p> <p>-Multimodal Assessment: Transit, Bicycle and Pedestrian.</p> <p>-Recommended/Warranted transportation improvements per development phasing (based on projected AM/PM Peak-hour trips).</p> <p>-Mitigation Strategies: Recommended Off-site Improvements, and if eligible, Proportionate Share Calculations</p> <p>-Summary/Conclusions: Brief discussion to highlight the reason for the TIA Tier classification, completed Methodology Form, General Results of the Analysis and Action Requested (e.g., approval of mitigation strategy) of the local government.</p> <p>-Appendix: Notification of Approved Methodology Form, Traffic count data, Site Plan, Existing signal timing form maintaining agency, Capacity Analysis Summary Sheets, Existing Conditions, Future Conditions, Trip Distribution Plot from the Travel Demand Model, and all other pertinent data to support the TIA.</p>
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## **ANALYSIS REQUIREMENTS:**

### 1. Traffic Data:

- a) Intersection turning movement and roadway segment volume traffic data used in analysis that is not provided by the County shall be from within 12 months of the TIA submittal. Tube counts shall be required for all roadway segment volume traffic data. Please ensure that traffic counts are only done during school days, otherwise collected counts will not represent accurate or reliable County data. If authorized by the County Engineer or designee, other sources of traffic count data may be used for the TIA.
- b) The latest Edition of the ITE Trip Generation Manual shall be used for calculation of project trips. Trips may be calculated using either ITE Land Use averages or direct ITE Land Use equations. If authorized by the CTOE or designee, trip generation data from other sources may be utilized in the analysis.
- c) The latest ITE Trip Generation documents shall be used to quantify pass-by trips and internal capture.
- d) For non-residential properties, local streets shall be included in the driveway control portion of the analysis if access is proposed from those segments.
- e) Roadway capacities will be provided by Osceola County, and are available on our County website located at: <https://www.osceola.org/agencies-departments/transportation-transit/traffic-counts-map.stml>. In the event the information is not available from the County, FDOT generalized level-of-service standards may be used upon confirmation by the CTOE. Roadway improvements programmed within the County's adopted Capital Improvement Program (CIP) may be utilized as long as the improvement is funded for construction within the first three years of the CIP.
- f) Projected background traffic based on phasing buildout years shall utilize other approved and submitted projects within the TIA boundary, historical growth rates, model background traffic, a minimum 2% growth factor for urban infill areas of fully built-out situations and 5% growth factor for suburban/urban expansion areas with surrounding developable acreages, or if authorized by the County Engineer and/or designated municipalities, variations in the growth factors for intersection and roadway traffic volumes may be utilized. A map of the urban infill areas and urban/rural expansion areas can be referenced from Appendix D. The projected background traffic for all intersections and roadway segments shall be reviewed and approved by Community Development Department and Transportation and Transit staff for reasonableness of future conditions.

### 2. Analysis:

- a) Existing scenario is defined as the analysis of existing traffic on the existing network. The existing network includes all existing roads, major roads under construction by a non-governmental party, plus all improvements for which construction contracts have been executed by government agencies at the time the proposed transportation methodology statement is initially submitted.

