

## **SCAPPOOSE TRANSPORTATION IMPACT STUDY GUIDELINES**

The following guidelines are intended to provide assistance to transportation planners/traffic engineers who will prepare transportation impact reports for developments located within the City of Scappoose's planning jurisdiction. Transportation impact reports will be required for land use actions as outlined in Table 1, below.<sup>1</sup>

The preparation of the transportation impact report is the responsibility of the land owner or applicant. The applicant can choose any qualified traffic engineer. All transportation impact reports shall be reviewed by the City Engineer and City Planner (referred to as "City" in this document). The transportation impact report shall be prepared under the supervision of an Oregon Professional Traffic Engineer or an Oregon Professional Engineer with a traffic engineering background. Studies that do not address the guidelines adequately shall be returned to the applicant for modification. The applicant should coordinate with Columbia County and/or ODOT<sup>2</sup> for any potential impacts or access to county roads or state highways.

### **Study Scope**

The engineer preparing the transportation impact study should contact the City at the project's outset. The City will then establish the project study area, intersections for analysis, scenarios to be evaluated and any other pertinent information concerning the study. In general, studies will fall into one of two categories based on their estimated trip generation, as described in Table 1.

For any level of project, the City may require additional analysis when a development's location, proposed site plan or traffic characteristics could affect traffic safety, access management, street capacity, or known traffic problems or deficiencies in a development's study area.

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<sup>1</sup> Proposals to amend the comprehensive plan or zoning map shall be reviewed to determine whether they significantly affect a transportation facility pursuant to Oregon Administrative Rule (OAR) 660-012-0060 (Transportation Planning Rule - TPR). TPR analysis requirements is outside the scope of this document.

<sup>2</sup> Analysis of ODOT facilities should follow the current version of ODOT's Analysis Procedures Manual (APM).

**Table 1: Study Scope Trip Generation Thresholds**

Scope Level	Peak Hour Project Trip Generation Total (In/Out)		Daily Project Trip Generation Total (In/Out)
<b>Letter</b>	10 or fewer	Or	100 or fewer
<b>Report</b>	> 10	Or	> 100

Report requirements for each project category are described below:

**Letter Outline (10 or fewer peak hour trips or 100 or fewer daily trips)**

Trip generation should be estimated for the proposed project using the latest version of the ITE Trip Generation Manual and/or trip generation surveys conducted at similar facilities<sup>3</sup>. If the estimated trip generation for the proposed project is 10 or fewer PM peak hour trips or 100 or fewer daily trips, a brief report would be required, including a discussion of the following items:

- Weekday AM/PM peak hour and daily trip generation estimate
- Sight distance at project access point(s) (verified by a registered Oregon Traffic or Civil Engineer)
- Safety evaluation within ¼ mile of project frontage (i.e. horizontal/vertical curves, sight distance, high collision locations, access spacing, street lighting/visibility, etc.)
- Discussion/evaluation of on site circulation and street connectivity to adjacent parcels
- Explanation of locations where local street and/or pedestrian/bicycle access way minimum spacing cannot be met
- Pedestrian/bicycle facility discussion/evaluation with a list of nearest bicycle/pedestrian routes and potential connections to adjacent parcels
- Describe safe walking route to school for residential developments within ½ mile of a school

It is at the City’s discretion whether additional analysis would be required once this initial information is collected. In general, addressing the items listed above would be sufficient analysis and could typically be achieved in two to three pages.

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<sup>3</sup> Use of trip generation surveys collected independently from ITE should be verified with the City prior to use.

## **Report Outline (more than 10 peak hour trips or 100 daily trips)**

If the estimated trip generation for the proposed project is more than 10 PM peak hour trips or more than 100 daily trips, a full transportation impact report will be required. The report shall include the following components:

### ***Introduction and Summary***

Provide a brief description of the project, site location, study area, key assumptions and summary of project impacts and any other conclusions. Any recommended mitigation measures and/or operational issues shall be discussed.

### ***Existing Conditions***

This section shall include the following elements:

- Description of roadways in the study area, including roadway classification (City of Scappoose, ODOT, and Columbia County), number of lanes, average daily traffic volume, roadway width, presence or absence of sidewalks and/or bicycle facilities, nearest transit route, posted speed, presence or absence of on-street parking, etc.
- Existing geometric deficiencies at study intersections
- Existing traffic volumes at the study intersections measured within the previous twelve months
- Crash data at study intersections for the most recent five-year period available
- Other pertinent features.

Study area intersections shall be determined at the City's discretion, which will typically be based on:

- Intersections of regional significance (arterials, collectors and neighborhood streets) where the traffic generated by the proposed project exceeds ten percent of existing AM or PM peak hour total intersection traffic volumes within the Scappoose City limits
- All project access points onto the public roadway system

Intersection analysis shall be determined for study area intersections for the weekday AM and PM peak periods using the most recent version of the Highway Capacity Manual. The analysis shall include level of service, average delay and volume to capacity ratio (v/c for traffic signal and all-way stop controlled intersections only). Figures showing the study area roadway network, traffic

control, and AM and PM peak hour intersection turn movement volumes shall be provided. A speed survey shall be conducted at predetermined locations (as required by the City).

