

APPENDIX F

South Loop District Roadway Infrastructure Improvement Study (March 2018)

Memorandum

South Loop Roadway Infrastructure Improvement Study

Prepared for

City of Bloomington



March 6, 2018

SRF No. 0169190

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Executive Summary

An update to the traffic evaluation has been completed to the Alternative Urban Areawide Review (AUAR) for the South Loop District in the City of Bloomington. The South Loop District is bounded by I-494 to the north, Trunk Highway (TH) 77 to the west and the river to the south and east. The main study goals are to collect updated traffic counts and land use projections throughout the South Loop District, identify transportation issues, recommend improvements, and develop conceptual layouts and cost estimates.

Existing Conditions

The existing conditions were evaluated to identify current transportation issues and to establish a baseline for comparison with future development within the South Loop District. The evaluation of existing conditions includes a review of non-motorized, transit, and motorized facilities.

Existing pedestrian/bicyclist volumes and facilities were reviewed for the South Loop District. The main goal of this evaluation was to identify high volume pedestrian and bicycle locations and to identify missing connections (bicycle routes, trails, sidewalks and pedestrian crossings) within the District.

The Blue Line Light Rail Transit (LRT) operates through the South Loop District. In addition, the South Loop District is well served by bus routes (local, express, bus-rapid-transit) providing access to/from the South Loop District to much of the Twin Cities area. Existing transit facilities were accounted for in the traffic operations analysis.

Intersection turning movement counts were collected at 36 intersections in the South Loop District. Three peak hour volume sets were evaluated including the weekday a.m., weekday p.m., and Saturday peak hours. The intersection volumes were adjusted to represent an 85th percentile day, which is understood to represent the typical weekday/Saturday peak hour volume during the back to school shopping season, which is typically the threshold used to conduct traffic operations analysis for traffic studies near the Mall of America (MOA).

The traffic operations analysis was conducted using PTV Vissim, which is an effective tool to analyze LRT operations, pedestrians and roundabouts. Results of the existing capacity analysis indicate that all study intersections currently operate at an acceptable overall LOS D or better during the peak hours, with the existing traffic control, geometric layout, and signal timing. However, there are intersections with movements that currently operate at LOS E or F during weekday p.m. and Saturday midday peak hours. Movement delays are provided in Appendix D. Note that the results of the traffic simulation were consistent with field observations including locations where poor lane utilization occurs, which results in queueing issues.

Traffic Forecasts

Year 2025 and year 2040 traffic forecasts account for background growth, travel pattern shifts due to construction of the 77th Street connection in Richfield underneath TH 77, future traffic expected to be generated by expansions to MSP Airport, and trips generated by the expected land use changes in year 2025 and year 2040 within the South Loop District.

Trip generation estimates were developed for existing, year 2025 and year 2040 based on the current and future development expected to occur in the South Loop District. The future development land use assumptions are consistent with the AUAR. Trip rate data were obtained from a combination of the *Institute of Transportation Engineer (ITE) Trip Generation Manual, 9th Edition*, peak hour driveway counts conducted locally, and engineering judgment. Modal reductions due to trips arriving via transit, carpool, or walk/bike and multi-use reductions accounting for trips utilizing one or more land uses were also included in the trip generation analysis.

Year 2025 Conditions

Year 2025 conditions were evaluated to identify if/where improvements to the existing roadway network will be needed to accommodate future traffic forecasts. Once again non-motorized traffic, transit, and motorized traffic were reviewed.

Based on the Bloomington Alternative Transportation Plan (ATP) several priority improvements related to the pedestrian/bicyclists facilities in the South Loop District were identified. These included expansion of the Nine Mile Creek Regional Trail through the South Loop District as well as improvements to the American Boulevard and East Old Shakopee Road corridors to continue the pedestrian-way enhancements.

The MOA Transit Station renovations are expected to be completed by year 2025. The renovations plan to improve efficiency of bus operations, simplify access for mass transit vehicles, provide clear and convenient pedestrian access, improve the aesthetics, and increase the exterior visibility and presence of the station.

To determine if the existing roadway network can accommodate year 2025 traffic forecasts, a detailed traffic capacity analysis was completed. Study intersections were once again analyzed using Vissim. Results of the year 2025 operations analysis indicate that a number of intersection are expected to have traffic operation issues under year 2025 conditions without improvements. To address the operational issues, 13 improvements were identified.

Concepts and Preliminary Cost Estimates

Based on the year 2025 land use assumptions, the improvements identified below are the highest priority and most likely to be needed by year 2025 conditions. With these improvements all study intersections are expected to operate at LOS D or better under year 2025 conditions. Illustrations of concepts are provided at the end of the Executive Summary.

Priority 1 Improvement: I-494/24th Avenue

This concept includes a second northbound right-turn lane at the I-494/24th Avenue interchange by converting an existing through lane to a shared through/right-turn lane. The northbound right-turn is also proposed to be signalized since there will be three lanes merging into two lanes on the eastbound I-494 on ramp. The northbound right-turn phase is proposed to overlap with all phases except the southbound left-turn phase. It should be noted that bike lanes are also shown on this concept. The bikes are part of the improvements for Priority 7, which overlap with this concept.

This concept has a preliminary cost estimate of \$525,000 (no overlap with costs from Priority 7).

Priority 2 Improvement: I-494/34th Avenue

This concept adds another northbound right-turn lane at the I-494/34th Avenue interchange by converting an existing through lane to a shared through/right-turn lane. The northbound right-turn and southbound left-turns are also proposed to be signalized since there will be four lanes merging into three lanes on the eastbound I-494/TH 5 on ramp. The northbound right-turn movement would overlap with the following existing phases: 1, 3, 4, 7, and 8. To reduce the likelihood of southbound queues extending into the I-494/34th Avenue North Crossover intersection, a “dummy phase” will need to be added to clear the southbound left-turn movement through the interchange. The northbound right-turn phase is proposed to overlap with all phases except the southbound left-turn.

An alternative to signalizing the northbound right-turn and southbound left-turn movements at the I-494/34th Avenue interchange would be to add two additional lanes to the eastbound I-494/TH 5 on ramp. This would allow for the two-northbound right-turn lanes and two southbound left-turn lanes to make their respective movements concurrently without conflicting with each other.

In addition to the second northbound right-turn lane at the I-494/34th Avenue interchange, the following improvements are proposed at the 34th Avenue/American Boulevard intersection:

- Eliminate the eastbound/westbound left-turn path overlap to provide the opportunity to implement protected/permitted phasing and allow the left-turn phases to time concurrently.
- Reduce the eastbound through to one lane and shift the eastbound left-turn lanes south. The length of the inside eastbound left-turn lane is also proposed to be extended.
- Reduce the westbound through to one lane and shift the westbound left-turn lane south.
- Extend the eastbound left-turn lanes to 33rd Avenue.
- Increase the pedestrian storage area near the LRT stations on the north and south sides of the intersection.

This concept has a preliminary cost estimate of \$1,275,000.

Priority 3 Improvement: Killebrew Drive/20th Avenue

This concept converts one southbound left-turn lane into a right-turn lane. The southbound right-turn also becomes signalized and overlaps with the eastbound left-turn. No Right Turn on Red (RTOR) is proposed; this configuration and operation is similar to the Lindau Lane/IKEA Way and Lindau Lane/22nd Avenue intersections on the north side of the MOA. An alternative concept was reviewed that removes the channelized right-turn median island on the southbound approach.

This concept has a preliminary cost estimate of \$225,000 for both alternative concepts.

Priority 4 Improvement: Signal Timing

Signal timing improvements are expected to be needed at 15 of the study intersections to better accommodate the year 2025 traffic forecasts. The need for signal timing improvements is based on when adjacent development occurs.

The cost to retime these signals would be approximately \$45,000 (approximately \$3,000 per signal).

Priority 5 Improvement: Lindau Lane/IKEA Way and Lindau Lane/22nd Avenue

This concept modifies the existing southbound right-turn cat-tracking at the Lindau Lane/IKEA Way intersection and adds cat-tracking to the southbound right-turn at Lindau Lane/22nd Avenue. The cat-tracking should align the easternmost southbound right-turn lane with the southernmost westbound lane. Based on the downstream ramps, the southern and middle westbound lanes are the heaviest utilized lanes; the northern westbound lane leads to eastbound I-494, which is the least utilized ramp. It is not proposed to update the northbound left-turn cat-tracking at the Lindau Lane/IKEA Way intersection since shifting the cat-tracking south would increase the total number of vehicles in the southern lane exiting the MOA, causing additional delay for northbound through and right-turn vehicles due to the northbound left-turn queues spilling back from the turn lanes. Wayfinding will also need to be updated accordingly.

Priority 6 Improvement: American Boulevard/International Drive

This concept converts the American Boulevard/International Drive intersection to three-quarter access (no left-turns or through movements from the side-street). The American Boulevard/Metro Drive intersection is also proposed to be converted to a roundabout as part of this concept to facilitate the required U-turn for southbound vehicles on International Drive that are destined for the east. Converting the American Boulevard/Metro Drive intersection to a roundabout will also allow for the northbound approach to be added in the future once development occurs to the south of American Boulevard and allows for north-south pedestrian crossings of American Boulevard which do not currently exist.

This concept has a preliminary cost estimate of \$1,650,000.

Priority 7 Improvement: 24th Avenue (I-494 to East Old Shakopee Road/Killebrew Drive)

This concept consists of restriping and median work to improve lane utilization and better position drivers for downstream movements. As part of this, triple westbound left-turns are proposed at the I-494/24th Avenue interchange. A second eastbound right-turn lane at the interchange and signalization of this movement are proposed. The eastbound right-turn lane would overlap with all phases except the westbound left-turn and southbound through phases.

While a few existing channelized right-turn lanes are shown removed since they are not needed from a capacity perspective, right-turn channelization along 24th Avenue should be reevaluated during the design phase to potentially remove additional channelized right-turns if both vehicle and pedestrian service and safety can be improved. Several add-in lanes are also removed since the additional capacity is not needed and the existing add-in lanes place vehicles in lanes that drop downstream, requiring vehicles to weave shortly after entering 24th Avenue.

The existing roadway right-of-way should be maintained on 24th Avenue to accommodate a north/south on-street bicycle facility. Further review is needed to assess the feasibility of constructing bike lanes on 24th Avenue. The preliminary concept illustrates a two-way bike lane facility on the east side of 24th Avenue.

This concept has a preliminary cost estimate of \$4,850,000.

Priority 8 Improvement: Killebrew Drive/22nd Avenue

This concept consists of restriping the northbound and southbound shared left-turn/through lanes to a through lane. A single left-turn lane on both approaches is expected to adequately accommodate the traffic; left-turn path overlap is also eliminated by removing the outside left-turn lane. Since there would not be any path overlap with the lane use adjustments, the northbound and southbound approaches would not need to operate split-phase, improving the efficiency of the signal operations.

This concept has a preliminary cost estimate of \$100,000.

Priority 9 Improvement: East Old Shakopee Road/28th Avenue

There are two intersection control improvements that were considered at the East Old Shakopee Road/28th Avenue intersection to mitigate the delay for southbound left-turning vehicles:

- Signalizing the intersection
- Multi-lane roundabout (2x1)

Both concepts would improve operations and allow side-street vehicles to enter traffic on East Old Shakopee Road and facilitate north-south pedestrian crossings at this intersection. Both alternatives are expected to provide acceptable operations in year 2040. It was assumed that the northbound approach would not exist by year 2025; however, the design of the signalized intersection or roundabout should allow for the northbound approach to be constructed in the future with minimal change.

This concept has a preliminary cost estimate of \$850,000 and \$1,350,000 for the traffic signal and roundabout concepts, respectively.

Priority 10 Improvement: Killebrew Drive/East Old Shakopee Road/24th Avenue

This concept consists of restriping the westbound approach and modifying the curb on the westbound approach of the East Old Shakopee Road/24th Avenue intersection, so the three westbound lanes maintain lane continuity through the intersection. This concept develops a westbound right-turn lane where the westbound lane currently drops and is forced to turn right.

This concept has a preliminary cost estimate of \$75,000.

Priority 11 Improvement: East Old Shakopee Road/33rd Avenue

This concept consists of adding a marked pedestrian crossing across East Old Shakopee Road between 33rd Avenue and 31st Avenue to better accommodate pedestrians at one of the busiest crossing in the South Loop District. The proposed pedestrian crossing is a two-stage crossing that provides storage in the median of East Old Shakopee Road for pedestrians. The concept proposes pedestrian activated beacons at the crossing to increase the visibility of the crossing to drivers. A High Intensity Activated crosswalk (HAWK) should also be considered.

This concept has a preliminary cost estimate of \$275,000.

Priority 12 Improvement: American Boulevard/30th Avenue

This concept is to install a traffic signal at the American Boulevard/30th Avenue intersection once warranted and if the side-street traffic has difficulties finding acceptable gaps in traffic on American Boulevard. The geometry of the intersection is already setup to be signalized, so minimal geometric modifications would be required to signalize the intersection.

This concept has a preliminary cost estimate of \$625,000.

Priority 13 Improvement: American Boulevard/28th Avenue

This concept changes the lane utilization of the northbound approach at the American Boulevard/28th Avenue intersection. Currently there is one northbound left-turn lane, two northbound through lanes, and one channelized right-turn lane. The two northbound through lanes lead to a service road for the airport, which is seldom used. To increase the capacity of the northbound approach and align the northbound through movement with the receiving lane, this concept converts the western northbound through lane to shared left-turn/through lane and the eastern northbound through lane is converted to the right-turn lane. The channelized northbound right-turn is also removed to improve the safety of pedestrians

This concept has a preliminary cost estimate of \$475,000.

Year 2040 Conditions

Year 2040 conditions were evaluated to identify if/where additional improvements to the concepts identified under year 2025 conditions will be needed to accommodate future traffic forecasts.

Planned regional trail and corridor improvements should continue to be a priority for the South Loop District. Concepts developed for intersection and corridor improvements should take into consideration the alternative transportation plans for the South Loop District and look for opportunities to improve the connectivity of the pedestrian/bicyclist system as well as provide safer pedestrian/bicyclist crossing locations. As funding and right-of-way becomes available, steps should be taken to aid in the development of pedestrian/bicyclist regional and local plans.

While no changes were assumed to the transit routes/frequencies from existing conditions to year 2040 conditions, if LRT were to be selected as the preferred transit type for the Riverview Corridor, the alignment would likely follow the Blue Line LRT tracks/stops within the South Loop District. If the frequency of LRT crossing events were to increase, additional intersection capacity improvements would likely be needed. Grade separated crossings or intersections would need to be considered at the at-grade LRT crossings at both the American Boulevard/34th Avenue and 24th Avenue/Killebrew Drive intersections. Alternatively, removal of the LRT gate arms at the 24th Avenue/Killebrew Drive intersection should be considered to help improve operations if grade separation is not feasible.

To determine if the roadway network with the improvements identified under year 2025 conditions can accommodate year 2040 traffic forecasts, a detailed traffic capacity analysis was completed. Study intersections were once again analyzed using Vissim. Results of the year 2040 operations analysis indicate that a number of intersection are expected to have traffic operation (delay and/or queuing) issues under year 2040 conditions without additional improvements.

To address the traffic operational issues under year 2040 conditions, improvements were identified for consideration. It is important to note that due to the uncertainty of the year 2040 forecasts the improvements listed below are considerations. Once detailed development plans are available, and more is known about autonomous/connected vehicle technology the improvements listed below should be re-evaluated.

- 24th Avenue/79th Street – if opportunity arises, consider closing this intersection if other area improvements are constructed (such as Thunderbird Road connection, dual rights from 24th Avenue to eastbound I-494).
- I-494/Thunderbird Ramp Eastbound Ramp
- 24th Avenue/American Boulevard – extend the eastbound left-turn lane
- Killebrew Drive/20th Avenue – the eastbound through lane of the MOA circulatory roadway should be evaluated for potential to convert to a shared through/right-turn lane. This would eliminate the hatched-out pavement area as this would become a traffic lane. The triangular median between the circulatory roadway and MOA entrance could be expanded to the east to reduce the southbound approach to one lane and eliminate the need for additional traffic control.
- I-494/34th Avenue Interchange – triple southbound right-turns, triple westbound left-turns, triple northbound through lanes at the north crossover intersection and triple eastbound right-turns and triple northbound right-turns at the south crossover intersection. Between the north and south crossover on 34th Avenue, there are four lanes in each direction.
 - Regional improvements, such as expanding the capacity of the westbound I-494 and TH 5 off-ramps, will also be needed to carry the demand at the I-494/34th Avenue interchange.
- 34th Avenue/American Boulevard – triple eastbound left-turn lanes, four northbound through lanes, and dual westbound right-turn lanes with a southbound left-turn signal overlap phase.
 - This intersection should be re-evaluated once more information is known regarding regional transit improvements to the study area (e.g. Riverview Corridor LRT).

- American Boulevard/Thunderbird Road – assuming that the I-494/Thunderbird Eastbound Ramp project is constructed, the southbound approach should be expanded to provide dual southbound left-turn lanes, a through lane, and a shared through/right-turn lane
- East Old Shakopee Road and TH 77 Northbound Ramps – extend eastbound dual left-turn lane storage.
 - Closure of Glenview Lane and conversion to a continuous flow intersection could also be considered.
- East Old Shakopee Road/28th Avenue – two intersection control options (traffic signal and multi-lane roundabout) were identified under year 2025 conditions. Under year 2040 conditions dual eastbound and southbound left-turn lanes should be considered with the traffic control option. Both are expected to provide acceptable operations.
- East Old Shakopee Road/30th Avenue – traffic control change is needed (signal assumed) as well as increasing the radius of the East Old Shakopee Road curve by shifting the road south.
- East Old Shakopee Road/33rd Avenue– traffic control change is needed (signal assumed)
- 82nd Street extension between 28th Avenue and 30th Avenue – this is not needed from a traffic operational perspective, but would improve connectivity in the area.

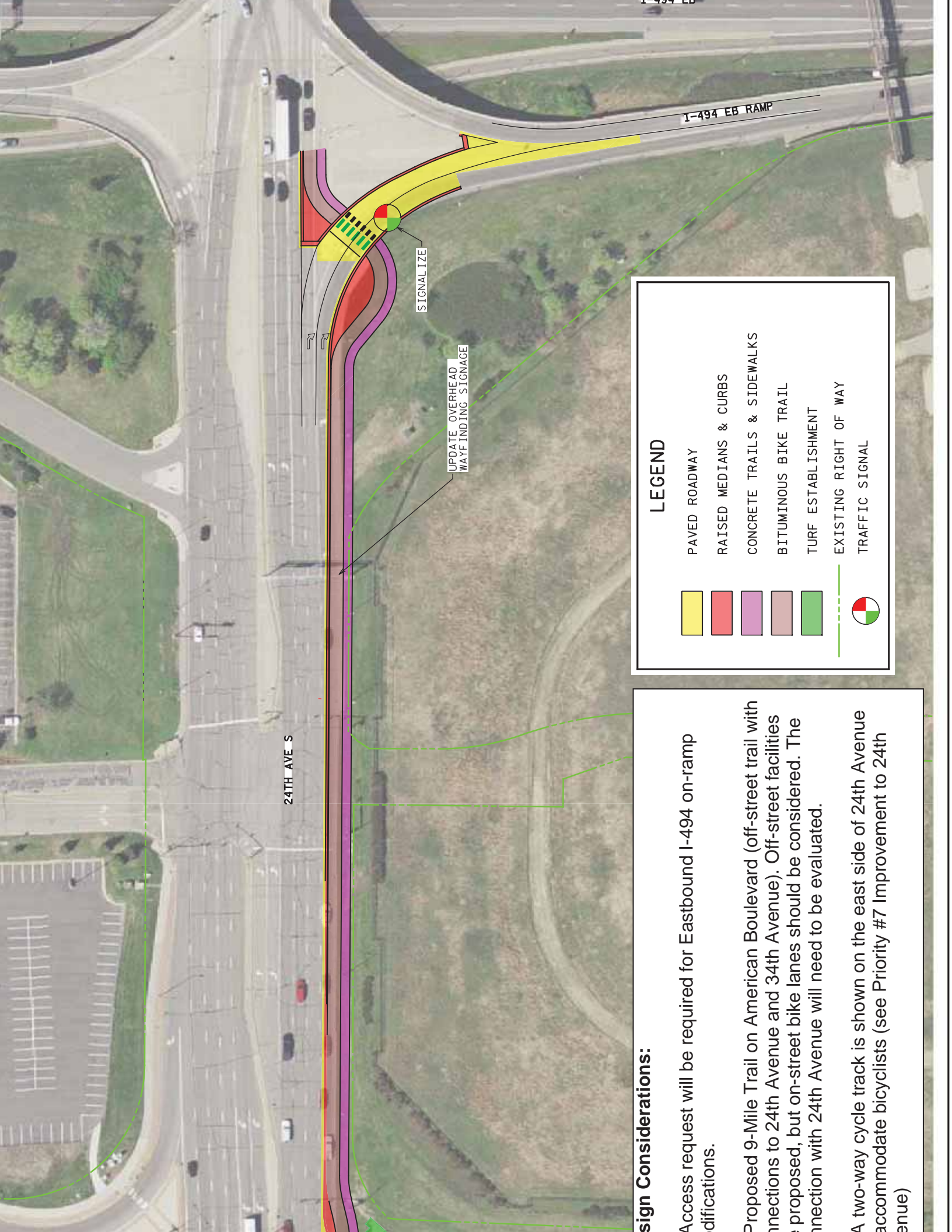
Wayfinding

The wayfinding plans are an integral component of current and future operations in the South Loop District. As new development occurs, both the dynamic and static wayfinding signs should be reviewed and updated if needed to better accommodate traffic. Efficient use of the freeway and local wayfinding sign plans has the potential to reduce congestion and limit the intersection capacity improvements needed in the South Loop District.

Autonomous/Connected Vehicle Impacts

In the past when estimating future traffic forecasts, it has been assumed that the current assumptions relating to travel trends, capacity, and mode preference will not significantly change under future conditions. However, based on upcoming new technology and several behavioral trends it is likely these base assumptions will be different under future conditions compared to what they are now. One of the most disruptive changes expected to impact traffic forecasts/patterns is the introduction of autonomous/connected vehicles or self-driving vehicles.

Based on the current information that is available, it is difficult to estimate how the technology will be used and how it will affect mobility. The autonomous/connected vehicle technology has the potential to improve safety by reducing the number of crashes and increasing the reliability of the transportation system; improve vehicle performance and capacity by reducing vehicle spacing/headway needed; and provide efficiencies due to dynamic routing, parking locations, parking supply/demand, and congestion pricing. It is recommended that this technology be reviewed once again when the South Loop District Update occurs in approximately five years (year 2022). At that time more information will be known about autonomous/connected vehicles technologies and better assumptions/decisions can be developed to assess what the infrastructure needs are needed in the long-term (year 2025 and beyond).



Design Considerations:

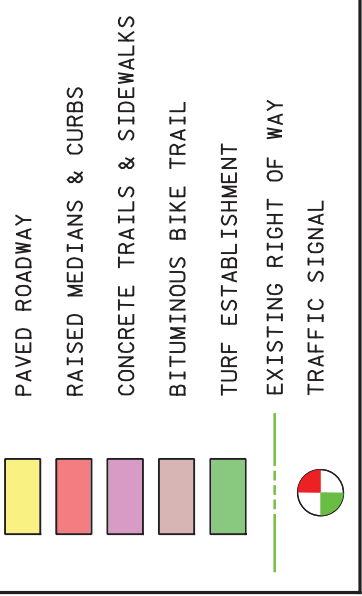
Access request will be required for Eastbound I-494 on-ramp modifications.

Proposed 9-Mile Trail on American Boulevard (off-street trail with connections to 24th Avenue and 34th Avenue). Off-street facilities proposed, but on-street bike lanes should be considered. The connection with 24th Avenue will need to be evaluated.

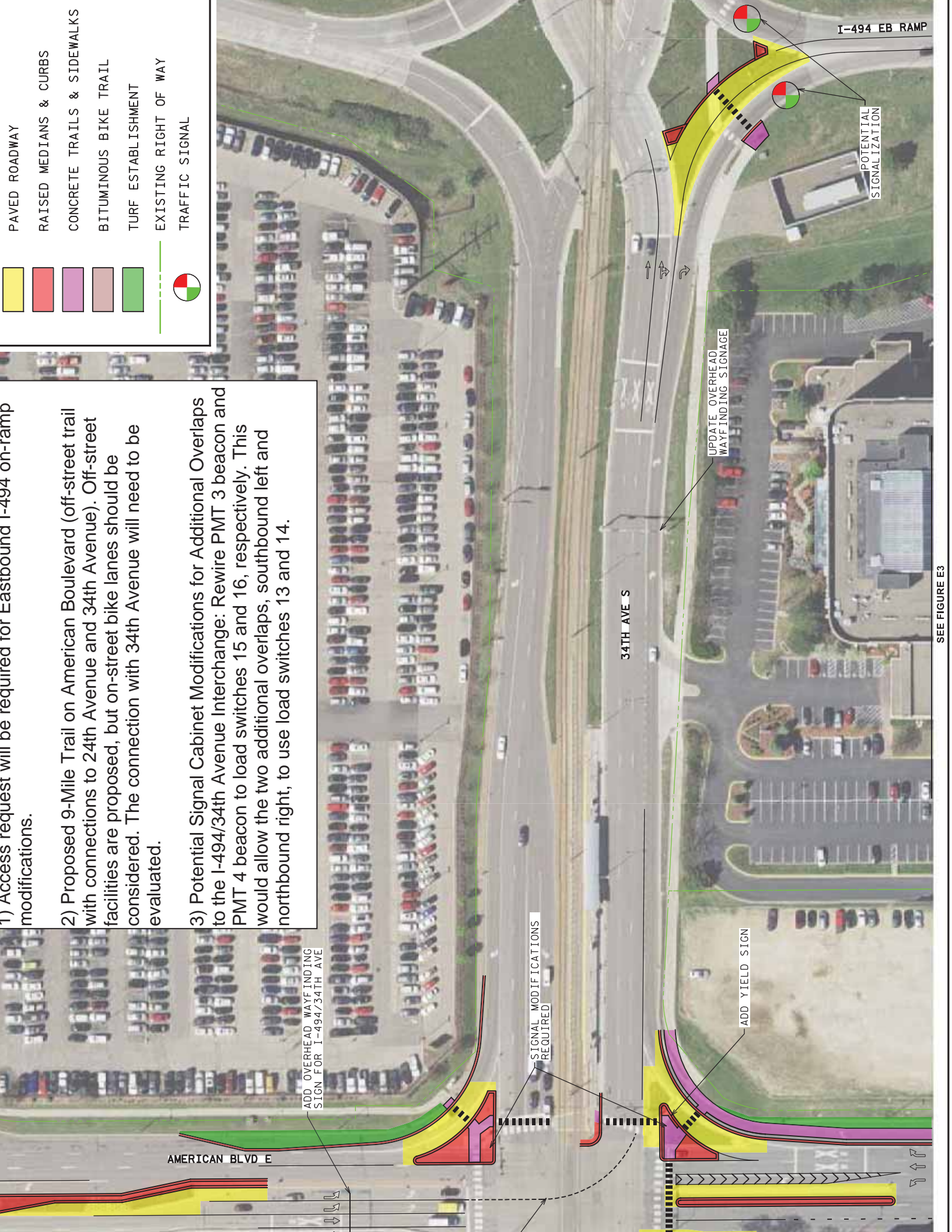
A two-way cycle track is shown on the east side of 24th Avenue to accommodate bicyclists (see Priority #7 Improvement to 24th Avenue)






LEGEND

-  PAVED ROADWAY
-  RAISED MEDIANS & CURBS
-  CONCRETE TRAILS & SIDEWALKS
-  BITUMINOUS BIKE TRAIL
-  TURF ESTABLISHMENT
-  EXISTING RIGHT OF WAY
-  TRAFFIC SIGNAL



- 1) Access request will be required for Eastbound I-494 on-ramp modifications.
- 2) Proposed 9-Mile Trail on American Boulevard (off-street trail with connections to 24th Avenue and 34th Avenue). Off-street facilities are proposed, but on-street bike lanes should be considered. The connection with 34th Avenue will need to be evaluated.
- 3) Potential Signal Cabinet Modifications for Additional Overlaps to the I-494/34th Avenue Interchange: Rewire PMT 3 beacon and PMT 4 beacon to load switches 15 and 16, respectively. This would allow the two additional overlaps, southbound left and northbound right, to use load switches 13 and 14.



	PAVED
	RAISED
	CONCRE
	TURF
	EXISTING

Design Considerations:

1) Sidewalk is shown close to the roadway to increase the amount of developable area; however, the sidewalk could remain closer to its existing location. This should be evaluated in the design phase.

erting eastbound through lane of roadway to a shared roadway would eliminate the hatched out lane and become a traffic lane. The one circulatory roadway and the roadway would be expanded to the east to approach to one lane and eliminate the control.

and right-turn porkchop could be added 90 degree turn. The western side of the east with this option.

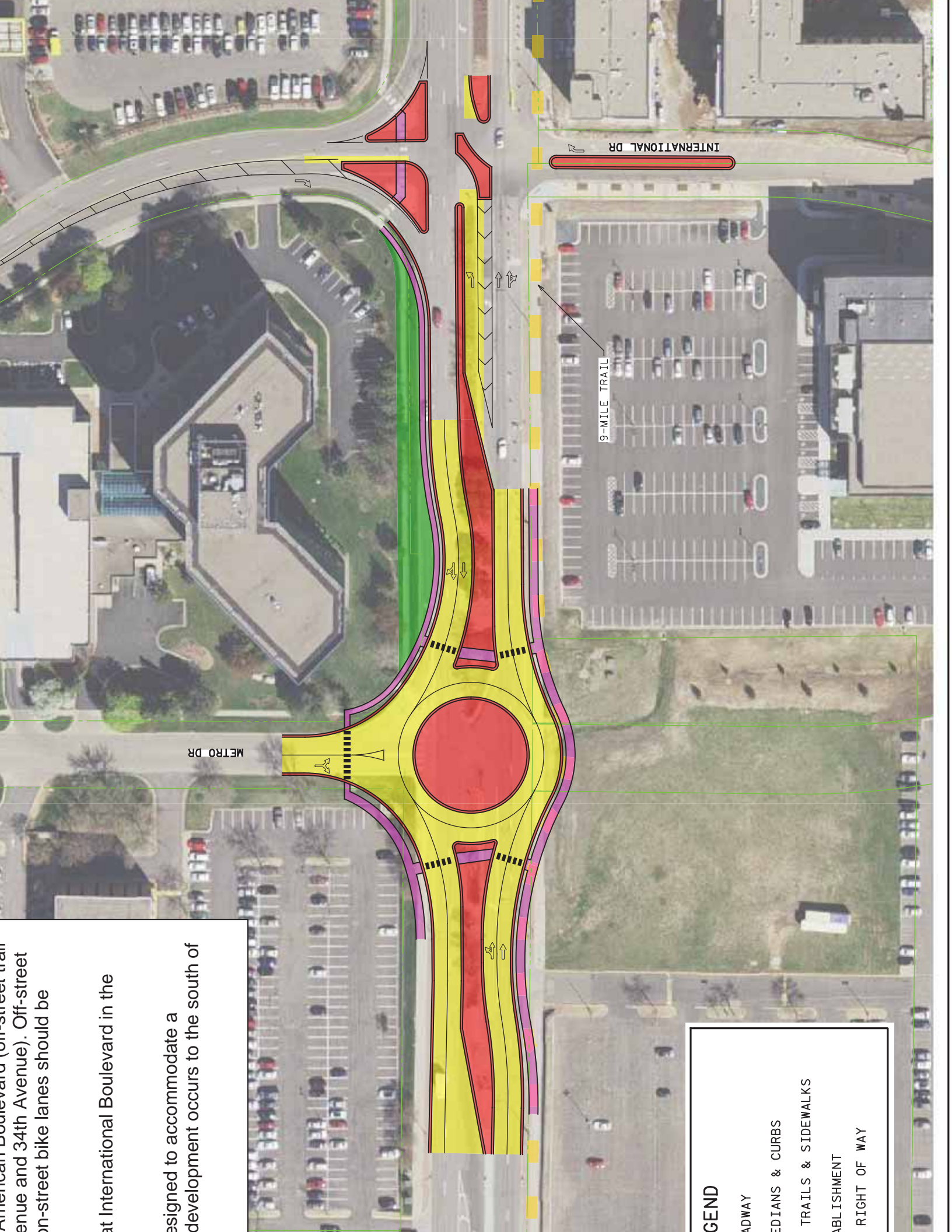


END
ROADWAY
DIANS & CURBS
TRAILS & SIDEWALKS
RIGHT OF WAY

International Boulevard (on-street trail
International Boulevard and 34th Avenue). Off-street
on-street bike lanes should be

at International Boulevard in the

designed to accommodate a
development occurs to the south of



LEGEND

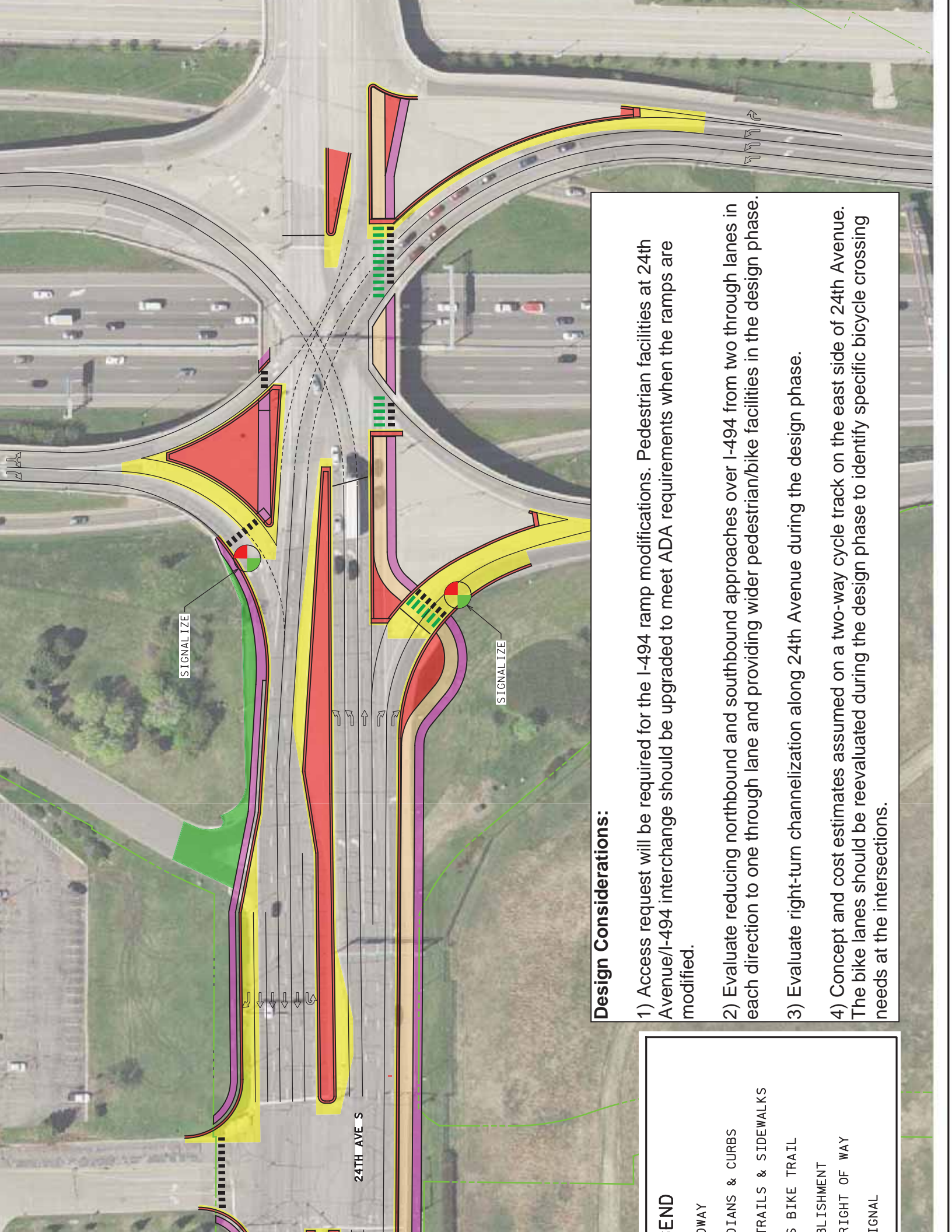
ROADWAY

MEDIAN & CURBS

TRAILS & SIDEWALKS

LANDSCAPE

RIGHT OF WAY



END
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 BLISHMENT
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 SIGNAL

