

MEMO

VIA EMAIL

To: Mr. Todd Wyett
Versa Development

From: Julie Kroll, PE, PTOE
Jacob Swanson, EIT
Fleis & VandenBrink

Date: November 17, 2019

Re: Mixed-Use Development
Genoa Township, Michigan
Improvement Timing Analysis

INTRODUCTION

This memorandum is intended to provide supplemental information to the Traffic Impact Study (TIS) prepared by Fleis & VandenBrink (F&V) dated September 13, 2019 completed for the Versa Development in Genoa Township, Michigan. This memo presents the results of an evaluation of the timing of the recommended intersection improvements identified in the TIS. An iterative analysis was performed on the study roadway and intersections to determine when the traffic generated by the proposed development would necessitate implementation of the recommended improvements outlined in the TIS and summarized below:

- Latson Road & WB I-96
 - Upgrade to a fully actuated signal
 - Provide permissive/protected left-turn phasing for the northbound approach
- Latson Road & EB I-96
 - Upgrade to a fully actuated signal
 - Provide permissive/protected left-turn phasing for the southbound approach
- Latson Road & N. Site Drive
 - Construct an actuated coordinated signal
- Latson Road between N. Site Drive and S. Site Drive
 - Widen to a 5-lane roadway

ANALYSIS

This evaluation was performed assuming a baseline condition represented by the background traffic volumes for the buildout year ***without the proposed development***. In order to determine when the aforementioned improvements would be required at the study intersections, an iterative analysis was performed; evaluating varying percentages of site-generated traffic volumes. The varying levels of site-generated traffic were then added to the baseline traffic volumes and the network was analyzed to determine at what level the study intersections began operating unacceptably. The percentages and volumes of site generated traffic associated with each of the recommended intersection improvements is summarized in **Table 1**.

Table 1: Improvement Timing Summary

Intersection	Percentage of Site-Generated Traffic	AM Peak Hour (vph)			PM Peak Hour (vph)		
		In	Out	Total	In	Out	Total
Latson Road & WB I-96	15%	90	38	128	45	95	140
Latson Road & EB I-96	40%	240	102	342	119	252	371
Latson Road & N. Site Drive	60%	360	152	512	179	378	557

The results of the analysis indicate that the recommended improvement to widen Latson Road between N. Site Drive and S. Site Drive is not necessary to improve operations to an acceptable level. The analysis indicates that additional capacity is not needed on Latson Road, south of the N. Site Drive.

CONCLUSIONS

The conclusions of this Analysis are as follows:

1. Latson Road & WB I-96

At approximately **15%** of the site generated traffic (128 AM trips and 140 PM trips), the following improvements are needed to mitigate operational issues at the intersection of Latson Road & WB I-96.

- a. Upgrade to a fully actuated signal
- b. Provide permissive/protected left-turn phasing for the northbound approach.

2. Latson Road & EB I-96

At approximately **40%** of the site generated traffic (342 AM trips and 371 PM trips), the following improvements are needed to mitigate operational issues at the intersection of Latson Road & EB I-96.

- a. Upgrade to a fully actuated signal
- b. Provide permissive/protected left-turn phasing for the southbound approach.

3. Latson Road & N. Site Drive

At approximately **60%** of the site generated traffic (512 AM trips and 557 PM trips), the following improvements are needed to mitigate operational issues at the intersection of Latson Road and N. Site Drive.

- a. Construct an actuated coordinated signal

4. Latson Road between N. Site Drive and S. Site Drive

This analysis indicated that the widening of Latson Road between the N. Site Drive and S. Site Drive is not necessary to mitigate the impact of the proposed development. The existing 3-lane cross-section operates well with the addition of the other recommended intersection improvements .

JJS2:jmk