- b) Future scenario is defined as the analysis of existing traffic, plus background traffic (derived from growth rates), plus the project's traffic placed on the existing network, plus all improvements funded for construction within the first three years of the local jurisdiction's adopted CIP and/or adopted TIP. For multiphase developments include analysis of future scenario/conditions with recommended/warranted transportation improvements per development phasing. Concurrency is no longer in use by Osceola County.
- c) If there is any proposed access onto a County Maintained Framework Road that is not up to County Standards as defined by the TRN Maps of the Comprehensive Plan, the Southeast Area Transportation Study (SEATS), or another County approved Concept Plan, the analysis should identify the number of lanes needed on the Framework Roadway to serve the development.
- d) If signalization is proposed as a mitigation measure, Florida DOT signal warrant summary worksheets and an ICE analysis shall be provided for the location(s) proposed for signalization.
- e) Future scenario with mitigation is defined as analysis of the Future Scenario with the inclusion of any other improvements that are required for mitigation. This analysis scenario will be required only if mitigation is required as the result of the future scenario analysis. Off-site capacity deficiencies requiring mitigation will require a proportionate share cost analysis. If improvements are to be above the minimum criteria of our County's Land Development Code Chapter 4 and you have entered into a Developer-Funded County Obligation Agreement with Osceola County, please see Appendix C for the accepted proportionate-share formula.
- f) Multimodal Assessment: If the development location is in a present or future urbanized area, as determined by the CTOE, an evaluation of present and programmed bike, pedestrian and transit mobility options is necessary. A system assessment of sidewalks, bikeways and existing transit routes should be documented. The site plan should also address how walking, bicycling and transit ridership will be encouraged through one or more of the following:
- Safe, adequately lit, and well-maintained pathways
  - Shelters along sidewalks
  - Bicycle Parking facilities
  - Identifiable crosswalks
  - Transit bus stops & transit stop amenities (i.e., bench, bus shelter, etc.)
  - Phased traffic signals to accommodate pedestrian movements
  - Removal of natural and/or built barriers that discourage walking
  - Compliance with Americans with Disabilities Act requirements
  - Buffering between vehicular areas and sidewalks
  - Linkage to existing or future walkway and/or bikeway network and transit route
- g) A Transportation Impact Analysis Methodology Form is mandatory for all TIAs to be submitted to County staff for review and will require the CTOE or designee to sign off on the methodology in the form of a response letter and/or email, before TIA reports can be considered for review.
- h) Additional traffic software may be used for evaluation of intersection operations, determination of roadway capacities and LOS determination of roadway segments.
- i) Traffic modeling utilizing the currently approved and calibrated Central Florida Regional Planning Model (CFRPM) computer traffic model shall be required for all Tier 2 traffic impact analyses, unless an exemption is provided by the CTOE. The County reserves the right to request modifications to the Traffic Analysis Zone socioeconomic data within the CFRPM traffic model

or any other computer traffic model that is utilized. If authorized by the CTOE or designee, a different computer traffic model, including proprietary models, may be utilized.

3. Report:

- a) TIA report shall be provided in the order and format outlined in Table 1, and Appendix B. Use of maps and graphical representations and illustrations are encouraged for ease of comprehension.
- b) A draft report containing all elements (electronic analysis files such as Synchro, HCS, Cube Model files, etc.) shall be provided for review with the corresponding application submittal. County Transportation & Transit Department staff, or designees, shall review the report and provide comments through the Development Review process.
- c) The final approved TIA report shall be signed & sealed by a qualified Florida registered professional engineer.
- d) One (1) signed & sealed electronic copy in PDF format of the final, approved TIA shall be uploaded to the County's permitting system (Accela), along with all backup traffic analysis, modeling files, and a complete associated Methodology Form. This record upload is required for any development applications requiring receipt of a permit. This record upload is also required for any future development application revisions requiring receipt of a new permit, and/or for any future development applications related to the overall project buildout of the traffic study (i.e. multi-phase developments)
- e) The validity of transportation impact analysis reports and associated documents shall remain valid for up to three years. Beyond three years, background traffic volumes will change significantly, so therefore, an updated TIA report will need to be submitted for County review.

**Appendix A. – Methodology Form.**

1. Project Name: \_\_\_\_\_

2. Project Description: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3. Attach Location Map. If Tier 2, show 2-mile radius.

