




November 19, 2021

TO: File

FROM:  Randy Newton, P.E., P.T.O.E., City Traffic Engineer Department of Public Works

SUBJECT: City of Saint Paul Transportation Study Guidelines

Section 1. Purpose

This memorandum is intended to provide a framework for written transportation studies submitted as part of the City of Saint Paul's site plan review process or as otherwise requested by the Traffic Engineering Division of the Department of Public Works.

Traffic Engineering's requirements for written transportation studies are intended to:

- Ensure that the proposed site is designed to accommodate all modes of travel safely and efficiently, while encouraging non-motorized transportation and use of transit.
- Ensure that the site does not have negative impacts to the safety and operation of the public transportation system.
- Identify opportunities to improve safety and operation of the proposed site plan and the public transportation system through design modifications.
- Balance the need for traffic capacity analysis in the context of a mature, developed, urban area with the amount of effort to perform and review the analysis.

Section 2. Site Plan Transportation Study Guidelines Overview

The table below outlines the typical transportation study requirements for developments based on their expected level of transportation needs. The Traffic Engineer reserves the right to require additional study above the typical requirements based on the characteristics of specific development proposals. It is recommended that the applicant discuss their approach with Traffic Engineering before starting any work.








Renovation with no change in land use	
<p>Site plans falling in this category are characterized by proposing no significant modification to an existing structure on site, no change in land use, and no change in access.</p>	<p>Typically, no written study is required. Exceptions include but are not limited to:</p> <ul style="list-style-type: none"> • Schools • High intensity retail uses, such as high turnover restaurants
Minor expansion or small residential construction	
<p>Site plans falling in this category typically are:</p> <ul style="list-style-type: none"> • Additions to an existing building resulting in a minor increase in floor area with no change in occupant or access. • New residential construction with 20 or fewer units. 	<p>Typically, no written study is required. Plans where a study will likely be required include but are not limited to:</p> <ul style="list-style-type: none"> • Schools • High intensity retail uses, such as high turnover restaurants • Changes to parking capacity or impacts to the public ROW.
New construction/major expansion	
<p>Most sites not falling in to one of the two categories above will be considered new construction or a major expansion.</p>	<ul style="list-style-type: none"> • An evaluation of the site's transportation characteristics for all modes of travel is typically required. See Section 3 for more information. • An analysis of traffic impacts may be required based on intensity of expected trips generated by the site or other site characteristics. See Section 4 for more information.
Special land uses	
<p>The City will require additional evaluation for certain land uses known to have a higher likelihood of significant impact. See Section 4 for more information.</p>	<ul style="list-style-type: none"> • Schools <ul style="list-style-type: none"> ◦ All schools must provide a school operations plan, detailing expected student arrival and departure operations. ◦ An evaluation of the site's transportation characteristics for all modes of travel is typically required. See Section 3 for more information. • Drive-through windows will require a queuing analysis to identify potential impacts to public roadways and ROW.
Access modifications	
<p>The City may require additional evaluation if:</p> <ul style="list-style-type: none"> • New access locations are proposed • Alley access is proposed for parking areas with more than 10 spaces. • Existing access points are undesirable or are more numerous than necessary 	<ul style="list-style-type: none"> • The City will generally look to reduce the number of access points along public roadways. Proposals to introduce new access points will require justification and analysis. • Proposed access points near existing intersections are likely to require analysis. • In some cases, justification for the continuation of existing access points will be required.

Section 3. Evaluation of Transportation Characteristics by Mode

The table below outlines the basic information that should be included in an evaluation of the transportation characteristics of the proposed site plan. In addition to answering the questions below, the evaluation should include discussion of any features or challenges of the site and the surrounding transportation network.

The evaluation should include a site plan with the access points for each mode labeled, the existing curbside uses, any changes to curbside uses, and other appropriate features should be mapped.

	<p>pedestrians</p>	<ul style="list-style-type: none"> • How do pedestrians access the site? • What pedestrian facilities exist adjacent to the site? • Are there any notable destinations for users of the site? If so, what route are they likely to utilize? Are there any notable concerns along that route (e.g. sidewalk gap, uncontrolled crossing of a busy/high speed roadway)? • Where are entrances? Are entrances likely to result in crossings at a location that may be unsafe or undesirable? • How does the Saint Paul Pedestrian Plan relate to the site?
	<p>bicycles</p>	<ul style="list-style-type: none"> • How do bikes access the site and bike parking on site? • What bike facilities exist within ½ mile of the site? Are there any notable challenges that will make it difficult for users of the site to access the bicycle network? • What bike facilities are proposed within ½ mile of the site? • Is any bike parking proposed in the public ROW?
	<p>transit</p>	<ul style="list-style-type: none"> • What transit routes/stops/stations exist within ½ mile of the site? • What transit routes are planned within ½ mile of the site? • How will peds/bikes from the site access stops/stations? Are there any notable concerns along that route (e.g. sidewalk gap, uncontrolled crossing of a busy/high speed roadway)?
	<p>traffic</p>	<ul style="list-style-type: none"> • What roadways exist adjacent to the site? • How do motor vehicles access the site? • How will motor vehicles circulate on site? Identify any elements that may result in impacts to the public ROW, including queuing off site. • Is parking on the site expected to meet demand? How will impacts to surrounding neighborhoods be mitigated if parking demand exceeds site capacity? • Does the site plan result in the removal of on-street parking? Metered parking? • How will any anticipated passenger pick-up/drop-off activity at be accommodated?
	<p>freight</p>	<ul style="list-style-type: none"> • How are deliveries accommodated at the site? How is trash service and other expected services requiring large vehicles accommodated at the site? • Are loading zones proposed within the public ROW?

