

DRAFT MEMORANDUM

TO: Kurt Hagen, Phase II Development Manager
MALL OF AMERICA

FROM: Marie Cote, P.E., Principal
Joshua Maus, P.E., Senior Engineer

DATE: November 8, 2007

SUBJECT: MALL OF AMERICA PHASE II TRAFFIC STUDY
RENAISSANCE HOTEL DEVELOPMENT

INTRODUCTION

The purpose of this study is to evaluate the traffic impacts at key intersections and recommend improvements necessary to support the proposed Renaissance Hotel development located on the south side of the existing Mall of America site (see Figure 1 - Project Location). This study includes a Saturday and Thursday p.m. peak hour operations analysis under existing and year 2012 build conditions. This study will take into consideration the previous *Mall of America Phase II Traffic Study* (September 2006), prepared by SRF Consulting Group, Inc.

EXISTING CONDITIONS

Based on a review of traffic volume data at the freeway ramp locations in the immediate area, traffic volumes have remained constant over the past few years. Thus, the existing analysis (year 2005) completed in the *Mall of America Phase II Traffic Study*, will be assumed in this study. Traffic operations for existing conditions were analyzed at the following key intersections:

- Killebrew Drive/TH 77 Ramps/20th Avenue
- Killebrew Drive/22nd Avenue
- Killebrew Drive/24th Avenue
- 24th Avenue/I-494 Single-Point Interchange
- 24th Avenue/American Boulevard
- 24th Avenue/Lindau Lane
- 24th Avenue/82nd Street

An operations analysis was conducted for the Saturday and Thursday p.m. peak hours at each of the key intersections to determine how traffic currently operates within the project area. The signalized intersections were analyzed using the Synchro/SimTraffic software. Existing geometrics, traffic controls and peak hour traffic volumes for key intersections are shown in Figures 2 and 3.

The operations analysis identifies a Level of Service (LOS) which indicates the quality of traffic flow through an intersection. Intersections are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS F indicates an intersection where demand exceeds capacity, or a breakdown of traffic flow. LOS A through D are generally considered acceptable by drivers. LOS E indicates that an intersection is operating at, or very near its capacity, and that vehicles experience substantial delays.

Results of the analysis shown in Table 1 indicate that all of the key intersections, with the exception of Killebrew Drive/22nd Avenue, are presently operating at acceptable levels of service.

Table 1
Existing Peak Hour Capacity Analysis
Level of Service Results

Intersection	Level of Service	
	Saturday Peak	Thursday P.M. Peak
Killebrew Drive/TH 77 Ramps/20th Avenue	C	B
Killebrew Drive/22nd Avenue	E (C)	B
Killebrew Drive/24th Avenue	D	D
24th Avenue/I-494 Single-Point Interchange	D	C
24th Avenue/American Boulevard	C	C
24th Avenue/Lindau Lane	B	B
24th Avenue/82nd Street	B	B