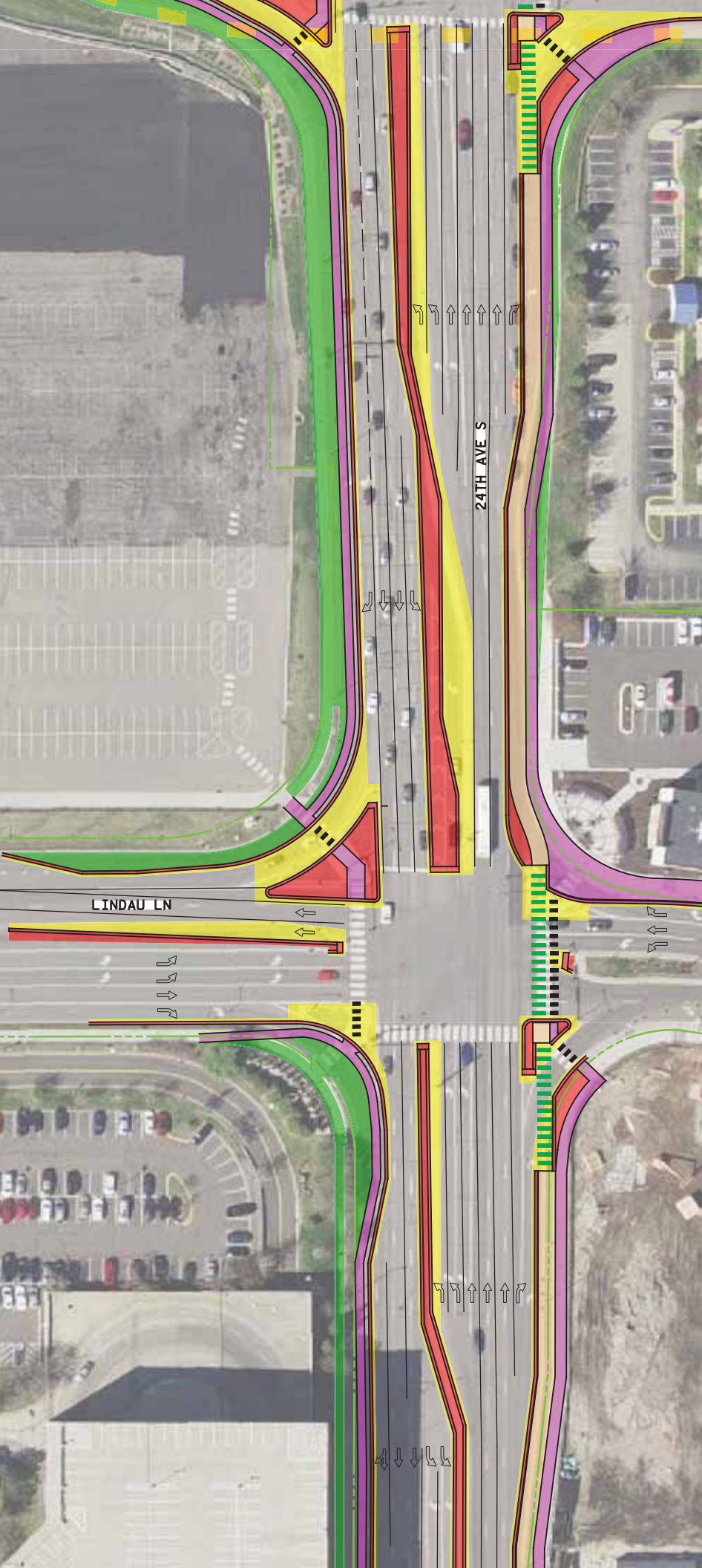
24TH AVE S

SIGNAL IZE

SIGNAL IZE

Design Considerations:

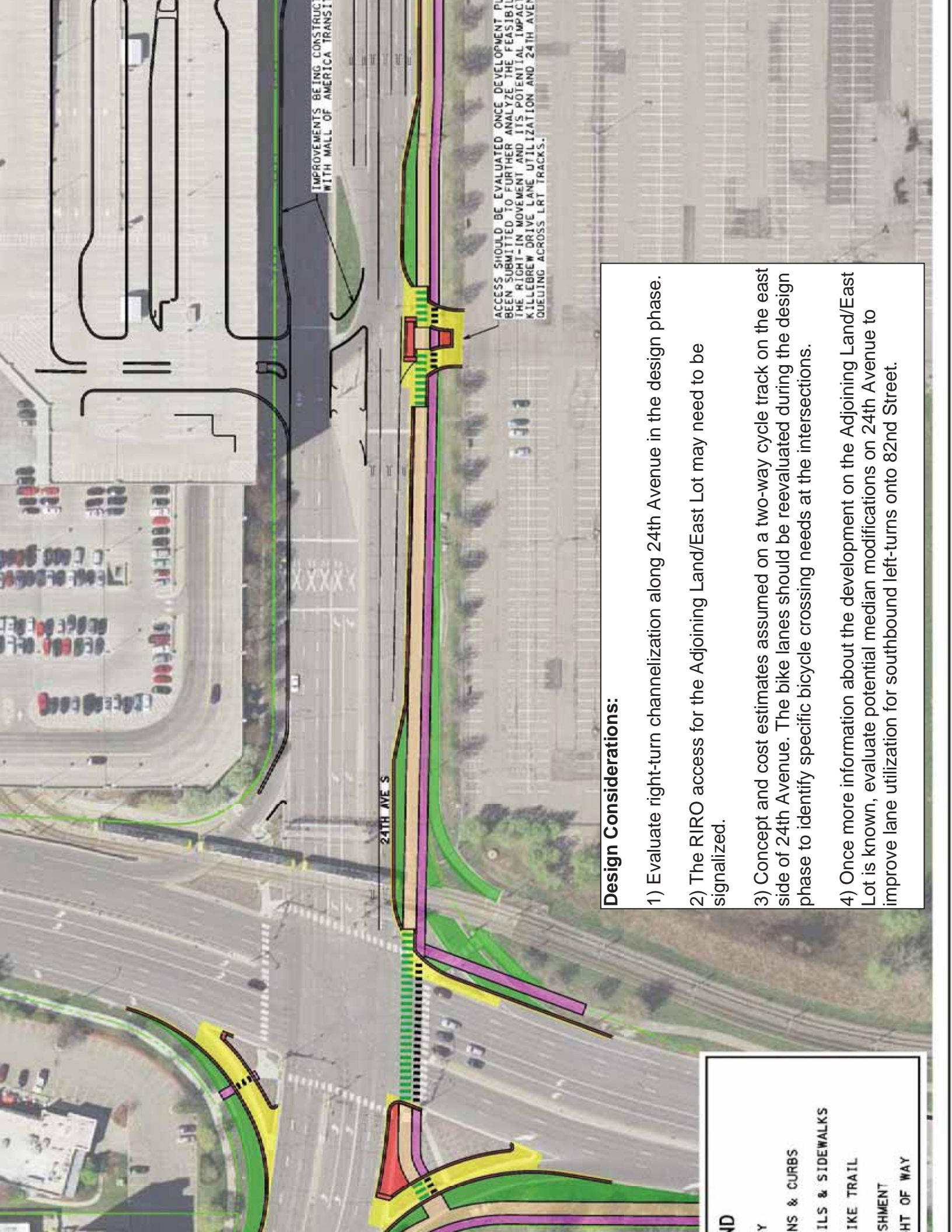
- 1) Access request will be required for the I-494 ramp modifications. Pedestrian facilities at 24th Avenue/I-494 interchange should be upgraded to meet ADA requirements when the ramps are modified.
- 2) Evaluate reducing northbound and southbound approaches over I-494 from two through lanes in each direction to one through lane and providing wider pedestrian/bike facilities in the design phase.
- 3) Evaluate right-turn channelization along 24th Avenue during the design phase.
- 4) Concept and cost estimates assumed on a two-way cycle track on the east side of 24th Avenue. The bike lanes should be reevaluated during the design phase to identify specific bicycle crossing needs at the intersections.



END
 WAY
 IANS & CURBS
 RAILS & SIDEWALKS
 BIKE TRAIL
 LISHMENT
 IGH T OF WAY

Design Considerations:

- 1) Proposed 9-Mile Trail on American Boulevard (off-street trail with connections to 24th Avenue and 34th Avenue). Off-street facilities are proposed, but on-street bike lanes should be considered. The connection with 24th Avenue will need to be evaluated.
- 2) Evaluate right-turn channelization along 24th Avenue in the design phase.
- 3) Concept and cost estimates assumed on a two-way cycle track on the east side of 24th Avenue. The bike lanes should be reevaluated during the design phase to identify specific bicycle crossing needs at the intersections.
- 4) Evaluate a pedestrian bridge across 24th Avenue in the design phase. A potential location for a pedestrian bridge is directly to the north of Lindau Lane where high pedestrian activity is expected and there is additional space from bringing in the curb.
- 5) Bus stop proposed at 24th Avenue/Lindau Lane as part of the American Boulevard BRT. The location of this stop should be considered in the design phase.



IMPROVEMENTS BEING CONSTRUCTED WITH MALL OF AMERICA TRANSIT

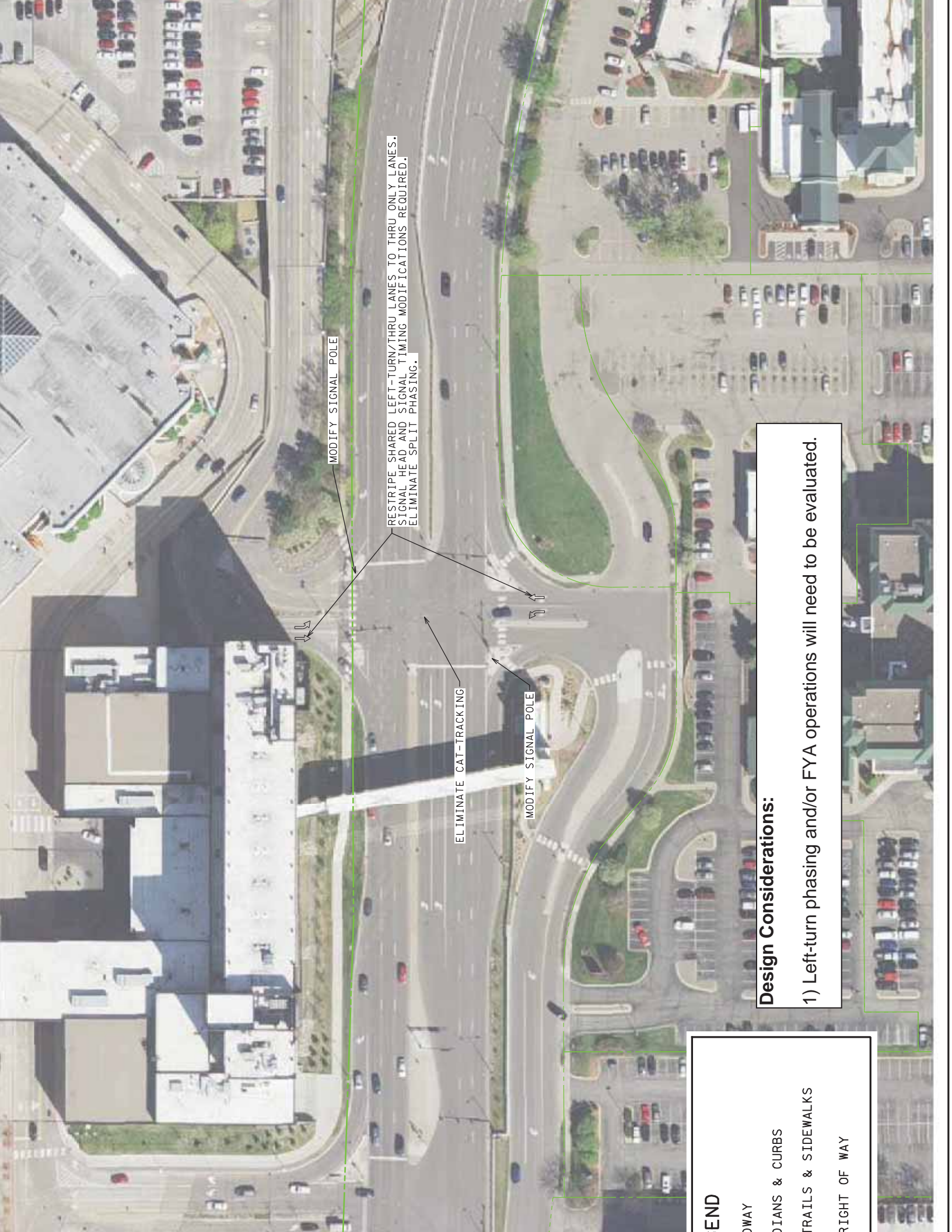
ACCESS SHOULD BE EVALUATED ONCE DEVELOPMENT PLAN HAS BEEN SUBMITTED TO FURTHER ANALYZE THE FEASIBILITY OF THE RIGHT-IN MOVEMENT AND ITS POTENTIAL IMPACT ON KILLEBREW DRIVE LANE UTILIZATION AND 24TH AVENUE QUEUING ACROSS LRT TRACKS.

24TH AVE S

Design Considerations:

- 1) Evaluate right-turn channelization along 24th Avenue in the design phase.
- 2) The RIRO access for the Adjoining Land/East Lot may need to be signalized.
- 3) Concept and cost estimates assumed on a two-way cycle track on the east side of 24th Avenue. The bike lanes should be reevaluated during the design phase to identify specific bicycle crossing needs at the intersections.
- 4) Once more information about the development on the Adjoining Land/East Lot is known, evaluate potential median modifications on 24th Avenue to improve lane utilization for southbound left-turns onto 82nd Street.

ND
Y
NS & CURBS
LS & SIDEWALKS
KE TRAIL
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HT OF WAY



MODIFY SIGNAL POLE

RESTRIPE SHARED LEFT-TURN/THRU LANES TO THRU ONLY LANES.
SIGNAL HEAD AND SIGNAL TIMING MODIFICATIONS REQUIRED.
ELIMINATE SPLIT PHASING.

ELIMINATE CAT-TRACKING

MODIFY SIGNAL POLE

END

BIWAY

DIANS & CURBS

TRAILS & SIDEWALKS

RIGHT OF WAY

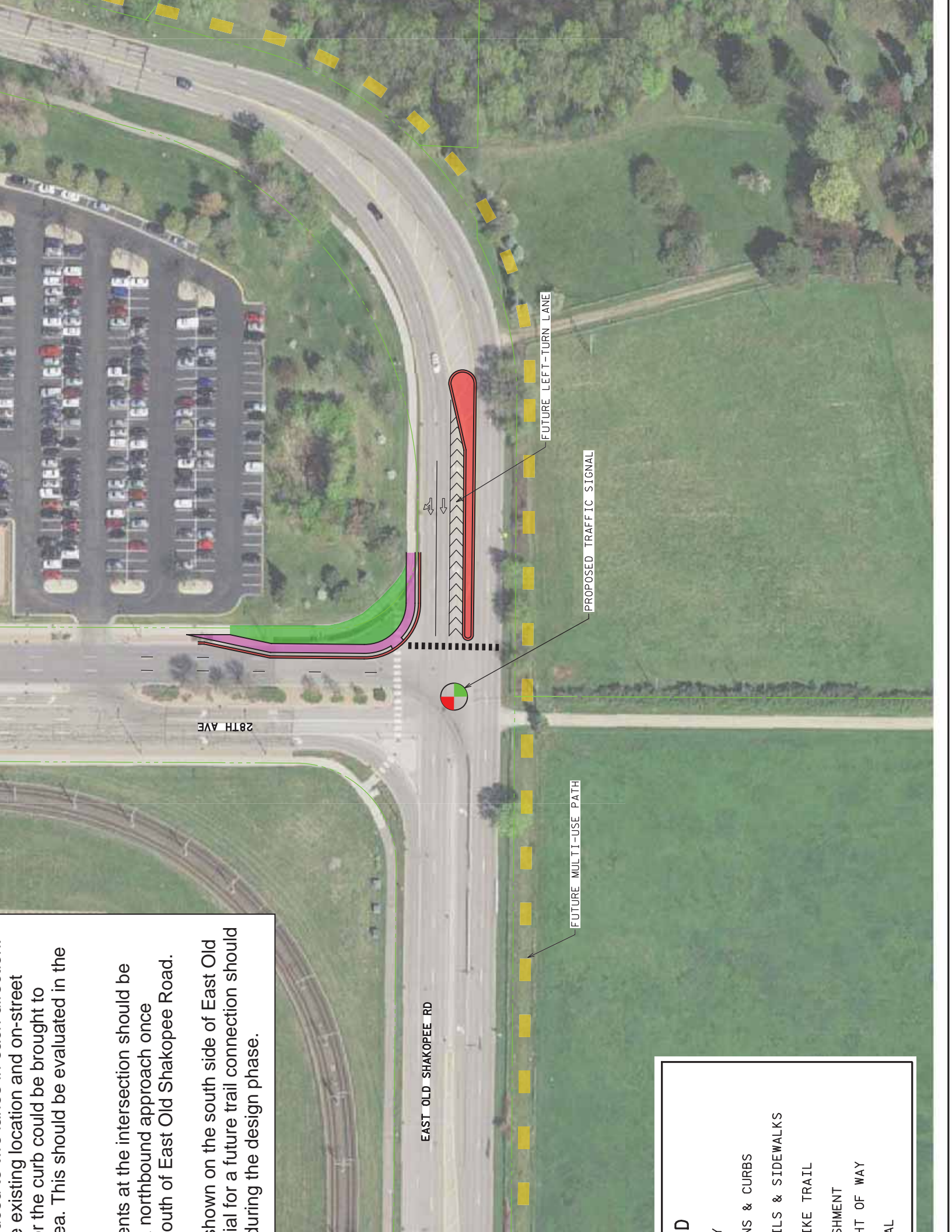
Design Considerations:

- 1) Left-turn phasing and/or FYA operations will need to be evaluated.

the existing location and on-street curb could be brought to the area. This should be evaluated in the

elements at the intersection should be northbound approach once south of East Old Shakopee Road.

shown on the south side of East Old Shakopee Road for a future trail connection should be evaluated during the design phase.



28TH AVE

EAST OLD SHAKOPEE RD

FUTURE LEFT-TURN LANE

PROPOSED TRAFFIC SIGNAL

FUTURE MULTI-USE PATH

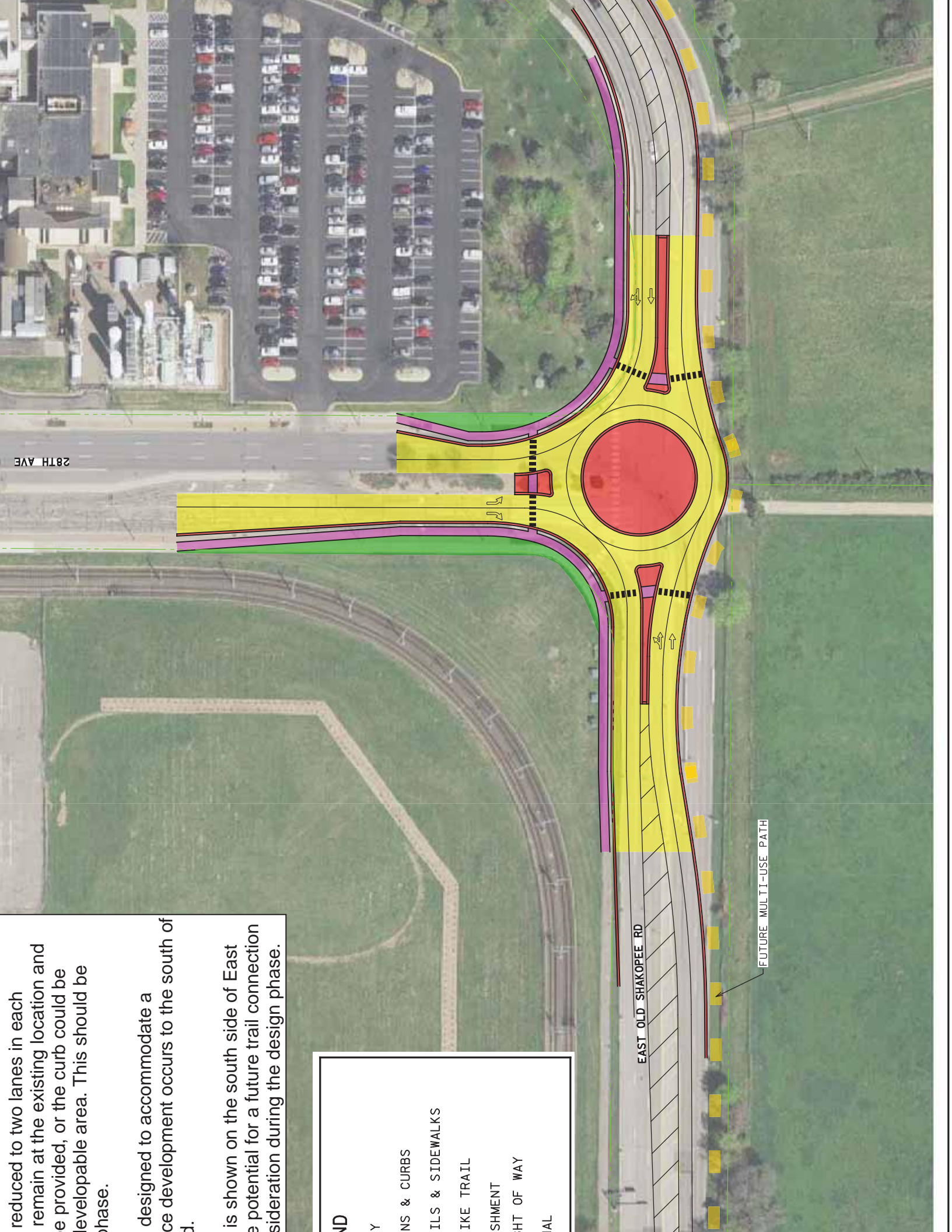
- DRIVEWAYS & CURBS
- SIDEWALKS
- BIKE TRAIL
- TRAIL ALIGNMENT
- RIGHT OF WAY
- UTILITY LINES

reduced to two lanes in each
 remain at the existing location and
 e provided, or the curb could be
 developable area. This should be
 phase.

designed to accommodate a
 ce development occurs to the south of
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is shown on the south side of East
 e potential for a future trail connection
 sideration during the design phase.

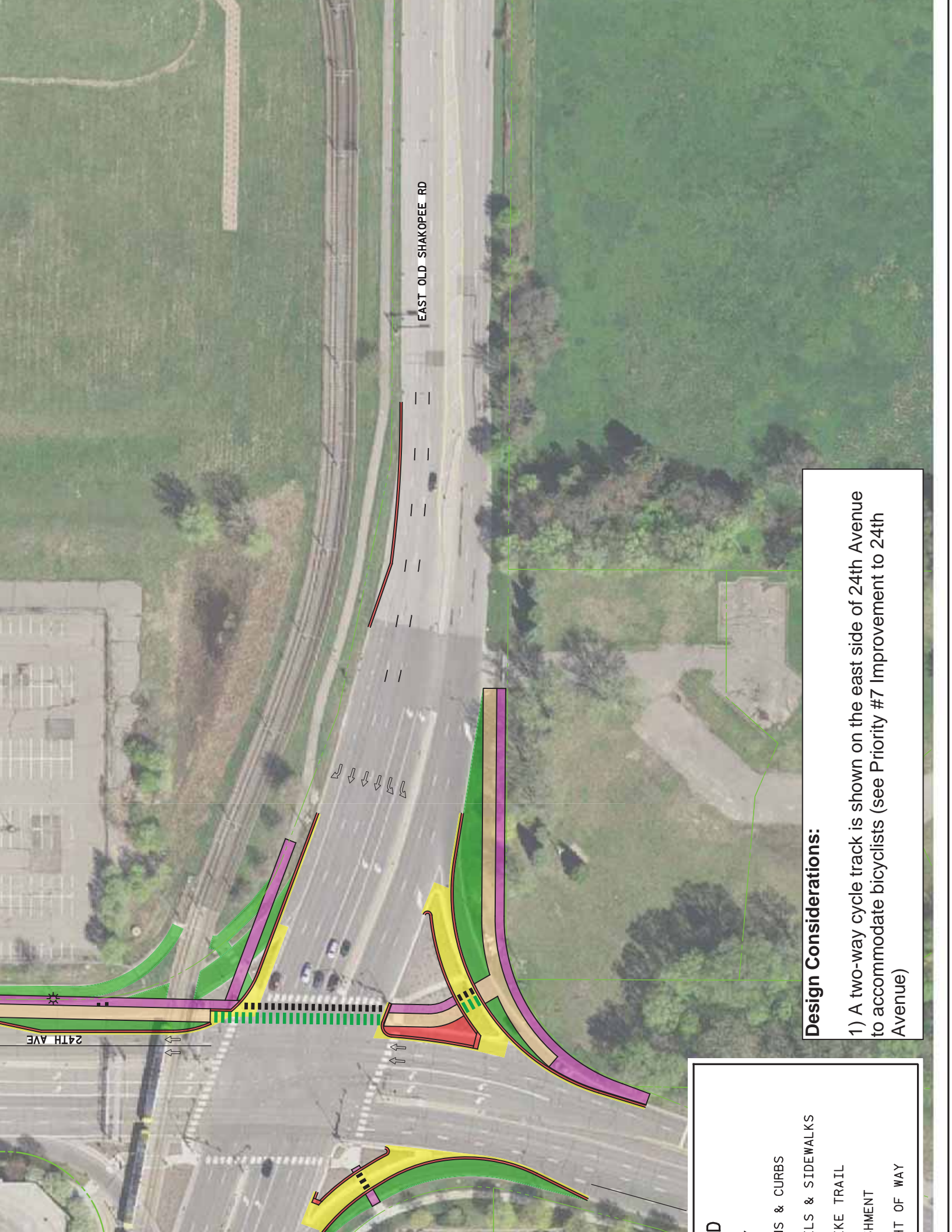
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- IAL



28TH AVE

EAST OLD SHAKOPEE RD

FUTURE MULTI-USE PATH



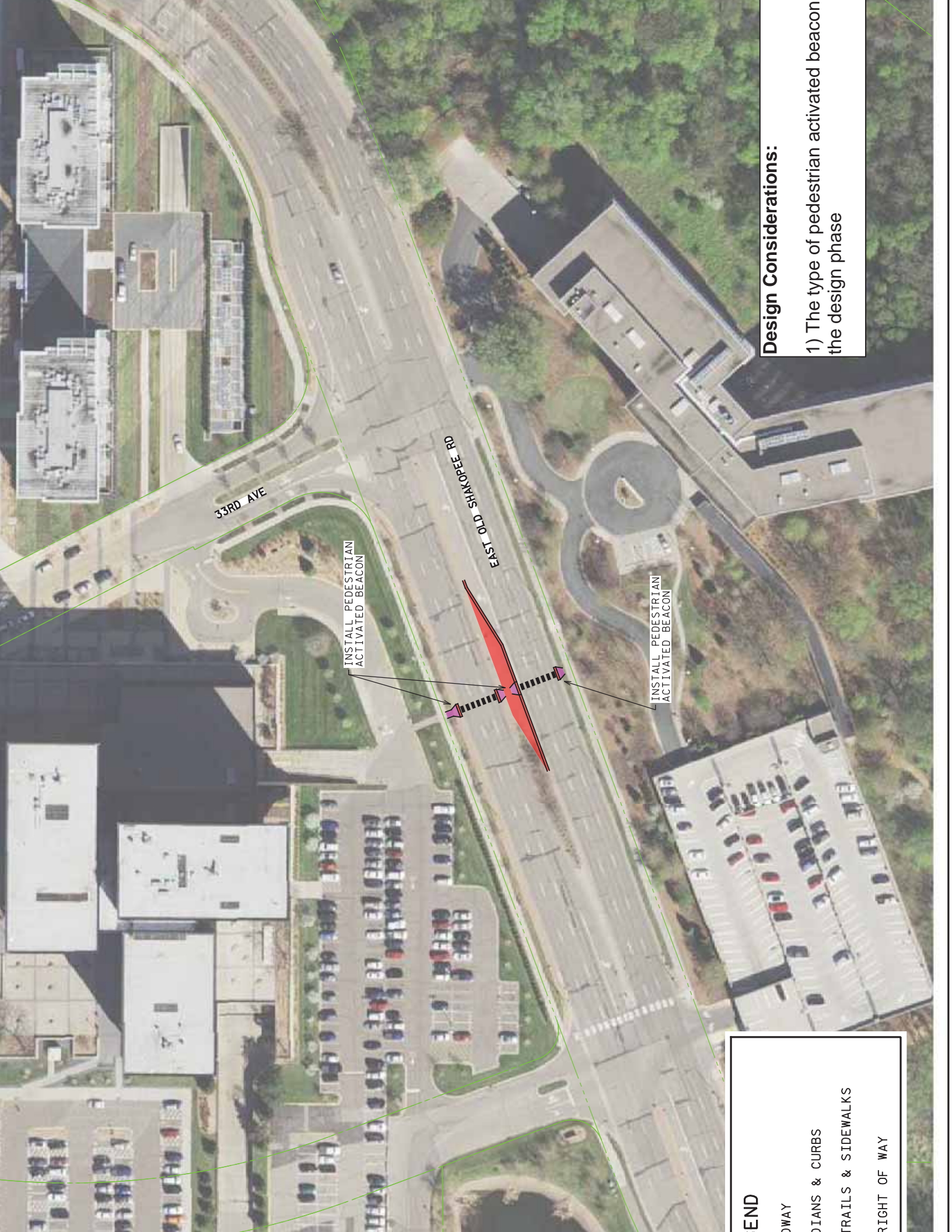
EAST OLD SHAKOPEE RD

24TH AVE

Design Considerations:

- 1) A two-way cycle track is shown on the east side of 24th Avenue to accommodate bicyclists (see Priority #7 Improvement to 24th Avenue)

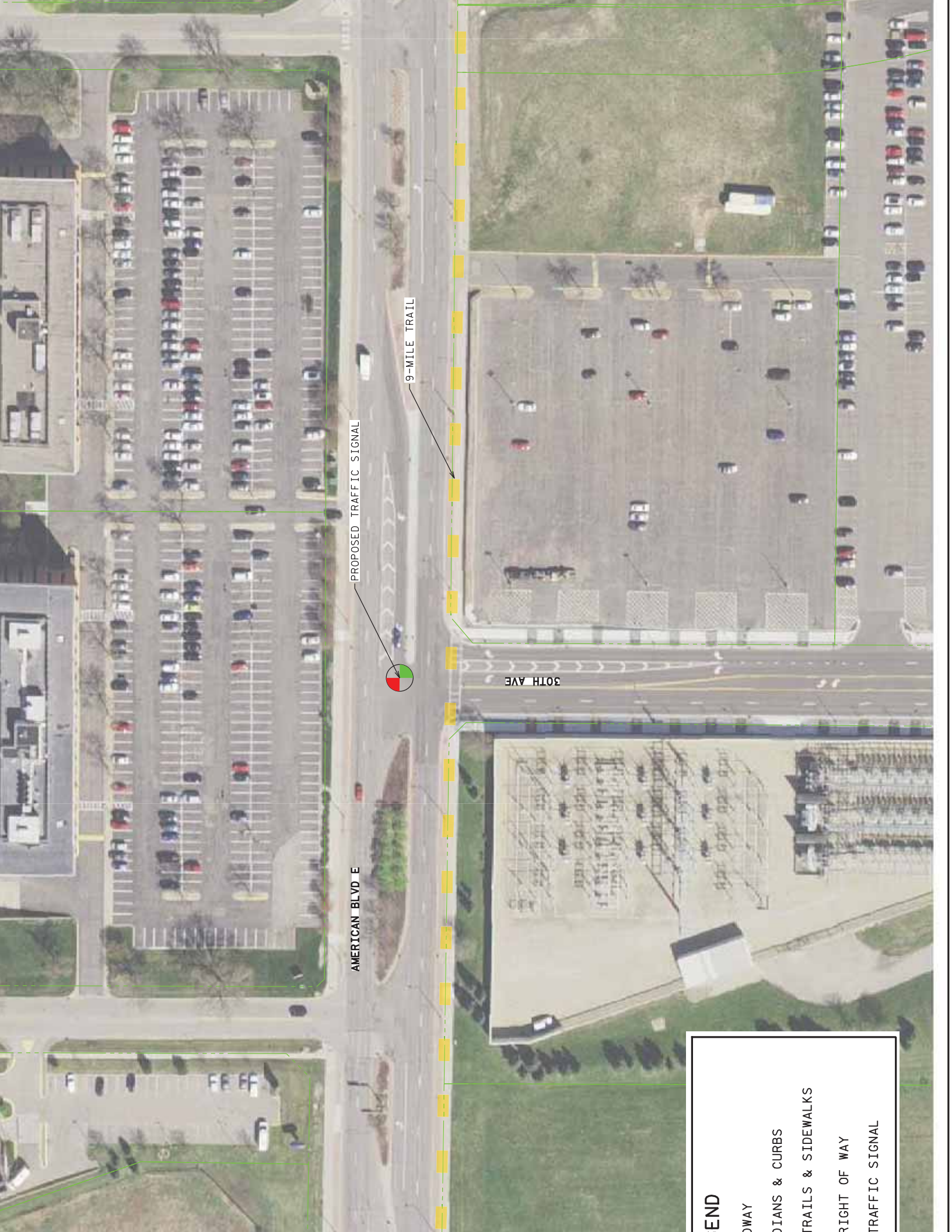
D
 S & CURBS
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 KE TRAIL
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 IT OF WAY



Design Considerations:

- 1) The type of pedestrian activated beacon the design phase

END
 DOWAY
 DIANS & CURBS
 TRAILS & SIDEWALKS
 RIGHT OF WAY



PROPOSED TRAFFIC SIGNAL

9-MILE TRAIL

AMERICAN BLVD E

30TH AVE

- END
- DRIVEWAY
- LANE MARKINGS & CURBS
- TRAILS & SIDEWALKS
- RIGHT OF WAY
- TRAFFIC SIGNAL

9-MILE TRAIL

AMERICAN BLVD E

28TH AVE



Design Considerations:

- 1) Proposed 9-Mile Trail on American Boulevard (off-street trail with connections to 24th Avenue and 34th Avenue). Off-street facilities are proposed, but on-street bike lanes should be considered.
- 2) Evaluate right-turn channelization during the design phase.
- 3) Curb on east side of 28th Avenue could remain at the existing location and on-street parking could be provided. This should be evaluated in the design phase.

END

DOWNWAY

DIANS & CURBS

TRAILS & SIDEWALKS

RIGHT OF WAY

Introduction

As requested, an update to the traffic evaluation has been completed to the Alternative Urban Areawide Review (AUAR) for the South Loop District in the City of Bloomington. The original AUAR was completed in 2002 and subsequent updates have been completed in 2009 and 2012. This report focuses on the updates to the traffic operations analysis, recommended improvements, and preliminary cost estimates for proposed improvements to be used for purposes of updating the AUAR.

The South Loop District (also referred to as the District) is bounded by I-494 to the north, TH 77 to the west and the river to the south and east (see Figure 1: Project Area). This report provides additional details regarding traffic operations and the recommended improvements to support the AUAR submittal. The main study goals are to collect updated traffic counts and land use projections throughout the District, identify transportation issues, recommend improvements, and develop conceptual layouts and cost estimates for the recommended improvements.