Section 4. Traffic Impact Analysis

The criteria below are typical guidelines. The Traffic Engineer reserves the right to require additional analysis above the typical guidelines based on the characteristics of specific development proposals. It is recommended that the applicant's consultant or prospective consultant discuss their approach with Traffic Engineering before starting any work.

Unless otherwise specified, analysis in this section must be prepared by or under the direct supervision of a Professional Engineer licensed by the State of Minnesota. Verification shall be included with all analysis submitted to the City.

Trip Generation

Typically, if the proposed site plan is...

- A residential development with fewer than 100 units
- Office space with a gross floor area less than 50,000 square feet
- Industrial space with a gross floor area less than 100,000 square feet

...no trip generation estimate is required.

In all other cases, an estimate of the trips to be generated by the site must be provided. Trip generation should be estimated for the morning and evening peak hours, as well as any off-peak times where generation is particularly high (e.g. school dismissal, lunch rush, wholesale shift changes).

If ITE Trip Generation data is used:

- Trip generation estimates should represent the upper level of activity in cases where land uses are unknown at the time of study.
- Estimates should be based on conservative interpretations of the setting/location.
- Rates for locations with small sample sizes should not be used without approval of Traffic Engineering.
- Rates should be based on data sets with sites of comparable size.
- Reductions from mode split are allowable but must be in line with documented existing mode split in Saint Paul or measured from similar developments in the immediate area of the development.
- Trip generation estimates must be accompanied by identification of the edition used, land use name and code, setting/location, unit of measurement, rate/equation used and the time of day of the data used.

If trip generation is to be based on observations at similar local sites, the approach must be reviewed with and approved by Traffic Engineering before a determination on required further analysis can be completed.

Trip Distribution, Assignment, and Modeling

In typical cases, the formal traffic analysis required for a proposed site plan will be based on the number of trips estimated to be generated by the site during its peak. The approximate thresholds and typical requirements are provided in the table below.

Fewer than 100 peak hour trips generated

- General modelling of the impact to the surrounding roadway network will typically not be required.
- Modeling may be required to analyze specific issues (e.g. queueing issues associated with access locations, neighborhood traffic impacts).

Between 100 and 250 peak hour trips generated

- Trip distribution and assignment should be performed to identify where motor vehicle traffic increases are anticipated.
 - Trip distribution should be to/from major roadways or attractors in the area, considering regional travel patterns.
 - Trip assignment should be provided on a map depicting the impacts to adjacent intersections.
- Traffic modeling may be required based on a review of the trip distribution and assignment, dependent on the characteristics of the surrounding roadway network (e.g. a site generating a large number of trips expected to travel through an adjacent traffic signal will likely need to be modeled).

Greater than 250 peak hour trips generated

- A full Traffic Impact Analysis is typically required.
- Specific scope of traffic study must be reviewed with and approved by the Traffic Engineering Division prior to commencement of the study.

Additional Requirements for Special Land Uses

Schools

- All schools must provide a school operations plan, detailing expected student arrival and departure operations.

Drive-thrus

- A thorough queuing analysis must be performed for all proposed site plans with drive-thru service.
- Where possible, data specific to the proposed user of the site must be used in the queuing analysis (e.g. a fast-food franchise should provide data collected at locations of similar size and character).
- The primary purpose of the queuing analysis is to determine if the proposed site plan will impact the public ROW, including the sidewalk and flow of motor vehicles on the public roadway.
- The queuing analysis should provide an estimate of the probability of queues exceeding the available storage space.

Section 5. Reference

Plan Documents

Saint Paul Pedestrian Plan – <http://stpaul.gov/walking>

Saint Paul Bicycle Plan – <http://stpaul.gov/bikes>

Sample Safe Routes to School Plans - <http://www.stpaul.gov/safe-routes-school>





Traffic Data

Traffic data needs are dependent on the scope of the Traffic Impact Analysis to be performed. All City data is publicly available at pwgeo.org. Data can be accessed by following the instructions below. The City requests that all traffic data collected as part of the study be provided for addition to this application.

The use of data older than five years must be approved by Traffic Engineering.

Every effort should be made to utilize site specific data when available (e.g. the trip generation and distribution of a relocated school should be based on the student body and transportation characteristics of the existing location).

TO USE PWGEO.ORG:

<p>1 Under the catalog tab, navigate to the Traffic Counting folder:</p> <ul style="list-style-type: none"> • Utilities & Infrastructure <ul style="list-style-type: none"> ○ Traffic <ul style="list-style-type: none"> ▪ Traffic Counting 	
<p>2 Check the box for the data type of interest.</p>	
<p>3 Click the yellow balloon under the checked box from Step 2 to enable popups.</p>	
<p>4 Zoom in to the area of study.</p>	
<p>5 Hover over the icon for the data type, which should bring up a popup.</p>	
<p>6 Click "View PDF" within the popup to access the data.</p>	