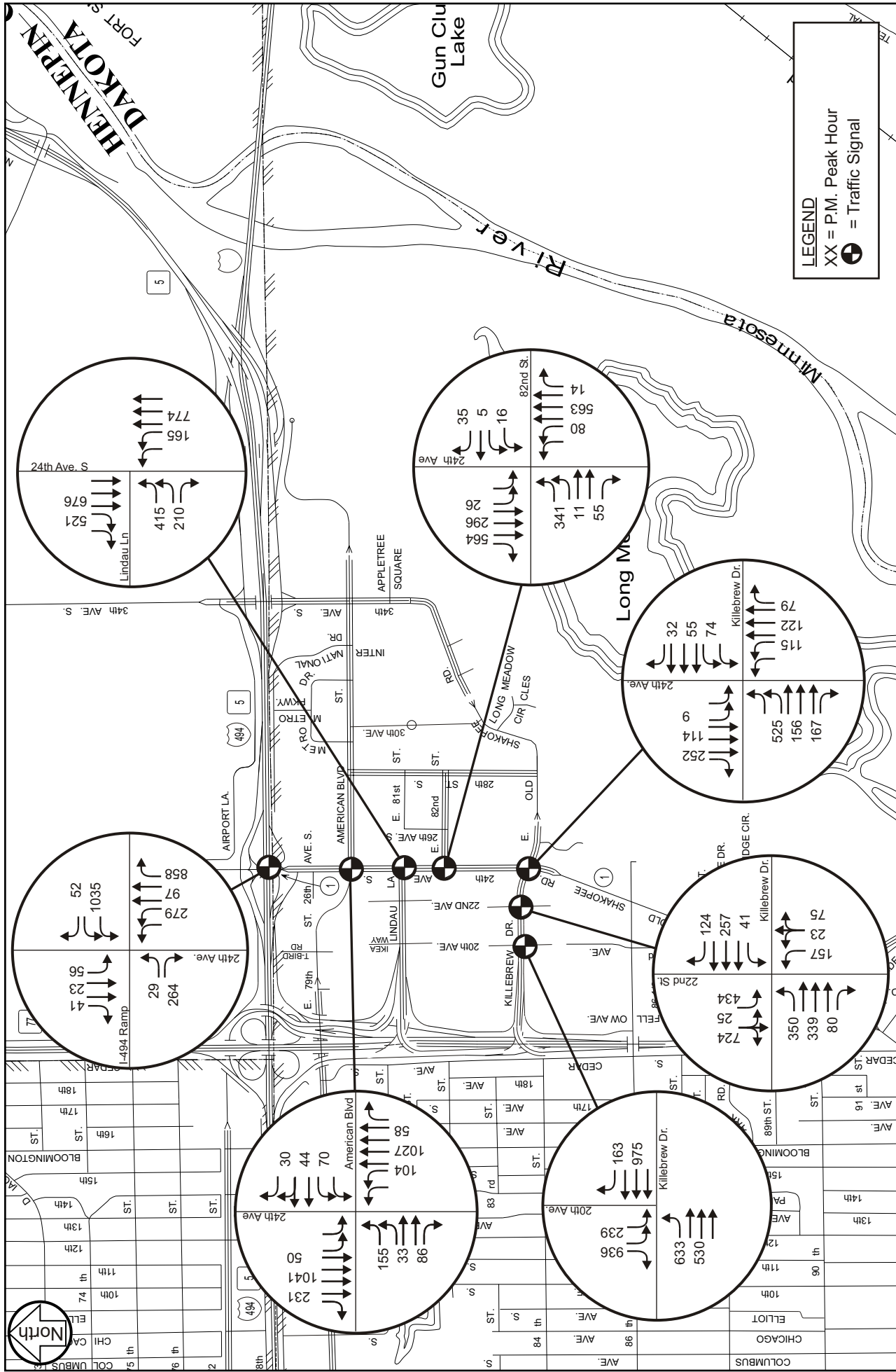
Note: Parentheses indicate LOS with assumed improvements listed below.

Poor operations at the intersection of Killebrew Drive/22nd Avenue are a result of inadequate capacity for turning vehicles. In order for this intersection to operate at acceptable levels of service, the following improvement is recommended:

