Traffic Study Guidelines

January 2025

The scope of the traffic impact analysis (TIA) should follow these guidelines and the requirements of VMC 11.80.130 (Traffic Impact Analysis) and VMC 11.70 (Transportation Concurrency). The City's Traffic Engineer may require more or less analysis where warranted.

The TIA shall be prepared and stamped by a Civil Engineer licensed in the State of Washington with appropriate traffic engineering experience. Submittal of the traffic study is a Fully Complete item for project submittal. If the applicant is utilizing the 90 Day Streamline Review Process the traffic study shall be submitted 2 weeks prior to the Pre-Submittal meeting.

To request other formats, please contact:
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I. Introduction, Project Description, and Methodology

- ☐ Table of contents, general description of the project, a description of the contents of the report, and an explanation of the analysis methodology.
- ☐ Vicinity map of the project site, surrounding transportation system, and new and existing access points.
- ☐ A description of the existing adjacent street system including street names, roadway classifications, number of lanes and lane widths, on-street parking, intersection lane configurations, traffic control systems for all intersections, signalized & unsignalized, pedestrian and bicycle facilities, and transit service including routes and headways.

II. Trip Generation and Distribution

- ☐ Use the most current edition of the *Institute of Transportation Engineers (ITE) Trip Generation Manual*, and follow the guidelines specified in the most current ITE Trip Generation Handbook. Trip generation and distribution shall be justified by the applicant and approved by the City Traffic Engineer prior to completion of the TIA.
- ☐ Use the weighted average rate given in the ITE Trip Generation Manual to calculate trip generation for the ADT.
- ☐ Use the methodology described in the ITE Trip Generation Handbook to calculate trip generation for AM and PM peak hour trips.
- ☐ Approved pass-by trips shall be included at driveways.

A. General TIA Requirements.

- For any development generating 5 or more net new PM Peak Hour trips, trip generation and distribution is required for project-generated AM & PM peak hour trips at or adjacent to all site accesses.
- When generating fewer than 5 trips, only trip generation is required. In this case, the trip generation calculation does not have to be completed by a licensed engineer.
- Additionally, for developments generating 20 or more PM peak hour trips, the City Traffic Engineer may require traffic impact analysis of surrounding intersections. If such analysis is required, it shall encompass all intersections specified by the traffic engineer for LOS analysis that fall within the limits identified in 11.80.130(A)(2). The analysis may also include intersections beyond the thresholds listed in 11.80.130(A)(2) where significant traffic hazards would be caused or materially aggravated by the proposed development.
- Trip distribution shall use the Regional Transportation Council select link assignment for the project TAZ. However, if the project generates fewer than 20 net new PM weekday peak hour trips, trip distribution may be based on existing traffic patterns and guidelines in the current ITE Trip Generation Handbook.

B. Transportation Concurrency Requirements.

- For developments generating 5 or more net new PM Peak Trips, the applicant is required to submit trip generation and distribution for the proposed development and to list the number of PM peak trips entering each of the concurrency corridors in table format. See Table 1 below for the list of corridors
- For developments generating fewer than 5 net new PM Peak Trips, trip distribution is not required. However, for concurrency purposes, all trips shall be assumed to impact the closest concurrency corridor.

- Transportation Concurrency is evaluated according to the Corridor Classification. The Director may require additional information or modeling if an impacted corridor is operating close to the adopted level of service. Generally, where a proposed development sends trips to a Category 1 or Category 2 corridor, the Director shall track those trips and presume concurrency between LOS measurements pursuant to VMC 11.70.090.

