



An ISO 9001:2000  
Certified Company

37871 Interchange Dr  
Farmington Hills, MI 48335  
248-478-3690  
Fax: 248-478-3986  
www.wilcox.us

**Built on Quality -**  
continuously improving our  
quality of service to meet  
and exceed our  
clients' expectations.

## TECHNICAL MEMORANDUM

**TO:** Mr. Doraid Markus  
Rochester Auburn Associates, LLC

**FROM:** Michael J. Labadie, PE  
Timothy J. Likens, PE

**DATE:** October 16, 2012

**SUBJECT:** Proposed Commercial Redevelopment  
SW Corner Rochester Road & Auburn Road  
Traffic Impact Study – Summary of Findings

**VIA EMAIL**

### Introduction

This memorandum presents a summary of key findings for the Traffic Impact Study (TIS) for the subject redevelopment project. The purpose of providing these findings is to facilitate discussion of traffic operations at the upcoming Planning Commission Study Session. The future development will consist of 37,882 square feet (SF) of retail and restaurant space, with drive-through service. The TIS scope developed based on input from the City of Rochester Hills Traffic Engineering Division and the Michigan Department of Transportation (MDOT). Both Rochester Road and Auburn Road are under the jurisdiction of MDOT. The study includes analysis of the signalized intersections of Rochester Road with Auburn Road and the Meijer / Lowes Drive.

### Existing Conditions

Traffic operations were evaluated for the weekday AM, Mid-Day (MD), PM, and Saturday MD periods. Wilcox collected peak period traffic volume data at the study intersections and modeled the study road network using Synchro and SimTraffic software. Vehicle delays, Levels of Service, and vehicle queues were calculated at the study intersections under existing conditions. The key findings of these analyses are:

- The intersection of Rochester Road & Meijer / Lowes Drive currently operates acceptably.
- At Rochester Road & Auburn Road, several through movements operate at a LOS E or F, and the left turn movements operate at a LOS F.
- The existing capacity issues at Rochester Road & Auburn Road cause queues which frequently block adjacent driveways.

Additionally, Wilcox reviewed City planning documents and previous corridor studies. The City Master Thoroughfare Plan Update indicates that a proposed right-turn lane on eastbound Auburn Road at Rochester Road is planned. Wilcox also understands that the traffic signal at this location is planned to be modernized. The right turn lane improvement and right turn overlap phasing would add intersection capacity and improve existing traffic operations.

Other planning documents indicate that existing driveway locations along Rochester Road and Auburn Road do not match the City's corridor and access management plans. Vehicle crash patterns have also been identified related to driveway operations.



## Site Traffic Generation

The number of AM and PM peak hour vehicle trips that would be generated by the proposed redevelopment was forecast based on data published by the Institute of Transportation Engineers (ITE) in *Trip Generation, 8<sup>th</sup> Edition* and the *Trip Generation Handbook, 2<sup>nd</sup> Edition*. As is typical of retail and restaurant uses, a portion of the site-generated trips are already present on the adjacent road network and are interrupted to visit the site. These trips are known as “pass-by” trips and account for a percentage of the total site-generated traffic. Pass-by trips result in turning movements at the site driveways, but do not increase traffic volumes on the adjacent road network. Approximately 40% of the site-generated traffic is expected to currently exist on the adjacent road network.

## Future Conditions

The vehicle trips that would be generated by the proposed redevelopment were assigned to the study road network based on existing peak hour traffic patterns, the proposed site access plan, and the methodologies published by ITE. This methodology indicates that pass-by trips enter and exit the development in their original direction of travel, while new trips will return to their direction of origin.

Future traffic operations were evaluated with the addition of site-generated traffic. The results of these analyses indicate:

- This project will not have a significant impact to traffic operations at the study intersections, as compared to existing conditions.
- There is not adequate space to accommodate left turns in the center lane on Auburn Road between Rochester Road and the east site drive.
- Eastbound vehicle queues at the traffic signal would block the east site driveway to Auburn Road.

## Conclusions

The following conclusions are based on the study analyses and findings as outlined above:

1. The east driveway to Auburn Road should be constructed as a right-in / right-out only driveway.
2. The west driveway to Auburn Road and the driveway to Rochester Road will operate acceptably as full-movement driveways.
3. The proposed site access plan is an improvement as compared to existing conditions. The consolidation of site driveways and elimination of driveway turning movements will provide traffic operations and safety improvements on Rochester Road and Auburn Road.
4. Existing vehicle demands at the intersection of Rochester Road & Auburn Road currently exceed capacity. The proposed project will not significantly impact existing traffic operations; therefore off-site traffic mitigation should not be required.

Any questions related to this memorandum, study, analyses, and results should be addressed to Wilcox Professional Services, LLC.

TJL:mjl