Project Background

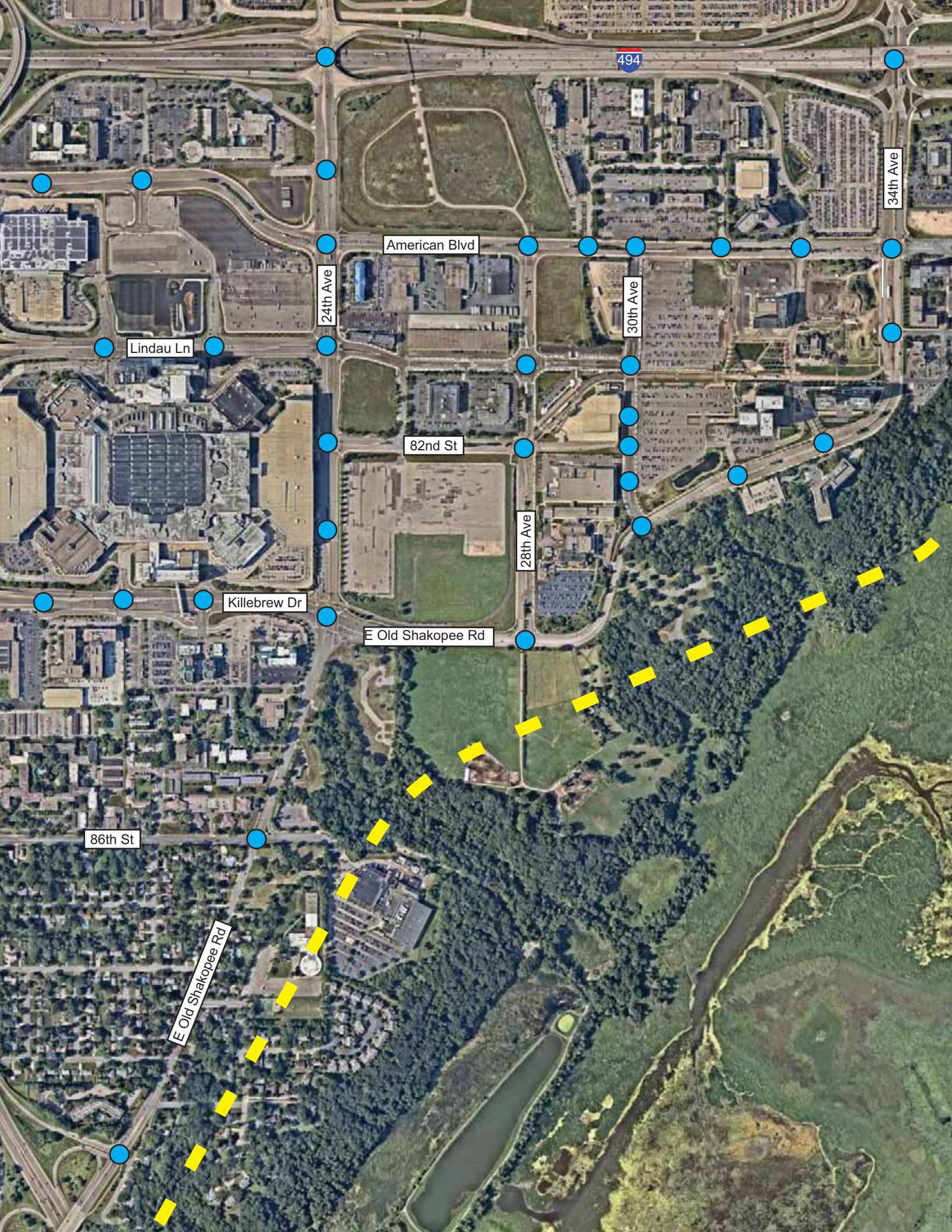
This study is an update to the previous traffic study completed for the previous AUAR update in the South Loop District in 2012. The study evaluated traffic operations within the study area and identified a number of infrastructure improvements. Since the completion of the 2012 update, the following infrastructure improvements and developments have been constructed:

Transportation Infrastructure Improvements

- Internal Mall of America (MOA) improvements on the north side of the building
- Lindau Lane Grade Separation
- Lindau Lane Extension between 24th Avenue and 30th Avenue
- Lindau Lane and 28th Avenue roundabout
- 30th Avenue improvements between American Boulevard and East Old Shakopee Road
- 33rd Avenue extension between American Boulevard and East Old Shakopee Road
- Killebrew Drive Pedestrian Bridge
- I-494/34th Avenue Diverging Diamond Interchange (DDI)
- 28th Avenue Park-and-Ride parking lot modifications

Development Projects

- MOA Phase 1C (open at time of study, but office and retail space was not fully leased)
- Radisson Blu Hotel
- TownePlace Suites Hotel
- 8100 26th Avenue South Multi-Use Development (under construction at time of the study)
- Bloomington Central Station (BSC) Hyatt Regency Hotel (opened near the start of the study)
- BSC Residential Phase I and II (under construction at time of the study)



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd

Existing Conditions

The existing conditions were evaluated to identify current transportation issues and to establish a baseline for comparison to determine impacts associated with future development within the South Loop District. The evaluation of existing conditions includes a review of non-motorized, transit, and motorized facilities.

Non-Motorized Traffic

Existing pedestrian/bicyclist volumes and facilities were reviewed for the South Loop District. The main goal of this evaluation is to identify high volume pedestrian and bicycle locations and to identify missing connections (bicycle routes, trails, sidewalks and pedestrian crossings) within the District.

Pedestrian/Bicyclist Data Collection

Two-way pedestrian and bicyclist volumes were collected by the City of Bloomington for a 12-hour period (7:00 a.m. to 7:00 p.m.) over a one to three-day period at five locations during June 2015. A summary of the pedestrian and bicyclist volumes are shown in Table 1. The two highest pedestrian/bicyclist volume locations are at American Boulevard just east of 24th Avenue and at the East Old Shakopee Road/33rd Avenue intersection.

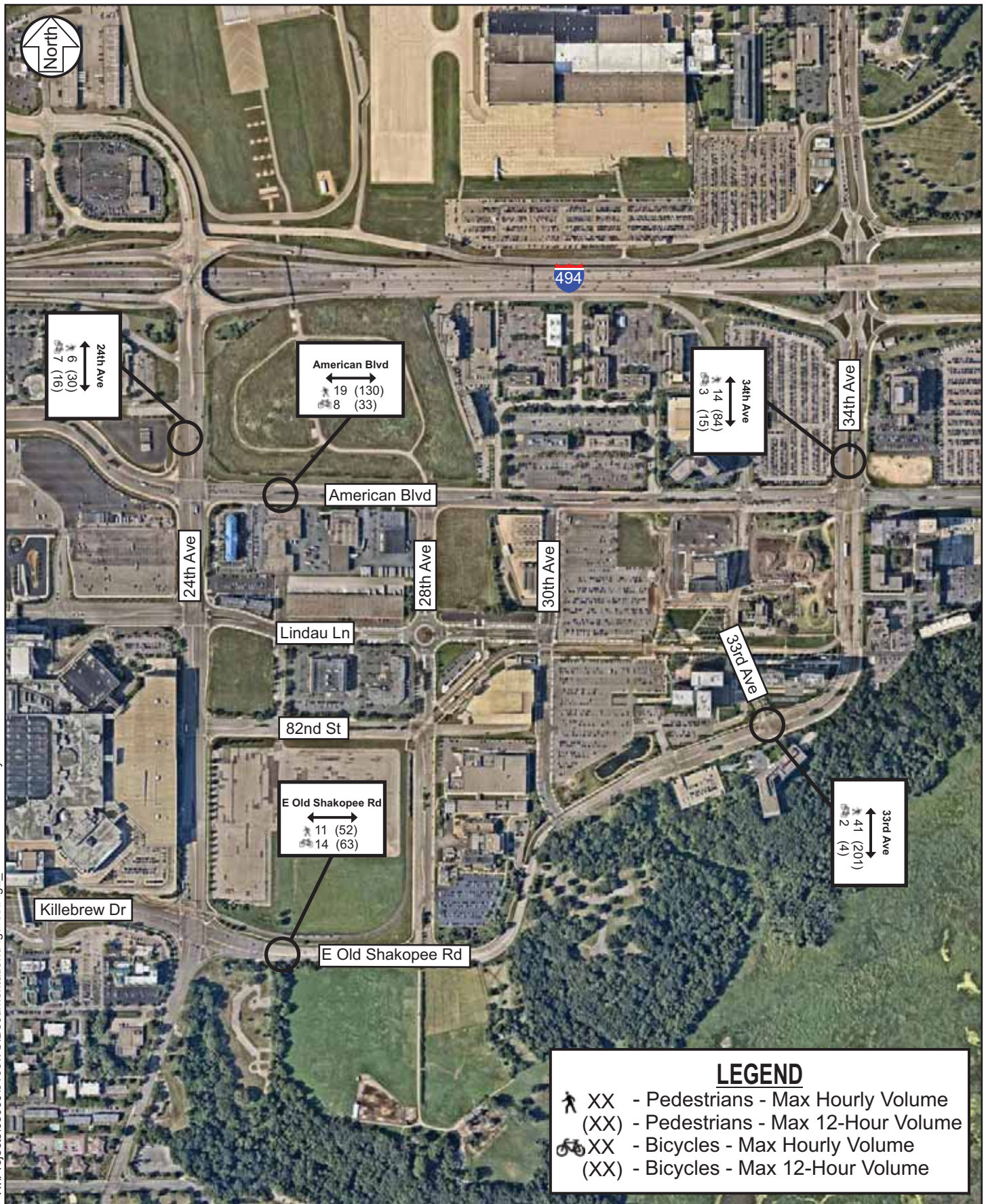
Table 1. Summer 2015 Pedestrian and Bicyclist Count Summary (Two-Way Counts)

Location	Max Hour Volume Pedestrian (Bicyclist)	Max 12-Hour Volume Pedestrian (Bicyclist)
24th Avenue (North of American Boulevard)	6 (7)	30 (16)
34th Avenue (North of American Boulevard)	14 (3)	84 (15)
American Boulevard (East of 24th Avenue)	19 (8)	130 (33)
East Old Shakopee Road at 33rd Avenue	41 (2)	201 (4)
East Old Shakopee Road (East of 24th Avenue)	11 (14)	52 (63)

Supplemental pedestrian and bicyclist volumes were collected at intersections throughout the District in March/April 2016 and focused on the weekday a.m., weekday p.m. and Saturday midday peak periods (included in Appendix A). During the data collection dates, few pedestrians/bicyclists were counted (i.e. less than ten per hour) at most study intersections. This is partially due to the cold and/or rainy weather during the counts. Intersections where more than ten (10) peak hour pedestrians/bicyclist were counted crossing one or more approaches include:

- 24th Avenue/American Boulevard
- 24th Avenue/Lindau Lane
- 24th Avenue /82nd Street
- 34th Avenue/American Boulevard
- Lindau Lane/30th Avenue
- 28th Avenue/82nd Avenue
- 30th Avenue/North HP Driveway/METRO Park-and-Ride

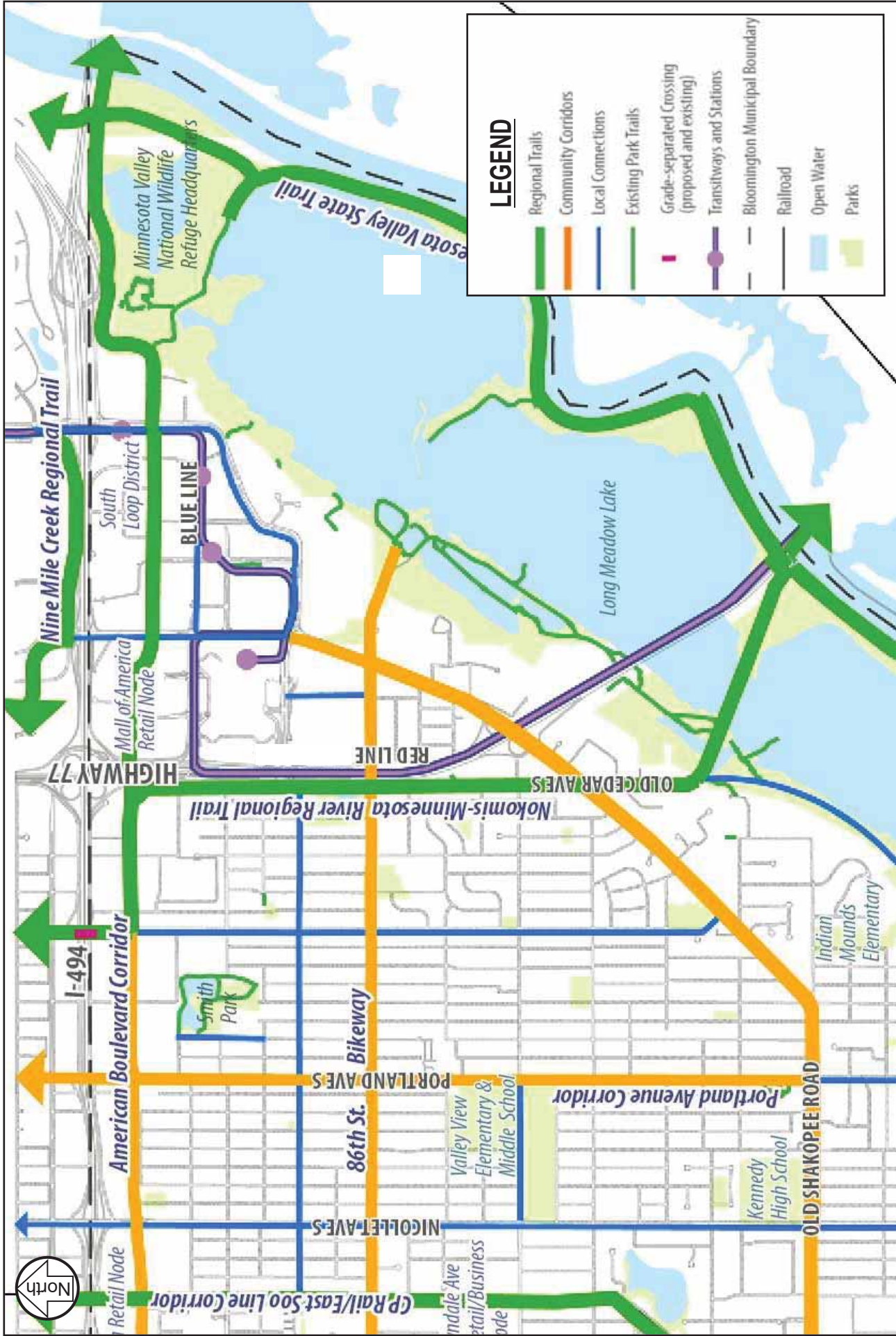
The pedestrian/bicyclist counts are summarized in Figure 2.



Pedestrian/Bicyclist Facilities

The existing pedestrian/bicyclist facilities such as sidewalks, trails, and crosswalks were reviewed for the corridors within the South Loop District. The *City of Bloomington Alternative Transportation Plan (ATP)*, dated April 2016, shown in Figure 3 illustrates the pedestrian/bicycle functional system:

- The **Minnesota Valley State Trail is an existing regional trail** that is located on the west bank of the Minnesota River and to the east of Long Meadow Lake within the South Loop District. The regional trail connects into the Minnesota Valley National Wildlife Refuge Visitor Center via the Long Meadow Lake Trail (an existing park trail).
- **Existing park trails including the Long Meadow Lake Trail** are located at multiple locations between East Old Shakopee Road and Long Meadow Lake (near 28th Avenue, 31st Avenue, Appletree Square, and 86th Street).
- **American Boulevard is identified as a Regional Trail** within the study area. Master plans for the expansion of the Nine Mile Creek Regional Trail indicate that the preferred alignment is along American Boulevard. American Boulevard currently has enhanced sidewalks and connects to the Minnesota Valley National Wildlife Refuge Visitor Center.
- **East Old Shakopee Trail is identified as a community corridor** between TH 77 and Killebrew Drive. There is sidewalk between TH 77 and Killebrew Drive that alternates between the west and east sides of the road.
- **East Old Shakopee Trail is identified as a local connection** to the north and east of Killebrew Drive. On this segment East Old Shakopee Road has a multi-use trail on the north/west side. There is also a sidewalk on the east side of East Old Shakopee Road/34th Avenue between 31st Avenue and American Boulevard.
- **86th Street is identified as a community corridor.** 86th Street has on-street bike lanes.
- **24th Avenue is identified as a local connection.** 24th Avenue has sidewalks on both sides of the roadway between Killebrew Drive and American Boulevard. To the north of American Boulevard sidewalks are located on the west side of the road and there is a missing sidewalk connection on the east side of 24th Avenue north of American Boulevard. The sidewalks/crossings at the interchange are narrow.
- **28th Avenue 30th Avenue, and 33rd Avenue have sidewalks** located on the west and east sides between East Old Shakopee Road and American Boulevard
- **34th Avenue within the study area has sidewalks** located on the east side.
- **Lindau Lane between 22nd Avenue and 28th Avenue has sidewalks** located on both the north and south sides: the sidewalks between 22nd Avenue and 24th Avenue provide access to the MOA and/or parking lots north of Lindau Lane. No pedestrian crossings are permitted across Lindau Lane west of the 24th Avenue intersections.
- **82nd Street has sidewalk** Located on the north and south side.
- **Killebrew Drive between 20th Avenue and East Old Shakopee Road has sidewalks:** Located on the north side and east of 22nd Avenue on the south side.
- **Grade separated crossings** are provided across Lindau Lane between 22nd Avenue and 24th Avenue and across Killebrew Drive west of 22nd Avenue.



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Figure 3

Pedestrian/Bicyclist Infrastructure Network Review

The existing pedestrian/bicyclist infrastructure network within the South Loop District was reviewed. The *City of Bloomington ATP* reviewed the study area at high-level and identified a number of gaps within the District (illustrated in Figure 4). The following corridors within the District were identified as an existing off-street trail gap:

- 24th Avenue between the I-494 interchange and Killebrew Drive/East Old Shakopee Road
- 34th Avenue between the I-494 interchange and American Boulevard
- American Boulevard east of 34th Avenue
- East Old Shakopee Road between Killebrew Drive to south of TH 77

An additional review of the pedestrian/bicyclist infrastructure was conducted to identify locations where there are specific sidewalk/trail gaps on the corridors within the study area:

- A gap in sidewalk is located on the east side of 24th Avenue north of American Boulevard. There is an existing trail on the north side of American Boulevard that could eventually connect to the sidewalk which starts just south of 79th Street, the sidewalk gap is approximately 450 feet.
- The sidewalk along East Old Shakopee Road between Killebrew Drive and TH 77 is not consistently located on the east and/or west sides of the road. Sidewalk gaps are located in the following locations on the segment:
 - East side of the road between Killebrew Drive and 88th Street (sidewalk located on west side of the road).
 - West side of the road between 88th Street and 89th Street (sidewalk located on the east side of the road).
 - West side of the road between the Northbound TH 77 Ramp and Old Cedar Avenue.
- Pedestrian facility gap along the south side of East Old Shakopee Road between 24th Avenue and 31st Avenue.

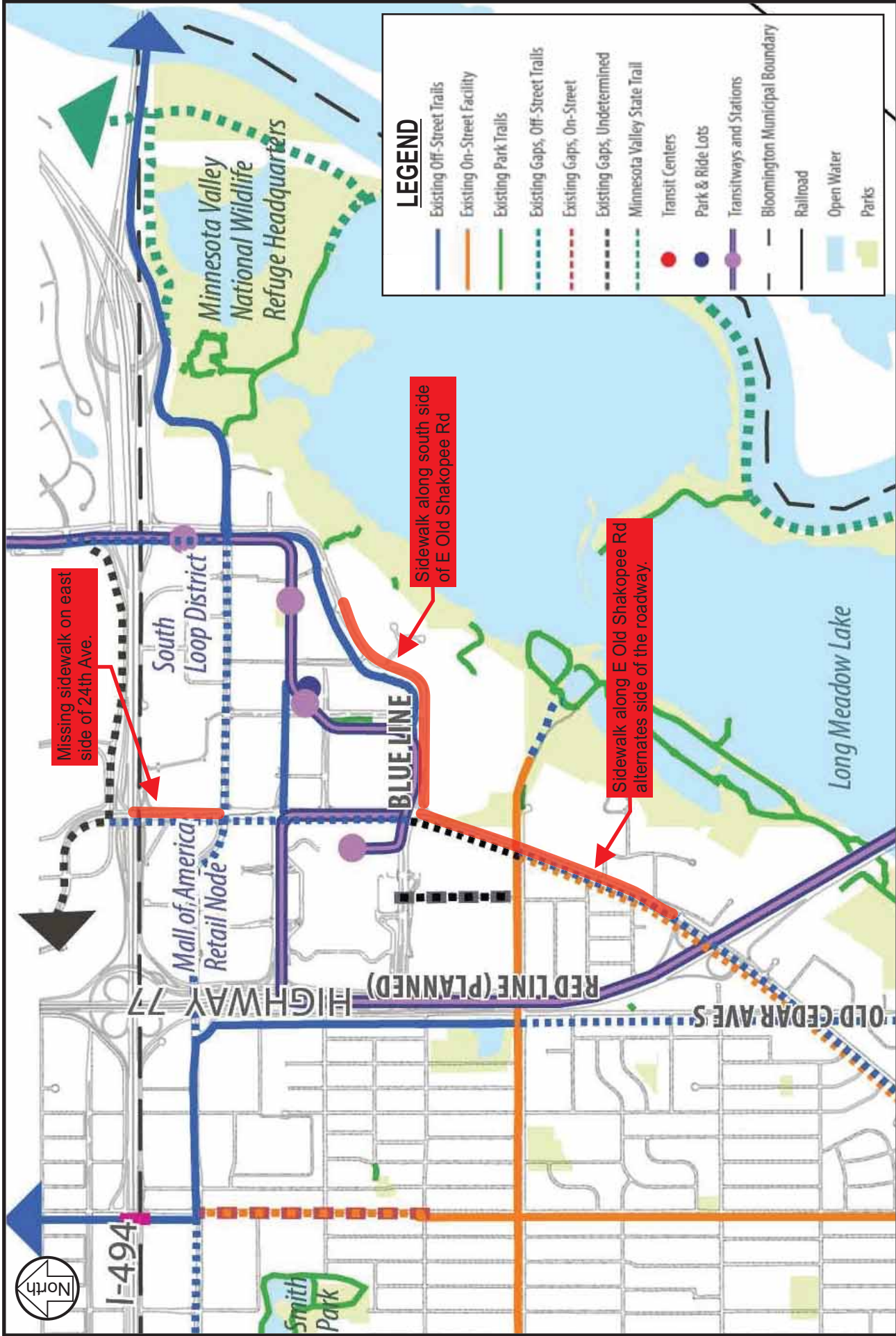


Figure 4

H:\Projects\09000\09190\TSDocumentation\Figures\Fig4 Pedestrian/Bicyclist Infrastructure Gaps.cdr

Transit

The Blue Line Light Rail Transit (LRT) operates through the South Loop District. In addition, the District is well served by bus routes (local, express, and bus-rapid-transit) providing access to/from the South Loop District to much of the Twin Cities area.

Blue Line Light Rail Transit

There are four LRT stations within the South Loop District. The end-of-the line station is located at the MOA on the ground level at the mall's northeast parking ramp. Additional LRT stations include the 28th Avenue Station (park-and-ride facility), the Bloomington Central Station, and the American Boulevard Station.

Within the South Loop District, there are seven locations where there are currently at-grade crossings, which include the following intersections:

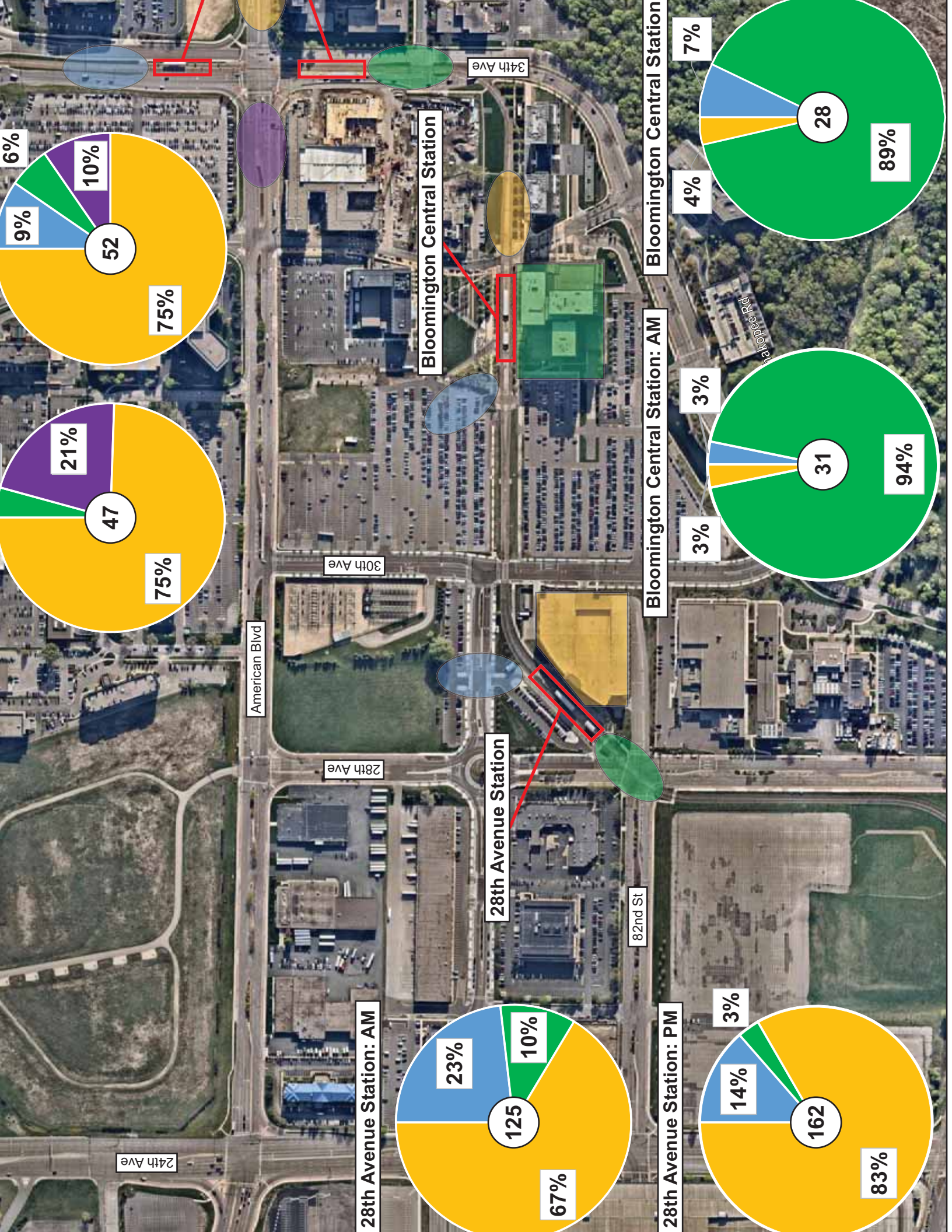
- 24th Avenue/East Old Shakopee Road/Killebrew Drive
- 28th Avenue/82nd Street
- 30th Avenue/Lindau Lane
- 33rd Avenue north of East Old Shakopee Road (midblock)
- 34th Avenue south of Appletree Square (midblock, crosses southbound lanes only)
- 34th Avenue/American Boulevard
- 34th Avenue/I-494 Interchange

LRT Data Collection

SRF collected pedestrian counts at three LRT stations in the South Loop District during the weekday a.m., weekday p.m., and Saturday peak periods. The purpose of collecting this data was to understand how many people are utilizing LRT during the peak periods and to identify where riders are coming to/from. Counts were conducted at the American Boulevard Station, Bloomington Central Station, and the 28th Avenue Park-and-Ride Station. Results of the counts are summarized in Table 2 and illustrated in Figure 5. These counts were used to estimate transit factors for developments within the South Loop District based on the land use and proximity to a LRT station.

Table 2. LRT Pedestrian Counts

LRT Station	A.M. Peak Hour Boardings/Alightings	P.M. Peak Hour Boardings/Alightings
American Boulevard/34th Avenue Station	47	52
Bloomington Central Station	31	28
28th Avenue Station (Park-and-Ride)	125	162



24th Ave

American Blvd

28th Ave

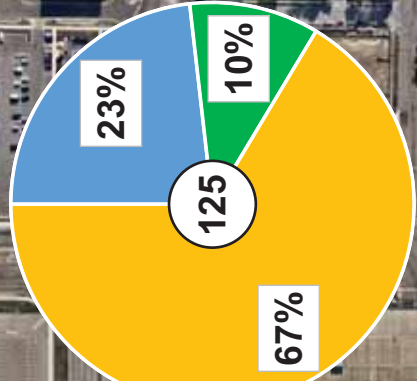
30th Ave

34th Ave

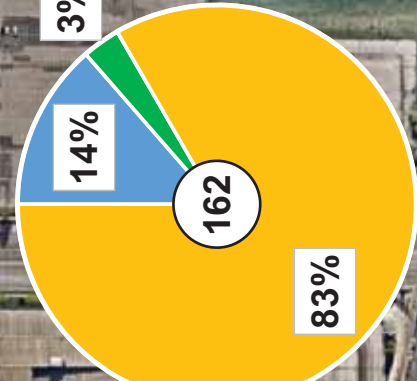
82nd St

1st Ave

28th Avenue Station: AM



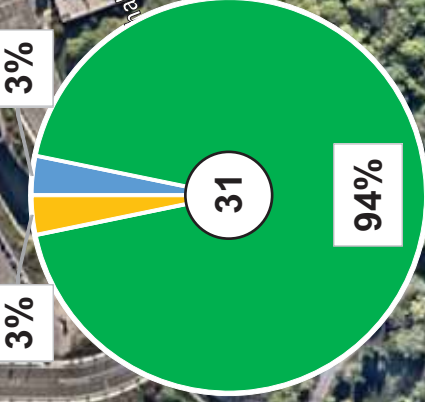
28th Avenue Station: PM



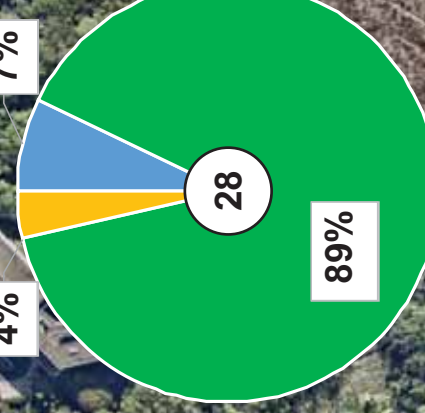
28th Avenue Station

Bloomington Central Station

Bloomington Central Station: AM



Bloomington Central Station



As illustrated in Figure 5, riders using the American Boulevard/34th Avenue station were primarily destined to/from the east approach (office/hotel/park-and-fly type uses). Riders using the Bloomington Central Station were primarily destined to/from the Health Partners offices. Riders using the 28th Avenue Station were primarily people utilizing the park-and-ride.

Based on information provided by Metro Transit, the MOA Transit Center has approximately 6,000 weekday and 7,500 Saturday average daily boardings. As part of the *Mall of American Special Generator Survey*, which is dated April 2012, survey information was gathered to estimate the mode share for visitors/employees to/from the MOA. Results of this survey indicate that approximately 11 percent of trips arrive via LRT. Note that approximately two (2) percent arrive via biking or walking, approximately four (4) percent arrive via public bus service (Metro Transit), and approximately seven (7) percent utilize a hotel shuttle services. The majority of visitors arrive via a private vehicle (approximately 69 percent).

Transit Routes/Frequency

As shown in Table 3, the South Loop District is well-served by transit. All Metro Transit service stops within the District are listed in Table 3, which provide access throughout the metropolitan area and beyond.

Table 3. Transit Operations Summary

Route	Service Area	Rush Hour Frequency (minutes)
METRO Red Line	Red Line Apple Valley-MOA	15
METRO Blue Line	Blue Line - Minneapolis - Airport - MOA	10
5	Brooklyn Center - Fremont - 26th Avenue - Chicago - MOA	5-10
54	W 7Street - Airport - MOA (Ltd Stop)	15
415	MOA - Mendota Heights - Eagan	2 trips
444	Savage-Burnsville-MOA	30
495	Shakopee - MOA	60
515	Southdale - 66th Street - Bloomington Avenue - MOA	15
538	Southdale - York Avenue - Southtown - 86th Street - MOA	30
539	Normandale College - France Avenue - 98th Street - MOA	30
540	Edina - Richfield - 77th Street - MOA	15-20
542	84th Street - 76th Street - American Boulevard - MOA	30

Motorized Traffic

The evaluation of existing conditions includes peak hour intersection turning movement counts, field observations, a review of the MOA gate counts, Minnesota Department of Transportation (MnDOT) loop detector data, and an intersection capacity analysis.

Data Collection

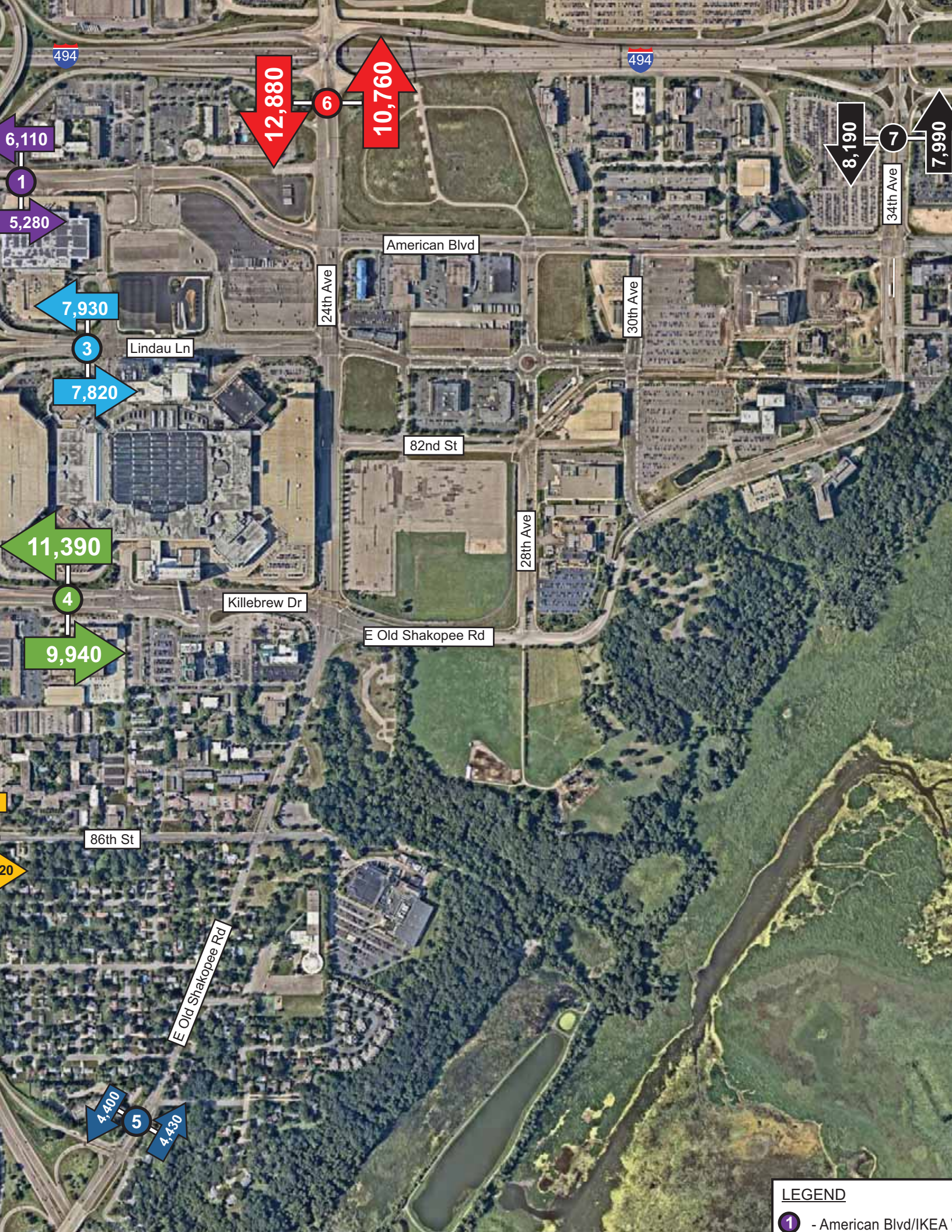
The data collection efforts focused on Thursday and Saturday conditions. This is consistent with other traffic studies completed in the South Loop District. Based on experience with working in the South Loop District, Thursday conditions typically have higher traffic volumes than Tuesday or Wednesday conditions. This is likely due to the traffic generated by the MOA. Further, a Saturday condition was also evaluated to capture the peak time period for the retail/hotel developments.