Table 1: Concurrency Corridors and Current Classification

Arterial Concurrency Corridor	Extent	LOS Standard Avg. PM Peak Speed (MPH)	2012 Corridor Classification
Mill Plain Blvd.	Fourth Plain to I-5	10	Category 1
	I-5 to Andresen	12	Category 1
	Andresen to I-205	12	Category 1
	I-205 to 136th Ave.	10	Category 1
	136th Ave. to 164th Ave.	10	Category 1
	164th Ave. to 192nd Ave.	10	Category 1
St. Johns / Ft. Van Way	Mill Plain to 63rd St.	12	Category 1
Fourth Plain Blvd.	Mill Plain to I-5	12	Category 1
	I-5 to Andresen	10	Category 1
	Andresen to I-205	10	Category 1
	I-205 to 162nd Ave.	10	Category 1
Andresen Road	Mill Plain to SR500	11	Category 1
	SR500 to 78th St.	15	Category 1
112th Avenue	Mill Plain to 28th St.	11	Category 1
	28th St. to 51st St.	15	Category 1
164th/162nd Avenue	SR14 to SE 1st St.	10	Category 1
	SE 1st St. to Fourth Plain	10	Category 1
Burton Road / 28th Street	18th St. to 112th Ave.	12	Category 1
	112th Ave. to 138th Ave.	10	Category 1
	138th Ave. to 162nd Ave.	12	Category 1
18th Street	112th Ave. to 138th Ave.	12	Category 1
	138th Ave. to 164th Ave.	12	Category 1
136th/137th Avenue	Mill Plain to 28th St.	12	Category 1
	28th St. to Fourth Plain	12	Category 1
192nd Avenue	SR14 to NE 18th St.	10	Category 1

Monitoring fees of $57.00 per trip shall be charged for trips sent to every corridor, up to a maximum monitoring fee of $1500 for any single development (VMC 20.180.070).

III. Traffic Safety and Circulation

A. Collision Analysis.

- Provide a five-year collision history and crash rate per Million Entering Vehicles (MEV) at intersections adjacent to the development or as specified by the City Traffic Engineer. Provide proposed mitigations for intersections with crash rate exceeding 1.0 per MEV. Copies of the collision reports shall be included in an appendix to the TIA.
- Wherever collision rates are equal to or greater than 1.0 per MEV, a detailed collision site analysis and recommended mitigation will be required. The site analysis will include at a minimum the following:

- Collision Diagrams with Vehicle-type symbols, Movement symbols, Severity symbols, and Accident-type symbols.
- Condition Diagrams which describe all physical and environmental conditions at the site including all geometric features, signs, signal, markings, lighting, and all relevant features of the roadside environment.
- Interpretation of results and recommended mitigation(s).

- Provide safety analysis for proposed offset centerline of driveway/ street

B. Access Management and Circulation Analysis

- Include proposed locations of all access points to the public roadway.
- Include proposed distances between new access points and existing adjacent driveways and intersections.
- Provide safety analysis for proposed offset centerline of driveway/street.
- Include an adequate street cross circulation layout and connection plan that accounts for future development build out of the vicinity.
- Median Breaks requests shall meet the criteria outlined in VMC 11.80.110(C)(1).

C. Sight Distance Analysis (VMC 11.80.140)

- Provide sight distance analysis for a) each proposed access point to a public street and b) each proposed new roadway approach. Intersection sight distance analysis will be done per the most current version of *A Policy on Geometric Design of Highways and Streets (AASHTO)*, and the City of Vancouver Transportation Standard Plans.
- Planning requirements for Vision Clearance Triangles can be found in VMC 20.985.020.

D. Pedestrian, Bike, and Transit Facilities

- Identify and analyze safety associated with pedestrian, bicycle, and transit facilities (existing and proposed) which provide circulation and connection onsite and offsite.

IV. Traffic Impact Analysis

A. Existing Conditions

- A turning movement count diagram for each intersection identified by the traffic engineer and the date collected. *Traffic counts older than two years will not be accepted for traffic operations analysis.*
- For driveways and intersections adjacent to the development and intersections impacted by 20 or more project generated peak hour trips, complete an AM and PM peak hour delay, LOS, and queuing analysis for the intersection, each approach, and all turning movements. The analysis shall be based on signal timing and coordination as it exists in the field. Optimized signal timing/coordination will not be accepted. Contact Richard Gamble at Richard.Gamble@cityofvancouver.us or 360-487-8251 for signal timing data.
- Use the delay criteria in the current Highway Capacity Manual (HCM) for intersection, intersection approach, and turning movement level of service.
- Summarize Measures of Effectiveness (MOEs) in table format and describe key findings from the delay, LOS, and queuing analysis.
- Include output from the traffic analysis software in an appendix and submit an electronic copy of the traffic analysis file (*e.g.*, the *.syn file from Synchro).

