Guidelines for
Traffic Impact Analysis

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December 5, 2013

Iowa Department of Transportation

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I. Introduction

Assessing operational impacts from a permitted access connection is imperative when managing the primary highway system. Moreover, access management is vital to ensuring that a safe and efficient road system is maintained. Therefore, the following guidance and requirements have been documented to provide a clear understanding of the operational impacts from moderate to high volume commercial access connections. Although traffic volumes are a key factor, the Iowa Department of Transportation (Department) may request an impact analysis for lower volume accesses if the highway has been determined, at the sole discretion of the Department, to be nearing capacity.

The purpose of this document is to establish uniform guidelines for preparing a traffic impact analysis. The Department requires a traffic impact analysis for all Type "A" and "B" access permits.

II. Purpose of Traffic Impact Analysis

The purpose of the traffic impact analysis is to identify system and immediate area impacts associated with a proposed development. Identification of impacts and appropriate mitigation measures allows the Department to assess the existing and future highway system's safety, performance, maintenance, and capacity needs.

The Traffic Impact Analysis guidelines will:

1. Provide information to the applicant on initial information needed and specific traffic impact documentation required.
2. Ensure consistency in the preparation of traffic impact analysis information.
3. Define the acceptable format for the required traffic impact analysis.
4. Create a clear understanding of the impacts resulting from the proposed access to the primary highway system.

III. Initial Applicant Submittal

When requesting a commercial access to the primary highway system, the requestor shall:

1. Identify the location (primary highway number and orientation) of the proposed access.
2. Identify the proposed land use that will be served by the proposed commercial access.
3. Provide the total leasable square footage of the commercial development (Full Build-out).
4. Characterize vehicle types that will use the entrance. Give the percent of cars, single unit trucks, and combination unit trucks.

This information will be used to estimate the future traffic demands based on the development size and land use. The Department will use this traffic estimate to evaluate operational concerns.

IV. Level of Traffic Impact Analysis

Based on traffic volumes, there are two traffic impact analysis levels, Traffic Impact Letter (TIL) or Traffic Impact Study (TIS).

TRAFFIC VOLUME	TRAFFIC IMPACT LETTER (TIL)	TRAFFIC IMPACT STUDY (TIS)
AADT (Annual Average Daily Traffic)	Less than or equal to 500 trips	Greater than 500 trips
Peak Hour Volume	Less than or equal to 100 trips	Greater than 100 trips

Specific threshold criteria have been defined for each level related to traffic impact. Threshold criteria were developed to avoid placing an undue burden on development with moderate traffic volumes with minimum frequency, while ensuring that large developments with significant impacts are thoroughly

evaluated. The Access Policy Administrator will determine the traffic impact analysis level based on preliminary data supplied by the applicant and potential impact on the primary highway system.

V. Traffic Impact Analysis Submittal

As a result of the initial information submitted, the Access Policy Administrator will inform the applicant which level of analysis will be required. Therefore, the applicant will be responsible for delivery of acceptable traffic impact documentation. The traffic impact analysis should be authored by an individual or entity demonstrating the capability to analyze mobility, traffic engineering, and design elements. Coordination between the study and proposed site design is essential. The traffic impact analysis must be completed and sealed by a Professional Engineer licensed in the State of Iowa. The applicant, via their professional engineer, will submit the proposed entrance design and the required traffic impact analysis to the appropriate district office.

VI. Traffic Impact Letter (TIL)

A. Purpose of the Traffic Impact Letter

The purpose of a Traffic Impact Letter (TIL) is to give the Iowa DOT vital information regarding potential impacts associated with developments along the Primary Highway system.

Traffic impact letter is intended to:

i. Document whether the access request meets the requirements of the TIL process.
ii. Analyze location and access connection(s) necessary to minimize traffic volumes.
iii. Recommend the need for any improvements to the adjacent and nearby roadway system to maintain a satisfactory level of service and safety.
iv. To protect the function of the highway system while providing appropriate and necessary access to the proposed development.

B. Traffic Impact Letter Thresholds

A traffic impact letter is required if the proposed land use development meets one of the following design year volume conditions:

i. Trip generation for the proposed land use development is less than or equal to 500 daily vehicle trips or
ii. Trip generation for the proposed land use development is less than or equal to 100 peak hour vehicle trips or
iii. When considered necessary by the Iowa DOT due to the nature of the proposed land use development and potential impact on the Primary Highway System.