Intersection Turning Movement Counts

SRF collected Thursday and Saturday cordon counts (24-hour) at eight locations to collect all entering and exiting traffic to the District. Both motorized and non-motorized were collected. Counts were conducted at the following locations in March/April 2016:

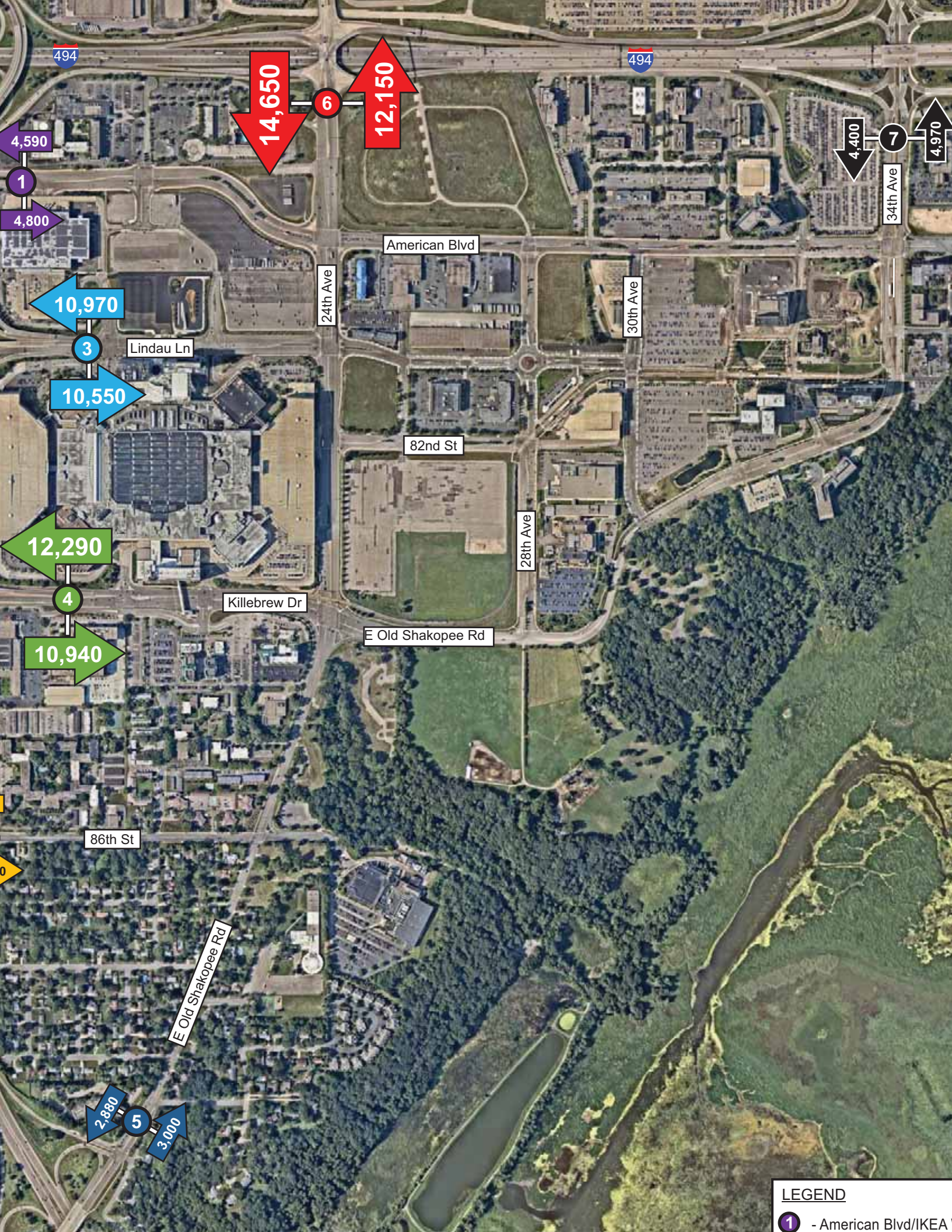
- 24th Avenue/I-494 Single Point Interchange
- 34th Avenue/I-494 South Crossover
- American Boulevard/IKEA driveway
- Lindau Lane/IKEA Way
- Killebrew Drive/20th Avenue
- TH 77 Southbound/Northbound Ramps Merge at Killebrew Drive
- East Old Shakopee Road/TH 77 Northbound Ramps
- E 86th Street/TH 77 Service Road

A summary of the 24-hour weekday and Saturday counts entering and exiting the District area is provided in Figure 6 and Figure 7, respectively. It should be noted that the volumes in the figure represent the raw vehicle counts collected at the locations (i.e. no adjustments were made to represent an 85th percentile day as discussed in the following section or to balance between study intersections). Further the counts shown in the figures do not include pedestrian/bicyclist volumes since they were low due to the weather on the days of data collection. The hourly volume profiles for each intersection for both the weekday and Saturday counts are included in Appendix A. A comparison of the weekday and Saturday volume information indicates that segments with higher weekday volumes are likely due to office generated trips (i.e. 34th Avenue, American Boulevard, 86th Street, East Old Shakopee Road) versus the segments with higher Saturday volumes are likely due to the retail generated trips (i.e. 24th Avenue, Lindau Lane, Killebrew Drive).



LEGEND

1 - American Blvd/IKEA



LEGEND

1 - American Blvd/IKEA

In addition to the 24-hour cordon counts, SRF conducted peak period turning movement counts (passenger vehicles, pedestrians, and bicycles) during the Thursday a.m. peak and p.m. peak and Saturday peak periods at the following locations in March/April 2016:

- 24th Avenue/79th Street
- 24th Avenue/American Boulevard
- 24th Avenue/Lindau Lane
- 24th Avenue/82nd Street
- 24th Avenue/ MOA Gate 6
- 24th Avenue/Killebrew Drive/East Old Shakopee Road
- 34th Avenue/American Boulevard
- 34th Avenue/I-494 North Crossover
- 34th Avenue/Appletree Square
- American Boulevard/Thunderbird Road
- American Boulevard/28th Avenue
- American Boulevard/Metro Drive West
- American Boulevard/30th Avenue
- American Boulevard/31st Avenue/Metro Drive East
- American Boulevard/33rd Avenue/International Drive
- Lindau Lane/22nd Avenue
- Killebrew Drive/22nd Avenue
- East Old Shakopee Road/TH 77 Southbound Ramps
- East Old Shakopee Road/86th Street
- East Old Shakopee Road/28th Avenue
- East Old Shakopee Road/30th Avenue
- East Old Shakopee Road/31st Avenue/Ceridian Driveway
- East Old Shakopee Road/33rd Avenue/Ceridian Driveway
- 28th Avenue/Lindau Lane
- 28th Avenue/82nd Street
- 30th Avenue/Lindau Lane
- 30th Avenue/North HP Driveway /Metro Park-and-Ride
- 30th Avenue/Central HP Driveway
- 30th Avenue/South HP Driveway

A review of the intersection turning movement counts found that the weekday a.m. peak hour is from 7:30 to 8:30 a.m., the weekday p.m. peak hour is from 4:30 to 5:30 p.m., and the Saturday peak is from 3:00 to 4:00 p.m. Detailed information is provided in Appendix A.

85th Percentile Adjustments

When conducting traffic studies in the South Loop District, the base volume sets are adjusted to reflect the 85th percentile condition. The 85th percentile is understood to represent the typical weekday/Saturday peak hour volume during the back to school shopping season, which is typically the threshold used to conduct traffic operations analysis for traffic studies near the MOA. The traffic volumes in this area fluctuate weekly, so historical traffic volume information as well as MOA Gate Counts and MnDOT Loop Detector data were reviewed to determine what adjustments should be made so that the existing volume set represents an 85th percentile traffic volume set.

Gate Closure Day

During data collection on Saturday, March 19, 2016 the MOA gates closed starting around 2:00 p.m. Gate closures occur when the parking ramps are fully utilized, and the access locations are blocked off to route vehicles to alternative parking locations, such as the parking lot west of 24th Avenue between 82nd Street and East Old Shakopee Road. While collecting traffic volumes on a gate closure day was not intended and not used for the baseline existing volumes, the gate closure conditions are helpful to understand traffic volumes/patterns during a worst-case condition. SRF counted the MOA access intersections on this gate closure day and recounted on a non-gate closure day in April 2016. This information was used to help develop the Saturday 85th percentile peak hour condition.

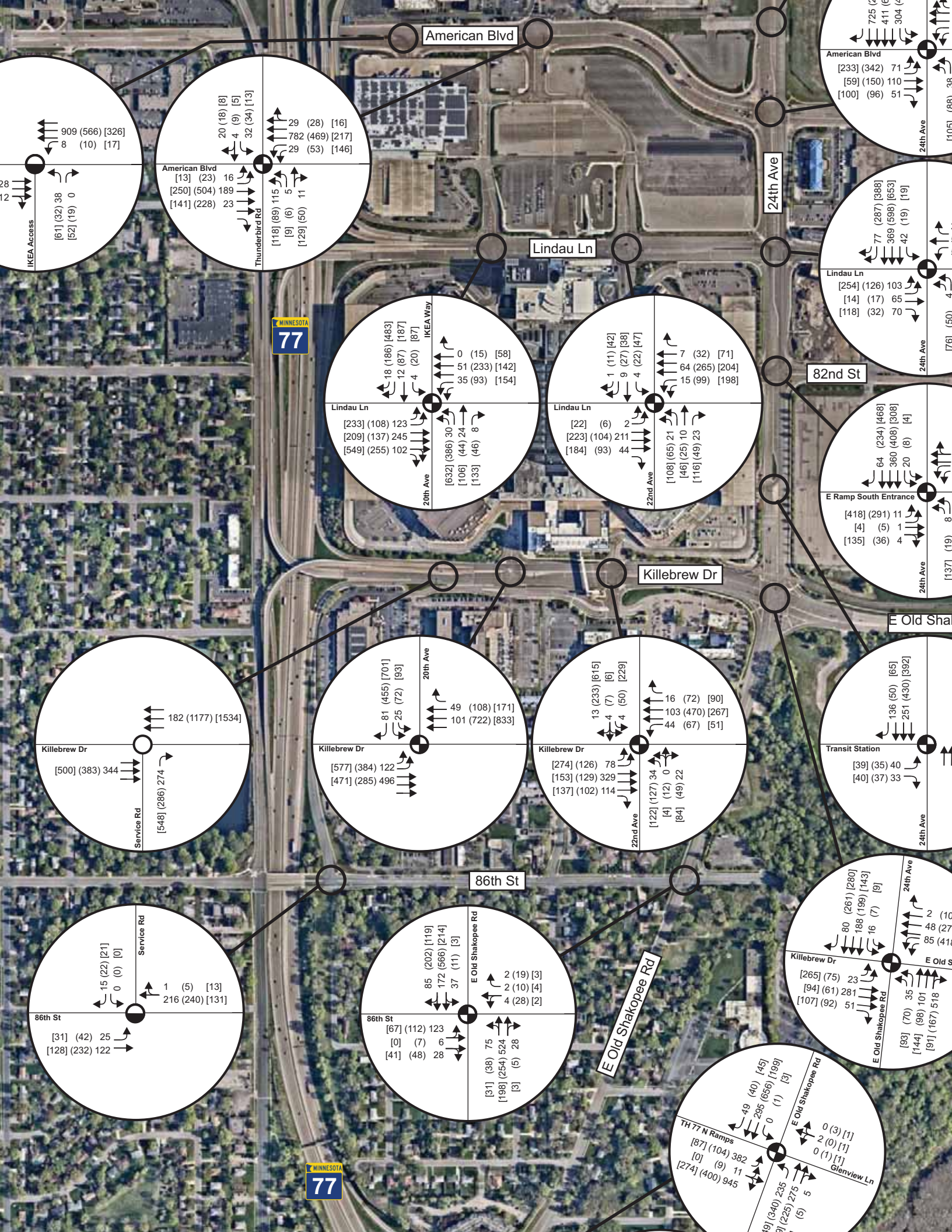
MOA Gate Counts/MnDOT Loop Detector

January 2015 to April 2016 MOA gate count and MnDOT loop detector data was reviewed for both Thursday and Saturday conditions and compared to the data collection days in March and April. Additional information summarizing the results of the MOA Gate Count and MnDOT Loop Detector review are provided in Appendix B.

For locations where the traffic volumes varied from the 85th percentile, adjustment factors were developed and applied to the peak hour condition to develop an 85th percentile volume. The adjustment factors applied to each study intersection for the weekday a.m., weekday p.m., and Saturday peak hours are provided in Appendix C.

Roadway Characteristics

Field observations were conducted to identify roadway characteristics within the study area (i.e. roadway geometry, posted speed limits, and traffic controls). Existing signal timing was provided by the City of Bloomington. At-grade LRT crossing locations were also identified and accounted for in the analysis. Existing geometrics, traffic control, and weekday a.m. and p.m. and Saturday peak hour volumes are shown in Figure 8 and Figure 9.



American Blvd

American Blvd

[233] (342) 71
[59] (150) 110
[100] (96) 51

[105] (88) 38

24th Ave

Lindau Ln

[254] (126) 103
[14] (17) 65
[118] (32) 70

[76] (50) 4

82nd St

[254] (126) 103
[14] (17) 65
[118] (32) 70

[137] (19) 8

E Old Shakopee Rd

[418] (291) 11
[4] (5) 1
[135] (36) 4

[39] (35) 40
[40] (37) 33

[39] (35) 40
[40] (37) 33

[83] (70) 35
[144] (98) 101
[91] (167) 518

[83] (70) 35
[144] (98) 101
[91] (167) 518

[83] (70) 35
[144] (98) 101
[91] (167) 518

[83] (70) 35
[144] (98) 101
[91] (167) 518

[83] (70) 35
[144] (98) 101
[91] (167) 518

MINNESOTA
77

MINNESOTA
77

909 (566) [326]
8 (10) [17]

[61] (32) 38
[52] (19) 0

American Blvd
[13] (23) 16
[250] (504) 189
[141] (228) 23

20 (18) [8]
4 (9) [5]
32 (34) [13]

29 (28) [16]
782 (469) [217]
29 (53) [146]

[118] (89) 115
[9] (6) 5
[129] (50) 11

18 (186) [483]
12 (87) [187]
4 (20) [87]

0 (15) [58]
51 (233) [142]
35 (93) [154]

[233] (108) 123
[209] (137) 245
[549] (255) 102

[632] (386) 30
[106] (44) 24
[133] (46) 8

1 (11) [42]
9 (27) [38]
4 (22) [47]

7 (32) [71]
64 (265) [204]
15 (99) [198]

[22] (6) 2
[223] (104) 211
[184] (93) 44

[108] (65) 21
[46] (25) 10
[116] (49) 23

Killebrew Dr

81 (455) [701]
25 (72) [93]

49 (108) [171]
101 (722) [833]

[577] (384) 122
[471] (285) 496

13 (233) [615]
4 (7) [6]
4 (50) [229]

16 (72) [90]
103 (470) [267]
44 (67) [51]

[274] (126) 78
[153] (129) 329
[137] (102) 114

[122] (127) 34
[4] (12) 0
[84] (49) 22

86th St

15 (22) [21]
0 (0) [0]

1 (5) [13]
216 (240) [131]

[31] (42) 25
[128] (232) 122

85 (202) [119]
172 (566) [214]
37 (11) [3]

2 (19) [3]
2 (10) [4]
4 (28) [2]

[67] (112) 123
[0] (7) 6
[41] (48) 28

[31] (38) 75
[198] (254) 524
[3] (5) 28

E Old Shakopee Rd

80 (261) [280]
188 (199) [143]
16 (7) [9]

2 (10)
48 (27)
85 (41)

[265] (75) 23
[94] (61) 281
[107] (92) 51

[83] (70) 35
[144] (98) 101
[91] (167) 518

[83] (70) 35
[144] (98) 101
[91] (167) 518

[83] (70) 35
[144] (98) 101
[91] (167) 518

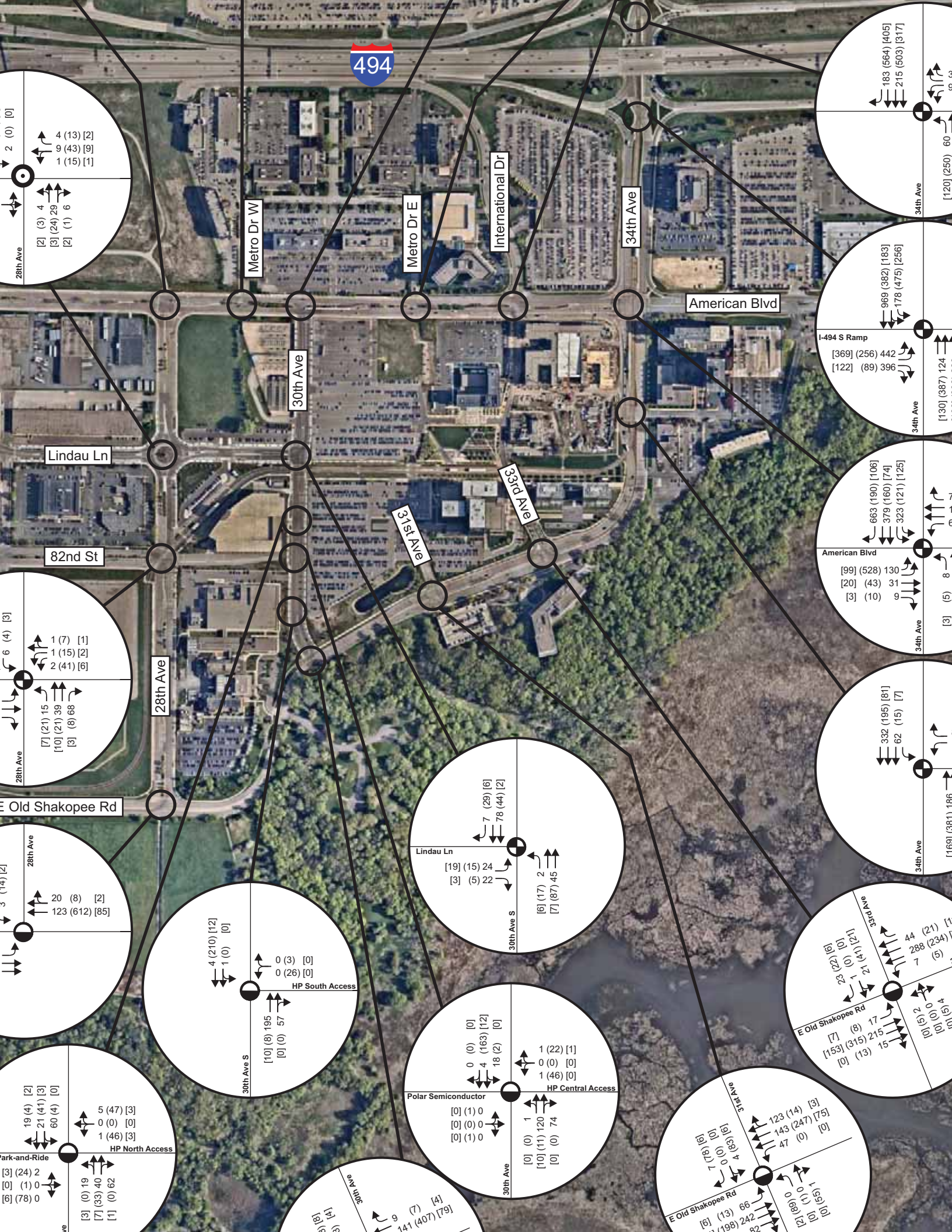
[83] (70) 35
[144] (98) 101
[91] (167) 518

TH 77 N Ramps
[87] (104) 382
[0] (9) 11
[274] (400) 945

0 (3) [1]
2 (0) [1]
0 (1) [1]

[19] (340) 235
[2] (225) 275
(5) 5

Glenview Ln



Field Observations

The following on-site field observations were noted and utilized in the calibration of the existing model:

Locations where unbalanced lane utilization was observed:

- Southbound 24th Avenue (I-494/24th Avenue interchange to Lindau Lane)
 - This is due to a high number of vehicles destined to make a southbound right-turn into the MOA. This poor lane utilization was observed to start at the westbound left-turn movement at the I-494/24th Avenue interchange (70 percent in the northern left-turn lane and 30 percent in the southern left-turn lane). The lane imbalance continues south through the Lindau Lane intersection.
- Northbound 24th Avenue (Lindau Lane to the I-494/24th Avenue interchange).
 - Northbound queuing occurs as a result of vehicles positioning themselves to make the northbound right-turn movement at the I-494/24th Avenue interchange.
 - While it is understood that periodically the northbound through lane queues may extend to 82nd Street with traffic stopping to merge into the far-right lane during the peak hour, this was not observed during field observations.
- Eastbound left-turn movement at the 24th Avenue/American Boulevard
 - The majority of traffic making the left-turn is destined to make a northbound right-turn movement at the I-494/24th Avenue interchange (approximately 30 percent in the northern left-turn lane and 70 percent in the southern left-turn lane). There was minimal use of the inside turn lane and during the weekday p.m. peak hour, the outside left-turn lane frequently queues past the storage, blocking access to the inside left-turn lane.
- Eastbound left-turn movement at Lindau Lane/IKEA Way
 - A majority of the vehicles currently making a left-turn are destined for IKEA (60 percent in the northern left-turn lane and 40 percent in the southern left-turn lane).
- Northbound left-turn and southbound right-turn movement at Lindau Lane/IKEA Way
 - Majority of vehicles exiting the MOA at this location (during the weekday p.m. and Saturday peak hours) are destined for the ramp to I-494 westbound and TH 77 (80 percent in the western left-turn lane and 20 percent in the eastern left-turn lane).
 - Southbound right-turn vehicles are destined for the ramp to I-494 westbound and TH 77 (approximately 70 percent in the eastern right-turn lane and 30 percent in the western right-turn lane).
- Eastbound left-turn movement at 34th Avenue/American Boulevard
 - The majority of traffic making the left-turn is destined to make northbound right-turn movements at the I-494/34th Avenue interchange (approximately 20 percent in the northern left-turn lane and 80 percent in the southern left-turn lane). There was minimal use of the inside turn lane and during the weekday p.m. peak hour, the outside left-turn lane frequently queues past the storage, blocking access to the inside left-turn lane.

Intersection Operations Analysis

An operations analysis was conducted to quantify how traffic operates at the study intersections under existing conditions. PTV Vissim (Version 7.00-16) was used since it is an effective tool to analyze LRT operations, pedestrians, and roundabouts. Intersection operations analysis results identify a Level of Service (LOS) which indicates how well an intersection is operating. Intersections are ranked from LOS A through LOS F. The LOS results are based on average delay per vehicle, which correspond to the delay threshold values shown in Table 4. LOS A indicates the best traffic operation and LOS F indicates an intersection where demand exceeds capacity. Overall intersection LOS A through LOS D is considered acceptable by the City of Bloomington.

Table 4. Level of Service Criteria for Signalized and Unsignalized Intersections

LOS Designation	Signalized Intersection Average Delay/Vehicle (seconds)	Unsignalized Intersection Average Delay/Vehicle (seconds)
A	≤ 10	≤ 10
B	> 10 - 20	> 10 - 15
C	> 20 - 35	> 15 - 25
D	> 35 - 55	> 25 - 35
E	> 55 - 80	> 35 - 50
F	> 80	> 50

For side-street stop controlled intersections, special emphasis is given to providing an estimate for the level of service of the side-street approach. Traffic operations at an unsignalized intersection with side-street stop control can be described in two ways. First, consideration is given to the overall intersection level of service. This takes into account the total number of vehicles entering the intersection and the capability of the intersection to support these volumes. Second, it is important to consider the delay on the minor approach. Since the mainline is not stop controlled, the majority of delay is attributed to the minor approaches. It is typical of unsignalized intersections with higher mainline traffic volumes to experience high levels of delay, i.e. poor levels of service, on the side-street approaches, but an acceptable overall intersection level of service during peak hour conditions.

Results of the existing capacity analysis shown in Table 5 indicate that all study intersections currently operate at an acceptable overall LOS D or better during the weekday a.m., weekday p.m. and Saturday peak hours, with the existing traffic control, geometric layout, and signal timing. The LOS results for the weekday a.m., weekday p.m., and Saturday peak hours are illustrated in Figure 10, Figure 11, and Figure 12, respectively. Detailed traffic operations results, including movement delays and queue lengths are provided in Appendix D.

Table 5. Existing Conditions Peak Hour Capacity Analysis (Level of Service)

Intersection	AM Peak Hour	PM Peak Hour	Sat Peak Hour
24th Avenue/I-494 Interchange	B	B	B
24th Avenue/79th Avenue	A	A	A
24th Avenue/American Boulevard	C	C	C
24th Avenue/Lindau Lane	A	B	B
24th Avenue/82nd St	A	B	C
24th Avenue/Transit Station	A	A	A
24th Avenue/Killebrew Drive /East Old Shakopee Road	C	C	C
34th Avenue/I-494 Interchange	C	B	B
34th Avenue/American Boulevard	B	C	B
34th Avenue/Appletree Square	A	A	A
American Boulevard/IKEA Access ⁽¹⁾	A/B	A/B	A/A
American Boulevard/Thunderbird Road	A	A	B
American Boulevard/28th Avenue/Airport Access	A	A	A
American Boulevard/Metro Drive West ⁽¹⁾	A/A	A/B	A/A
American Boulevard/30th Avenue ⁽¹⁾	A/B	A/C	A/A
American Boulevard/Metro Drive East ⁽¹⁾	A/B	A/C	A/A
American Boulevard/33rd Avenue/International Drive ⁽¹⁾	A/B	A/C	A/A
Lindau Lane/IKEA Way	B	C	D
Lindau Lane/22nd Avenue	A	B	C
SB TH 77/NB TH 77 Merge at Killebrew Drive ⁽¹⁾	A/A	A/A	A/A
Killebrew Drive/20th Avenue	A	B	C
Killebrew Drive/22nd Avenue	A	B	D
East Old Shakopee Road/TH 77 S Ramps ⁽¹⁾	A/A	A/A	A/A
East Old Shakopee Road/TH 77 N Ramps	B	A	A
East Old Shakopee Road/86th Street	A	A	A
East Old Shakopee Road/28th Avenue ⁽¹⁾	A/A	A/A	A/A
East Old Shakopee Road/30th Avenue ⁽¹⁾	A/B	A/A	A/A
East Old Shakopee Road/31st Avenue ⁽¹⁾	A/B	A/B	A/A
East Old Shakopee Road/33rd Avenue/Ceridian Access ⁽¹⁾	A/A	A/A	A/A
28th Avenue/Lindau Lane	A	A	A
28th Avenue/82nd Street	A	B	B
30th Avenue/Lindau Lane	A	A	A
30th Avenue/North HP Driveway/METRO Park-and-Ride ⁽¹⁾	A/A	A/A	A/A
30th Avenue/Central HP Driveway ⁽¹⁾	A/A	A/A	A/A
30th Avenue/South HP Driveway ⁽¹⁾	A/A	A/A	A/A
E 86th Street/Service Road ⁽¹⁾	A/A	A/A	A/A

(1) Side-street stop controlled intersection. Overall intersection LOS followed by the worst approach.



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd

Key Operational Issues

Although all the intersections currently operate at acceptable overall levels of service during the peak hours, the following operational issues were observed during field observations as well as in the simulation model:

24th Avenue/American Boulevard

- During the weekday p.m. peak hour, the southern eastbound left-turn queues extend back approximately 400 feet, which is beyond the available left-turn storage of approximately 300 feet. As mentioned under the field observations, this movement has an unbalanced lane utilization.

24th Avenue/I-494 Interchange

- During the weekday a.m. and p.m. peak hour, the northern westbound left-turn lane queues extend 355 feet and 285 feet, respectively. As mentioned under the field observations, this movement has an unbalanced lane utilization.

34th Avenue/American Boulevard

- During the weekday p.m. peak hour, the southern eastbound left-turn queues extend back approximately 450 feet, which is beyond the available left-turn storage of approximately 180 feet. As mentioned under the field observations, this movement has an unbalanced lane utilization.

Lindau Lane/IKEA Way

- During the Saturday peak hour, northbound left-turn queues extend approximately 500 feet, blocking access to the northbound through and right-turn lanes on the south approach.

Trip Generation Analysis

Trip generation estimates were developed for existing, year 2025 and year 2040 based on the current and future development expected to occur in the South Loop District. The future development land use assumptions are consistent with the AUAR.

Existing Land Use

The existing intersection turning movement counts were reviewed to understand the routes, travel patterns, and trip rates that are currently being used to enter and exit the South Loop District. It is important to understand the existing routes to accurately distribute trips generated by future development in the South Loop District. Existing South Loop District trips were generated for the study area based on land use data provided by the City and the *Institute of Transportation Engineer (ITE) Trip Generation Manual, 9th Edition*. The existing land use size and type for each parcel was provided by the City of Bloomington and is illustrated in Figure 13.

Using the average ITE trip generation rate for all land uses to generate existing trips in the South Loop District resulted in traffic volumes that were higher or lower than the traffic volumes collected during the intersection turning movement counts. The MOA and Health Partners are exceptions; both developments generated traffic at a similar rate to ITE. To account for existing developments that are generating higher or lower than the average ITE rate, adjustment factors were developed for the weekday a.m., weekday p.m., and Saturday peak hours for the TAZs.

In general, the existing developments generated trips at a lower rate than the ITE average trip rate. There are a variety of reasons for why developments may be generating less than the average ITE trip rate for that specific land use. Some of these factors include:

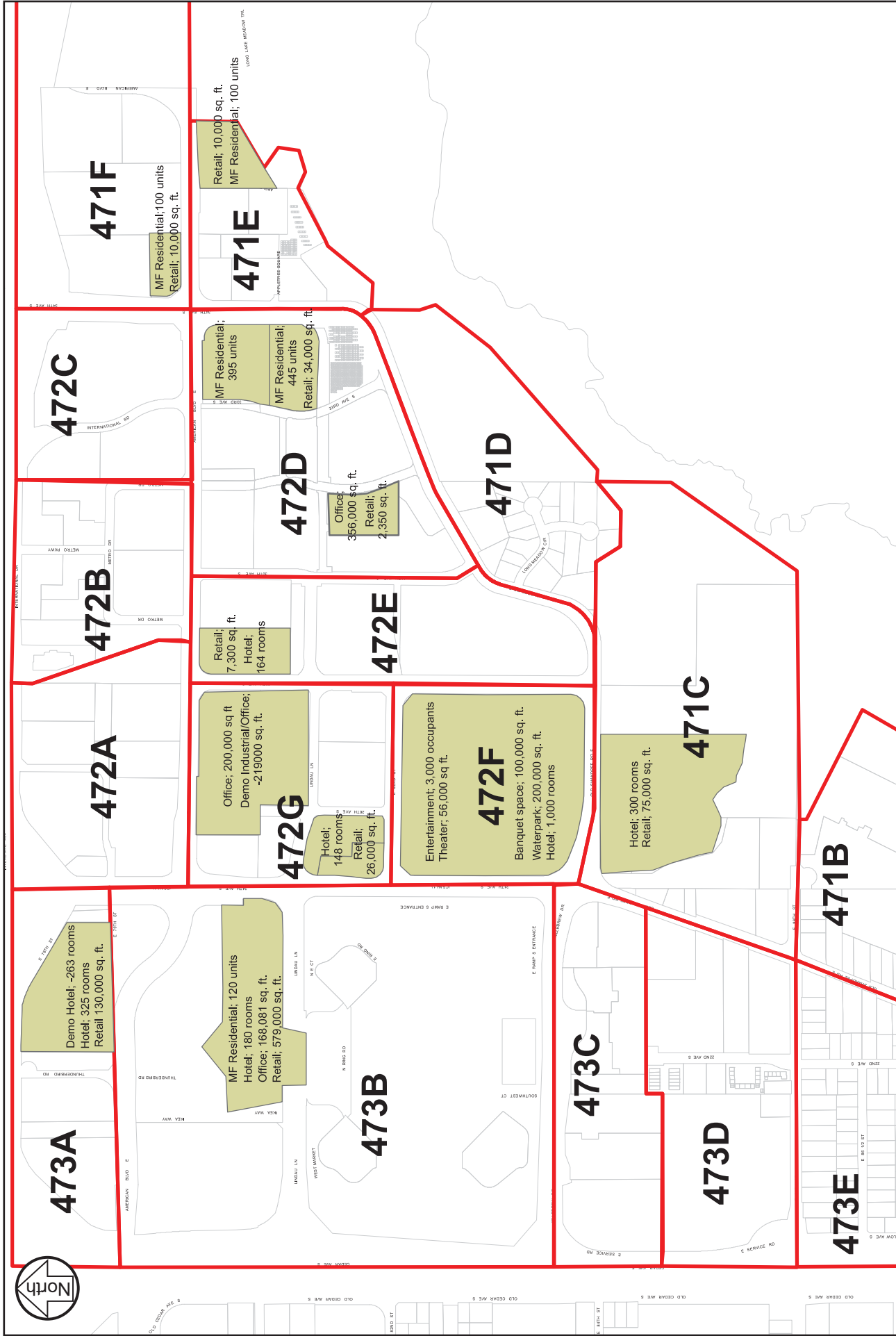
- Mode share (a portion of trips are arriving via transit, carpool, or walk/bike)
- Multi-use (trips that are utilizing one or more land uses within the area)
- The building space within the development is not fully utilized/leased
- The development is a less than average generator

In addition to validating the routing and trip generation assumptions, the trips generated by existing developments is important to understand for locations where proposed future development will replace an existing development. Under that scenario, the calibrated existing development trips will be used to estimate what trips should be removed from the existing volume set. A detailed comparison of existing trip generation estimates compared the ITE trip generation estimates is provided in the Appendix E.

Year 2025 Land Use

Trip generation estimates for the weekday a.m., weekday p.m. and Saturday peak hours were calculated for the anticipated development land use scenario under year 2025 conditions. The year 2025 planned land use is illustrated in Figure 14. To estimate the number of trips that will be generated by future developments the *ITE Trip Generation Manual, 9th Edition* was used. While ITE was used to develop trip generation estimates for a majority of the parcels, due to the uniqueness of the planned land uses for the developments listed below, additional resources/assumptions were utilized to develop trip generation estimates. The assumptions used to generate trips for these developments are provided in Appendix F.

- Hotel/Retail Development in 473A
- MOA Phase 1C and 2B in 473 B
- MOA Transit Station in 473B
- Waterpark Hotel/Banquet Space in 472F
- Entertainment/Theater in 472 F
- 28th Avenue Park-and-Ride in 472E



Based on existing observations, the following modal and multi-use reductions were applied:

- For all development located within one-quarter (1/4) mile of a LRT station, a five (5) percent modal reduction was applied to the trip generation estimates. This reduction is consistent with the observations completed at each of the LRT stations during the weekday a.m. and p.m. peak hours.
- To account for motorists that will utilize one or more land uses, a five (5) percent multi-use reduction was applied to locations where mixed-use developments are proposed. This multi-use reduction was developed based on a combination of existing observations and the methodology described in the *ITE Trip Generation Handbook*.
- A 15 percent reduction for all proposed hotel developments was applied to peak hour trips. Driveway count information collected by SRF and Spack Consulting at hotels in the South Loop District suggest that the hotels in this area consistently generate trips at a lower rate than the average ITE trip rate. This is likely due to the close proximity of the airport and the MOA since the hotels provide shuttle services to both of these locations. Local driveway count information is included in Appendix F.