Killebrew Drive/22nd Avenue

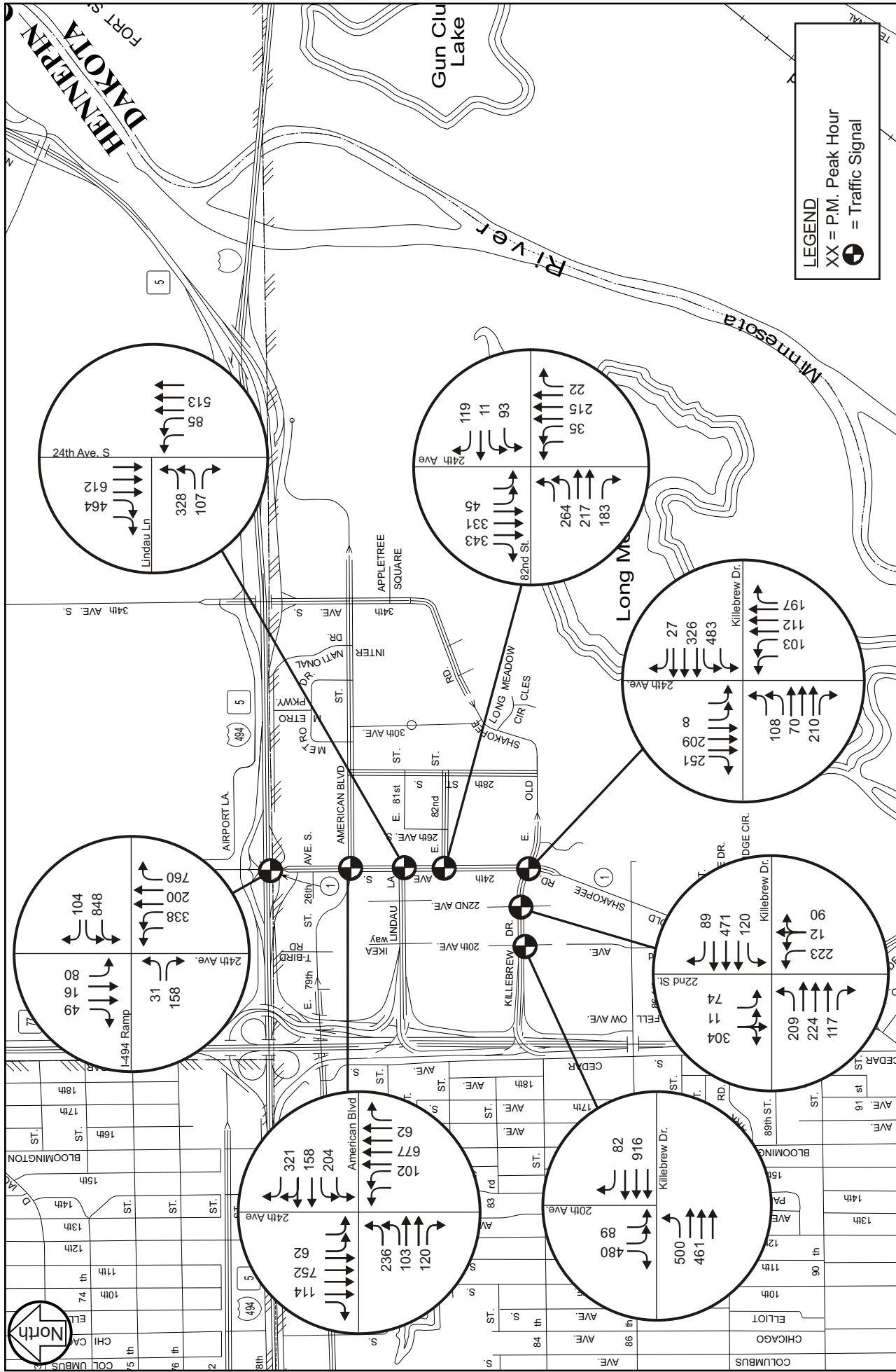
- Construct an additional eastbound left-turn lane to provide dual left-turn lanes

This improvement is consistent with those identified in the *Mall of America Phase II Traffic Study* and is scheduled to be constructed in year 2008 along with other capacity improvements along Killebrew Drive.



YEAR 2005 SATURDAY PEAK HOUR TRAFFIC VOLUMES (3 PM TO 4 PM)
 MALL OF AMERICA PHASE II TRAFFIC STUDY - RENAISSANCE HOTEL DEVELOPMENT
 Mall of America

Figure 2



YEAR 2005 WEEKDAY PEAK HOUR TRAFFIC VOLUMES (4:30 PM to 5:30 PM)
 MALL OF AMERICA PHASE II TRAFFIC STUDY - RENAISSANCE HOTEL DEVELOPMENT

Figure 3



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PROPOSED DEVELOPMENT

The proposed development consists of a 500 room Renaissance Hotel located on the south side of the existing Mall of America site. Construction is scheduled to be completed in year 2010. New trips generated by the hotel are expected to access the site using the existing access at Killebrew Drive/20th Avenue. The location of the proposed hotel is displayed in Figure 4.