C. Traffic Impact Letter Requirements

i. Study area description.
    a. Show the study area boundary. A recommendation in determining the study area boundary is to carry the analysis out at least as far as the nearest major intersection(s) or desirably, to points on the system where the influence of the proposed improvement is no longer discernible.
ii. Include a description of the proposed land use.
iii. Include a trip generation table of the proposed development.
    a. Use equations or rates available in the latest edition of the ITE Trip Generation manual. If equations or rates are unavailable, contact the Office of Systems Planning at (515)-239-1629.
iv. Include a turning movement diagram for peak hour and design hour traffic volumes for each access location.
v. Conclusion

a. Describe the impact of the proposed development on the surrounding area and roadway system.
b. Discuss any significant impacts the proposed development might have on the primary highway being accessed. (e.g. safety, LOS)

VII. Traffic Impact Study (TIS)

A. Purpose of the Traffic Impact Study

The purpose of a Traffic Impact Study (TIS) is to identify system and immediate area impacts associated with a proposed development accessing the Primary Highway System.

A traffic impact study is intended to:

i. Document whether or not the access request meets the requirements of the Traffic Impact Study process.

ii. Analyze location, spacing, and design of the access connection(s) necessary to minimize traffic issues.

iii. Analyze operational impacts on the highway for both day of opening and the design year. Analysis for peak hour or design hour may also be required. Analysis for intermediate time frames between the program year and design year may also be required.

iv. Recommend the need for any improvements to the adjacent and nearby roadway system to maintain safety, a satisfactory level of service, and to protect the function of the highway system while providing appropriate and necessary access to the proposed development.

v. Assure that the internal traffic circulation of the proposed development is designed to provide safe and efficient access to and from the adjacent roadway system without creating congestion on the primary roadway.

vi. Analyze the proposed development to ensure transportation impacts to the traveling public are minimized.

B. Traffic Impact Study Thresholds

A traffic impact study is required if the proposed land use development meets one of the following design year conditions:

i. Trip generation from the proposed land use development is greater than 500 daily vehicle trips.

ii. Trip generation from the proposed land use development is greater than 100 peak hour vehicle trips.

iii. When considered necessary by the Iowa DOT due to the nature of the proposed land use development and potential impact on the Primary Highway System.

C. Traffic Impact Study Format

A traffic impact study should be submitted to the Iowa DOT in a PDF format and should follow the outline below. Please note that all assumptions should be noted where made.

i. EXECUTIVE SUMMARY, CONCLUSIONS & RECOMMENDATIONS

ii. INTRODUCTION

iii. ANALYSIS OF EXISTING CONDITIONS

iv. PROPOSED DEVELOPMENT

v. ANALYSIS OF FUTURE CONDITIONS

vi. CONCLUSIONS & RECOMMENDATIONS

vii. APPENDICES

D. Traffic Impact Study Requirements

The traffic impact study shall incorporate, at a minimum, traffic engineering principles and standards as presented in the Iowa Primary Access Management Policy, Department standards, and national practices. When preparing a traffic impact study within a metropolitan planning area the development of traffic forecasts must be coordinated with the Metropolitan Planning Organization staff and the MPO travel demand model.

When preparing a traffic impact study, consider the items listed below and include those that are applicable:

i. Study Area Description

- a. Show the site location and include the intersection(s) of the proposed site access drives and any intersections or interchanges impacted.
- b. Show the study area boundary. A recommendation in determining the study area boundary is to carry the analysis out at least as far as the nearest major intersection(s) or desirably, to points on the system where the influence of the proposed improvement is no longer discernible.

ii. Proposed Land Use

- a. Include an explanation of the proposed land use and how the land use will impact the area.
- b. Identify physical concerns relating to the area, site, and specific access points.
- c. Identify any critical restrictions due to terrain, adjacent land use, zoning requirements, etc.

iii. Forecast Years

- a. Document and include all phases of development for:
  - I. The opening year (opening day of project)
  - II. The design year (twenty years after opening day).

iv. Analysis Period

- a. For the opening and design years, analyze site and adjacent road traffic (including turning movements) for:
  - I. Weekday A.M. peak hours
  - II. Weekday P.M. peak hours
  - III. Weekday AADT

  Weekend generation rates might be required depending on the nature of the proposed land use development (e.g., churches and shopping malls). Contact the Iowa DOT to determine if the proposed land use development would require a weekend traffic analysis.