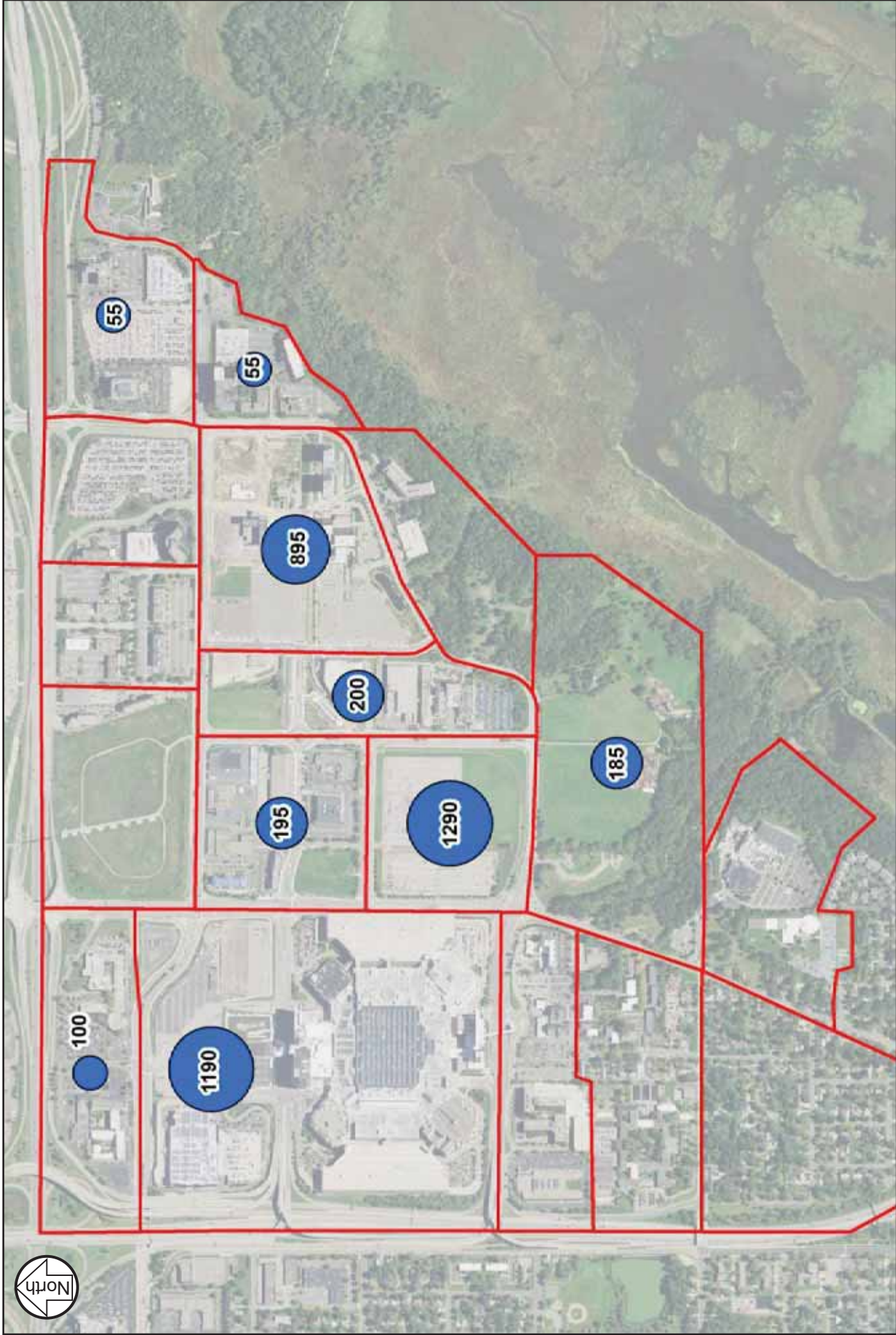
Year 2025 development traffic is summarized by TAZ in Figure 15, Figure 16, and Figure 17 for the weekday a.m., weekday p.m., and Saturday midday peak hours, respectively. The trip generation estimates account for any existing land uses that are proposed to be removed under year 2025 conditions and the development trips illustrated represent the net increase in trips to each TAZ. Trip generation estimates and assumptions used for each development and summarized by TAZ are provided in Appendix G (for pedestrian and vehicle trips).

Year 2040 Land Use

Trip generation estimates for the weekday a.m., weekday p.m., and Saturday peak hours were calculated for the expected development between year 2025 and year 2040 conditions. The year 2040 planned land use is illustrated in Figure 18. To estimate the number of trips that will be generated by future development the *ITE Trip Generation Manual, 9th Edition* was used. While ITE was used to develop trip generation estimates for a majority of the parcels, due to the uniqueness of the planned land uses for the developments listed below additional resources/assumptions were utilized to develop trip generation estimates. The assumptions used to generate trips for these developments are provided in Appendix F.

- MOA Phase 2C and Hotel/Retail Development in TAZ 473B
- 28th Avenue Park-and-Ride in 472E

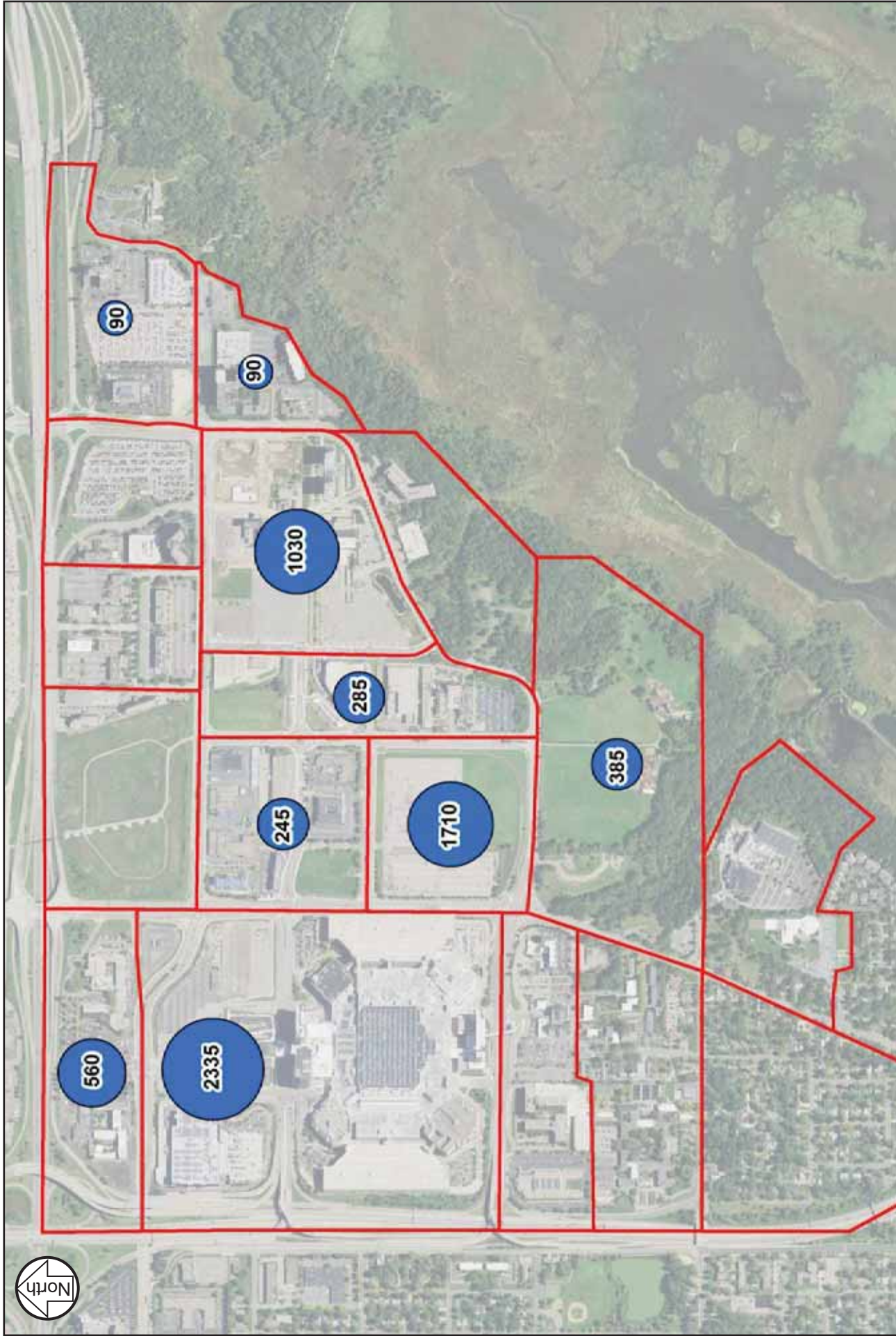
The modal and multi-use reduction assumptions applied under year 2025 conditions were also applied under year 2040 conditions. Year 2040 development traffic is summarized by TAZ in Figure 19, Figure 20, and Figure 21 for the weekday a.m., weekday p.m., and Saturday peak hours respectively. The trip generation estimates account for any existing land uses that are proposed to be removed under year 2040 conditions and the development trips illustrated represent the net increase in trips to each TAZ.



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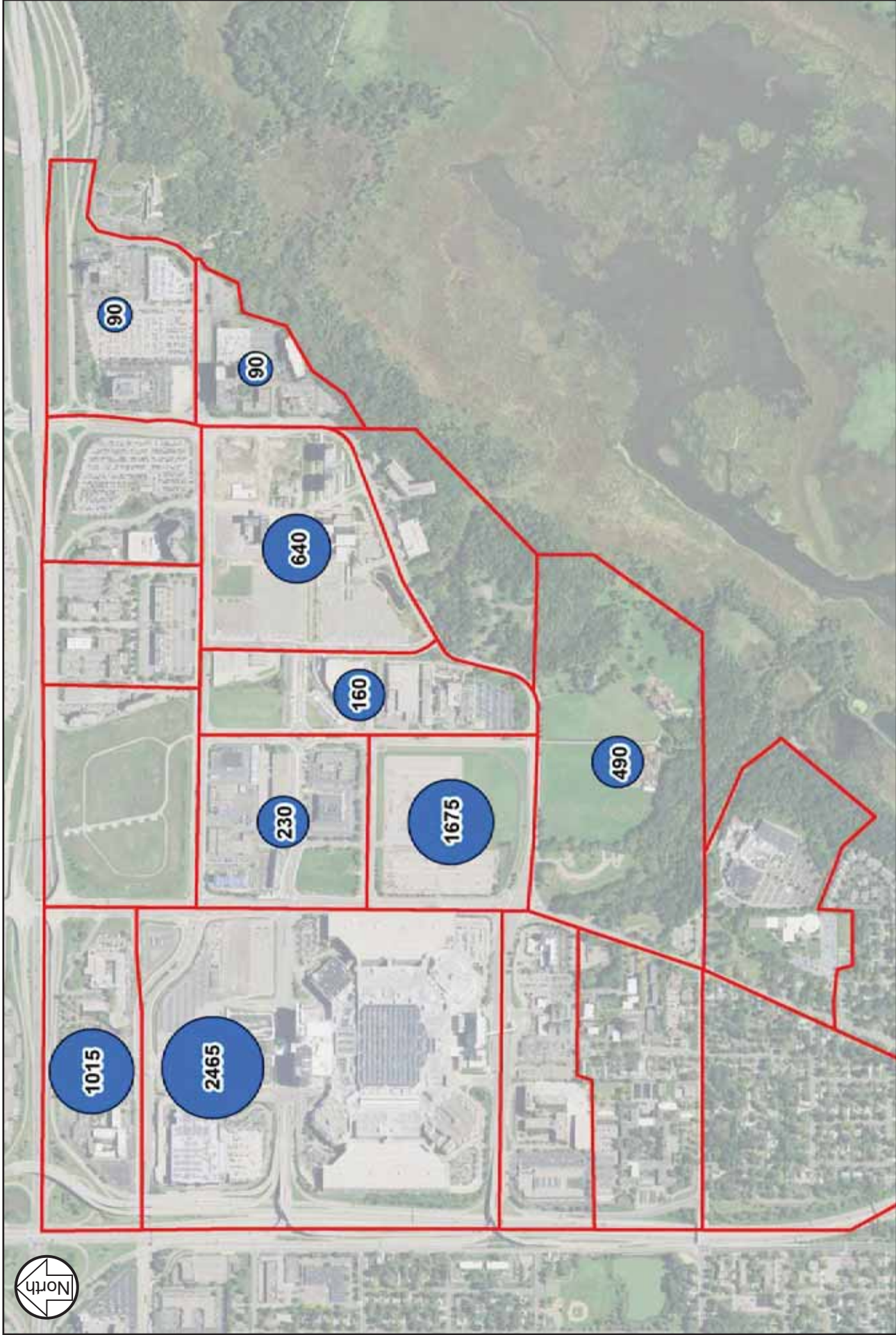
Figure 15

Year 2025 Development Trips - Weekday AM Peak Hour
 South Loop Roadway Infrastructure Improvement Study
 City of Bloomington



Year 2025 Development Trips - Weekday PM Peak Hour
South Loop Roadway Infrastructure Improvement Study
City of Bloomington

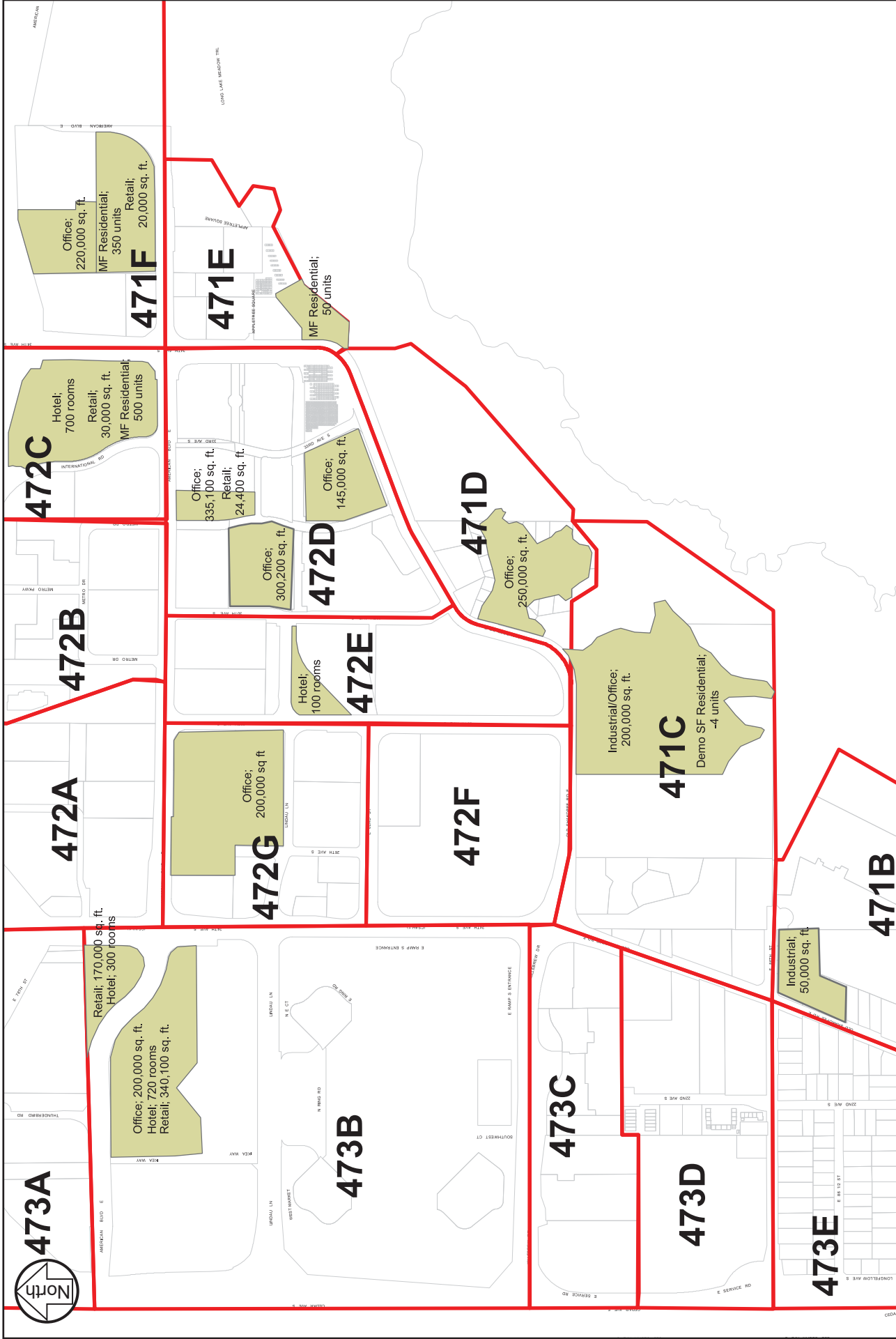
Figure 16

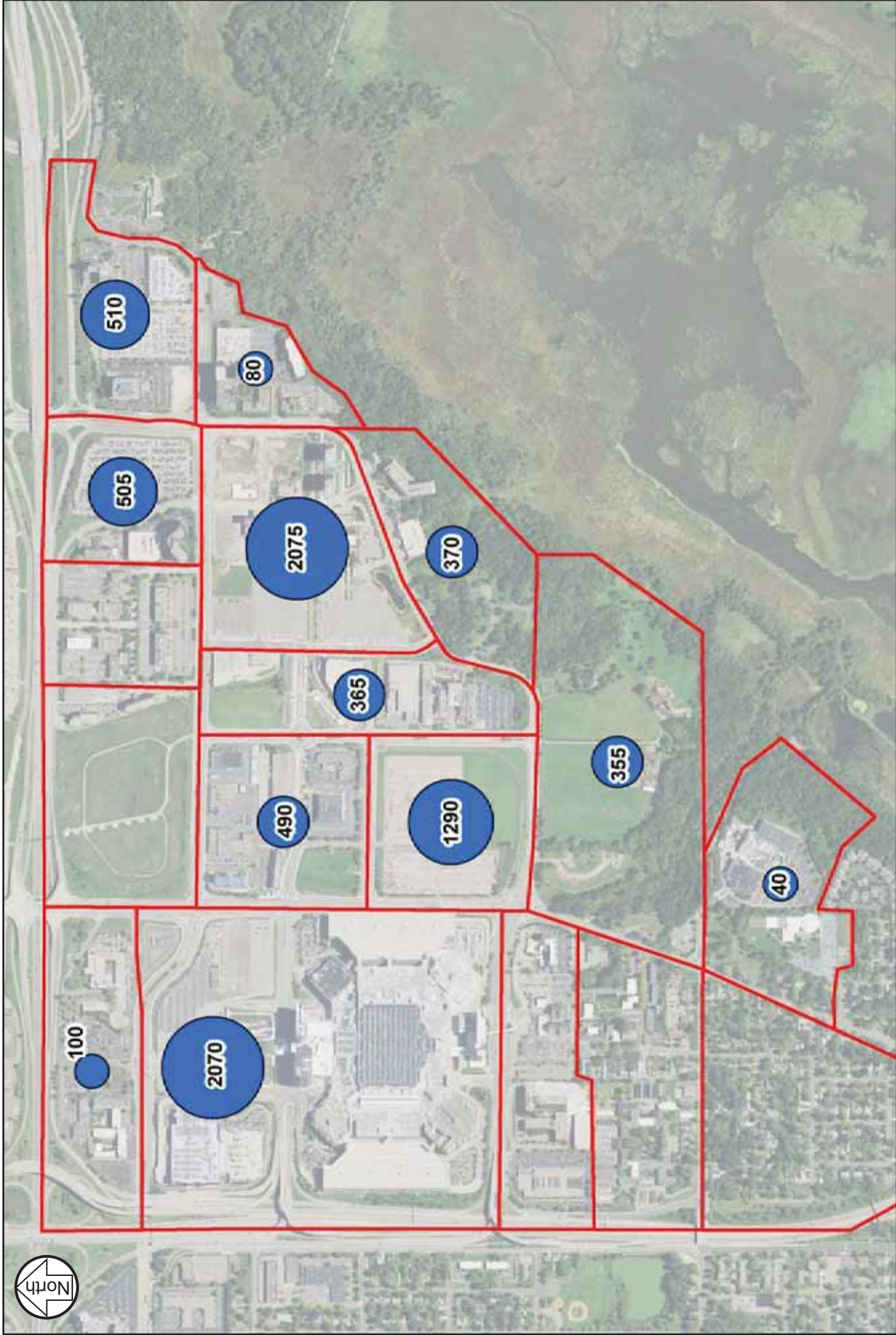


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Figure 17

Year 2025 Development Trips - Saturday Peak Hour
 South Loop Roadway Infrastructure Improvement Study
 City of Bloomington

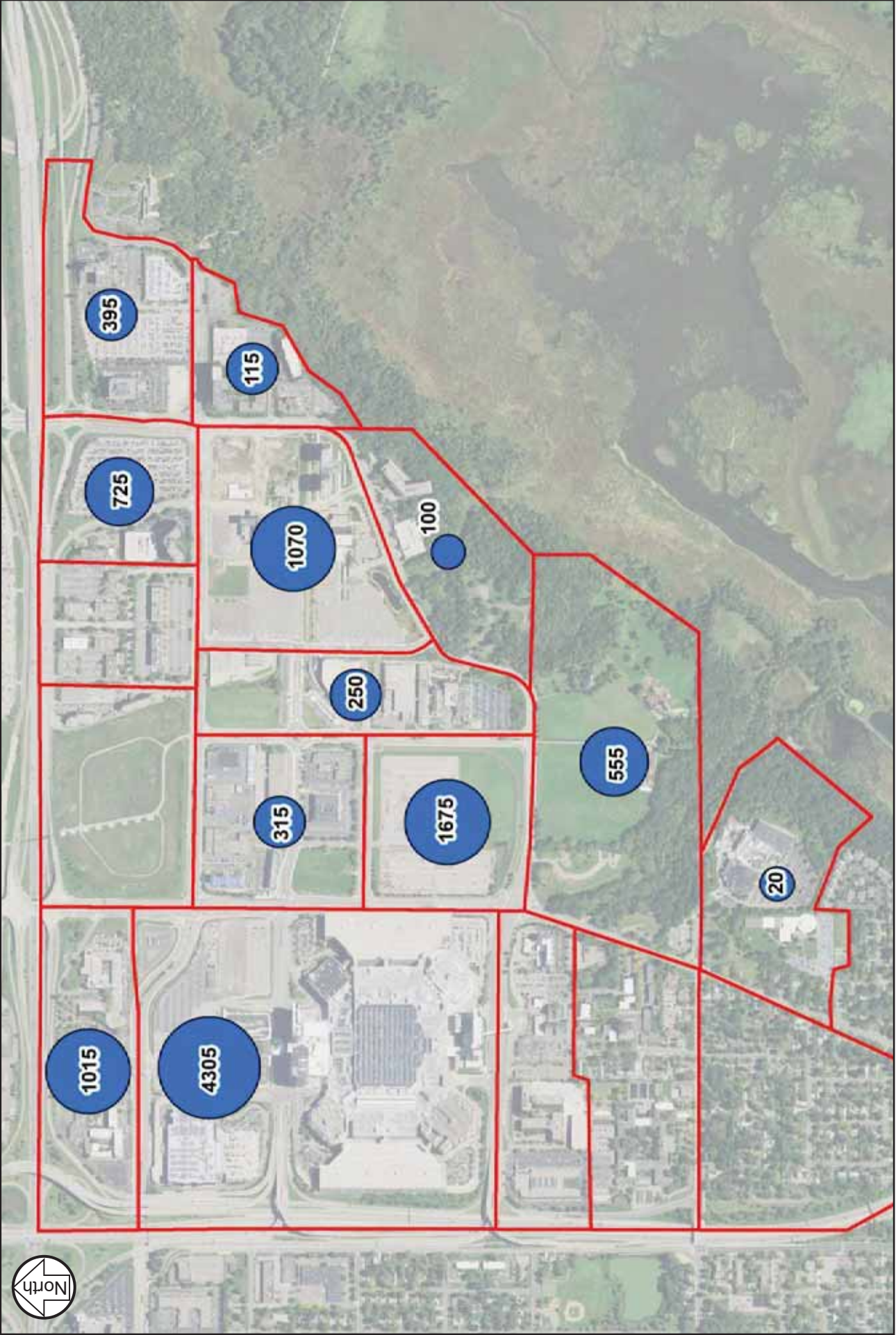




H:\Projects\090000\1901\TSDocumentation\Figures\Fig19_Year 2040 Development Trips (Existing to Year 2040) - Weekday AM Peak Hour.cdr

Figure 19





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Year 2025 and 2040 development trip estimates were assumed to generate trips based on the average ITE trip rate and modal/multi-use assumptions developed for year 2025. However, it is important to note that there are a number of unknowns under year 2040 conditions that would impact traffic forecast estimates for all development traffic in the South Loop District (i.e. existing, year 2025 and year 2040 development generated trips). A few of these unknowns are listed below. Based on these uncertainties, the year 2040 forecasts year 2040 infrastructure improvement needs should be re-evaluated every five (5) years as the AUAR is being updated:

- Autonomous/connected vehicle impacts to traffic volumes/patterns
 - *Traffic Forecasting and Autonomous Vehicles (2016 European Transport Conference)* found the following:
 - Difficult to estimate how autonomous vehicles (AV) will be used and how AV/CV will affect mobility as a whole
 - AV/CV technology will be available in four to ten (10) years
 - Large dispersion in expert’s opinion on how AV will affect forecasts
 - When AV/CV will be widespread? (when will AV/CV make up 10 percent, 20 percent of the car fleet?)
 - Percent of AV/CV owned versus a shared vehicle model
 - Impacts to transit ridership
 - Behavioral change (rider can legally undertake other activities while travelling)
- At this time it is unknown what changes there will be to current and/or proposed transit routes as well as frequency in the South Loop District. Metro Transit is considering LRT or bus rapid transit (BRT) to be constructed on the West 7th Street Corridor (i.e. Riverview Corridor) that would terminate at the MOA. A future BRT project (D-Line) is currently underway, which would provide BRT service along American Boulevard within the study area and terminate at the MOA. There is also the potential for the Blue Line LRT to increase frequency during peak and non-peak times.
 - Additional or increased frequency transit routes including LRT, BRT, local, and/or express may influence the mode choice for users to/from the South Loop District.
- Development trips were estimated using the average ITE rate for both year 2025 and 2040 development to provide a conservative estimate. However, developments may not generate at the average rate.
- To provide a conservative estimate, the process used to estimate development trips assumed that all developments would have the same peak hour; however, the development peaks may not all be within the same hour and may vary between a two to three peak hour period.
- With the increase of congestion to the South Loop District and surrounding regional transportation system there is potential for peak period spreading to occur.
- Behavioral changes with future driving age populations may shift traffic patterns, such as mode choice and flexibility in work hours.
- A higher percentage of employees electing to work remotely may change traffic patterns.

Year 2040 trip generation estimates and assumptions used for each development and summarized by TAZ are provided in Appendix G.

Directional Distribution

The existing weekday a.m., weekday p.m. and Saturday peak hour intersection turning movement counts as well as the Met Council Regional Travel Demand Model were reviewed to develop a directional distribution. In addition, the general travel patterns/routing were developed for each TAZ based on a combination of existing turning movement count data, route time/distance information, and engineering judgment. The access, directional distribution, and routing percentages are provided in the Appendix H. These distribution patterns are fairly consistent with those assumed in previous studies within the area.

Access

The City provided access assumptions for all planned land uses, including the access location and if the access is restricted or full. The access assumptions graphic provided in the Appendix H.

Based on the access assumptions and planned land use assumptions the following should be noted:

- The 24th Avenue/79th Street intersection is located less than 500 feet from the I-494/24th Avenue interchange eastbound right-turn and westbound left-turn merge point. This short distance makes it difficult for vehicles that are destined to make a southbound right-turn at 79th Street to weave to the appropriate lane. This intersection should be monitored under future conditions and access at this location should not be guaranteed when a development proposal is submitted for the southwest quadrant of the interchange.
- Under year 2025 conditions a hotel/retail development is planned in the southeast quadrant of the 24th Avenue/Killebrew Drive/East Old Shakopee Road intersection (TAZ 471C). Since the Kelly Farms property is not anticipated to redevelop until after year 2025 conditions, a full access to the development is assumed on the south side of East Old Shakopee Road approximately 300 feet east of 24th Avenue (where an existing curb-cut is located). This access is located in the 24th Avenue/Killebrew Drive/East Old Shakopee Road intersection northbound right-turn/eastbound through movement merge point and has potential to create safety/operational issues. However, this is the only feasible access location for the planned development in year 2025 until the Kelly Farms property to the east redevelops. If/when a development proposal is submitted for this location, the access should be reconsidered, and a detailed traffic study should be completed to assess the access safety and operational impacts.
- While there is no development proposal currently submitted for the adjoining land area bounded by 24th Avenue to the west, 82nd Street to the north, 28th Avenue to the east, and East Old Shakopee Road to the south (TAZ 472F), the proposed location of the parking lots/supply within the TAZ will impact how vehicles enter/exit the development. Based on information provided by the City, two of the planned access locations to the TAZ cross LRT tracks; one located on East Old Shakopee Road (right-in/right-out) and a second access on 28th Avenue (full access). These access locations should be critically reviewed when development plans are known. Further, discussion with Metro Transit should occur to determine the feasibility and requirements for the assumed access locations.
 - In addition, there is a right-in/right-out access proposed on 24th Avenue directly across from the MOA Transit Station access. The right-in movement should be critically reviewed for feasibility and potential impacts to lane utilization and queuing on Killebrew Drive, as well as proximity of LRT tracks.

Year 2025 Conditions No Improvements

Year 2025 conditions were evaluated to identify if/where improvements to the existing roadway network will be needed to accommodate future traffic forecasts.

Non-Motorized Traffic

Pedestrian volumes were generated for the proposed land uses under year 2025 conditions. The pedestrian volume assumptions are based on the modal reduction assumptions applied to the trip generation estimates. For instance, all developments located within one-quarter mile of a LRT station, five percent of development trips were assumed to be made to/from the station via walk/biking. Further trips generated to/from hotels, the proposed theater in 472F and the MOA were also quantified based on the trip generation mode choice assumptions. Pedestrian trip generation estimates for each TAZ are included in Appendix G.

Based on current and expected pedestrian volumes, standalone pedestrian crossing improvements have been identified at three locations. It should be noted that additional pedestrian/bicyclist infrastructure improvements were identified, but have been incorporated into the intersection and corridor improvements discussed in the following section. The three standalone pedestrian/bicyclist infrastructure improvements include the following and are illustrated in Figure 22:

- Crossing enhancements at the East Old Shakopee Road/33rd Avenue intersection.
 - Currently more than 200 pedestrians cross East Old Shakopee Road at this location daily. The intersection does not have marked crosswalks. Enhanced crossing treatments were considered to improve the safety of pedestrians crossing at this location.
 - It is recommended that a marked pedestrian midblock crossing be constructed for pedestrians crossing East Old Shakopee Road midblock between 33rd Avenue and 31st Avenue. The proposed pedestrian crossing would provide a two-stage crossing via a pedestrian refuge island in the median. In addition, pedestrian activated beacons are recommended to increase the visibility of the crossing to drivers. A High Intensity Activated crosswalk (HAWK) should also be considered at this location. The concept and preliminary cost estimate are provided in the next section (Priority #11)
- Bike lanes on 24th Avenue between I-494 and Killebrew Drive/East Old Shakopee Road
 - To improve the bicycle network, the feasibility of constructing bike lanes on 24th Avenue should be considered. Beyond year 2025, a bicycle connection to 86th Street should also be considered to connect the bicycle facilities.
- Grade separated crossing on 24th Avenue connecting TAZ 472F and the MOA Phase 1.
 - Based on the planned land uses for TAZ 472F (i.e. hotel, water park, banquet space, theater), the development trips are expected to generate significant pedestrian trips to/from the MOA. This would also connect the TAZ 472F development trips to the MOA Transit Station.
 - The new MOA Transit design has taken into consideration the potential for a pedestrian skyway connection. This connection would improve pedestrian safety by providing a grade separated crossing. The development plans, building layout, and orientation for TAZ 472F are unknown at this time, therefore no concept or cost estimate are provided.