4. Attach Site Plan.

5. Buildout Year: \_\_\_\_\_

6. TIA Tier: \_\_\_\_\_

7. AM and PM Peak Hour Trips: \_\_\_\_\_

8. ITE Land Use Code from the latest ITE manual: \_\_\_\_\_

9. ITE Time Period from the latest ITE manual: \_\_\_\_\_

10. Attach Trip Generation Summary Table.

11. Travel Demand Model: \_\_\_\_\_

12. List of Intersections included in the TIA: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

13. List of Road segments to be included in the TIA: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

14. Planned and Programmed Improvements: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## **Appendix B – Traffic Impact Analysis Outline.**

### Executive Summary

#### 1.0 Introduction

- a. Purpose of the project,
- b. Project Description,
- c. Site Location – include figure.
- d. Site Plan – include figure.
- e. Study Area/Area of Influence – include figure,
- f. Planned and Programmed Improvements
- g. Committed Development in the area.
- h. Methodology summary – full methodology detailed in Appendix A

#### 2.0 Existing Roadway & Intersection Conditions

- a. Existing roadway segment geometry – include figure or table.
- b. Existing intersection geometry – include figure.
- c. Existing traffic volumes – include figure and discussion of any factors applied to raw counts, supporting documents placed in Appendix B
- d. Existing LOS – segment and intersection LOS – include figure or table, supporting documents placed in Appendix C (Synchro HCM and signal timing reports, signal timings from existing traffic controller)

#### 3.0 Future Roadway & Intersection Conditions

- a. Future Roadway Segment Geometry – include figure or table.
- b. Future Intersection Geometry – include figure.
- c. Planned and Programmed improvements in the first 3 years of the CIP, supporting documents placed in Appendix D

#### 4.0 Future Traffic

- a. Growth rate analysis – Use FDOT Trends analysis tool or 5%, whichever is greater, supporting documents placed in Appendix E
- b. Future Background Traffic – include figure.
- c. Trip Generation- include table and supporting ITE data.
- d. Trip Distribution – include figure and supporting model output – supporting documents placed in Appendix F
- e. Trip Assignment – include figure.
- f. Future Traffic Volumes – include figure.

#### 5.0 Transportation Assessment:

- a. Segment Analysis for no build and build out condition (V/C ratio, LOS) – include table.
- b. Intersection Analysis for no build and build out condition (V/C ratio, LOS) at all study intersections– include table. Supporting Synchro outputs should be as follows: Appendix G – No build, Appendix H – Build Out
- c. Turn Lane Analysis (based on Section 4.4.3.E of County’s Land Development Code – use 95<sup>th</sup> percentile queue analysis for all movement at all study intersections including site access. For special uses that exhibit peak hours outside of the traditional AM & PM Peak hours, queue analysis should be based on the project’s peak hour trip generation and coordinated with CTOE prior to submittal.
- d. Access Analysis

- e. Analysis of future scenario/conditions per development phasing (based on projected AM/PM Peak-hour trips) as needed.

#### 6.0 Multimodal Assessment: Transit, Bicycle, and Pedestrian

#### 7.0 Determination of Off-site improvements

- a. Recommended transportation improvements per development phasing (based on projected peak-hour trips)

#### 8.0 Mitigation Strategies

- a. Recommended improvements – include supporting operational analysis as needed (analysis should be in an appendix)
- b. Proportionate Share Calculations – support calculations should be in Appendix I

#### 9.0 Summary/Conclusions:

- a. Brief discussion of the methodology followed,
- b. General Results of the Analysis
- c. Action Requested (e.g., approval of mitigation strategy) of the local government.

Appendix A: Detailed methodology

Appendix B: Traffic Data – counts, seasonal factors

Appendix C: Existing Analysis Data

Appendix D: Planned and programmed improvements.

Appendix E: Growth rate calculations and supporting documentation

Appendix F: Model Output

Appendix G: No Build Operations analysis

Appendix H: Build Out Operational analysis

Appendix I: Proportionate Share Calculations (if applicable)

## Appendix C – Proportionate-Share Equation.

Peak Hour Trip-Based Method:

$$\text{Prop Share} = \frac{\text{Project Trips}}{\text{Total Projected Trips}} * 100 = \text{Proportionate Share \%}$$

\*\*\* **“Projects Trips”** = AM trips or PM trips, whichever is higher. For developments with peaks outside the standard AM and PM peak hours, use the Peak-Hour of Generator.

# Appendix D – Urban Infill Areas Vs Urban/Rural Expansion Map.