v. Data Collection

- a. Include AADT volumes and turning movement counts for current year (or latest year collected by the Iowa DOT), opening year, and design year.
  - I. Include the traffic growth rate and discuss the assumptions used.
  - II. Discuss traffic characteristics (vehicle mix, % make-up, and any special vehicle requirements).
- b. Describe site and adjacent roadway and intersection geometries.
- c. Identify traffic control devices including traffic signals and regulatory signs.
- d. Include traffic crash data.
- e. Include traffic modeling results where applicable.

vi. Trip Generation

Use equations or rates available in the latest edition of the ITE Trip Generation manual. If equations or rates are unavailable, contact the Office of Systems Planning at (515)-239-1629.

vii. Trip Distribution and Assignment

a. Document separately the distribution and assignment of existing, site, background, and future traffic volumes.

I. Discuss trip/vehicle make-up and any vehicles that require special routing (e.g., vehicles with special weight, length and/or width restrictions).

II. Discuss trip reduction strategies and pass-by trips.

III. Discuss directional distribution of site-generated traffic.

IV. Discuss assignment of non-site related traffic (existing, background and future). Document both existing and committed development, and when appropriate other background planned development traffic. Discuss assignment of total future non-site traffic for the design year.

viii. Capacity Analysis

a. Include LOS analysis results at all intersections for:

I. The existing traffic conditions

II. The future traffic conditions without the proposed development in the program and design years

III. The future traffic conditions with the proposed development in the program and design years

IV. Capacity Analysis will be completed in accordance with the latest edition of the "Highway Capacity Manual".

ix. Traffic Signal Impacts

For existing traffic signals:

a. Identify the impact on the operations of the existing traffic signals.

b. Complete an operational/capacity analysis of the intersection using opening day traffic volumes to determine necessary changes to the traffic signals, timing, phasing, etc.

c. Provide conceptual plan sheets indicating the changes to the existing traffic signals.

For proposed traffic signals:

d. Complete a Traffic Signal Warrant analysis of the intersection using opening day traffic volumes to determine if the signal warrants are met. Complete a capacity analysis to determine which traffic control provides the best intersection operations.

e. If traffic signals are proposed, provide Traffic Signal drawings (including the location of traffic signals and signs).

Analysis of the need for Traffic Signals will be completed in accordance with the latest edition of the "Manual on Uniform Traffic Control Devices".

x. Geometrics

a. Include acceleration, deceleration and weaving lanes, queuing lengths, and traffic control features (number of lanes, lane widths, alignment,). Include off-system features as related to site plan and access point(s).

b. If required, Queuing Analysis shall be conducted for all turn lanes and ramp termini under stop or signal control within the study area.

xi. Right-of-Way Access

a. Identify right-of-way, geometric boundaries and physical conflicts.

xii. Crash and Traffic Safety Analysis

a. Discuss the history/conditions of the existing vs. proposed development and document how the level of safety may change.

xiii. Design and Mitigation

a. Identify operational concerns and mitigation measures to ensure safe and efficient operations. If applicable, this should include pedestrian/bicycle danger mitigation.

b. If needed for clarification, include scaled schematic drawings illustrating alignment, number of lanes, lane widths, signing, and pavement markings. If traffic signal modifications are proposed, also include signal phasing, signal head locations, and lane markings.

xiv. Conclusion

a. Describe the impact of the proposed development on the surrounding area and roadway system.

b. Discuss any significant findings from the applicable items of the Traffic Impact Study Requirements (e.g. safety, LOS)

c. Engineering judgment must have a basis in the data and analysis, give an explanation of the reasoning (all statements must be supported by the data provided in the report).

d. Describe the type of access permit that is being requested.

xv. Recommendation

a. Discuss recommended changes to the existing roadway system due to the planned development, including benefits or mitigated effects of changes.

VIII. Glossary of Terms, Abbreviations and Acronyms

Access – For the purposes of this these guidelines, an access is any entrance or exit point to a primary highway (Office of Systems Planning, Iowa Department of Transportation).

Access management – Methods that regulate physical access to streets, roads, and highways from public roads and private driveways. Requires balancing access to developed land while ensuring movement of traffic in a safe and efficient manner (McRae, Bloomberg and Muldoon).

