

**COLORADO DEPARTMENT OF TRANSPORTATION
RECOMMENDED OUTLINE FOR TRAFFIC IMPACT STUDY**

**Access Management Unit, CDOT
February, 2008**

GENERAL

1. Prior to submitting a formal application, the interested parties may request a pre-application conference with the issuing authority or Department to establish and agree upon base assumptions, including proposed traffic counts/volumes, and to determine if a Traffic Impact Study (TIS) must be submitted as a requirement of the State Highway Access Permit Application. CDOT considers this step beneficial to both the Applicant and CDOT because circumstances specific to the access can be identified and addressed early in the permitting process.
2. When a Traffic Impact Study (TIS) is required, it shall be completed and sealed by a Professional Engineer registered in the State of Colorado, preferably with specific training in traffic and transportation engineering.
3. In general, A TIS will be required when the proposed land use will generate a design hourly volume (DHV) of 100 trips or more, or when considered necessary or desirable by the issuing authority or the Department. The DHV is the 30th highest hour vehicular volume experienced in a one year period and is used in determining geometric design of highways. If this data is not available, then Peak Hour Volumes shall be used after being adjusted to the peak seasonal month.
4. In determining the extents of the area to include in the study, a general guide is to carry the analysis out at least as far as those areas where newly generated site traffic represents 5 percent or more of the roadway's peak hour capacity.
5. The TIS may only identify any anticipated waivers from the design standards of the Code as described in Section 4.12 of the State Highway Access Code. Waivers cannot be issued for procedural requirements.
6. The need for auxiliary lanes for any access is based on the highest peak hour volume generated within the entire day, for each turning movement. The TIS must look at both the peak hour of the generator and the peak hour of the adjacent street traffic. Traffic generated by the development will be used to evaluate the highest peak hour volume. Additionally, weekend generation rates must be evaluated depending on certain types of land uses, such as churches, shopping centers, and recreation facilities.
7. The TIS shall include evaluation of the current daily peak hour traffic data, any interim phases and 20th year projections. This includes turning movements at all intersections assuming a build- out of the study area based upon zoning, comprehensive plans and growth estimates. This includes any newly approved development that has not been constructed.
8. Revisions to the TIS will be required if the study does not include the necessary information required by the Code, or if the data is not accurate, sufficiently thorough or representative of the proposed access and development plan. If a previous study for a project is more than 1-year old, an updated study may be required.

RECOMMENDED TRAFFIC IMPACT STUDY FORMAT

Specific requirements and contents for a traffic impact study can be found in Section 2.3(5) of the State Highway Access Code. The following is a recommended outline of how those contents can be presented in the report. Figures, maps, and tables shall be labeled and presented in a legible scale. The report should include at minimum, the following:

- 1. TITLE PAGE** - Include project name and number, date, name, address and phone number of company. Name, address, phone number e-mail address (if any) of licensed engineer, stamp and expiration date
- 2. TABLE OF CONTENTS**
- 3. LIST OF FIGURES**
- 4. LIST OF TABLES**
- 5. INTRODUCTION AND EXECUTIVE SUMMARY**
 - a. Describe existing land use, site and study area boundaries
 - b. Describe proposed site uses
 - c. Describe existing and proposed uses in vicinity of the site (provide legible map).
 - d. Describe existing and proposed roadways, highway category, speed limit, mile post location, intersections and proposed future access locations, including signal locations for at least one-half mile in each direction along the highway, as well as all potential roadway and signal improvements (provide legible map).
- 6. PROJECT TRIP GENERATION AND DESIGN HOUR VOLUMES** - Provide table and include information on internal and/or pass-by trip reductions, if any
- 7. TRIP DISTRIBUTION** - Provide figure
- 8. TRIP ASSIGNMENT** - Provide figure
- 9. EXISTING AND PROJECTED TRAFFIC VOLUMES (provide figures for all)**
 - a. Existing total average daily traffic (ADT) volumes and existing AM and PM peak hour turning movement volumes for the street system in the study area. Include all turning movements.
 - b. Projected total daily traffic volumes and projected AM and PM peak hour traffic volumes, including existing (background) plus generator traffic, for the street system in the study area. Include all turning movements.

- c. Future projected “background” traffic volumes (volumes already using the roadway system without the proposed development) for daily, and AM and PM peak hour traffic volumes. Include all turning movements.
- d. Total projected daily traffic volumes and AM and PM peak hour traffic volumes, including existing traffic, generator traffic and cumulative traffic from build-out of approved projects. If the proposed development is being proposed in phases it may be appropriate to evaluate each major phase. Include all turning movements.
- e. Total and peak hour daily and turning movement volumes for “horizon” study year which is generally the 20th year projection. The peak hour traffic volume estimates for any access shall be based upon the anticipated total build-out of the development to be served, and shall include the highest peak hour volume within the entire day for each turning movement, which is typically the peak hour of the generator. See Section 2.3(4)(e) of the State Highway Access Code for information on calculating passenger car equivalents.
- f. Include an analysis of all reasonable alternatives, including no direct highway access or restricted access such as right in/right out (RI/RO) or ¾ movements.

10. DISCUSSION OF HIGHWAY IMPROVEMENTS AS REQUIRED BY THE CODE - Clearly tabulate all locations and volumes with required improvements as outlined in the Code.

11. CAPACITY AND LEVEL OF SERVICE (LOS) ANALYSIS - Provide complete analysis sheets in the Appendix. Additionally, electronic copies of this analysis may be requested.

12. TRAFFIC SIGNAL ANALYSIS - Provide analysis sheets in the Appendix. If the access is proposed to have a traffic signal or will necessitate modifications to an existing signal, refer to Section 2.3(5)(c) of the State Highway Access Code, items 21 through 29.

13. CDOT ACCESS PERMITTING CONSIDERATIONS - Clearly describe all locations requiring a permit as well as the traffic and turning volumes, highway improvements, anticipated design waivers and any other special requirements.

14. SUMMARY AND CONCLUSIONS

- a. All statements must be supported by the data provided in the report.
- b. Engineering judgment must have a basis in the data and analysis. Include explanation.
- c. Discuss how the proposed access qualifies under the State Highway Access Code.
- d. Describe any anticipated design waiver request.

15. APPENDICES - Data collection sheets, calculation sheets, software outputs, etc.

Depending on the location and size of the proposed development and the conditions prevailing on the surrounding roadway system, additional items may be required in the TIS. Please refer to Section 2.3(5) of the State Highway Access Code.