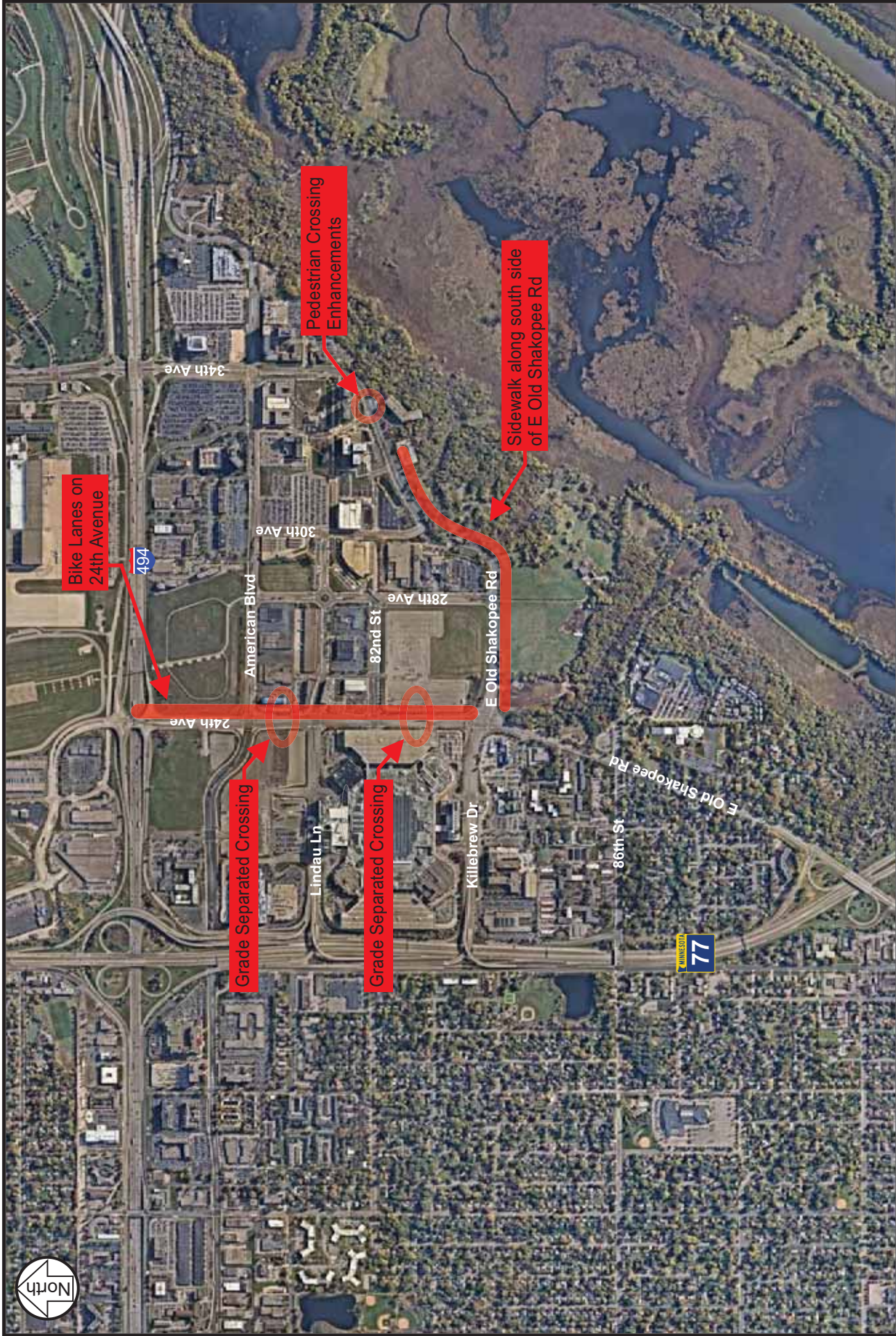


Figure 22

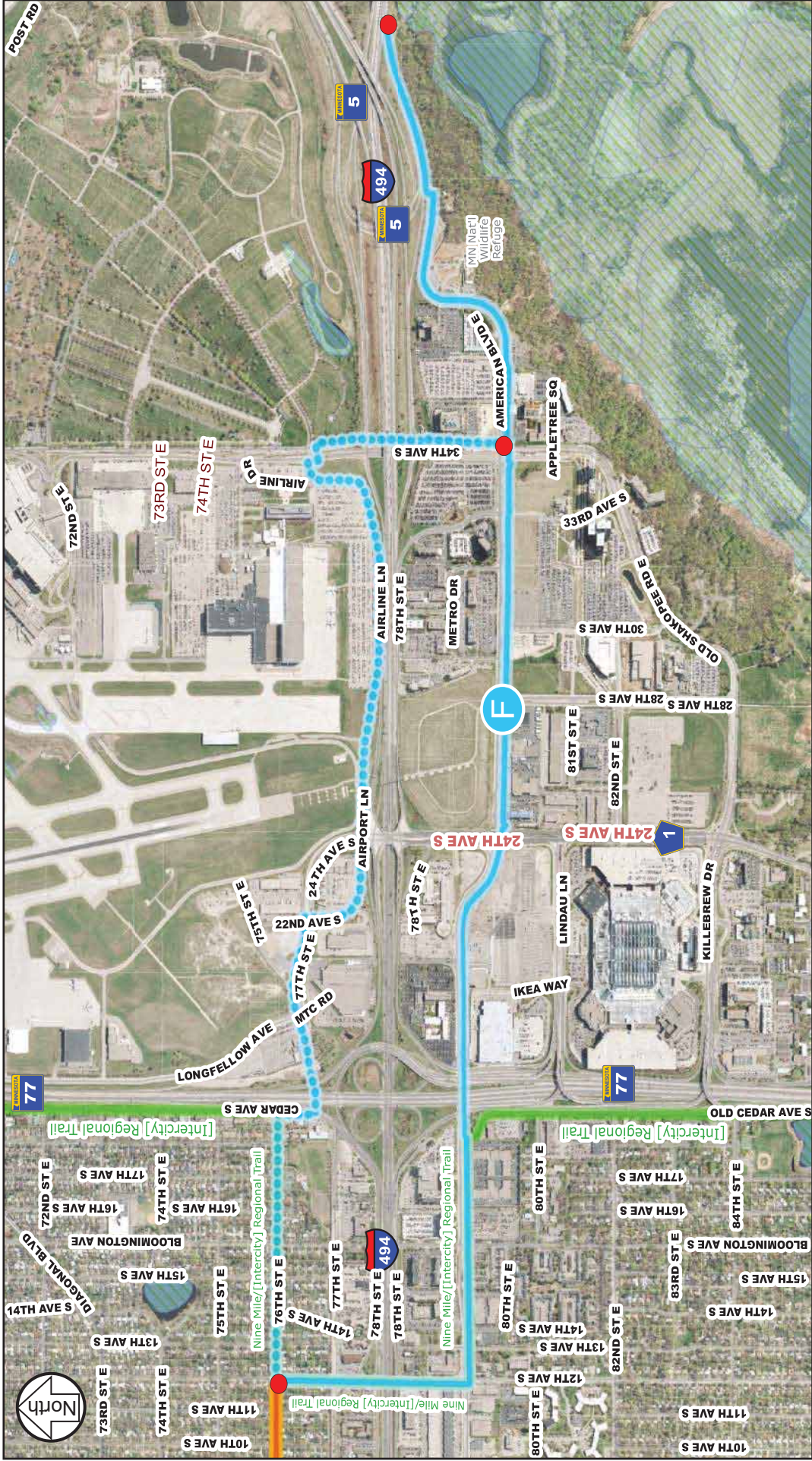
Year 2025 Pedestrian/Bicyclists Infrastructure Improvements
 South Loop Roadway Infrastructure Improvement Study
 City of Bloomington

H:\Projects\09000\091901\SDocumentation\Figures\Fig4_Pedestrian/Bicyclist Infrastructure Gaps.cdr

- Grade separated crossing on 24th Avenue connecting the east side of 24th Avenue and MOA Phase 2.
 - Currently pedestrian crossings are not permitted on the north approach of the 24th Avenue/Lindau Lane intersection. This is due to a combination of the low pedestrian volume demand at this approach (current) and the high volume of eastbound left-turning vehicles. Providing a pedestrian phase on the south approach does not have as significant of an impact to the signal timing operations for the intersection since the eastbound left-turn phase and pedestrian phase on the south approach can time concurrently.
 - With the construction of MOA Phase 2 the pedestrian demand on the north approach is expected to increase. A grade separated pedestrian crossing (e.g. pedestrian bridge) would provide a safe crossing location for pedestrians traveling between the hotels on the east side of 24th Avenue and the MOA. It should be noted that since the development plans/building layout for MOA Phase 2 had not been approved at the time of the study, no concept or cost estimate are provided.
- If/when redevelopment occurs south and east of East Old Shakopee Road a bituminous trail on the south side of East Old Shakopee Road should be considered to improve pedestrian/bicyclist connections in the District.

It should also be noted that the Bloomington ATP Plan has identified a number of priority improvements related to the pedestrian/bicycle facilities in the South Loop District, which are summarized below:

- Nine Mile Creek Regional Trail: Three Rivers Park District (TRPD) Regional Trail
 - This trail provides an east-west connection between the Hyland and Nokomis-Minnesota River trails and provides opportunities for connections to Edina, Richfield, and Minneapolis.
 - The Bloomington segment of the regional trail would be approximately 3.25 miles long and connect to Minnesota Valley National Wildlife Refuge Visitor Center. This segment would utilize existing sidewalk and trail facilities for much of its length (see Figure 23 for proposed alignment).
 - Based on information provided in the Nine Mile Creek Regional Trail Master Plan, the trail plans to utilize the Intercity Regional Trail from 76th Street south along 12th Avenue over I-494 via a new pedestrian/bicycle bridge to American Boulevard and then east to Old Cedar Avenue. At Old Cedar Avenue, the Intercity Regional Trail Corridor extends south to the 86th Street Bikeway and Nine Mile Creek Regional Trail continues east under TH 77 along American Boulevard to the existing trail crossing of the Minnesota River at I-494 adjacent to the Minnesota Valley National Wildlife Refuge Visitor Center.
 - Full realization of the Bloomington segment is contingent on the ability to secure additional right-of-way, improve the TH 77 underpass crossing to better accommodate the trail, and improve the existing sidewalk/trail for almost the entire length of the segment. Given the complexities of these factors, an alternative route through the Metropolitan Airport Commission (MAC) property, has also been identified the north side of I-494 (see Figure 23).



Nine Mile Creek Regional Trail | Bloomington



Map prepared by Three Rivers Park District
 Planning Department - AR September 11, 2013
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 completeness, accuracy, and appropriateness for
 the limitations of the Data, including the fact that the
 Data is dynamic and is in a constant state of maintenance,
 correction, and update.



Nine Mile Creek Regional Trail Proposed Alignment
 South Loop Roadway Infrastructure Improvement Study
 City of Bloomington

Figure 23

- Community Corridor Segments
 - America Boulevard Corridor (between Normandale Boulevard and 34th Avenue) is an important connection between the Nokomis-Minnesota River trail, Nine Mile Creek and Hyland trails. The continuation of pedestrian-way enhancements as part of street improvements are recommended, as is filling any gaps that currently exist.
 - East Old Shakopee Road Corridor (between Bloomington Ferry Road to the I-494/24th Avenue Interchange) is among the most complex, trafficked, and costly of the corridors to improve. For that reason, it is a lower priority since improvement costs are likely to be high while public value is relatively modest compared to the other priority corridors identified in the ATP. In the near term, priority focus should be on completing missing gaps and continuing to provide enhanced pedestrian connections to retail and business nodes as they develop. Applying the Complete Streets Program guidelines as segments of this corridor are upgraded over time is the recommended approach to enhancing this corridor for pedestrians/bicyclists.

Transit

The MOA Transit Station renovations are expected to be completed by year 2025. The renovations plan to improve efficiency of bus operations, simplify access for mass transit vehicles, provide clear and convenient pedestrian access, improve the aesthetics, and increase the exterior visibility and presence of the station. Currently all buses, delivery vehicles, and MOA staff enter/exit via the 24th Avenue/Transit Station (MOA Gate 6) access. Under the proposed layout, buses would have a separate entrance on 24th Avenue north of Gate 6 (improving bus operations) and delivery vehicles/MOA staff would enter via a new access on Killebrew Drive just west of 24th Avenue. Buses, delivery vehicles, and MOA staff would exit via the Gate 6 access, but buses and delivery vehicles/MOA staff vehicles would remain separated.

As previously mentioned, Metro Transit is considering implementing either a BRT or LRT transit route on West 7th Street referred to as the Riverview Corridor. This transit route is expected to terminate at the MOA. However, the Riverview Corridor is not expected to be constructed by year 2025 and is not currently funded. If funded, the project estimates that it will open in 10 to 12 years. The American Boulevard BRT corridor (D-Line) is currently in the project planning stage and expected to be constructed in years 2021/2022 (tentatively). The D-Line would utilize American Boulevard and terminate at the MOA. No other major transit improvements were identified in the programmed capital transit improvements within the study area. Therefore, no changes to transit frequency or routing were assumed under year 2025 conditions.

Traffic Forecasts

Year 2025 traffic forecasts account for background growth, travel pattern shifts due to the construction of the 77th Street connection, future traffic expected to be generated by expansions to MSP Airport, and year 2025 development traffic within the South Loop District.

Background Growth

General background growth expected in the South Loop District was evaluated using the Met Council Regional Travel Demand Model. Based on a review of current travel patterns through the study area, few trips travel through the District that are not destined to/from one of the developments. Non-South Loop District generated trips are primarily traffic generated by developments to the west of TH 77 near American Boulevard that utilize American Boulevard to access I-494 at either the 24th Avenue or 34th Avenue interchange. To account for growth generated by these routes, an annual growth rate of one-half percent was applied to the through trips on American Boulevard.

77th Street Connection

The 77th Street connection across TH 77 north of I-494 was assumed to be completed by year 2025 conditions. Based on the current design timeline and funding status of the project, it is reasonable to assume that the connection will be open by the year 2025. The Met Council Regional Travel Demand Model was reviewed to understand how this connection will impact existing and future traffic volumes in the study area. The connection provides an alternative route for accessing destinations/roadway connections to the west of TH 77 and a small percent of existing and future development traffic is expected to access the South Loop District via this connection.

This connection is expected to have the greatest impact during the a.m. peak hour, when it will act as a parallel reliever for I-494 westbound traffic, which is frequently congested during the a.m. peak period. The Met Council Regional Travel Demand Model was reviewed to estimate the number of new trips to the system (i.e. trips now exiting/entering at the I-494/24th Avenue interchange) and trips that are changing from their current route (i.e. trips entering/exiting at the I-494/24th Avenue interchange and using American Boulevard).

Based on current traffic volumes, approximately 40 weekday a.m., 30 weekday p.m., and 10 Saturday peak hour trips are expected to now utilize the I-494/24th Avenue interchange to access the 77th Street connection instead of continuing on I-494. Additionally, at the I-494/24th Avenue interchange, approximately 210 weekday a.m., 135 weekday p.m., and 50 Saturday peak hour trips are expected to divert from traveling to/from the south via a westbound left- or northbound right-turn to utilizing the 77th Street connection via a westbound right- or southbound left-turn. This connection was also accounted for when routing future development traffic to/from the study area.

Minneapolis-Saint Paul Airport Projections

The traffic forecasts developed for the Metropolitan Airports Commission (MAC) in the *MSP Area Roadway Improvement Project Memo* dated 2011, which was completed as part of the *Minneapolis-St. Paul International Airport 2020 Improvements EA/EAW* study, were used to estimate the future trips expected to be generated by expansion to the MSP Airport. The Airport Relocate Scenario was recommended from the EAW. Under this scenario, SkyTeam Airlines (Delta Airlines and alliance partners) remain at Terminal 1 and all other carriers are relocated to Terminal 2.

The airport expansion is expected to increase traffic to/from the north of the I-494/34th Avenue interchange. The increases in traffic under year 2025 turning movement counts developed for the 2011 study were assumed for this analysis. The traffic volume increases applied to the year 2025 southbound left, southbound right, eastbound left and westbound right turn movements are summarized in Table 6.

Table 6. Year 2025 MSP Airport Traffic Volume Increases at the I-494/34th Avenue Interchange

Movement	New Trips		
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
Southbound Left	+215	+575	+310
Southbound Right	+395	+1,085	+805
Eastbound Left	+350	+920	+620
Westbound Right	+500	+305	+280
Total	+1,460	+2,885	+2,015

The resultant year 2025 traffic forecasts, which include trips generated by development growth to the District, general background growth, travel pattern shifts due to the 77th Street connection, and MSP airport traffic are shown in Figure 24 and Figure 25.

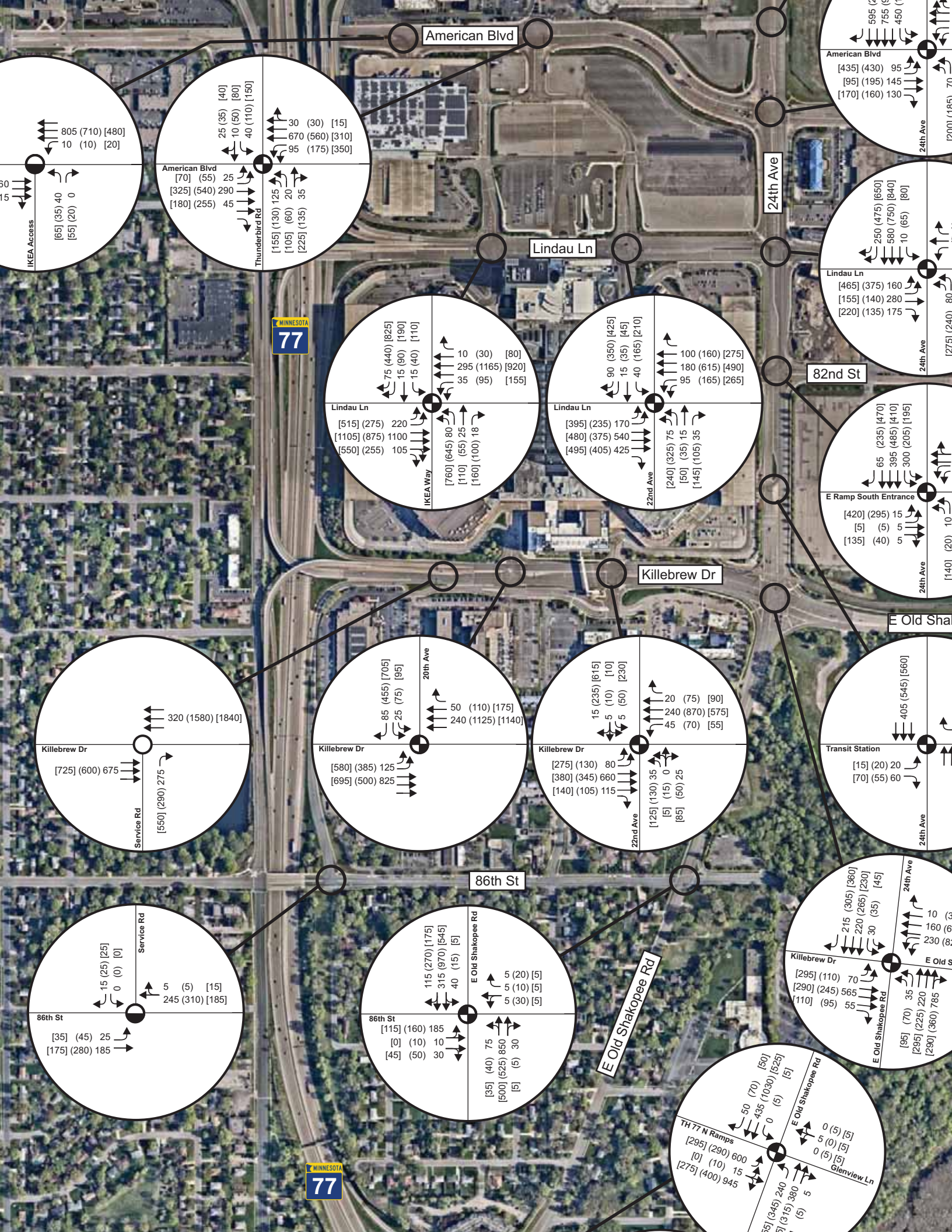
Intersection Operations Analysis

To determine if the existing roadway network can accommodate year 2025 traffic forecasts, a detailed traffic capacity analysis was completed. Study intersections were once again analyzed using Vissim. Results of the year 2025 operations analysis shown in Table 7 indicate that a number of intersection are expected to have traffic operational (delay and/or queuing) issues under year 2025 conditions without improvements. The LOS results for the weekday a.m., weekday p.m., and Saturday peak hours are illustrated in Figure 26, Figure 27, and Figure 28, respectively. Detailed traffic operations results are provided in Appendix I.

Year 2025 Recommended Improvement Concepts

Recommended improvement concepts were developed at the study intersections to address the traffic operational issues identified under year 2025 conditions. It is important to note that if development expected between year 2025 and year 2040 occurs earlier than anticipated that additional improvements may be needed prior to year 2025 conditions. However, based on the year 2025 land use assumptions, the improvements identified below are the highest priority and most likely to be needed by year 2025 conditions.

A summary table, 11x17 illustrations of concepts, and preliminary cost estimate are included in Appendix J. It should be noted that the cost estimates include construction costs, an assumed engineering/administration cost of 26 percent, a 20 percent contingency (except Priority 2: I-494/34th Avenue improvement which has a 30 percent contingency due to uncertainty with this project specifically), and right-of-way costs. The costs are in year 2017 dollars. Year 2025 conditions with recommended improvements are shown in Figure 29 and Figure 30.



American Blvd

American Blvd

[435] (430) 95
[95] (195) 145
[170] (160) 130

24th Ave
[200] (185) 70

American Blvd

[70] (55) 25
[325] (540) 290
[180] (255) 45

Thunderbird Rd
[155] (130) 125
[105] (60) 20
[225] (135) 35

25 (35) [40]
10 (60) [80]
40 (110) [150]
30 (30) [15]
670 (560) [310]
95 (175) [350]

24th Ave

Lindau Ln

[465] (375) 160
[155] (140) 280
[220] (135) 175

24th Ave
[275] (240) 80

Lindau Ln

[395] (235) 170
[480] (375) 540
[495] (405) 425

[240] (325) 75
[50] (35) 15
[145] (105) 35

82nd St

65 (235) [470]
395 (485) [410]
300 (205) [195]

24th Ave
[140] (20) 10

Lindau Ln

[515] (275) 220
[1105] (875) 1100
[550] (255) 105

[75] (440) [825]
15 (90) [190]
15 (40) [110]

[90] (350) [425]
15 (35) [45]
40 (165) [210]

100 (160) [275]
180 (615) [490]
95 (165) [265]

MINNESOTA
77

Lindau Ln

[760] (645) 80
[110] (55) 25
[160] (100) 18

[240] (325) 75
[50] (35) 15
[145] (105) 35

E Ramp South Entrance

[420] (295) 15
[5] (5) 5
[135] (40) 5

24th Ave
[140] (20) 10

Killebrew Dr

E Old Shakopee Rd

405 (545) [560]

24th Ave
[15] (20) 20
[70] (55) 60

Killebrew Dr

[725] (600) 675

Service Rd
[550] (290) 275

320 (1580) [1840]

Killebrew Dr

[580] (385) 125
[695] (500) 825

20th Ave
50 (110) [175]
240 (1125) [1140]

Killebrew Dr

[275] (130) 80
[380] (345) 660
[140] (105) 115

22nd Ave
15 (235) [615]
5 (10) [10]
5 (50) [230]

20 (75) [90]
240 (870) [575]
45 (70) [55]

[125] (130) 35
[5] (15) 0
[85] (50) 25

86th St

Killebrew Dr

[295] (110) 70
[290] (245) 565
[110] (95) 55

E Old Shakopee Rd

[95] (70) 35
[290] (360) 785

86th St

[35] (45) 25
[175] (280) 185

Service Rd
5 (5) [15]
245 (310) [185]

15 (25) [25]
0 (0) [0]

86th St

[115] (160) 185
[0] (10) 10
[45] (50) 30

E Old Shakopee Rd
115 (270) [175]
315 (970) [645]
40 (15) [5]

5 (20) [5]
5 (10) [5]
5 (30) [5]

E Old Shakopee Rd

TH 77 N Ramps
[295] (290) 600
[0] (10) 15
[275] (400) 945

E Old Shakopee Rd

0 (5) [5]
5 (0) [5]
0 (5) [5]

Glenview Ln

[35] (345) 240
[0] (315) 380
[5] (5) 5

MINNESOTA
77

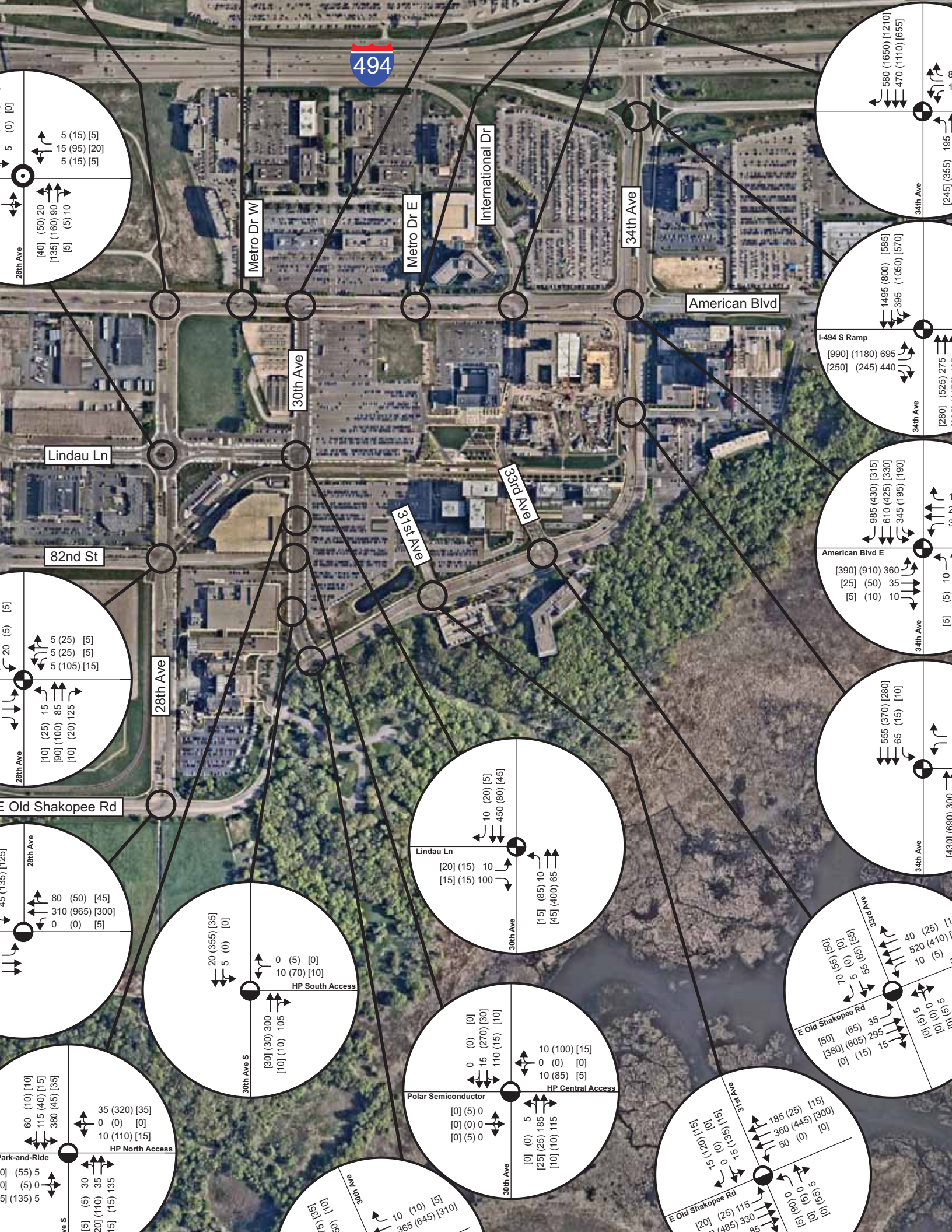


Table 7. Year 2025 Conditions Peak Hour Capacity Analysis (No Improvements)

Intersection	AM Peak Hour	PM Peak Hour	Sat Peak Hour
24th Avenue/I-494 Interchange	B	D	E
24th Avenue/79th Avenue	A	B	C
24th Avenue/American Boulevard	C	D	E
24th Avenue/Lindau Lane	B	E	D
24th Avenue/82nd St	B	B	C
24th Avenue/Transit Station	A	A	A
24th Avenue/Killebrew Drive /East Old Shakopee Road	C	E	C
34th Avenue/I-494 Interchange	D	D	C
34th Avenue/American Boulevard	C	D	C
34th Avenue/Appletree Square	A	A	A
American Boulevard/IKEA Access ⁽¹⁾	A/C	A/C	A/B
American Boulevard/Thunderbird Road	B	C	D
American Boulevard/28th Avenue/Airport Access	A	A	A
American Boulevard/Metro Drive West ⁽¹⁾	A/B	A/C	A/A
American Boulevard/30th Avenue ⁽¹⁾	A/C	C/E	A/A
American Boulevard/Metro Drive East ⁽¹⁾	A/C	A/C	A/A
American Boulevard/33rd Avenue/International Drive ⁽¹⁾	A/D	F/F	A/B
Lindau Lane/IKEA Way	B	F	F
Lindau Lane/22nd Avenue	B	F	F
SB TH 77/NB TH 77 Merge at Killebrew Drive ⁽¹⁾	A/A	A/A	A/A
Killebrew Drive/20th Avenue	A	B	C
Killebrew Drive/22nd Avenue	A	B	C
East Old Shakopee Road/TH 77 S Ramps ⁽¹⁾	A/A	A/A	A/A
East Old Shakopee Road/TH 77 N Ramps	B	B	B
East Old Shakopee Road/86th Street	A	B	A
East Old Shakopee Road/28th Avenue ⁽¹⁾	A/C	F/F	A/C
East Old Shakopee Road/30th Avenue ⁽¹⁾	A/B	A/C	A/A
East Old Shakopee Road/31st Avenue ⁽¹⁾	A/B	A/C	A/A
East Old Shakopee Road/33rd Avenue/Ceridian Access ⁽¹⁾	A/A	A/B	A/A
28th Avenue/Lindau Lane	A	A	A
28th Avenue/82nd Street	B	C	B
30th Avenue/Lindau Lane	B	A	A
30th Avenue/North HP Driveway/METRO Park-and-Ride ⁽¹⁾	A/D	A/B	A/A
30th Avenue/Central HP Driveway ⁽¹⁾	A/B	A/A	A/A
30th Avenue/South HP Driveway ⁽¹⁾	A/B	A/A	A/A
E 86th Street/Service Road ⁽¹⁾	A/A	A/A	A/A

(1) Side-street stop controlled intersection. Overall intersection LOS followed by the worst approach.



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

Lindau Ln

24th Ave

30th Ave

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

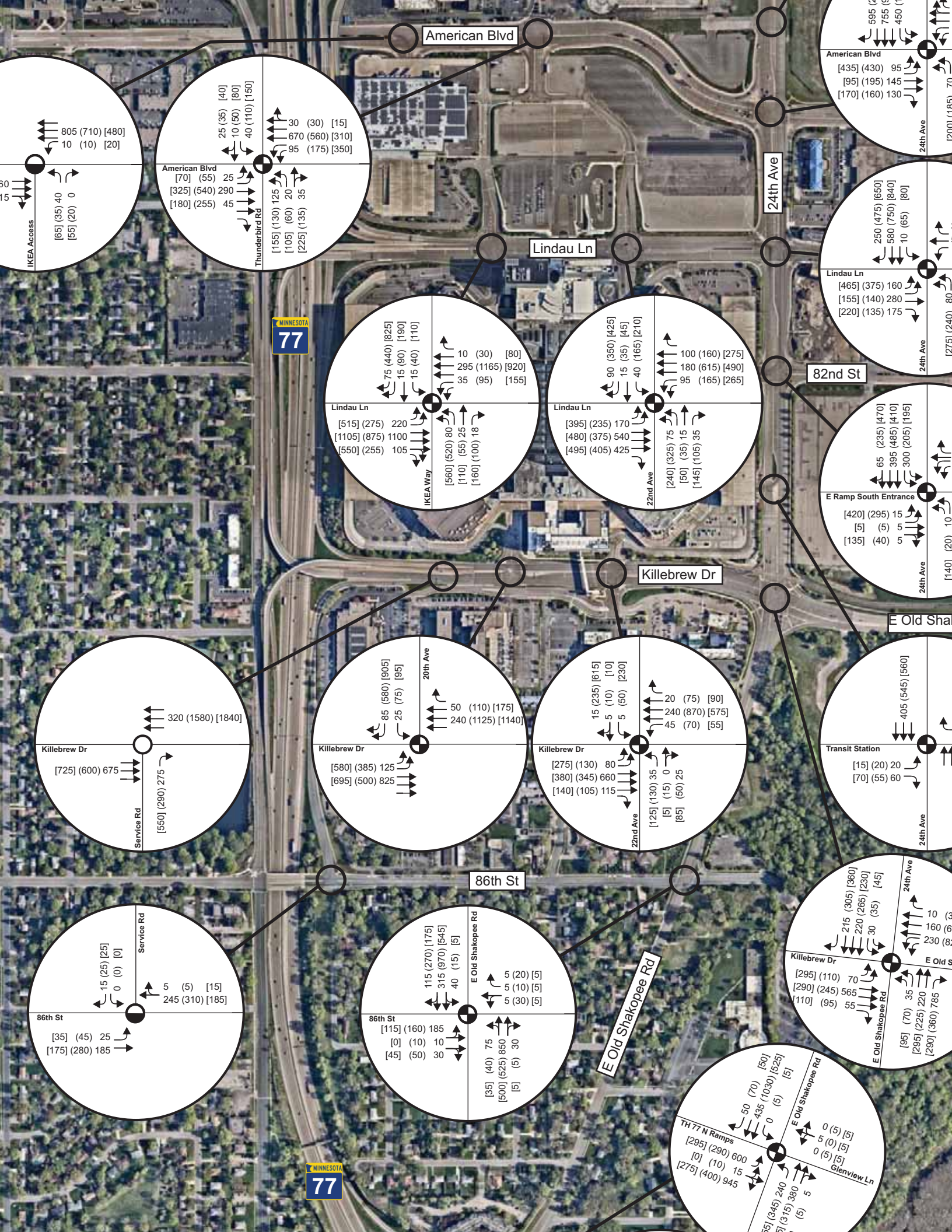
28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



American Blvd

American Blvd

24th Ave

Lindau Ln

Lindau Ln

82nd St

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd

IKEA Access

American Blvd

Thunderbird Rd

Lindau Ln

Lindau Ln

E Ramp South Entrance

Killebrew Dr

Killebrew Dr

Killebrew Dr

Transit Station

86th St

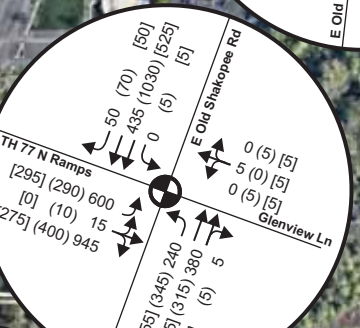
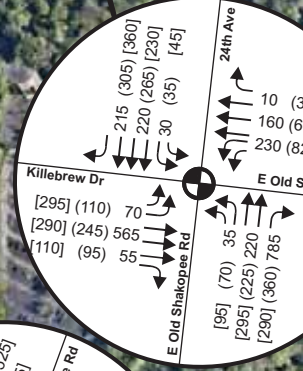
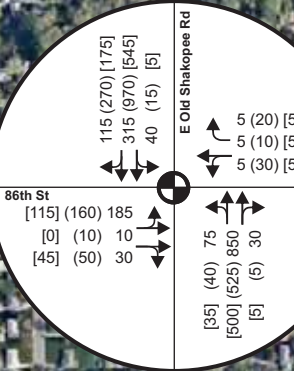
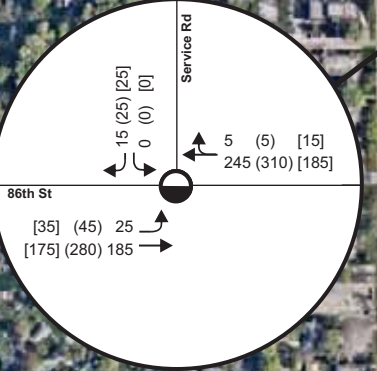
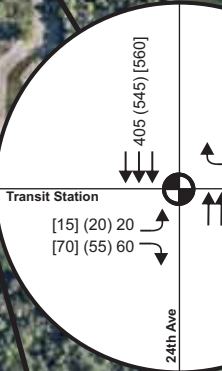
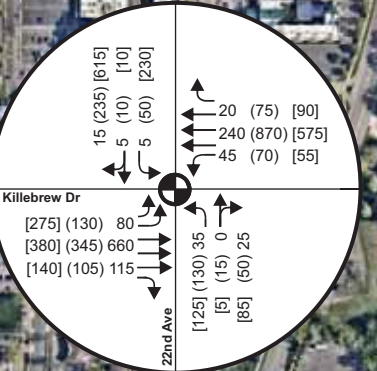
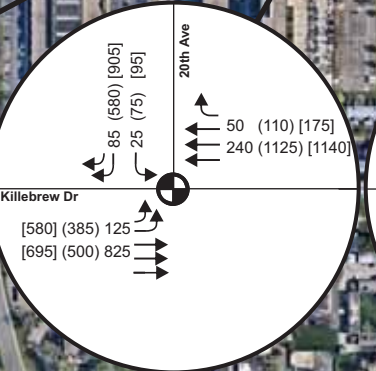
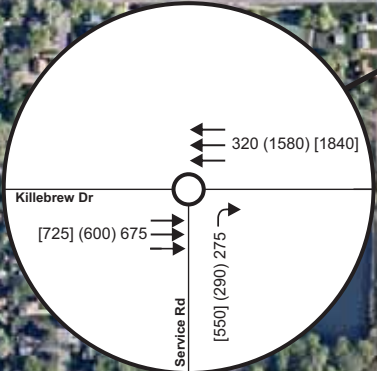
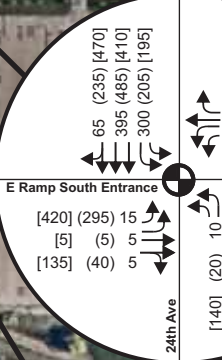
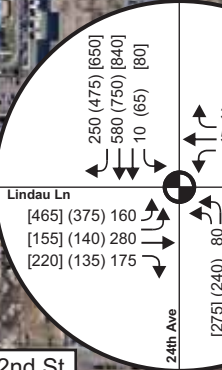
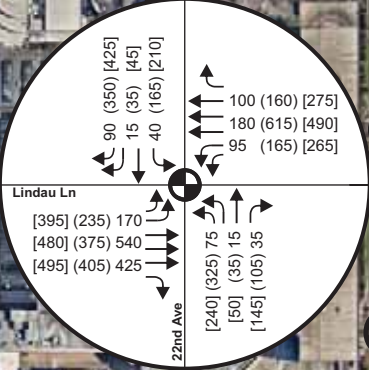
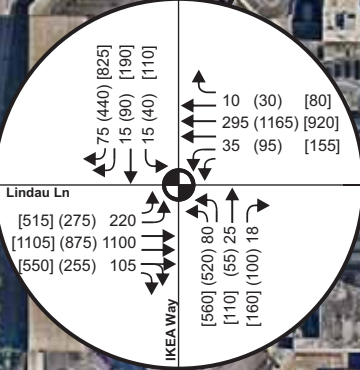
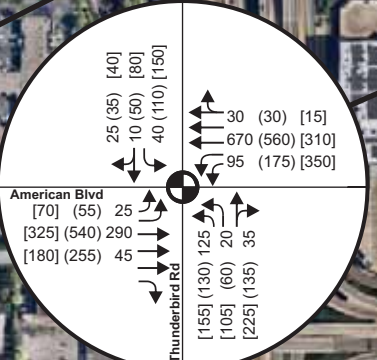
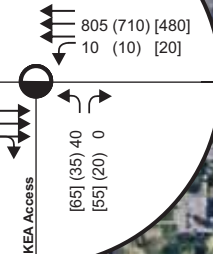
86th St