Annual Average Daily Traffic (AADT) – The total annual volume of traffic passing a point or segment of a highway in both directions divided by the number of days in the year (American Association of State Highway Transportation Officials)

Capacity – The maximum hourly rate at which vehicles can reasonably be expected to traverse a point or uniform section of a lane or roadway during a given time period under prevailing roadway, traffic, and control conditions (Wisconsin Department of Transportation 2009).

Decision sight distance – The distance required for a driver to detect an unexpected or otherwise difficult-to-perceive information source or hazard in a roadway environment that may be visually cluttered, recognize the hazard or its threat potential, select an appropriate speed and path, and initiate and complete the required maneuver safely and efficiently (American Association of State Highway Transportation Officials).

Design year – 20 years following the opening year or year the project is open to traffic (Office of Systems Planning, Iowa Department of Transportation 2013).

Development traffic – Traffic volumes that are generated by the development (Wisconsin Department of Transportation).

Directional distribution – The directional split of traffic during the peak or design hour, commonly expressed as a percentage in the peak and off-peak flow directions (American Association of State Highway Transportation Officials).

Highway Capacity Manual (HCM) – A manual published by the Transportation Research Board as a means of standardizing the techniques used to evaluate the quality of service provided by various transportation facilities (McRae, Bloomberg and Muldoon).

Institute of Transportation Engineers (ITE) – An international educational and scientific association of transportation professionals. ITE facilitates the application of technology and scientific principles to research, planning, functional design, implementation, operation, policy development, and management for all transportation modes (McRae, Bloomberg and Muldoon).

Intersection sight distance – The distance at which a motorist attempting to enter or cross a highway should be able to observe traffic in order to make his desired movement. The required distance varies with the speed of the traffic on the main highway (Ohio Department of Transportation)

Level of Service (LOS) – A qualitative measure describing operational conditions within a traffic stream based on service measures such as speed and travel time, freedom to maneuver, traffic interruptions, comfort, and convenience (American Association of State Highway Transportation Officials).

Opening year – The year the project is scheduled to be open to traffic (Office of Systems Planning, Iowa Department of Transportation).

Pass-by trips – Trips that would have traveled on a street adjacent to a retail land use even if the retail land use was not present (Wisconsin Department of Transportation).

Peak hour – That hour during which the maximum amount of travel occurs. It may be specified as the morning peak hour or the afternoon or evening peak hour (American Association of State Highway Transportation Officials)

Primary highway – A road or street designated as a "primary road" in accordance with Iowa Code 306.3(6). This definition includes primary road extensions in cities and primary roads under construction (Office of Systems Planning, Iowa Department of Transportation).

Queuing – A stacking of vehicles waiting to be serviced and/or processed (Office of Systems Planning, Iowa Department of Transportation).

Sight distance – The distance visible to the driver of a passenger vehicle measured along the normal travel path of a roadway from a designated location and to a specified height above the roadway when the view is unobstructed by traffic (Texas Department of Transportation).

Stopping sight distance – The distance required by a driver of a vehicle, traveling at a given speed, to bring the vehicle to a stop after an object on the roadway becomes visible. It includes the distance traveled during driver perception and reaction times and the vehicle braking distance (Texas Department of Transportation).

Study area – The portion(s) of the transportation system, which is directly affected by the planned development, to be included within the scope of the TIA analysis (Wisconsin Department of Transportation).

Traffic impact – The effect of site traffic on highway operations and safety (Wisconsin Department of Transportation).

Traffic Impact Analysis (TIA) – A traffic engineering study, which determines the potential traffic impacts of a proposed traffic generator. A complete analysis includes an estimation of future traffic with and without the proposed generator, analysis to traffic impacts, and recommended roadway improvements, which may be necessary to accommodate the expected traffic (Wisconsin Department of Transportation).

Traffic Impact Letter (TIL) – A TIA that requires limited analysis and documentation based on forecasted traffic that is below a defined traffic threshold (Office of Systems Planning, Iowa Department of Transportation)

Traffic Impact Study (TIS) – A TIA that requires more comprehensive analysis and documentation based on forecasted traffic that is above a defined traffic threshold (Office of Systems Planning, Iowa Department of Transportation).

Trip distribution – The allocation of the site-generated traffic among all possible approach and departure routes (Wisconsin Department of Transportation 2009).

Trip generation – The estimation of the number of origins from and destinations to a site resulting from the land-use activity on that site (Wisconsin Department of Transportation).

Works Cited

American Association of State Highway Transportation Officials'. *AASHTO Transportation Glossary, 4th Edition.* 2009.