TRIP GENERATION AND DISTRIBUTION

Trip generation estimates for the Saturday and Thursday p.m. peak hours and on a daily basis were calculated for the proposed Renaissance Hotel based on trip generation rates from the 2003 ITE Trip Generation Reports. A 50 percent multi-use reduction was applied to the trip generation estimates. This reduction is consistent with the *Mall of America Phase II Traffic Study*. Trip generation estimates are displayed in Table 2.

Table 2
Trip Generation Estimates

Development	ITE Land Use Code	Size (rooms/units)	Daily Trips	P.M. Peak Hour		Saturday Peak Hour	
				In	Out	In	Out
Renaissance Hotel ⁽¹⁾	310	500	2043	78	69	101	79

⁽¹⁾ A 50 percent multi-use reduction was assumed for hotel land use.

As shown in Figure 5, the directional trip distribution for the site-generated trips is consistent with the *Mall of America Phase II Traffic Study*.

YEAR 2012 BUILD CONDITIONS

To determine how well the existing and future roadway network will accommodate year 2012 build traffic forecasts, an operations analysis was conducted for Saturday and Thursday p.m. peak hour conditions. A background growth rate of one and one-half percent per year was assumed for all traffic that passes through the study area. This growth rate is consistent with previous studies conducted in the area. The year 2012 build condition assumes that adjacent growth and development identified as part of the *Bloomington Central Station Traffic Study*, the *Airport South AUAR*, and the Minneapolis/St. Paul International Airport expansion has occurred.

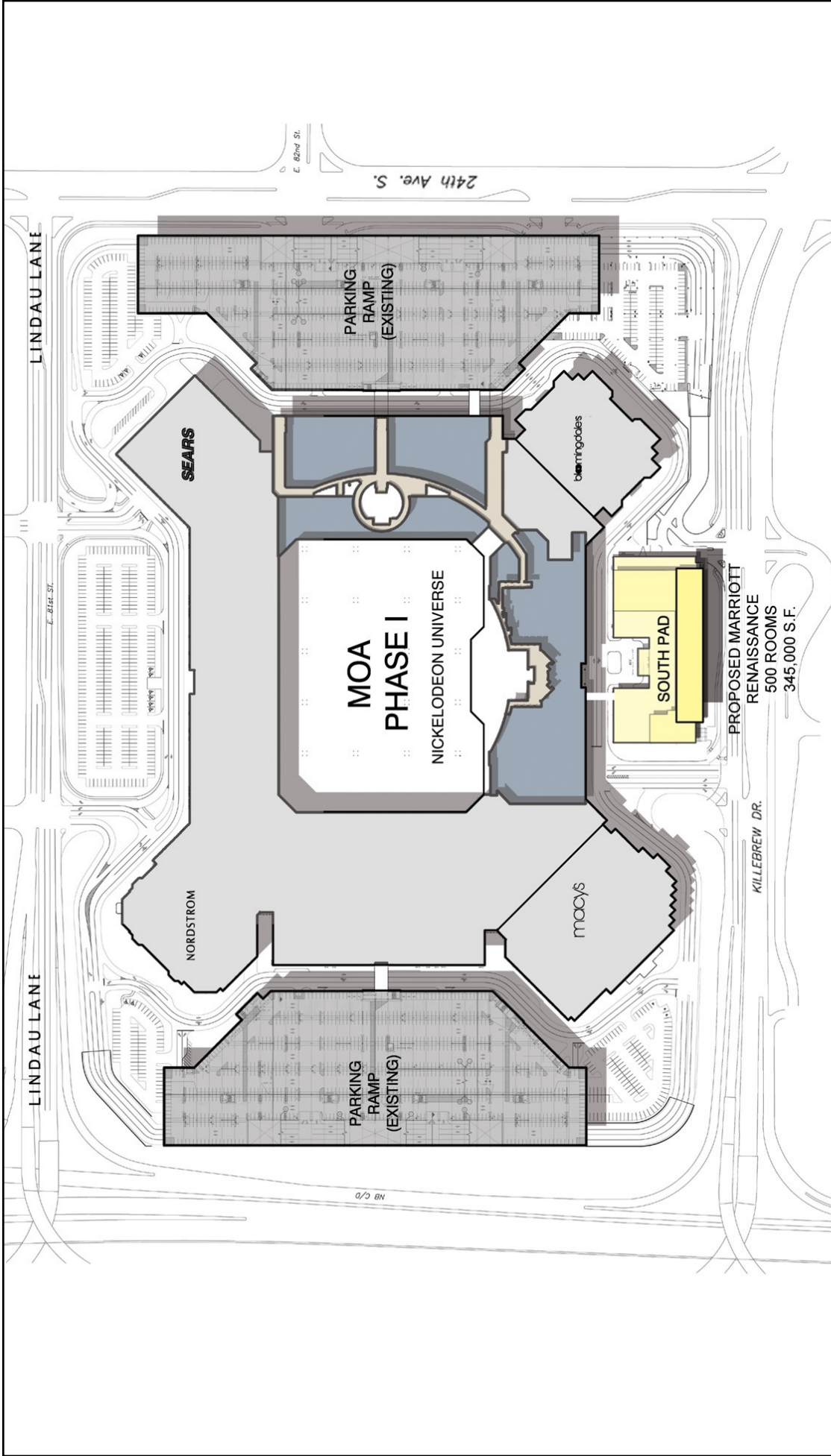
As previously mentioned, roadway improvements are scheduled in year 2008 along Killebrew Drive. These improvements are assumed in the year 2012 build analysis and consist of:

