City of Saskatoon

Eastlake Area Traffic Impact Assessment

Aggregate Results of Developer Studies Near Eastlake Avenue

February 23, 2023

Contents

INTRODUCTION

Three separate developments have been proposed near the intersection of Eastlake Avenue and 12th Street in the Nutana neighbourhood. Individually, each of these developments have completed a traffic impact assessment (TIA) through the City of Saskatoon's development review process. These traffic studies assess the individual impact of each development; however, there is currently no requirement or mechanisms for developers to assess the combined impact of multiple future developments located within close proximity of each other.

This report summarizes the City of Saskatoon's efforts to amalgamate the results of the individual TIAs and identify the overall transportation impacts of the combined development area.

Proposed Developments

555 Eastlake Avenue

A 26-storey mixed-use development that will include a variety of residential and commercial spaces.

509 12th Street

An 8-storey commercial/office development.

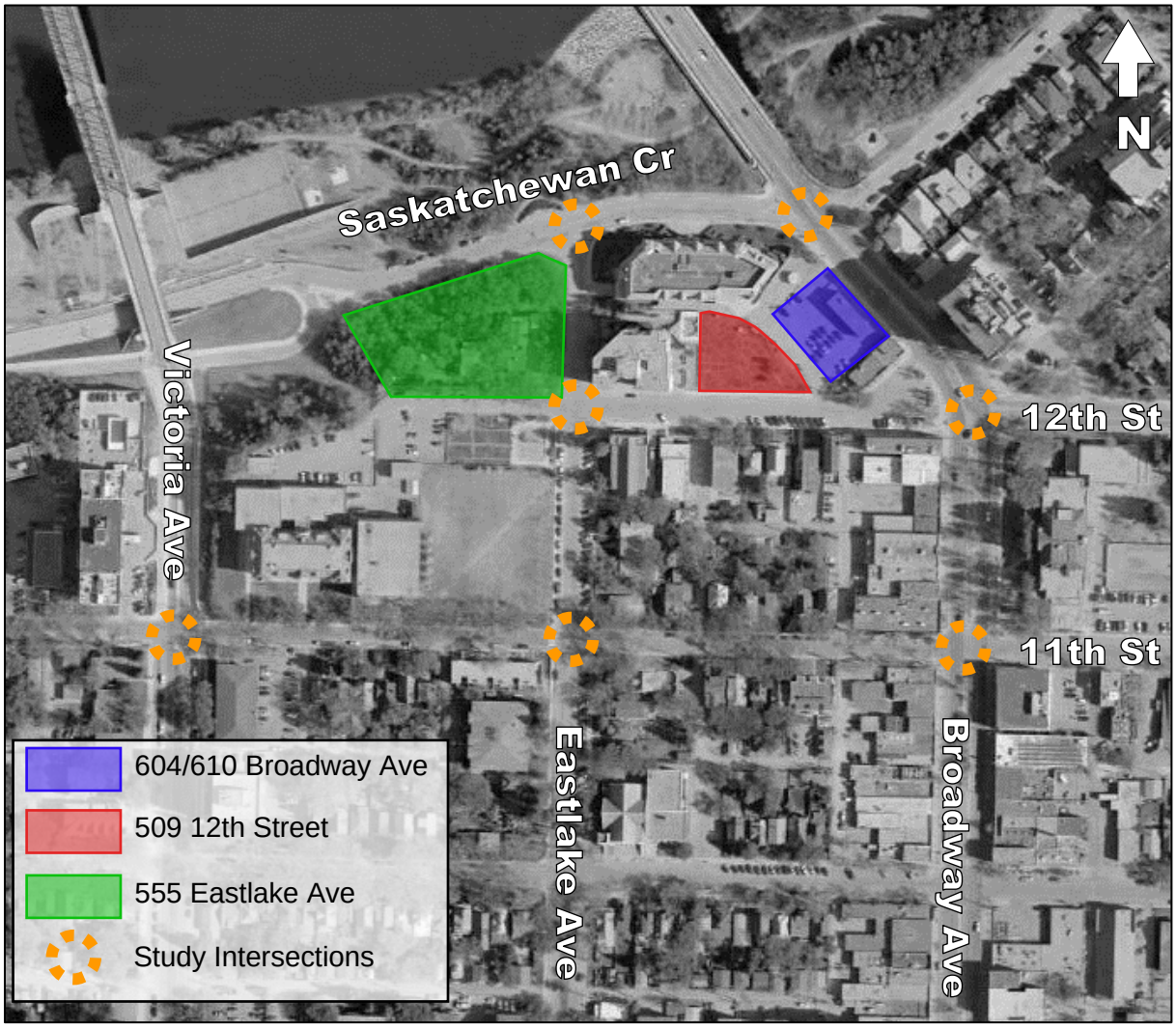
604/610 Broadway Avenue

A 17-storey mixed-use development with residential and commercial spaces.