McRae, Jay, Loren Bloomberg, and Darren Muldoon. *Best Practices for Traffic Impact Studies.* SPR 614, Oregon Department of Transportation & Federal Highway Administration, 2006.

Office of Systems Planning, Iowa Department of Transportation. "Traffic Impact Study Definitions." 2013.

Ohio Department of Transportation. *State Highway Access Management Manual.* Ohio Department of Transportation, 2001.

Texas Department of Transportation. "TxDOT Glossary." *TxDOT Online Manuals.* October 2013. http://onlinemanuals.txdot.gov/txdotmanuals/glo/glo.pdf.

Wisconsin Department of Transportation. *Traffic Impact Analysis Guidelines.* Wisconsin Department of Transportation, 2009.

Appendix A - Traffic Impact Letter Template

[Insert Title of Traffic Impact Letter]

Prepared by:

[Insert Preparers Name]

Prepared for:

[Insert Entity Name]

Submitted to:

Iowa DOT
[Insert Additional Names]

[Insert Date]

[Insert Engineering Certification Seal]

1) INTRODUCTION

2) ANALYSIS OF EXISTING CONDITIONS

Provide a text description of current site conditions. Include a description of the site location and the surrounding areas.

3) PROPOSED DEVELOPMENT

Provide a text description of the future commercial development. Include proposed land uses and how the development will impact the area.

4) ANALYSIS OF FUTURE CONDITIONS

- TRIP GENERATION

  Utilize the most current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual to estimate daily and peak hour trip volumes originating from and destined to the proposed development.

  Show trip generation rates for weekday, AM and PM Peak Hour in tables for opening year and design year.

- TRIP DISTRIBUTION

  In a diagram, show the movement distribution (rounded to the nearest 5) at each intersection and access location within the development area.

5) CONCLUSIONS & RECOMMENDATIONS

Summarize existing and future conditions and discuss the proposed development's impacts. Identify any significant impacts and recommend mitigation along with the effectiveness of the mitigation.

Appendix B - Traffic Impact Letter Checklist

Following is a checklist based on the guidelines provided by the ITE and the Iowa DOT's Guidelines for Traffic Impact Analysis. The purpose of the checklist is to see whether the preparer has provided all the information that the Iowa DOT requires. It should also be used as a format for the report by the developer to make the process consistent and quick to review.

Name of Project:	[ ]	**Checked By:**	[ ]
Location:	[ ]	**Prepared By:**	[ ]
Owner/Developer:	[ ]	**Date:**	[ ]

	Yes	No
Is the report stamped by a licensed professional with expertise in traffic engineering?	☐	☐

Project Information

1 - INTRODUCTION

Does this section include:	Yes	No	N/A
a) The reason for the traffic impact letter	☐	☐	☐

2 - ANALYSIS OF EXISTING CONDITIONS

Does this section include:			
a) Location	☐	☐	☐
b) Study area boundary	☐	☐	☐

3 - PROPOSED DEVELOPMENT

Does this section include:			
a) Description of future commercial development	☐	☐	☐
b) Type of proposed land uses	☐	☐	☐
c) Proposed impacts to the area	☐	☐	☐

4 - ANALYSIS OF FUTURE CONDITIONS

Does this section include:			
a) ITE Trip Generation Rates for:			
• Opening year	☐	☐	☐
• Design year	☐	☐	☐
Does each analysis year include:			
− Land Use	☐	☐	☐
− Land Use Code #	☐	☐	☐
− Land Use Quantity	☐	☐	☐
− Unit of Measurement	☐	☐	☐
− Weekday	☐	☐	☐
− AM Peak Hour with entering and exiting volumes	☐	☐	☐
− PM Peak Hour with entering and exiting volumes	☐	☐	☐
b) Trip Distribution for AM and PM peak hour traffic for:			
• Opening year	☐	☐	☐
• Design year	☐	☐	☐
Does each analysis year include:			
− Turning Movement Diagrams	☐	☐	☐

5 - CONCLUSIONS & RECOMMENDATIONS

Does this section include:			
a) Summary of the proposed project	☐	☐	☐
b) Discussion of development impacts	☐	☐	☐
c) Recommendation for mitigation measures	☐	☐	☐

Appendix C - Traffic Impact Study Template

[Insert Title of Traffic Impact Study]

Prepared by:

[Insert Preparers Name]

Prepared for:

[Insert Entity Name]

Submitted to:

Iowa DOT
[Insert Additional Names]

[Insert Date]

[Insert Engineering Certification Seal]

1) EXECUTIVE SUMMARY, CONCLUSIONS & RECOMMENDATIONS

   Provide a description of the development, site location and study area (including a site map). Briefly describe the purpose of the analysis, principal findings, conclusions and recommendations.