Killebrew Drive/22nd Avenue (identified in the existing conditions section)

- Construct an additional eastbound left-turn lane to provide dual left-turn lanes

Killebrew Avenue at 20th Avenue

- Construct an additional eastbound left-turn lane to provide dual left-turn lanes





MASTER PLAN PHASE 1

MALL OF AMERICA

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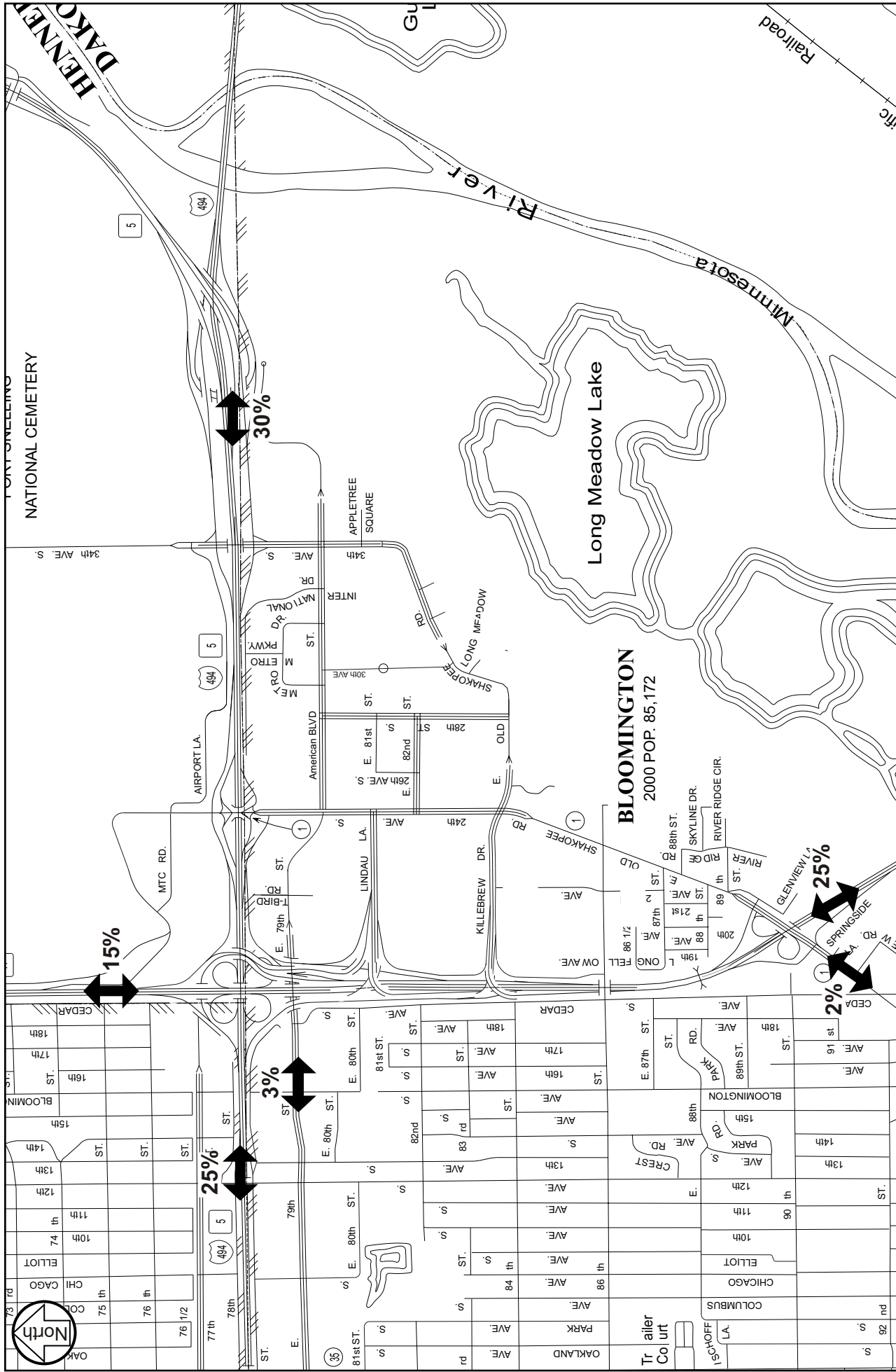