Study Area

Each of the proposed development sites is highlighted in Figure 1 below. The figure also shows each of the study intersections that were included in the analysis.

Figure 1: Development Locations



EXISTING CONDITIONS

To determine the impacts of the proposed development, an assessment of the existing conditions at each of the study intersections was completed. The analysis was completed using PTV Vistro, an industry standard traffic micro-simulation software package. The analysis evaluated the Level-of-Service (LOS), average delay and number of new trips at each of the study intersections.

Level-of-Service is a term used to describe the average delay experienced by motorists as they traverse an intersection. Based on the average delay, an intersection is assigned a LOS between A and F. The first, LOS A, represents the lowest range of average delay and therefore the best conditions, while LOS F represents the highest range of delay and therefore less than ideal conditions. Table 1 summarizes the range of intersection delays for each level-of-service and Table 2 summarizes that current LOS at each of the study intersections.

Table 1: Level of Service Definitions

Level-of-Service (LOS)	Average Control Delay for Movements	
	Unsignalized Intersections	Signalized Intersections
A	≤ 10 seconds per vehicle	≤ 10 seconds per vehicle
B	> 10 – 15 seconds per vehicle	> 10 – 20 seconds per vehicle
C	> 15 – 25 seconds per vehicle	> 20 – 35 seconds per vehicle
D	> 25 – 35 seconds per vehicle	> 35 – 55 seconds per vehicle
E	> 35 – 50 seconds per vehicle	> 55 – 80 seconds per vehicle
F	> 50 seconds per vehicle	> 80 seconds per vehicle

Table 2: Existing Traffic Conditions

Existing LOS	Existing LOS	
	AM Peak Hour	PM Peak Hour
Broadway Ave & Saskatchewan Cr	A	A
Broadway Ave & 12th Street	D	D
Broadway Ave & 11th Street	B	C
Eastlake Ave & Saskatchewan Cr	A	A
Eastlake Ave & 12th Street	A	B
Eastlake Ave & 11th Street	B	B
Victoria Ave & 11th Street	C	D

TRAFFIC FORECAST

For each development, the Institute of Transportation Engineers (ITE) Trip Generation Manual was used to estimate the number of vehicular trips traveling to or from the development sites in the weekday morning and afternoon peak hours. Table 3 and Table 4 summarize the trip generation potential of each development for the morning and afternoon peak hours.