B. Year of Opening Baseline Conditions Analysis (may be required by traffic engineer)

- To the existing condition traffic volumes, add background and in-process development traffic to the year of opening. Use of the RTC's Regional Travel Demand Model is the preferred method to account for background traffic growth. Alternatively, an annual growth rate can be applied. If an annual growth rate is used, for the 162nd/164th Avenue corridor and all areas east of that corridor, a compounded 2% annual growth rate must be applied. For all other areas of the City, a 1.5% compounded rate must be applied. The City's Traffic Engineer must approve alternative rates or methods of accounting for background traffic growth.
- Using the parameters and reporting requirements described above in the Existing Conditions analysis instructions, complete an analysis of year of opening conditions.
- A turn movement forecast diagram for each intersection identified by the traffic engineer.

C. Year of Opening with Project Conditions (may be required by traffic engineer)

- Using the parameters and reporting described above in the Year of Opening Baseline Conditions Analysis instructions, analyze future conditions with project-generated traffic.
- Optimized signal timings are allowed. Traffic signal cycle lengths are not to exceed 120 sec/cycle. At new or existing intersections located on a corridor with coordinated signal timing plans, the cycle length shall not be less than what currently exists.
- Provide traffic signal / turn lane warrants as defined by the most current version of the *Manual on Uniform Traffic Control Devices (MUTCD)* for any existing and proposed intersections.
- Describe potential mitigation strategies for any identified impact.

D. Future 5-Year Build Out Conditions

- Using the parameters and reporting described above in the Year of Opening with Project Conditions Analysis instructions, analyze future conditions with five (5) years of background and in-process development(s) traffic growth from the year of opening. Note that if the year of opening is several years from the date of the development application, the compounded growth rate would be applied to 5 years plus the number of years between the year of application and the year of opening.
- Describe potential mitigation strategies for any identified impact.

V. Conclusions and Recommendations

- ☐ Provide a comprehensive summary of all study results, conclusions, and recommendations of the engineer, including proposed mitigations. Conclusions and recommendations should follow the same format and address each section of the traffic study.

VI. Proportionate Share Contributions

- ☐ Where an impact is identified, an applicant may participate in the cost of roadway or traffic signal modifications at one or more of the following project locations. Proportionate share participation is calculated based on the peak hour distribution of project generated trips as demonstrated in the approved traffic study. Proportionate share payments are due prior to civil plan approval.

Proportionate Share Project Name	Fee Rate
137th Ave – from NE 49th St to Fourth Plain Blvd	$3,000 per PM peak hour trip
Fourth Plain Blvd & NE 152nd Ave	$333 per PM peak hour trip
Leiser / St. Helens / MacArthur	$2,000 per PM peak hour trip
SE 176th Ave & SE 20th St	$400 per PM peak hour trip
NE 192nd Ave & NE 13th St	$400 per PM peak hour trip
SE 192nd Ave & SE 34th St	$150 per PM peak hour trip
192nd Ave & SR-14 ramp terminals	$2,000 per PM peak hour trip
SE 192nd Ave & Columbia Palisades Dr. (**east/west legs only**)	$830 per PM peak hour trip
MacArthur Blvd & Andresen Rd Roundabout	$2,285 per PM peak hour trip
MacArthur Blvd & Devine Rd Roundabout	$2,226 per PM peak hour trip
Grove St / Columbia House Blvd / SR-14 WB off-ramp	$600 per **AM** peak hour trip
NE 172nd Ave & NE 18th St	$300 per PM peak hour trip
NE 179th Place & NE 18th St	$900 per PM peak hour trip
NE 187th Ave & NE 18th St	$1,200 per PM peak hour trip
NE 162nd Ave & NE 9th St	$1,500 per PM peak hour trip
NE 172nd Ave & NE 9th St	$4,100 per PM peak hour trip
NE 192nd Ave & NE 9th St	$1,100 per PM peak hour trip
NE 187th Ave & SE 1st St	$ 1,100 per PM peak hour trip