SITE PLAN

MALL OF AMERICA PHASE II TRAFFIC STUDY - RENAISSANCE HOTEL DEVELOPMENT
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Figure 4





DIRECTIONAL DISTRIBUTION

MALL OF AMERICA PHASE II TRAFFIC STUDY - RENAISSANCE HOTEL DEVELOPMENT

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Figure 5

To determine how well the existing and assumed roadway improvements listed above will accommodate year 2012 build traffic forecasts (see Figures 6 and 7), an operations analysis was conducted for Saturday and Thursday p.m. peak hours. Results of the analysis shown in Table 3 indicate that all intersections are expected to operate at acceptable levels of service during the Saturday and Thursday peak hours.

Table 3
2012 Build Peak Hour Capacity Analysis
Level of Service Results

Intersection	Level of Service	
	Saturday Peak	Thursday P.M. Peak
Killebrew Drive/TH 77 Ramps/20th Avenue	C	B
Killebrew Drive/22nd Avenue	D	C
Killebrew Drive/24th Avenue	D	C
24th Avenue/I-494 Single-Point Interchange	D	D
24th Avenue/American Boulevard	C	D
24th Avenue/Lindau Lane	C	B
24th Avenue/82nd Street	B	B

STUDY CONCLUSIONS

- Results of the existing operations analysis indicate that all intersections currently operate at acceptable levels of service during the Saturday and Thursday p.m. peak hours except for the intersection of Killebrew Drive/22nd Avenue.

Poor operations at the intersection of Killebrew Drive/22nd Avenue during the Saturday peak hour are a result of inadequate capacity for turning vehicles. In order for the intersection of Killebrew Drive/22nd Avenue to operate at acceptable levels of service, the following improvement is recommended:

Killebrew Drive/22nd Avenue (scheduled to be constructed in 2008)

- Construct an additional eastbound left-turn lane to provide dual left-turn lanes
- The proposed Renaissance Hotel will generate approximately 180 trips during the Saturday p.m. peak hour and 147 trips during the Thursday p.m. peak hour.