2) INTRODUCTION

3) ANALYSIS OF EXISTING CONDITIONS

   Provide a text description of current site conditions. Include the exisiting land use, zoning classification, and a description of the site location and the surrounding areas.

   Include a text description and graphic showing the existing lane configurations and traffic control devices in the study area.

   - TRAFFIC DATA

     Include a graphic showing the current AADT, AM peak hour and PM peak hour based on Iowa DOT traffic counts. Raw traffic volumes will not be accepted for use in traffic analysis.

     Include the % truck traffic on all routes.

     Identify and justify the annual growth rate to be used for future traffic analysis.

   - CRASH HISTORY

     Provide a description of crash data for the past 10 years. Include a crash data table by intersection.

4) PROPOSED DEVELOPMENT

   Provide a text description of the future commercial development. Include proposed land uses, street and driveway improvements for opening year and design year. Identify percent developed at each analysis year.

5) ANALYSIS OF FUTURE CONDITIONS

- TRIP GENERATION

  Utilize the most current edition of the Institute of Transportation Engineers (ITE) Trip Generation Manual to estimate daily and peak hour trip volumes originating from and destined to the proposed development.

  Show trip generation rates for weekday, AM and PM Peak Hour in tables for each analysis year. Each table must identify the land use by ITE code and name, the quantity estimated, the unit of measurement and the number entering and exiting.

- TRIP DISTRIBUTION

  The analysis should use available transportation models in conjunction with input from local jurisdictions and current Transportation Plans to estimate traffic distribution patterns.

  Show trip distribution and assignment on a turning movement diagram as trips (rounded to the nearest 5) at each significant intersection and access within the area of the development.

- TURN LANE WARRANTS

  Refer to Chapter 6 - Geometric Design of Intersections from the Office of Design's Design Manual to determine turn lane warants based on peak hour traffic data.

  Include a turn lane warrant table summarizing when each intersection is expected to warrant turn lanes.

- CAPACITY ANALYSIS

  Utilize the established methodologies of the current Highway Capacity Manual to analyze the capacity of all intersections and roadway segments.

  Perform capacity analysis for AM and PM peak hours for each analysis year.

  Include a capacity analysis LOS table summarizing the critical movement results for each analysis year.

  Include the effects of queuing and blocking on intersection operations.

6) CONCLUSIONS & RECOMMENDATIONS

Summarize existing and future conditions and discuss the proposed development's impacts. Identify any operational or safety deficiencies and recommend mitigation measures.

Summarize how the proposed development complies with all operational and safety standards.

7) APPENDICES

Planning Analysis Output

- Traffic Signal Warrants
- Traffic Capacity Analysis

Planning Analysis Input

A summary of traffic analysis variable inputs shall be provided. Any traffic impact study submitted without an input summary will not be accepted by the Department.

Appendix D - Traffic Impact Study Checklist

Following is a checklist based on the guidelines provided by the ITE and the Iowa DOT's Guidelines for Traffic Impact Analysis. The purpose of the checklist is to see whether the preparer has provided all the information that the Iowa DOT requires. It should also be used as a format for the report by the developer to make the process consistent and quick to review.

Name of Project:	[ ]	**Checked By:**	[ ]
Location:	[ ]	**Prepared By:**	[ ]
Owner/Developer:	[ ]	**Date:**	[ ]

	Yes	No
Is the report stamped by a licensed professional with expertise in traffic engineering?	☐	☐

Project Information

1 - EXECUTIVE SUMMARY, CONCLUSIONS & RECOMMENDATIONS

Does this section include:	Yes	No	N/A
a) Description of the development	☐	☐	☐
b) Site location including site map	☐	☐	☐
c) Purpose of analysis	☐	☐	☐
d) Principle findings	☐	☐	☐
e) Conclusions and recommendations	☐	☐	☐