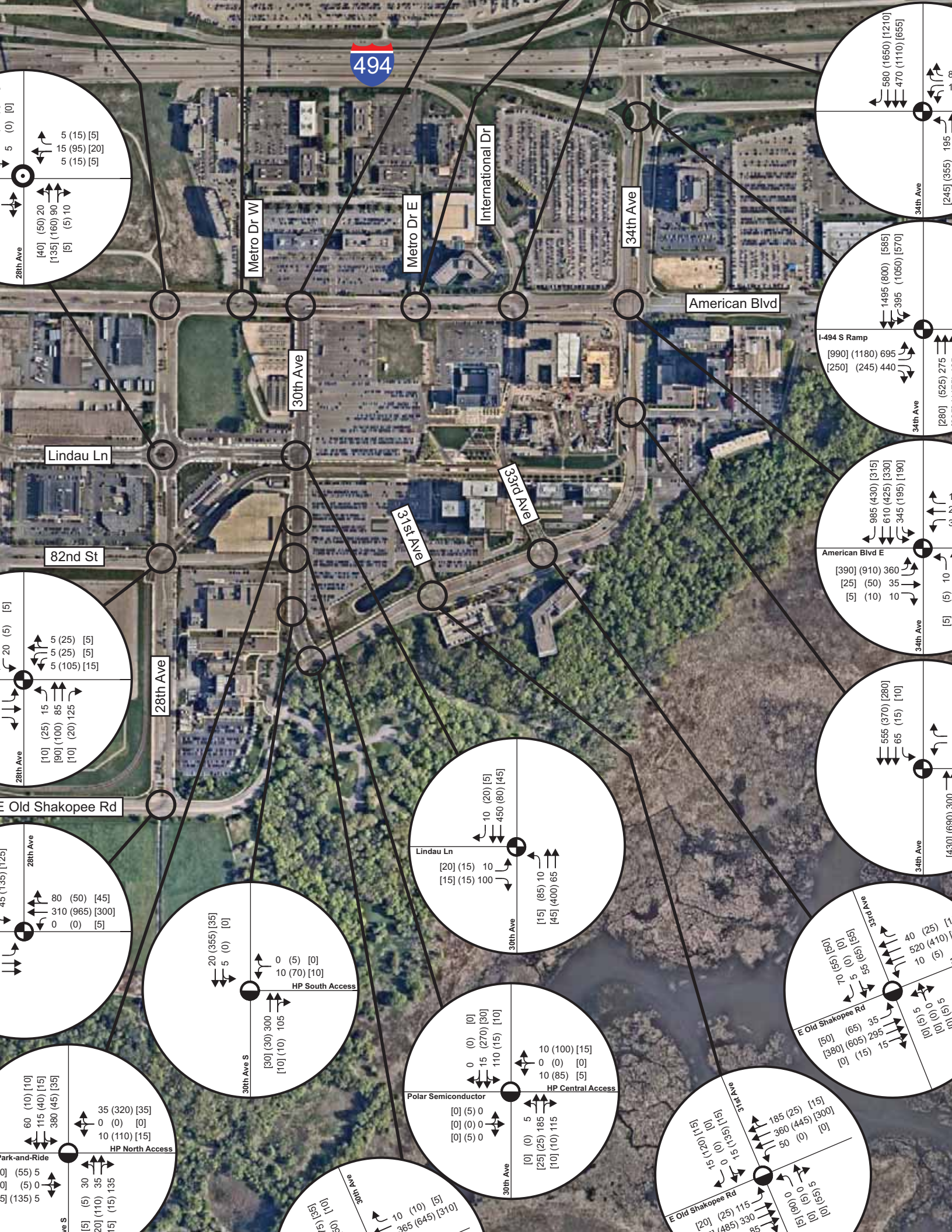
Killebrew Dr

E Old Shakopee Rd

TH 77 N Ramps

Glenview Ln





Priority 1 Improvement: I-494/24th Avenue

Need

This improvement addresses the existing unbalanced lane utilization that exists at the 24th Avenue/American Boulevard intersection, which is upstream of the I-494/24th Avenue interchange resulting from motorists positioning themselves to make a northbound right-turn movement onto eastbound I-494. This poor lane utilization is most prevalent during the p.m. peak hour at the 24th Avenue/American Boulevard intersection where the eastbound left-turn lanes and northbound through lanes have poor lane utilization; approximately 70 percent of eastbound left-turn traffic is in the southern left-turn lane. During the Saturday peak hour, the through lanes also have poor lane utilization from motorists departing the MOA and accessing I-494 east; observations indicate that 60 percent of the northbound through traffic is in the eastern through lane. Providing an additional northbound lane onto eastbound I-494 will improve lane utilization upstream of the interchange.

Improvement Description

This concept includes a second northbound right-turn lane at the I-494/24th Avenue interchange by converting an existing through lane to a shared through/right-turn lane. The northbound right-turn is also proposed to be signalized since there will be three lanes merging into two lanes on the eastbound I-494 on ramp. The northbound right-turn phase is proposed to overlap with all phases except the southbound left-turn phase. This improvement provides benefit to the eastbound left-turn and the northbound through lane utilization at the 24th Avenue/American Boulevard intersection. The concept is shown in Figure 31.

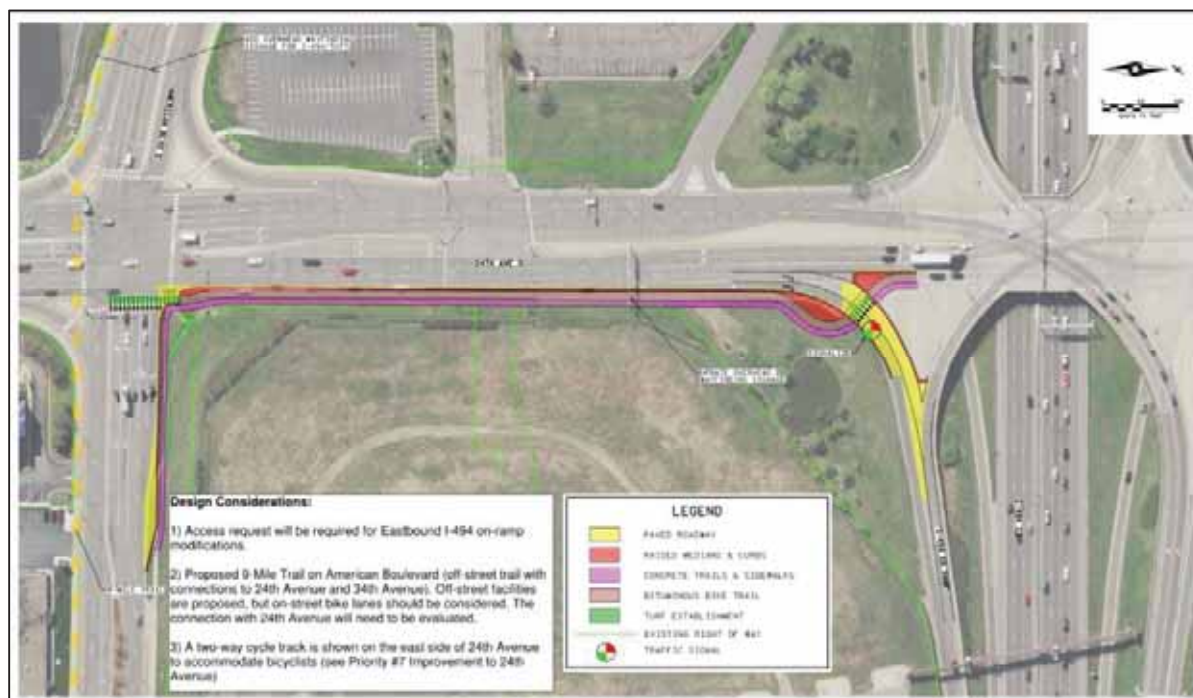


Figure 31. Priority 1: I-494/24th Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$525,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 2 Improvement: I-494/34th Avenue

Need

This improvement addresses the existing unbalanced lane utilization that exists upstream of the I-494/34th Avenue interchange resulting from motorists positioning themselves to make a northbound right-turn movement onto eastbound I-494. This poor lane utilization is most prevalent during the p.m. peak hour at the 34th Avenue/American Boulevard intersection where the eastbound left-turn lanes have poor lane utilization; approximately 80 percent of eastbound left-turn traffic is in the southern left-turn lane. Providing an additional northbound right-turn lane onto eastbound I-494 will improve lane utilization upstream of the interchange.

Improvement Description

This concept adds another northbound right-turn lane at the I-494/34th Avenue interchange by converting an existing through lane to a shared through/right-turn lane. The northbound right-turn and southbound left-turns are also proposed to be signalized since there will be four lanes merging into three lanes on the eastbound I-494/TH 5 on ramp. The northbound right-turn movement would overlap with the following existing phases: 1, 3, 4, 7, and 8. To reduce the likelihood of southbound queues extending into the I-494/34th Avenue North Crossover intersection, a “dummy phase” will need to be added to clear the southbound left-turn movement through the interchange. The northbound right-turn phase is proposed to overlap with all phases except the southbound left-turn.

An alternative to signalizing the northbound right-turn and southbound left-turn movements at the I-494/34th Avenue interchange would be to add two additional lanes to the eastbound I-494/TH 5 on ramp. This would allow for the two-northbound right-turn lanes and two southbound left-turn lanes to make their respective movements concurrently without conflicting with each other.

In addition to the second northbound right-turn lane at the I-494/34th Avenue interchange, the following improvements are proposed at the 34th Avenue/American Boulevard intersection:

- Eliminate the eastbound/westbound left-turn path overlap to provide the opportunity to implement protected/permitted phasing and allow the left-turn phases to time concurrently.
- Reduce the eastbound through to one lane and shift the eastbound left-turn lanes south. The length of the inside eastbound left-turn lane is also proposed to be extended.
- Reduce the westbound through to one lane and shift the westbound left-turn lane south.
- Extend the eastbound left-turn lanes to 33rd Avenue.
- Increase the pedestrian storage area near the LRT stations on the north and south sides of the intersection.

The concept is shown in Figure 32 and Figure 33.

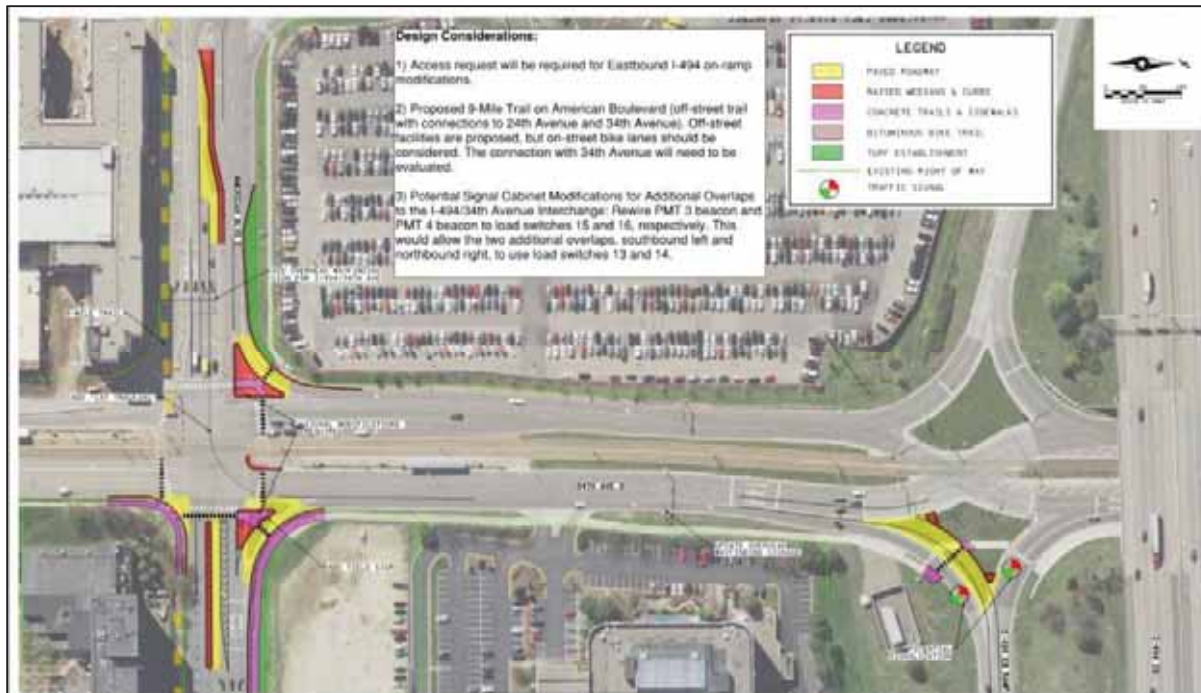


Figure 32. Priority 2: I-494/34th Avenue



Figure 33. Priority 2: I-494/34th Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$1,275,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 3 Improvement: Killebrew Drive/20th Avenue

Need

This improvement addresses the southbound right-turn queue exiting the MOA during the Saturday peak during year 2025 conditions. Queues are expected to extend through the internal signalized intersection to the west on the MOA perimeter roadway. This queue is the result of fewer acceptable gaps in traffic as volume on Killebrew Drive increases. City staff have also noted that there is a regular occurrence of rear-end southbound right-turn crashes at this intersection.

Improvement Description

The first concept converts one southbound left-turn lane into a right-turn lane. The southbound right-turn also becomes signalized and overlaps with the eastbound left-turn. No Right Turn on Red (RTOR) is proposed; this configuration and operation is similar to the Lindau Lane/IKEA Way and Lindau Lane/22nd Avenue intersections on the north side of the MOA. An alternative concept was reviewed that removes the channelized right-turn median island on the southbound approach. The concept is shown in Figure 34.



Figure 34. Priority 3: Killebrew Drive/20th Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$225,000 for the alternative concepts.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 4 Improvement: Signal Timing

Need

At some point between existing and year 2025 conditions, signal timing improvements are expected to be needed at each of the intersections listed below to maintain traffic flow. The timing for the need of the signal timing improvements for each identified intersection will be based on when adjacent development occurs.

- 24th Avenue/I-494
- 24th Avenue/79th Street
- 24th Avenue/American Boulevard
- 24th Avenue Lindau Lane
- 24th Avenue/82nd Street
- 24 Avenue/Transit Station
- American Avenue/Thunderbird Road
- Lindau Lane/IKEA Way
- Lindau Lane/22nd Avenue
- Killebrew Drive/20th Avenue
- Killebrew Drive/22nd Avenue
- Killebrew Drive/East Old Shakopee Rd/24th Avenue
- I-494/34th Avenue
- 34th Avenue/American Boulevard
- 34th Avenue/Appletree Square

Preliminary Cost Estimate

The cost to retime these signals would be approximately \$3,000 per signal (total of \$45,000).

Priority 5 Improvement: Lindau Lane/IKEA Way and Lindau Lane/22nd Avenue

Need

This improvement addresses the existing and future unbalanced lane utilization exiting IKEA and MOA Phase 2B and Phase 2C that is the result of motorists positioning themselves for the movements onto southbound TH 77, northbound TH 77/westbound I-494, and eastbound I-494.

Improvement Description

This concept modifies the existing southbound right-turn cat-tracking at the Lindau Lane/IKEA Way intersection and adds cat-tracking to the southbound right-turn at Lindau Lane/22nd Avenue. The cat-tracking should align the easternmost southbound right-turn lane with the southernmost westbound lane. Based on the downstream ramps, the southern and middle westbound lanes are the heaviest utilized lanes; the northern westbound lane leads to eastbound I-494, which is the least utilized ramp. It is not proposed to update the northbound left-turn cat-tracking at the Lindau Lane/IKEA Way intersection since shifting the cat-tracking south would increase the total number of vehicles in the southern lane exiting the MOA, causing additional delay for northbound through and right-turn vehicles due to the northbound left-turn queues spilling back from the turn lanes. Wayfinding will also need to be updated accordingly.

It should be noted that approximately 125 and 200 vehicles during the weekday p.m. and Saturday peak hours, respectively, were exiting the MOA at Lindau Lane/20th Avenue/IKEA Way via a northbound left-turn movement were shifted to make a southbound right-turn at the Killebrew Drive/20th Avenue intersection. This was assumed since vehicles exiting the MOA have multiple route options. With the construction of MOA Phase 2B there will be less green time for MOA Phase 1 vehicles to exit at the Lindau Lane/20th Avenue/IKEA Way intersection. Rather than increasing the capacity at the Lindau Lane intersections, traffic is expected to naturally “balance” itself out as motorists become familiar with faster route options and wayfinding signage. Modifications to the internal roadway network may be needed to help encourage motorists to exit via the Killebrew Drive/20th Avenue intersection. The MOA and City should monitor existing patterns to determine if modifications to help balance internal delays.

Priority 6 Improvement: American Boulevard/International Drive

Need

This improvement addresses the difficulty northbound and southbound vehicles are expected to have finding acceptable gaps in traffic on American Boulevard at the American Boulevard/International Drive intersection under year 2025 conditions.

Improvement Description

This concept converts the American Boulevard/International Drive intersection to three-quarter access (no left-turns or through movements from the side-street). The American Boulevard/Metro Drive intersection is also proposed to be converted to a roundabout as part of this concept to facilitate the required U-turn for southbound vehicles on International Drive that are destined for the east. Converting the American Boulevard/Metro Drive intersection to a roundabout will also allow for the northbound approach to be added in the future once development occurs to the south of American Boulevard.

The concept is shown in Figure 35.



Figure 35. Priority 6: American Boulevard/International Drive

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$1,650,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 7 Improvement: 24th Avenue (I-494 to East Old Shakopee Road/Killebrew Drive)

Need

This improvement addresses the existing unbalanced lane utilization that exists along 24th Avenue and better utilizes the existing roadway width. In addition to improving lane utilization, this improvement provides better accommodations for pedestrians and bicyclists. It should be noted that this improvement assumes that the improvements identified in Priority 1 at the I-494/24th Avenue interchange have been constructed. If this improvement (priority #7) is accelerated so that the corridor and interchange improvements were done at the same time, it would also account for the priority #1 improvements.

Improvement Description

This concept consists of restriping and median work to improve lane utilization and better position drivers for downstream movements as well as the addition of a two-way cycle track on the east side of 24th Avenue. As part of this, triple westbound left-turns are proposed at the I-494/24th Avenue interchange. A second eastbound right-turn lane at the interchange and signalization of this movement are proposed. The eastbound right-turn lane would overlap with all phases except the westbound left-turn and southbound through phases.

While a few existing channelized right-turn lanes are shown removed since they are not needed from a capacity perspective, right-turn channelization along 24th Avenue should be reevaluated during the design phase to potentially remove additional channelized right-turns if both vehicle and pedestrian service and safety can be improved. Several add-in lanes are also removed since the additional capacity is not needed and the existing add-in lanes place vehicles in lanes that drop downstream, requiring vehicles to weave shortly after entering 24th Avenue.

The existing roadway right-of-way should be maintained on 24th Avenue to accommodate a north/south on-street bicycle facility. The concept and cost estimates assumed a two-way cycle track on the east side of 24th Avenue, which was selected based on feasibility and to reduce conflicts between vehicles and bicyclists. The bike lanes should be reevaluated during the design phase to identify specific bicycle crossing needs at the intersections (signal design, pavement marking, etc.).

The concept is shown in Figure 36, Figure 37, and Figure 38.



Figure 36. Priority 7: 24th Avenue (I-494 to 82nd Street)

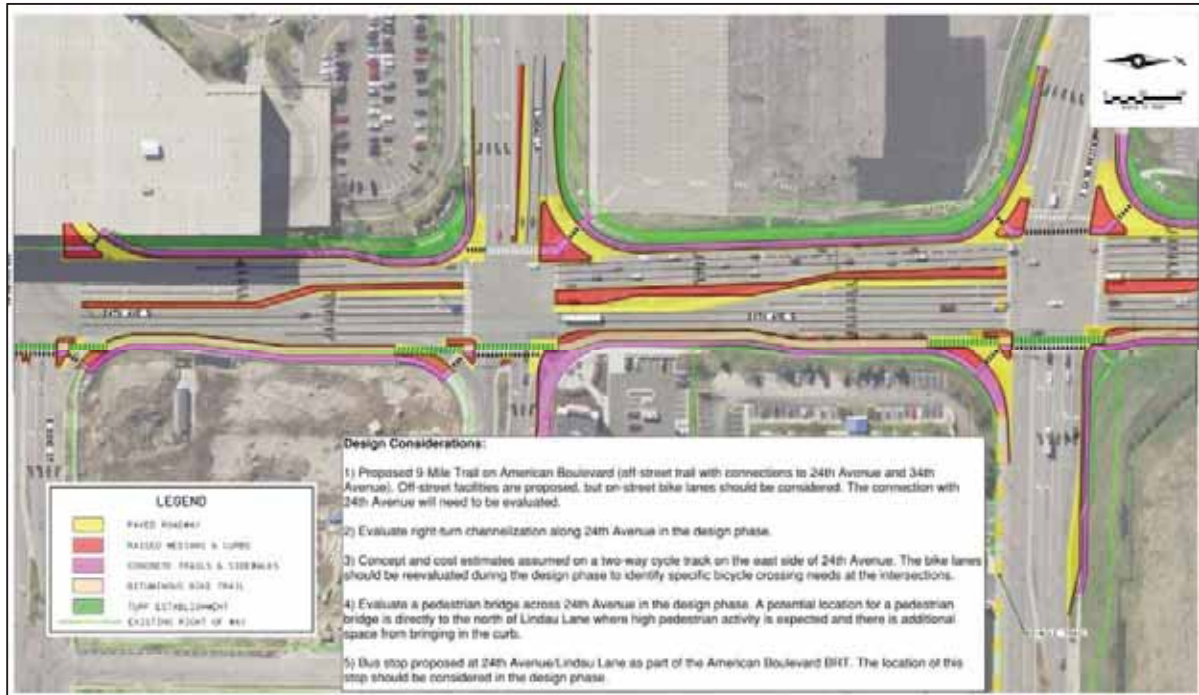


Figure 37. Priority 7: 24th Avenue (I-494 to 82nd Street)

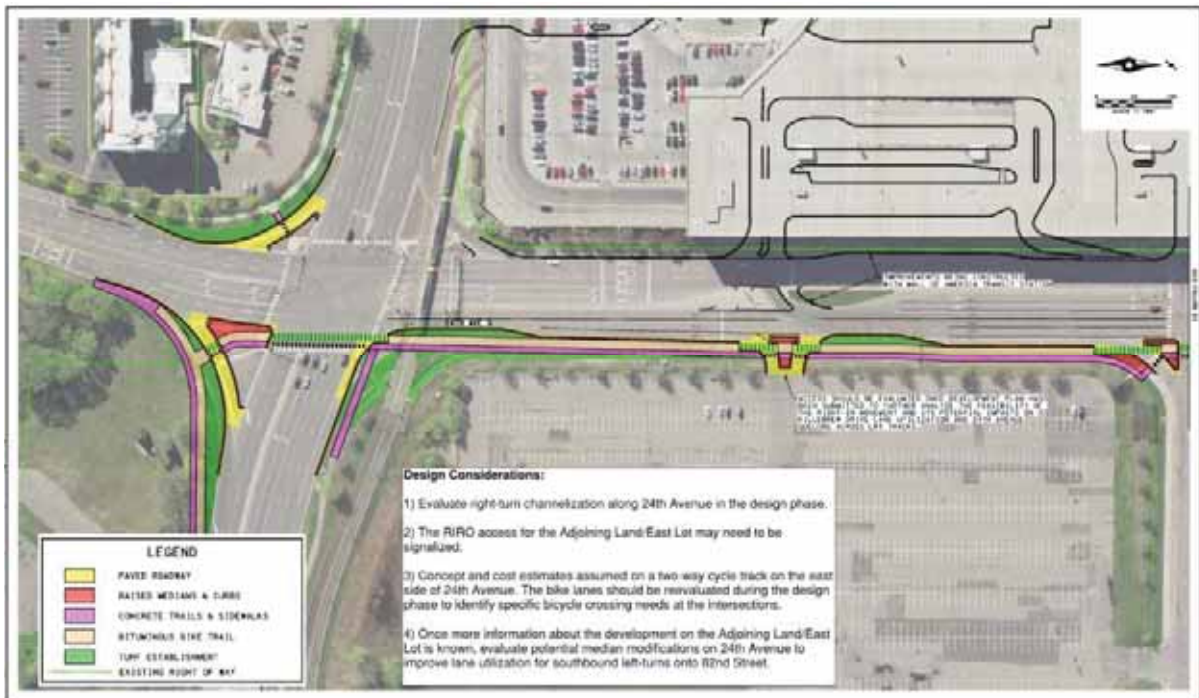


Figure 38. Priority 7: 24th Avenue (I-494 to 82nd Street)

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$4,850,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 8 Improvement: Killebrew Drive/22nd Avenue

Need

This improvement addresses the northbound and southbound right-turn queues that occasionally form from a left-turn vehicle in the outside left-turn lane blocking the free movement. This improvement also improves the efficiency of the signal operations at this intersection (currently operating split phase).

Improvement Description

This concept consists of restriping the northbound and southbound shared left-turn/through lanes to a through lane as well as signal head and timing modifications. A single left-turn lane on both approaches is expected to adequately accommodate the traffic; left-turn path overlap is also eliminated by removing the outside left-turn lane. Since there would not be any path overlap with the lane use adjustments, the northbound and southbound approaches would not need to operate split-phase, improving the efficiency of the signal operations.

The concept is shown in Figure 39.



Figure 39. Priority 8: Killebrew Drive/22nd Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$100,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 9 Improvement: East Old Shakopee Road/28th Avenue

Need

This improvement addresses the difficulty southbound left-turn vehicles are expected to have finding acceptable gaps in traffic on East Old Shakopee Road at the East Old Shakopee Road/28th Avenue intersection during the p.m. peak hour under year 2025 conditions.

Improvement Description

There are two intersection control improvements that were considered at the East Old Shakopee Road/28th Avenue intersection to mitigate the delay for southbound left-turning vehicles:

- Signalizing the intersection
- Multi-lane roundabout (2x1)

Both concepts would improve operations and allow side-street vehicles to enter traffic on East Old Shakopee Road. Both alternatives are expected to provide acceptable operations in year 2040. It was assumed that the northbound approach would not exist by year 2025; however, the design of the signalized intersection or roundabout should allow for the northbound approach to be constructed in the future with minimal change. East Old Shakopee Road currently does not have a sidewalk/trail facility on the south side of the roadway. Future design considerations of the corridor and intersections should consider the need for a sidewalk or trail to eliminate this gap in the pedestrian network.

The signalized concept is shown in Figure 40 and the roundabout concept is shown in Figure 41.



Figure 40. Priority 9: East Old Shakopee Road/28th Avenue

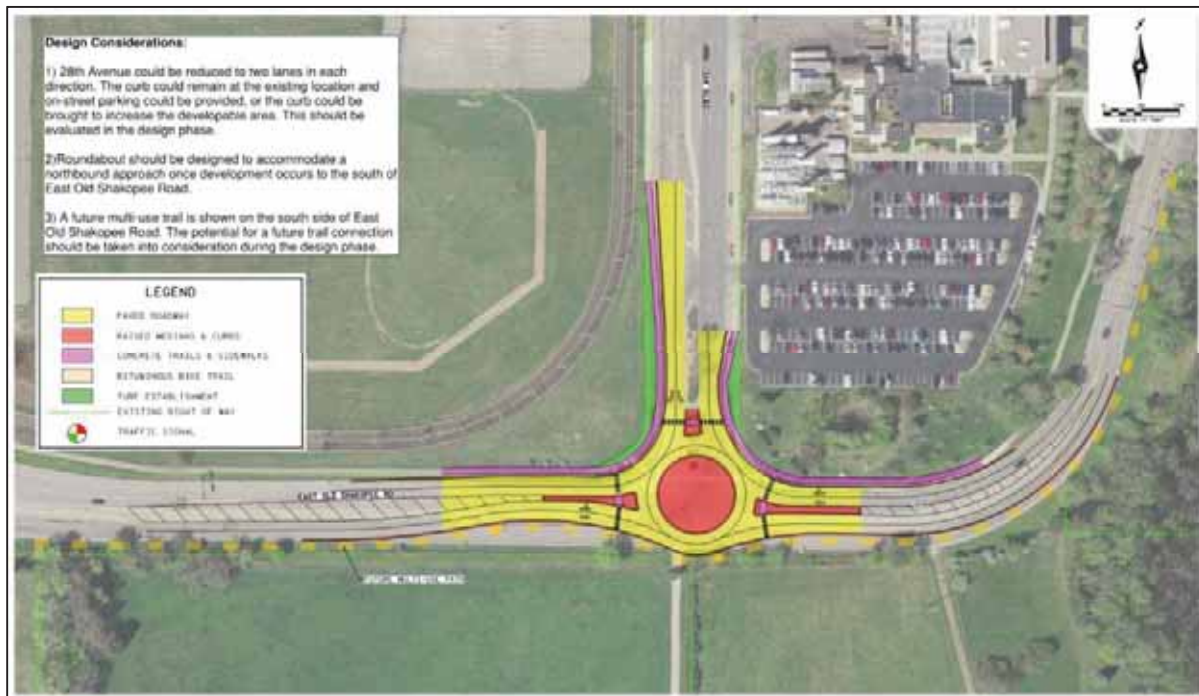


Figure 41. Priority 9: East Old Shakopee Road/28th Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$850,000 and \$1,350,000 for the traffic signal and roundabout concepts, respectively.

11x17 graphics of the proposed improvements and the detailed cost estimates are provided in Appendix J.

Priority 10 Improvement: Killebrew Drive/East Old Shakopee Road/24th Avenue

Need

This concept improves the lane continuity of the westbound approach at the Killebrew Drive/East Old Shakopee Road/24th Avenue intersection, addressing an existing issue. Currently the northern most westbound through lane drops and is forced to make a right-turn, while the southernmost westbound through lane develops into two through lanes.

Improvement Description

This concept consists of restriping the westbound approach and modifying the curb on the westbound approach of the East Old Shakopee Road/24th Avenue intersection, so the three westbound lanes maintain lane continuity through the intersection. This concept develops a westbound right-turn lane, whereas the current geometry forces the northern most westbound lane to turn right.

The concept is shown in Figure 42.



Figure 42. Priority 10: Killebrew Drive/East Old Shakopee Road/24th Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$75,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 11 Improvement: East Old Shakopee Road/33rd Avenue

Need

This concept improves the pedestrian facilities between the East Old Shakopee Road/33rd Avenue and East Old Shakopee Road/31st Avenue intersections. Currently the pedestrian crossing on East Old Shakopee Road is unmarked. Based on pedestrian/bicyclist counts collected by the City of Bloomington in June 2015, there are approximately 200 crossings per day.

Improvement Description

This concept consists of adding a marked pedestrian crossing across East Old Shakopee Road between 33rd Avenue and 31st Avenue to better accommodate pedestrians at one of the busiest crossing in the South Loop District. The proposed pedestrian crossing is a two-stage crossing that provides storage in the median of East Old Shakopee Road for pedestrians. The concept proposes pedestrian activated beacons at the crossing to increase the visibility of the crossing to drivers. However, depending on the future crossing demand, a High Intensity Activated crosswalk (HAWK) should be considered.

The concept is shown in Figure 43.



Figure 43. Priority 11: East Old Shakopee Road/33rd Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$275,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 12 Improvement: American Boulevard/30th Avenue

Need

This improvement addresses the American Boulevard/30th Avenue intersection that is expected to be near capacity and the difficulty northbound left-turns that are expected to have finding acceptable gaps in traffic on American Boulevard in the p.m. peak hour under year 2025 conditions.

Improvement Description

This concept is to install a traffic signal at the American Boulevard/30th Avenue intersection once warranted and if the side-street traffic has difficulties finding acceptable gaps in traffic on American Boulevard. The geometry of the intersection is already setup to be signalized, so minimal geometric modifications would be required to signalize the intersection.

The concept is shown in Figure 44.



Figure 44. Priority 12: American Boulevard/30th Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$625,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Priority 13 Improvement: American Boulevard/28th Avenue

Need

While there is not expected to be an operational issue at the American Boulevard/28th Avenue intersection, there is opportunity to better utilize the existing roadway and improve the safety of pedestrians. The goal of this improvement is to change the lane assignment to improve pedestrian safety at the American Boulevard/28th Avenue intersection.

Improvement Description

This concept changes the lane utilization of the northbound approach at the American Boulevard/28th Avenue intersection. Currently there is one northbound left-turn lane, two northbound through lanes, and one channelized right-turn lane. The two northbound through lanes lead to a service road for the airport, which is seldom used. To increase the capacity of the northbound approach and align the northbound through movement with the receiving lane, this concept converts the western northbound through lane to shared left-turn/through lane and the eastern northbound through lane is converted to the right-turn lane. The channelized northbound right-turn is also removed to improve the safety of pedestrians

The concept is shown in Figure 45.



Figure 45. Priority 13: American Boulevard/28th Avenue

Preliminary Cost Estimate

This concept has a preliminary cost estimate of \$475,000.

An 11x17 graphic of the proposed improvement and the detailed cost estimate are provided in Appendix J.

Year 2025 Conditions with Recommended Improvements

Year 2025 conditions with the recommended improvements are summarized in this section.

Intersection Operations Analysis

A detailed traffic capacity analysis was completed to assess the expected traffic operations with recommended improvements. Study intersections were once again analyzed using Vissim. Results of the year 2025 operations analysis shown in Table 8 indicate that with the recommended improvements the study intersections are expected to operate at LOS D or better during the weekday a.m., weekday p.m., and Saturday peak hours. The LOS results for the weekday a.m., weekday p.m., and Saturday peak hours are illustrated in Figure 46, Figure 47, and Figure 48, respectively. Detailed traffic operations results are provided in Appendix K.