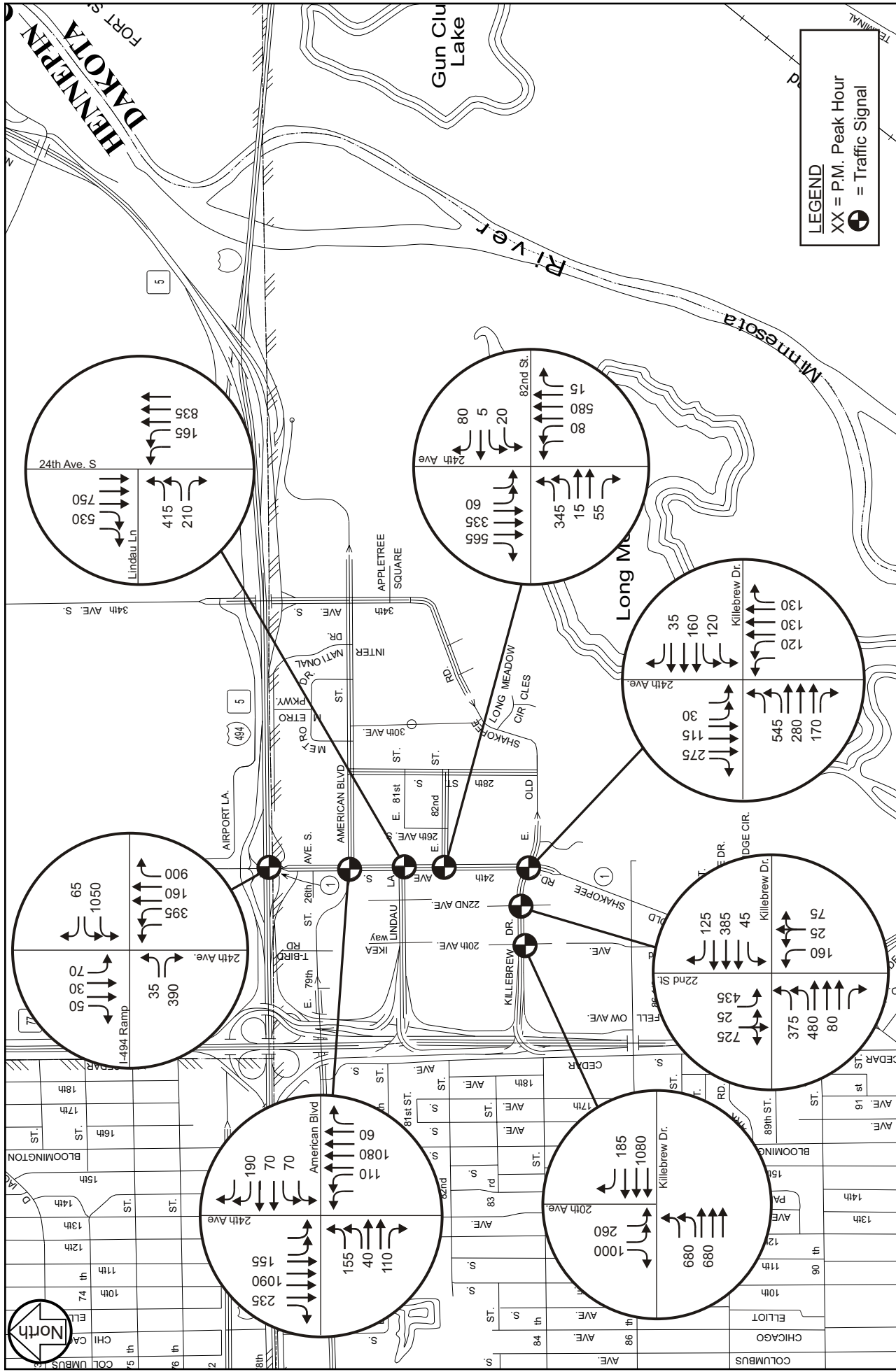


Figure 6

YEAR 2012 BUILD SATURDAY PEAK HOUR TRAFFIC VOLUMES
 MALL OF AMERICA PHASE II TRAFFIC STUDY - RENAISSANCE HOTEL DEVELOPMENT
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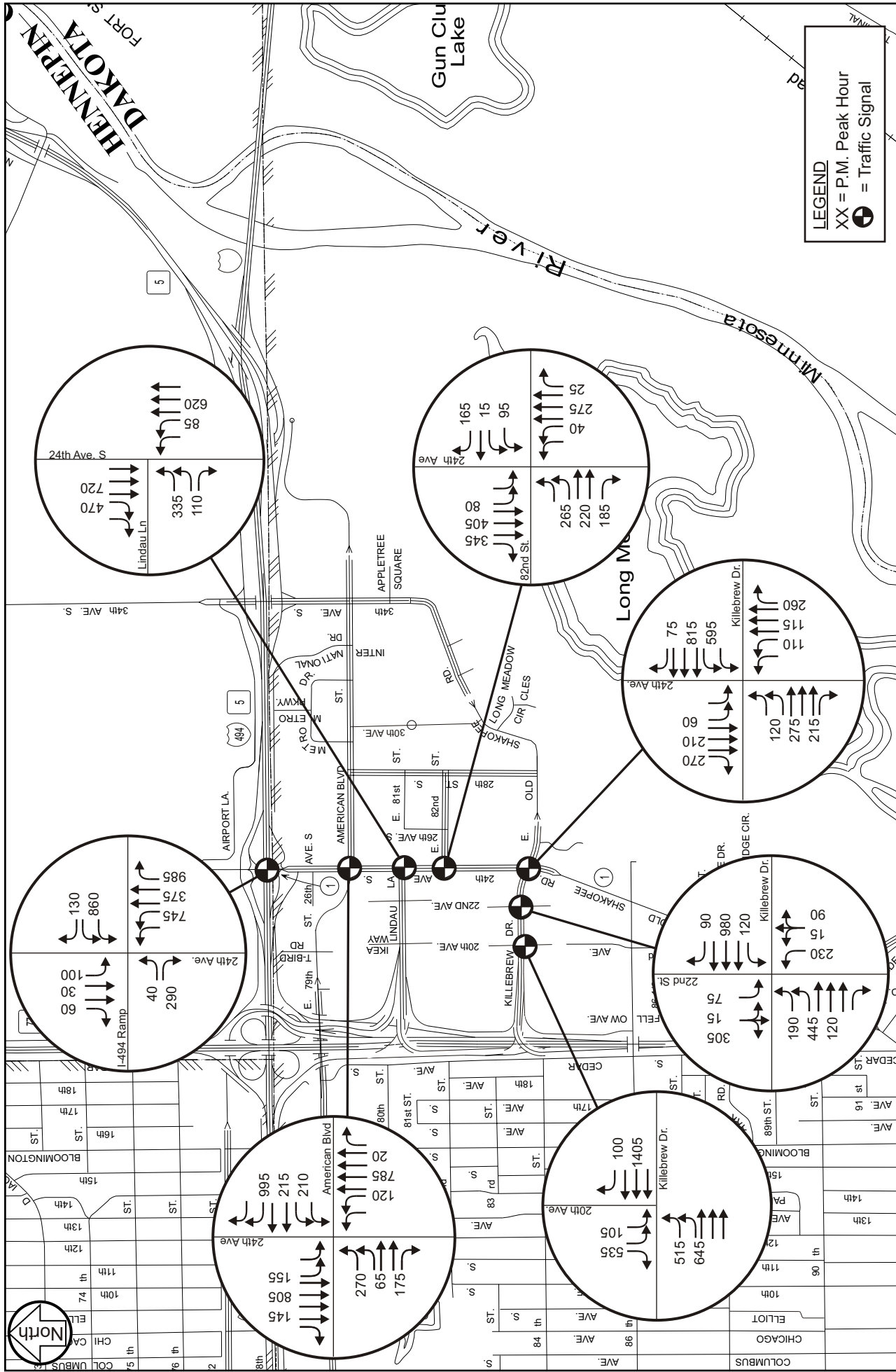


Figure 7

YEAR 2012 BUILD WEEKDAY PEAK HOUR TRAFFIC VOLUMES
 MALL OF AMERICA PHASE II TRAFFIC STUDY - RENAISSANCE HOTEL DEVELOPMENT
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- The following improvements are scheduled to be constructed in year 2008 and are assumed in the year 2012 build analysis:

Killebrew Drive/22nd Avenue (identified in the existing conditions section)

- Construct an additional eastbound left-turn lane to provide dual left-turn lanes

Killebrew Avenue at 20th Avenue

- Construct an additional eastbound left-turn lane to provide dual left-turn lanes

- Results of the 2012 build operations analysis indicates that all intersections will operate at acceptable levels of service during the Saturday and Thursday p.m. peak hours, assuming the improvements listed above.