### ***Impacts***

A detailed description of the proposed project shall be provided including the intended land use and intensity of use. Trip generation shall be estimated using the most recent version of the *ITE Trip Generation Manual* and/or trip generation surveys conducted at similar facilities,<sup>4</sup> and shown in a table.

The following figures shall be provided (combining them is allowable as long as data are clearly shown):

- Existing peak hour traffic volumes (AM and PM), including lane geometry and traffic control at study intersections
- Project trip distribution (percentages)
- Added project peak hour traffic volumes (AM and PM)
- Pass-by trips, if applicable (AM and PM)
- Existing plus approved project (trips from projects that have been approved but not yet constructed/occupied) peak hour traffic volumes (PM)
- Total peak hour traffic volumes (existing plus project plus approved—PM)
- If applicable, planning horizon future peak hour traffic volumes (PM)

Intersection analysis shall be conducted for the following scenarios:

- Existing plus project (AM and PM)
- Existing plus approved (PM)
- Existing plus project plus approved (PM)

For developments with trip generation or study intersections that do not peak during the PM peak hour (e.g. schools, churches, etc.), city staff may request alternate peak hour analyses (e.g. weekday AM peak hour, Sunday morning, etc.) for existing conditions and/or scenarios which include background growth (Existing plus approved, Existing plus project plus approved).

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<sup>4</sup> Use of trip generation surveys collected independently from ITE should be verified with the City prior to use.

For developments that have an anticipated year of opening greater than one year from the TIS date, additional background growth should be added (using a background growth rate provided by city staff).

Information regarding approved project traffic may be requested from the City. Information to be provided in the appendix includes the following:

- Map showing location of approved projects in the City
- Trips associated with each approved project (i.e. remaining trips associated with unoccupied portion of project)
- Figures from individual projects' transportation impact reports showing trip generation, distribution and assignment, if available.

The intersection analysis for each scenario shall be summarized in a table with the calculation sheets provided in an appendix to the report.

A list of planned and reasonably funded improvements (City of Scappoose, ODOT and Columbia County Capital Improvement Plans) assumed in the intersection analysis shall be provided.

Signal warrant analysis based on the *Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)* shall be conducted at unsignalized study area intersections that are at or below minimum level of service thresholds (LOS E for minor street approach for the City of Scappoose). The peak hour warrant (Warrant 3) should be checked and, if met, Warrants 1 and 2 (8-hour and 4-hour warrants) should be checked.

Left turn lane needs shall be evaluated using *Highway Research Record Number 211, Aspects of Traffic Control Devices, Volume Warrants for Left-Turn Storage Lanes at Unsignalized Grade Intersections*.

Right turn lane needs shall be evaluated using *NCHRP 279, Intersection Channelization Design Guide, Figure 4-23*.

Sight distance at project access points shall be evaluated using *A Policy on Geometric Design of Highways and Streets 2011 (AASHTO)*.<sup>5</sup>

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<sup>5</sup> *A Policy on Geometric Design of Highways and Streets 2011*, by American Association of State Highway and Transportation Officials, AASHTO.

A brief review of the site plan, including a site plan layout shall be provided. On-site circulation/connectivity issues shall be discussed, for example:

- Evaluation of site access locations (access drive depth, driveway lanes, queuing storage)
- Safety and efficiency of proposed vehicular circulation
- Parking layout

An explanation of locations where 530 foot (local street) and/or 330 foot (pedestrian/bicycle) minimum spacing cannot be met should be provided.

For sites with arterial or collector frontage, access management plans or techniques shall be evaluated. Techniques could include reducing accesses or increasing spacing between them, channelizing turn movements (turn lanes), turn restrictions, striping, medians, shared accesses, etc.

Bicycle and pedestrian issues shall be discussed and planned facilities shall be compared with the Scappoose Transportation System Plan (TSP) to make sure any facilities proposed in the TSP on the proposed project site are included as part of the proposed project. For those projects within ½ mile of a school, a safe (walking) route to school shall be described. Potential path connections to adjacent parcels shall be determined and discussed. The availability of public transportation to serve the site should be discussed.

The project site plan shall be evaluated for conformance to the City's Public Works Design Standards<sup>6</sup> and specific traffic calming measures (traffic circles, speed humps, chokers) shall be utilized where necessary.

### ***Mitigation***

Both project specific and area-wide mitigation measures shall be recommended where study intersections do not meet minimum performance standards. At a minimum, the study shall consider improvements identified in the Scappoose TSP, ODOT STIP, and Columbia County TSP. Recommendations should be made not only for motor vehicle needs, but for improvements to bicycle, pedestrian and transit facilities as well. The study shall clearly state the mitigation measures recommended by the analysis to mitigate project impacts.

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<sup>6</sup> City of Scappoose, Public Works Design Standards.

## ***Appendix***

The following items shall be in the appendix:

- Existing traffic counts
- Approved project information
- Level of service calculations
- Current site plan