Table 3: Site Generated Trips - AM Peak Hour

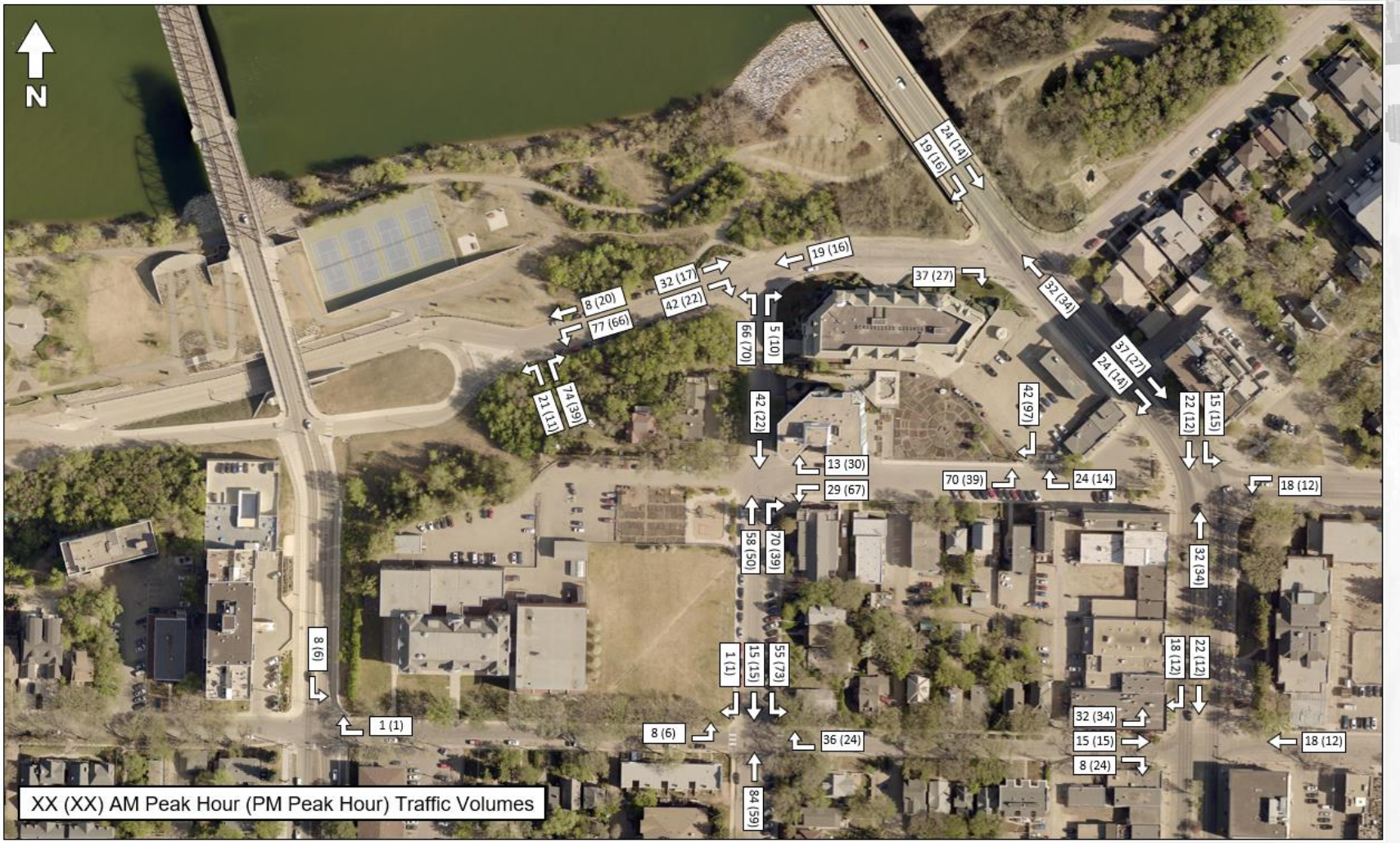
Development	Trips Entering	Trips Exiting	Total Trips
555 Eastlake Avenue	75	95	170
509 12th Street	52	13	65
604/610 Broadway Avenue	26	29	55

Table 4: Site Generated Trips - PM Peak Hour

Development	Trips Entering	Trips Exiting	Total Trips
555 Eastlake Avenue	65	50	115
509 12th Street	11	54	65
604/610 Broadway Avenue	34	38	72

These trips were then distributed onto the road network based on likely origin and destination points within Saskatoon. Figure 2 summarizes the results of the distribution and assignment of trips from the development sites to the road network. The numbers in the white boxes show the expected traffic volumes during the AM and PM peak hours. The AM volumes are shown on the left and the PM volumes are shown in the parenthesis on the right. The arrows next to each box indicate the direction of travel as the vehicles enter the intersections.

Figure 2: Site Generated Trip Distribution



Future Traffic Operations

These site generated trips were then added to the existing background volumes to determine the overall future impact to traffic operations. Table 5 and Table 6 show the change in overall intersection LOS between the pre-development and post-development scenarios for each study intersection. Generally, a LOS of D is considered an acceptable amount of delay at an intersection. None of the study intersections are estimated to operate worse than a LOS of D.

Table 5: AM Peak Hour LOS Comparison

Existing LOS	Pre-Development	Post-Development
Broadway Ave & Saskatchewan Cr	A	A
Broadway Ave & 12th Street	D	D
Broadway Ave & 11th Street	B	B
Eastlake Ave & Saskatchewan Cr	A	A
Eastlake Ave & 12th Street	A	B
Eastlake Ave & 11th Street	B	B
Victoria Ave & 11th Street	C	C
12th Street & Development Lane Access	B	B

Table 6: PM Peak Hour LOS Comparison

Existing LOS	Pre-Development	Post-Development
Broadway Ave & Saskatchewan Cr	A	A
Broadway Ave & 12th Street	D	D
Broadway Ave & 11th Street	C	C
Eastlake Ave & Saskatchewan Cr	A	B
Eastlake Ave & 12th Street	B	B
Eastlake Ave & 11th Street	B	B
Victoria Ave & 11th Street	D	D
12th Street & Development Lane Access	B	B

CONCLUSIONS

The combined redevelopment of 555 Eastlake Avenue, 509 12th Street, and 604/610 Broadway Avenue will result in an estimated 290 and 252 vehicular trips in the AM and PM peak hours respectively. Once these trips have been distributed to the roadway network, they will lead to minimal increases in intersection delay and minor impacts to LOS at each of the study intersections.

Based on the estimated impact to traffic operations at the study intersections, there are no recommended improvements that are required prior to the development of these sites.