

APPENDIX D
Supplemental Analysis



MEMORANDUM

TO: Mr. Mark Fabel
MCGOUGH DEVELOPMENT

FROM: Marie Cote, P.E., Principal
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DATE: November 10, 2004

SUBJECT: BLOOMINGTON CENTRAL STATION TRAFFIC STUDY – SUPPLEMENTAL ANALYSIS

Introduction

Based on discussions from the meeting held on November 5, 2004, the following issues were addressed:

- West Road operations need to be analyzed in detail, along with access recommendations
- Traffic volumes on the east/west roadway connections between 28th Avenue and West Road need to be addressed
- An alternative solution should be recommended for the traffic signal at the intersection of Old Shakopee Road/Central Road under year 2019 conditions
- East Road operations north of Old Shakopee Road need to be analyzed further to determine queuing problems that may develop during peak hour conditions

West Road Operations

To explain the operations analysis for West Road we identified the four parking structures A, B, C and D, (north to south). Parking structure A does not have direct access along West Road. The internal roadway connecting West Road and Central Road, north of Old Shakopee Road, is referred to as South Road in our analysis (see attached figure).

The modeling for West Road began with access to/from parking structure B along North Road and access to/from parking structures C and D along South Road. Under this scenario, North Road and South Road cannot handle the forecast volumes traveling to/from the parking structures.

Next, we added one full-access point along West Road to/from parking structures B, C and D. Under this scenario, the full-access to parking structure D needs to be closed. Access to/from this parking structure would be provided along South Road. South Road will need to be a two-lane approach. It should also be aligned directly across from the east/west roadway connection to the west. The existing driveway on the west side of West Road north of Old Shakopee Road, will experience problems.

The model for year 2019 will then have one full-access to parking structures B and C. Each of the parking structure driveways should have two-lane approaches. Significant delays and queues will develop in the ramps during peak hour conditions. There are no concerns with the southbound left-turn movement into parking structure B. Further analysis of parking structure C was conducted. The access for parking structure C should be aligned directly across from the access on the west side of West Road. This is located approximately 200 feet south of the LRT line. The maximum queue for the southbound left-turn movement at parking structure C is less than 200 feet. If problems develop with this movement, the left-turn movement into the ramp could be restricted, with access provided from South Road.

The five-lane section (two through lanes in each direction with a two-way left-turn lane) recommended will adequately handle future volumes.

East/West Roadway Connections between 28th Avenue and West Road

Motorists using these two roadway connections include generated trips only. It does not include rerouted trips already using the system. These roadways would rarely be used to avoid stopping along West Road when LRT crossings occur, since the LRT alignment would also cross 28th Avenue. Most of the trips using these connections are traveling to and from the developments located between 28th Avenue and West Road.

The year 2019 daily traffic volumes on the east/west roadway west of West Road, north of the railroad tracks is estimated at approximately 1,000 vehicles per day.

The year 2019 daily traffic volumes on the east/west roadway west of West Road, south of the railroad tracks is estimated at approximately 2,000 vehicles per day.

Old Shakopee Road/Central Road Improvements

For the intersection of Old Shakopee Road/Central Road to operate at acceptable levels of service during year 2019 conditions with side-street stop control, approximately 40 percent of the northbound and southbound left-turns would need to divert to the intersection of Old Shakopee Road/East Road. With the relocation of these peak hour trips, the intersection of Old Shakopee Road/East Road will continue to operate at acceptable levels of service.

The intersection of Old Shakopee Road/Central Road would operate at C/F with a side-street delay of two minutes. The intersection of Old Shakopee Road/East Road would continue to operate at LOS C, with the additional traffic.

East Road Operations

The additional analysis for East Road operations was only conducted for the a.m. peak hour. The reason for this is that a majority of the p.m. peak hour southbound left-turn volume is traveling from the HealthPartners ramp. Therefore, the southbound queue will back into the ramp and will not block northbound East Road motorists from making a left turn into the parking area. In addition, the northbound entering volume is low for the p.m. peak hour (due to office type use).

For the a.m. peak hour, an additional analysis was conducted to determine whether southbound queues on East Road will extend past the HealthPartners access roadway, blocking northbound motorists from making a left turn into the parking area. This could then possibly cause traffic to extend back out onto Old Shakopee Road.

Based on the proposed site plan, the HealthPartners access roadway is approximately 120 feet north of Old Shakopee Road. Results of our analysis indicate that the maximum queue for the southbound approach of East Road at Old Shakopee Road is approximately 200 feet. The average queue is approximately 120 feet. Based on these queue lengths, the southbound queue would reach the HealthPartners access roadway 50 percent of the a.m. peak hour. Signs (“Do Not Block intersection”) should be posted to prevent traffic from blocking the intersection. In addition, as design plans move forward for the proposed Bloomington Central Station development, this access roadway should be located as far north possible from Old Shakopee Road.

The model currently has more westbound Old Shakopee Road traffic making a right turn at East Road than Central Road, to enter the HealthPartners parking ramp. If delays occur while entering the ramp in the morning, employees will modify their route to enter from Central Road.