2 - INTRODUCTION

Does this section include:			
a) The reason for the traffic impact study	☐	☐	☐

3 - ANALYSIS OF EXISTING CONDITIONS

Does this section include:			
a) Location	☐	☐	☐
b) Study area boundary	☐	☐	☐
c) Existing land use and zoning	☐	☐	☐
d) Map showing all accesses and intersections identified by:			
• Controlled with signals	☐	☐	☐
• Controlled with stop signs	☐	☐	☐
• Uncontrolled	☐	☐	☐
e) Posted speed limit	☐	☐	☐
f) Street Classification and station number	☐	☐	☐
g) Sidewalk(s)	☐	☐	☐
h) Sight Distance	☐	☐	☐
i) Traffic Signals	☐	☐	☐
j) Existing level of service (LOS)	☐	☐	☐
k) Number of Thru Lanes	☐	☐	☐
l) Number of Turning Lanes	☐	☐	☐
m) Medians	☐	☐	☐
n) Traffic Data including:			
• Current AADT, AM & PM peak hour volumes	☐	☐	☐
• Existing turning movements at intersections	☐	☐	☐
• Truck % on all routes	☐	☐	☐

o) Growth rate
Has the growth rate assumption been:
- Justified ☐ ☐ ☐
- Documented ☐ ☐ ☐

p) Crash data for past 10 years ☐ ☐ ☐

4 - PROPOSED DEVELOPMENT

Does this section include:

a) Description of future commercial development ☐ ☐ ☐
b) Type of proposed land uses ☐ ☐ ☐
c) Proposed impacts to the area ☐ ☐ ☐
d) Site plan including all proposed intersections and accesses ☐ ☐ ☐
e) Phasing plan for:
- Opening year ☐ ☐ ☐
- Design year ☐ ☐ ☐

f) Physical concerns or restrictions identified ☐ ☐ ☐

5 - ANALYSIS OF FUTURE CONDITIONS

Does this section include:

a) ITE Trip Generation Rates for:
- Opening year ☐ ☐ ☐
- Design year ☐ ☐ ☐

Does each analysis year include:
- Land Use ☐ ☐ ☐
- Land Use Code # ☐ ☐ ☐
- Land Use Quantity ☐ ☐ ☐
- Unit of Measurement ☐ ☐ ☐
- Weekday ☐ ☐ ☐
- AM Peak Hour with entering and exiting volumes ☐ ☐ ☐
- PM Peak Hour with entering and exiting volumes ☐ ☐ ☐

b) Trip Distribution for AM and PM peak hour traffic for:
- Opening year ☐ ☐ ☐
- Design year ☐ ☐ ☐

Does each analysis year include:
- Turning Movement Diagrams ☐ ☐ ☐
- Method used to determine directional distribution ☐ ☐ ☐
- Site generated turning movements ☐ ☐ ☐
- Percent mix of vehicles including trucks ☐ ☐ ☐
- Pass by trip assumptions ☐ ☐ ☐
- Non-site related traffic ☐ ☐ ☐

c) Turn lane warrants evaluated for:
- Storage capacity ☐ ☐ ☐
- Length ☐ ☐ ☐

Does each include:
- Turn lane warrant table ☐ ☐ ☐

d) Capacity Analysis evaluated for:
- Level of Service (LOS) for:
  - Opening year ☐ ☐ ☐
  - Design year ☐ ☐ ☐
- LOS deficiencies identified and documented ☐ ☐ ☐

e) Geometrics evaluated for:
- Acceleration lanes ☐ ☐ ☐
- Deceleration lanes ☐ ☐ ☐
- Weaving lanes ☐ ☐ ☐
- Queuing analysis ☐ ☐ ☐

f) Traffic signal warrants evaluated for:
   - Compliance with MUTCD ☐ ☐ ☐
g) Sight distance ☐ ☐ ☐
h) ROW access
   - Is dedication of ROW proposed ☐ ☐ ☐
   - Is the new ROW identified ☐ ☐ ☐
   - Does the new ROW meet DOT Standards ☐ ☐ ☐
i) Description of methodologies used in analyses ☐ ☐ ☐

6 - CONCLUSIONS & RECOMMENDATIONS

Does this section include:
a) Summary of the proposed project ☐ ☐ ☐
b) Discussion of development impacts ☐ ☐ ☐
c) Identification of all deficiencies and conflicts ☐ ☐ ☐
d) Recommendation for mitigation measures ☐ ☐ ☐

7 - APPENDICES

Does this section include:
a) Planning level Traffic Signal Warrants ☐ ☐ ☐
b) Capacity Analysis software reports ☐ ☐ ☐
c) Traffic Analysis Inputs used in all software programs ☐ ☐ ☐