Table 8. Year 2025 Conditions Peak Hour Capacity Analysis (Recommended Improvements)

Intersection	AM Peak Hour	PM Peak Hour	Sat Peak Hour
24th Avenue/I-494 Interchange	B	C	C
24th Avenue/79th Avenue	A	A	B
24th Avenue/American Boulevard	C	C	D
24th Avenue/Lindau Lane	B	C	C
24th Avenue/82nd St	B	B	C
24th Avenue/Transit Station	A	A	A
24th Avenue/Killebrew Drive /East Old Shakopee Road	C	D	D
34th Avenue/I-494 Interchange	D	D	C
34th Avenue/American Boulevard	C	D	C
34th Avenue/Appletree Square	A	A	A
American Boulevard/IKEA Access ⁽¹⁾	A/B	A/C	A/B
American Boulevard/Thunderbird Road	B	C	D
American Boulevard/28th Avenue/Airport Access	A	A	A
American Boulevard/Metro Drive West ⁽¹⁾	A/B	A/B	A/A
American Boulevard/30th Avenue	B	B	A
American Boulevard/Metro Drive East	A	A	A
American Boulevard/33rd Avenue/International Drive ⁽¹⁾	A/A	A/A	A/A
Lindau Lane/IKEA Way	B	D	D
Lindau Lane/22nd Avenue	B	C	C
SB TH 77/NB TH 77 Merge at Killebrew Drive ⁽¹⁾	A/A	A/A	A/A
Killebrew Drive/20th Avenue	A	B	D
Killebrew Drive/22nd Avenue	A	B	C
East Old Shakopee Road/TH 77 S Ramps ⁽¹⁾	A/A	A/A	A/A
East Old Shakopee Road/TH 77 N Ramps	B	B	B
East Old Shakopee Road/86th Street	A	A	A
East Old Shakopee Road/28th Avenue	A	B	B
East Old Shakopee Road/30th Avenue ⁽¹⁾	A/A	A/C	A/A
East Old Shakopee Road/31st Avenue ⁽¹⁾	A/B	A/C	A/B
East Old Shakopee Road/33rd Avenue/Ceridian Access ⁽¹⁾	A/A	A/B	A/A
28th Avenue/Lindau Lane	A	A	A
28th Avenue/82nd Street	B	C	B
30th Avenue/Lindau Lane	B	A	A
30th Avenue/North HP Driveway/METRO Park-and-Ride ⁽¹⁾	A/D	A/B	A/A
30th Avenue/Central HP Driveway ⁽¹⁾	A/B	A/A	A/A
30th Avenue/South HP Driveway ⁽¹⁾	A/B	A/B	A/A
E 86th Street/Service Road ⁽¹⁾	A/A	A/A	A/A

(1) Side-street stop controlled intersection. Overall intersection LOS followed by the worst approach.



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd

Year 2040 Conditions No Improvements

Year 2040 conditions were evaluated to identify if/where additional improvements will be needed to accommodate future traffic forecasts. It is important to note that due to the uncertainty of the year 2040 conditions, the issues/improvements are only considerations. Once detailed development plans are available, and more is known about autonomous/connected vehicle technology, the South Loop District should be re-evaluated.

Non-Motorized Traffic

All regional trail and corridor improvements identified in the Bloomington ATP and discussed in the year 2025 Non-Motorized section should continue to be a priority for the South Loop District. Concepts developed for intersection and corridor improvements should take into consideration the alternative transportation plans for the South Loop District and look for opportunities to improve the connectivity of the pedestrian/bicyclist system as well as provide safe pedestrian/bicyclist crossing locations. As funding and right-of-way becomes available, steps should be taken to aid in the development of pedestrian/bicyclist regional and local plans. A summary of the pedestrian/bicyclist infrastructure needs is illustrated in Figure 49.

Transit

Metro Transit is considering either a BRT or LRT route on West 7th Street (i.e. Riverview Corridor). The MOA Transit Station could potentially be the end of the line station for this new high frequency transit route. The Riverview Corridor is defined by the Mississippi River on the south, I-35E and Ford Parkway on the north, Lowertown and Union Depot on the east, and the MSP airport and MOA on the west. Ramsey County Regional Railroad Authority is leading a transit study to research, analyze and identify opportunities to improve transit within the Riverview Corridor. One improvement being considered is the BRT or LRT connection between downtown Saint Paul and the MSP International Airport and/or MOA. Also, as previously mentioned American Boulevard is also being considered for future BRT, which would utilize American Boulevard and terminate at the MOA. No other major transit improvements were identified in the programmed capital transit improvements within the study area.

While no changes were assumed to the transit routes/frequencies from existing conditions to year 2040 conditions, if LRT were to be selected as the preferred transit type for the Riverview Corridor, the alignment would likely follow the Blue Line LRT tracks/stops within the South Loop District. If the frequency of LRT crossing events were to increase, additional intersection capacity improvements would likely be needed. Grade separated crossings or intersections would need to be considered at the at-grade LRT crossings at both the American Boulevard/34th Avenue and 24th Avenue/Killebrew Drive intersections. Alternatively, removal of the LRT gate arms at the 24th Avenue/Killebrew Drive intersection should be considered to help improve operations if grade separation is not feasible. Year 2040 forecasts and capacity improvements are discussed in the following sections in more detail.



Concepts developed for intersection and corridor improvements should take into consideration the alternative transportation plans for the South Loop District and look for opportunities to improve the connectivity of the pedestrian/bicyclist system as well as provide safe pedestrian/bicyclist crossing

Improve pedestrian facilities on American Boulevard in the TH 77 underpass

Bicycle facility connecting bike lanes on 24th Avenue and 86th Street

Construct sidewalk/trail in missing gap locations

Traffic Forecasts

Year 2040 traffic forecasts include the traffic growth expected under year 2025 conditions as well as account for additional background growth, future traffic expected to be generated by expansions to MSP Airport, and year 2040 development traffic within the South Loop District.

Background Growth

General background growth expected to the South Loop District was evaluated once again using the Met Council Regional Travel Demand Model. To account for growth generated by non-South Loop District development, through traffic on American Boulevard was increased by an annual growth rate of one-half percent.

Minneapolis-Saint Paul Airport Projections

Similar to the year 2025 traffic forecasts, the traffic forecasts developed for the *MSP Area Roadway Improvement Project Memo* dated 2011, which was completed as part of the *MSP International Airport 2020 Improvements EA/EAW* study, was used to estimate the future trips expected to be generated by expansion to the MSP Airport. The Airport Relocate Scenario was once again assumed. The increases in traffic assumed for year 2040 conditions between year 2025 and year 2040 are summarized in Table 9. It should be noted that the traffic forecasts assumed for year 2040 are based on the year 2030 forecasts from the EA/EAW. Based on updated assumptions for the growth timeline for the MAC, it is reasonable to assume that the year 2030 forecasts from the 2011 study represent a year 2040 condition.

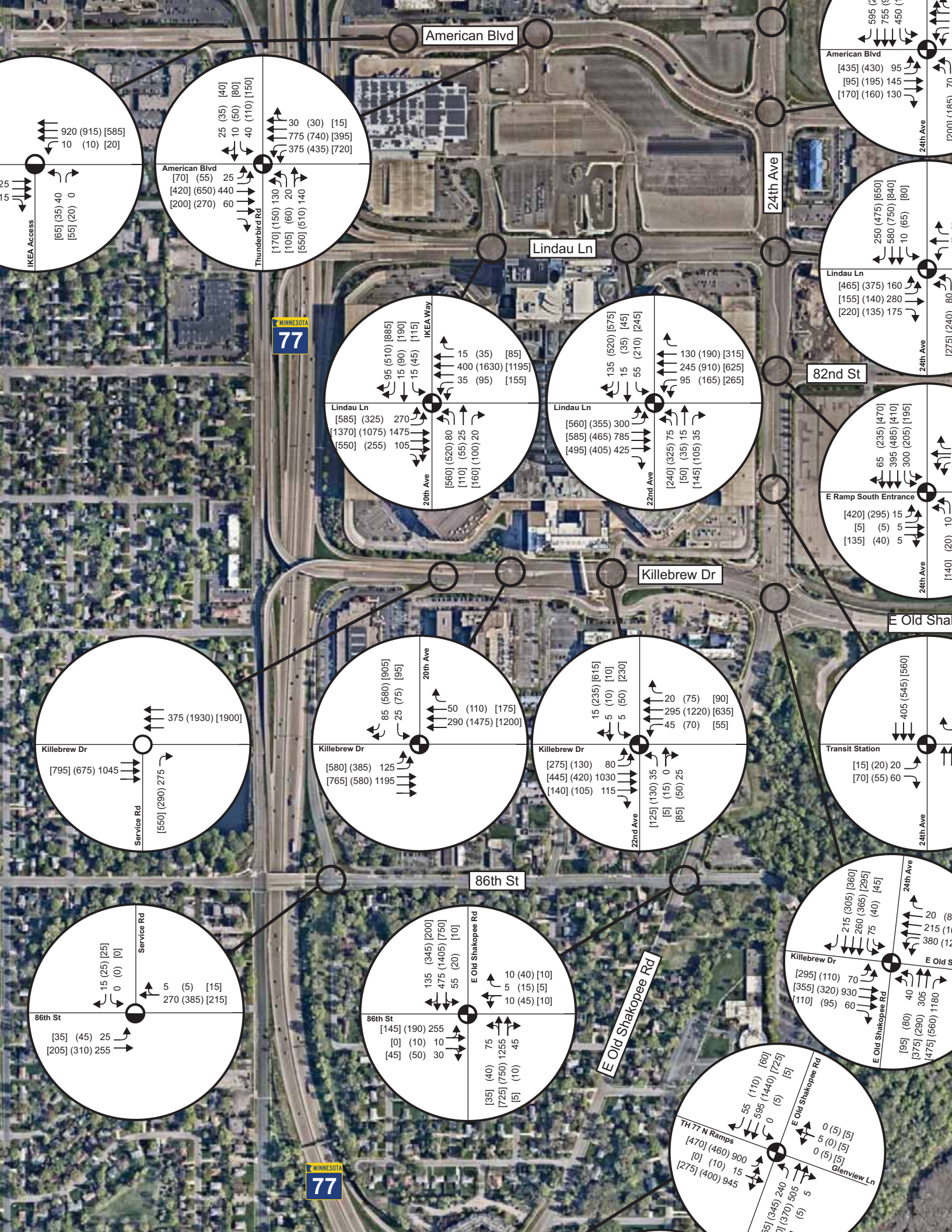
Table 9. Year 2040 MSP Airport Traffic Volume Increases at I-494/34th Avenue Interchange

Movement	New Trips (Between 2025 and 2040)		
	Weekday AM Peak Hour	Weekday PM Peak Hour	Saturday Peak Hour
Southbound Left	+370	+770	+445
Southbound Right	+310	+1,170	+800
Eastbound Left	+430	1090	+805
Westbound Right	+580	+445	+355
Total	+1,690	+3,475	+2,405

Demand Routing

Travel patterns for development trips that have multiple route options were adjusted based on expected travel times under year 2040 conditions. It is understood that traffic will “balance” itself out under future conditions as motorists adjust to typical traffic conditions. Therefore, during the weekday a.m. and p.m. peak hours vehicles to/from the I-494/34th Avenue interchange and the southern BCS office developments were diverted away from using American Boulevard/30th Avenue and re-routed to access via East Old Shakopee Road/30th Avenue.

The resultant year 2040 traffic forecasts which include trips generated by development growth to the District, general background growth, and MSP airport traffic are shown in Figure 50 and Figure 51.



American Blvd

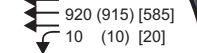
American Blvd



American Blvd



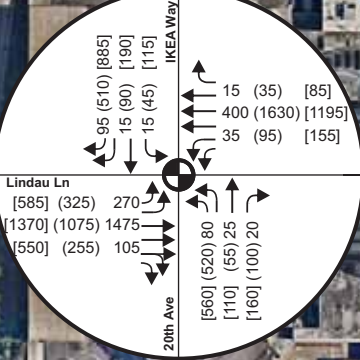
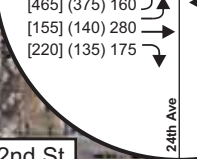
Thunderbird Rd



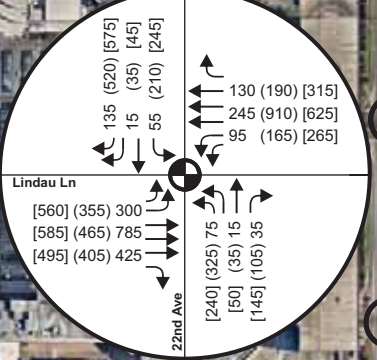
IKEA Access

Lindau Ln

Lindau Ln

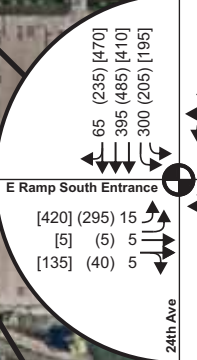


Lindau Ln



Lindau Ln

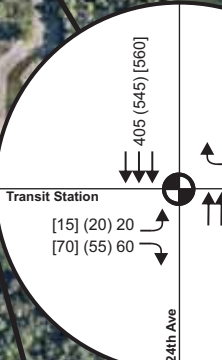
82nd St



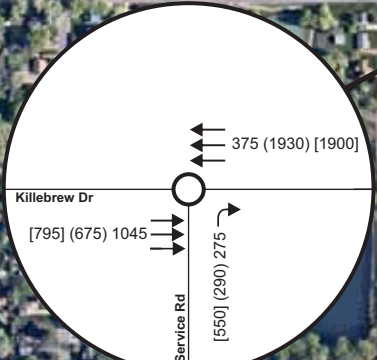
E Ramp South Entrance

Killebrew Dr

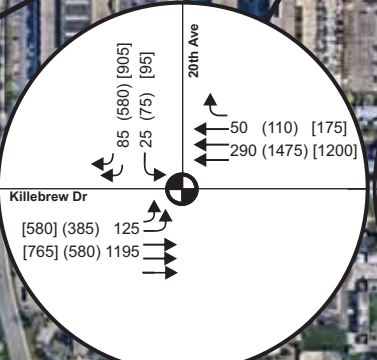
E Old Shakopee Rd



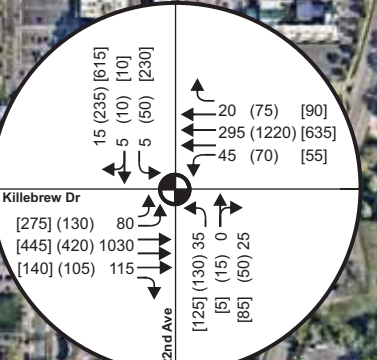
Transit Station



Killebrew Dr

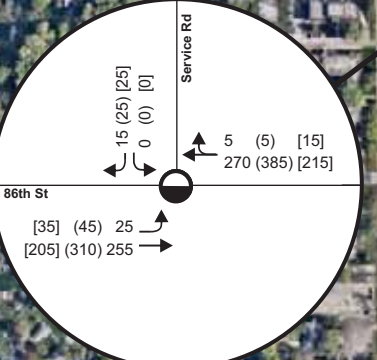


Killebrew Dr

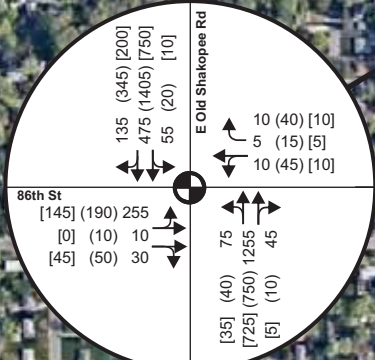


Killebrew Dr

86th St

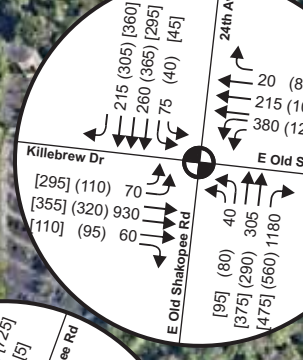


86th St



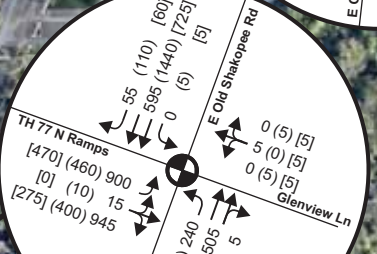
86th St

E Old Shakopee Rd



Killebrew Dr

E Old Shakopee Rd

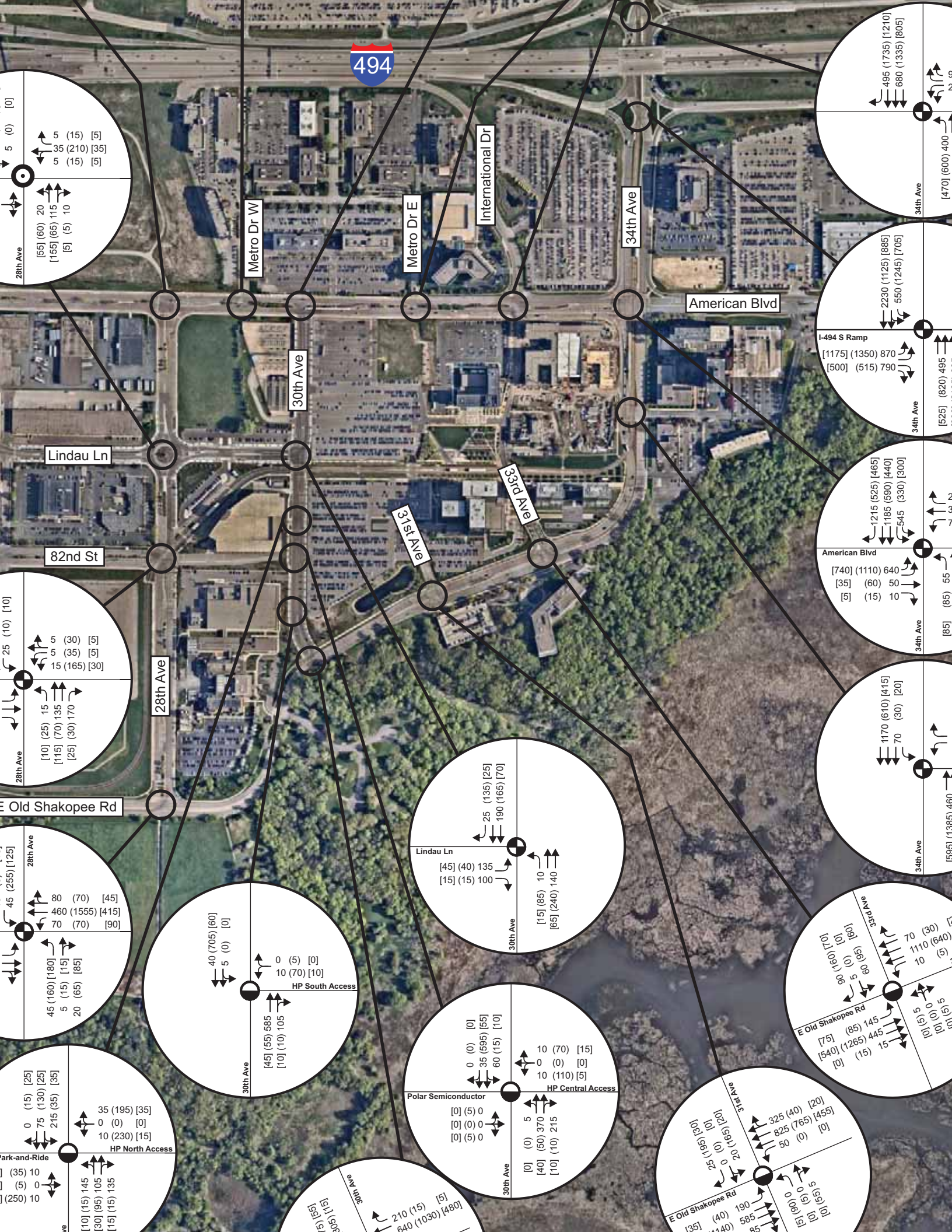


TH 77 N Ramps

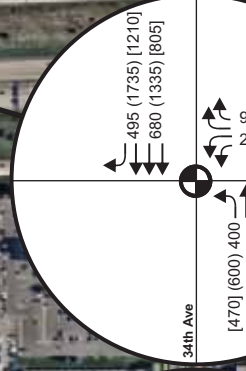
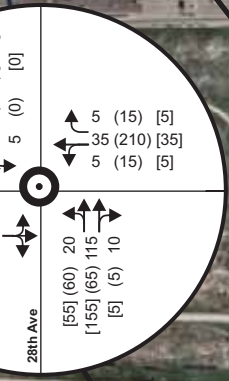
E Old Shakopee Rd

Glenview Ln





494



Metro Dr W

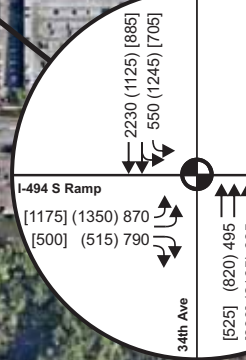
Metro Dr E

International Dr

34th Ave

American Blvd

30th Ave



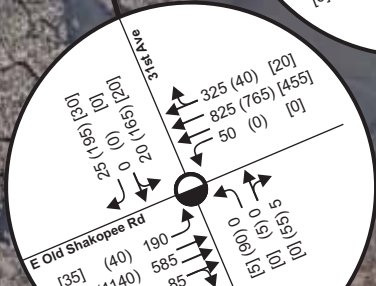
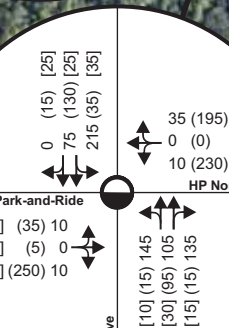
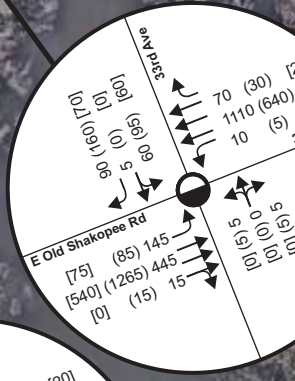
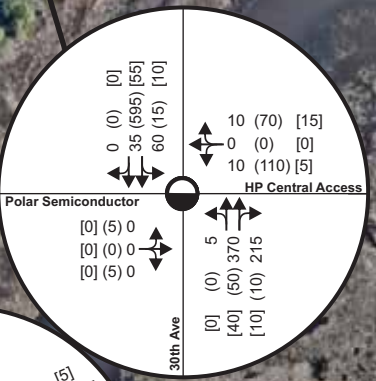
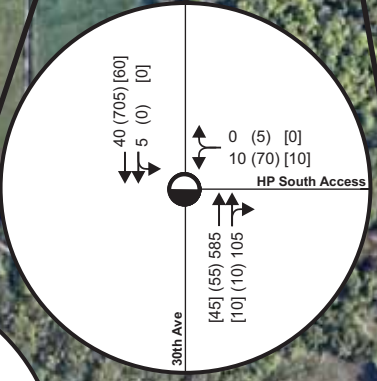
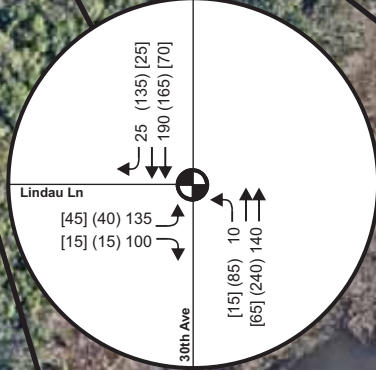
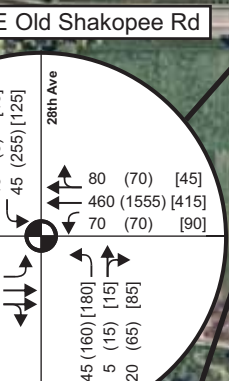
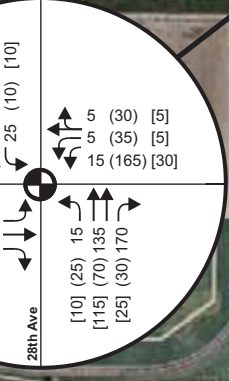
Lindau Ln

82nd St

28th Ave

31st Ave

33rd Ave



Intersection Operations Analysis

To determine if the roadway network with the improvements identified under year 2025 conditions can accommodate year 2040 traffic forecasts, a detailed traffic capacity analysis was completed. Study intersections were once again analyzed using Vissim. Results of the year 2040 operations analysis shown in Table 10 indicate that a number of intersection are expected to have traffic operational (delay and/or queuing) issues under year 2040 conditions without additional improvements. The LOS results for the weekday a.m., weekday p.m., and Saturday peak hours are illustrated in Figure 52, Figure 53, and Figure 54, respectively. Detailed traffic operations results are provided in Appendix L.

Table 10. Year 2040 Conditions Peak Hour Capacity Analysis (No Additional Improvements)

Intersection	AM Peak Hour	PM Peak Hour	Sat Peak Hour
24th Avenue/I-494 Interchange	C	C	E
24th Avenue/79th Avenue	B	B	B
24th Avenue/American Boulevard	C	E	D
24th Avenue/Lindau Lane	C	D	C
24th Avenue/82nd St	B	B	C
24th Avenue/Transit Station	A	A	A
24th Avenue/Killebrew Drive /East Old Shakopee Road	D	E	D
34th Avenue/I-494 Interchange	F	E	C
34th Avenue/American Boulevard	C	F	D
34th Avenue/Appletree Square	A	B	A
American Boulevard/IKEA Access ⁽¹⁾	A/C	E/F	A/B
American Boulevard/Thunderbird Road	B	F	D
American Boulevard/28th Avenue/Airport Access	A	A	A
American Boulevard/Metro Drive West ⁽¹⁾	A/B	A/C	A/A
American Boulevard/30th Avenue	A	B	A
American Boulevard/Metro Drive East	A	D	A
American Boulevard/33rd Avenue/International Drive ⁽¹⁾	A/A	D/E	A/A
Lindau Lane/IKEA Way	B	E	E
Lindau Lane/22nd Avenue	B	E	E
SB TH 77/NB TH 77 Merge at Killebrew Drive ⁽¹⁾	A/A	A/A	A/A
Killebrew Drive/20th Avenue	A	B	D
Killebrew Drive/22nd Avenue	A	B	C
East Old Shakopee Road/TH 77 S Ramps ⁽¹⁾	A/A	A/A	A/A
East Old Shakopee Road/TH 77 N Ramps	C	B	B
East Old Shakopee Road/86th Street	B	B	A
East Old Shakopee Road/28th Avenue	B	E	B
East Old Shakopee Road/30th Avenue ⁽¹⁾	A/B	D/F	A/B
East Old Shakopee Road/31st Avenue ⁽¹⁾	A/C	B/F	A/B
East Old Shakopee Road/33rd Avenue/Ceridian Access ⁽¹⁾	A/B	A/C	A/A
28th Avenue/Lindau Lane	A	A	A
28th Avenue/82nd Street	B	C	B
30th Avenue/Lindau Lane	B	D	A
30th Avenue/North HP Driveway/METRO Park-and-Ride ⁽¹⁾	A/B	F/F	A/A
30th Avenue/Central HP Driveway ⁽¹⁾	A/B	F/F	A/A
30th Avenue/South HP Driveway ⁽¹⁾	A/B	F/F	A/A
E 86th Street/Service Road ⁽¹⁾	A/A	A/A	A/A

(1) Side-street stop controlled intersection. Overall intersection LOS followed by the worst approach.



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

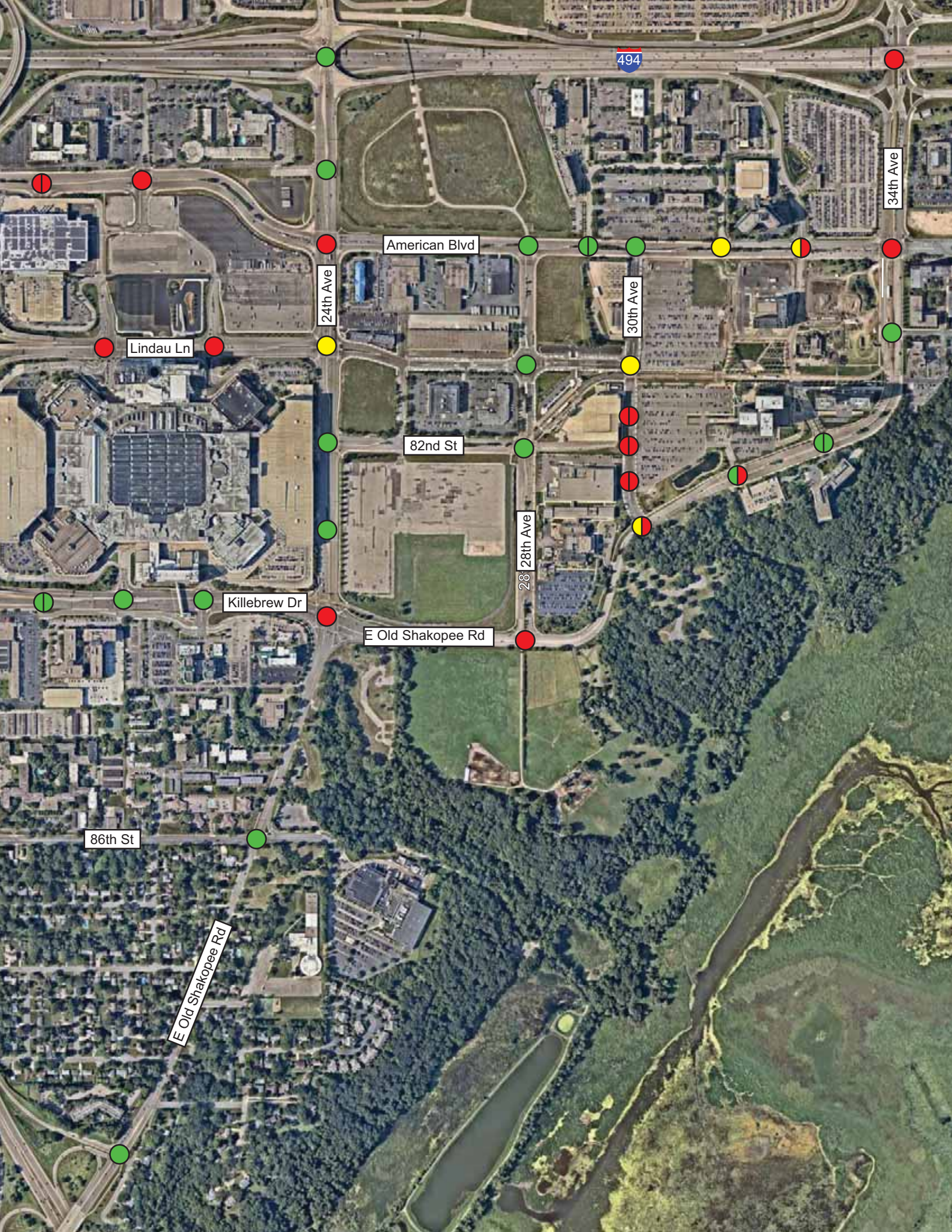
28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

Lindau Ln

30th Ave

82nd St

28th Ave

E Old Shakopee Rd

Killebrew Dr

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd

Improvements for Consideration

To address the operational issues identified under year 2040 conditions the improvements listed below were identified. It is important to note that due to the uncertainty of the year 2040 forecasts the improvements listed below are considerations. Once detailed development plans are available, and more is known about autonomous/connected vehicle technology the improvements listed below should be re-evaluated.

24th Avenue/79th Street

- A combination of the increased southbound traffic on 24th Avenue and the close access spacing of this intersection to the I-494/24th Avenue interchange limits the capacity for southbound vehicles. If opportunity arises, consider closing this intersection if other area improvements are constructed (such as Thunderbird Road connection, dual rights from 24th Avenue to eastbound I-494). Development traffic utilizing this intersection has alternative access/route options.

I-494/Thunderbird Ramp Eastbound Ramp

- This improvement has been identified as a potential long-term improvement under previous traffic studies completed for the South Loop District and MOA. The I-494/Thunderbird Road Eastbound Off-Ramp would provide an alternative route for vehicles entering the South Loop District from northbound TH 77. This would directly reduce traffic volume and subsequently the delay for the eastbound left-turn movement at the Lindau Lane/IKEA Way/20th Avenue intersection. This is expected to be a heavily used route based on the high percentage of vehicles destined to the MOA from TH 77 to the south (25 percent). Further, based on the current alignment, it is difficult for vehicles from the Lindau Lane/TH 77 Northbound off-ramp to make an eastbound left-turn at the Lindau Lane/IKEA Way/20th Avenue intersection since vehicles need to cross two to three lanes within 300 feet to make a left-turn. As traffic volumes increase, this movement is expected to become more challenging.
- Discussions are ongoing with MnDOT about the potential to provide an eastbound I-494 on ramp at Thunderbird Road. This would provide an alternative route for vehicles making an eastbound left-turn at the 24th Avenue/American Boulevard intersection to a northbound right-turn at the I-494/24th Avenue interchange. Under year 2040 conditions the 24th Avenue/American Boulevard intersection operates at LOS E during the weekday p.m. peak hour and the I-494/24th Avenue interchange operates at LOS F during the Saturday peak hour; construction of this on-ramp would reduce delay/queues at these intersections.
- While this improvement is not identified under year 2025 conditions, once the MOA Phase 2 is fully built out, this improvement is expected to be needed to accommodate traffic volumes.

Lindau Lane at IKEA Way/20th Avenue and 22nd Avenue

- The construction of I-494/Thunderbird Eastbound Ramp project will help divert traffic away from these two intersections.

- Similar to year 2025 conditions, as the MOA Phase 2 continues to expand and generate more trips the capacity for northbound left-turn movements exiting at the Lindau Lane/IKEA Way/20th Avenue is reduced. Through internal wayfinding, MOA Phase 1 vehicles should be diverted away from using the Lindau Lane/IKEA Way/20th Avenue intersection to exit via a southbound right-turn movement at the Killebrew Drive/20th Avenue intersection.

24th Avenue/American Boulevard

- The construction of the I-494/Thunderbird Eastbound Ramp project is expected to reduce the number of vehicles making an eastbound left-turn movement at this intersection and is preferred over extending the eastbound left-turn lane storage given the timing demands at the 24th Avenue/American Boulevard intersection.
- To reduce the likelihood of eastbound left-turn queues extending beyond the available turn lane storage, it is recommended that the eastbound left-turn lane be extended (utilize existing median to extend turn lane).

Killebrew Drive/20th Avenue

- As mentioned under year 2025 conditions as a design consideration, the eastbound through lane of the MOA circulatory roadway should be evaluated for potential to convert to a shared through/right-turn lane. This would eliminate the hatched-out pavement area as this would become a traffic lane. The triangular median between the circulatory roadway and MOA entrance could be expanded to the east to reduce the southbound approach to one lane and eliminate the need for additional traffic control.

I-494/34th Avenue Interchange

- To accommodate year 2040 traffic generated by the South Loop District and the MSP International Airport expansion, the capacity improvements identified under the *MSP International Airport 2020 Improvements EA/EAW* study should be constructed. These infrastructure improvements include triple southbound right-turns, triple westbound left-turns, triple northbound through lanes at the north crossover intersection and triple eastbound right-turns and triple northbound right-turns at the south crossover intersection. Between the north and south crossover on 34th Avenue, there are four lanes in each direction.
- Regional improvements, such as expanding the capacity of the westbound I-494 and TH 5 off-ramps, will also be needed to carry the demand at the I-494/34th Avenue interchange.
- The current traffic signal programming allows for entry of an LRT vehicle twice-per-cycle to reduce the travel time of the LRT through the interchange. If the volumes through this interchange reach the projected levels, the twice-per-cycle operation should be re-evaluated since no vehicles are able to pass through the interchange while the LRT phase is running.

34th Avenue/American Boulevard

- Additional capacity improvements are needed at this intersection to accommodate the year 2040 forecasts. This intersection should be re-evaluated once more information is known regarding regional transit improvements to the study area (e.g. Riverview Corridor LRT) and the impacts of autonomous/connected vehicle technology to the transportation network.

- Based on the year 2040 forecasts, to provide LOS E or better conditions during the peak hours intersection, improvement assumptions included triple eastbound left-turn lanes, four northbound through lanes, dual westbound left-turn lanes, and dual westbound right-turn lanes with a southbound left-turn signal overlap phase.

American Boulevard/Thunderbird Road

- For both a scenario where the I-494/Thunderbird Eastbound Ramp project is constructed and not constructed, capacity improvements will be needed at the southbound approach to accommodate the year 2040 traffic volumes.
- For the year 2040 improvements analysis it was assumed that the I-494/Thunderbird Eastbound Ramp project was constructed. The assumed improvements to the southbound approach included dual southbound left-turn lanes, a through lane, and a shared through/right-turn lane

East Old Shakopee Road and TH 77 Northbound Ramps

- To accommodate the year 2040 forecast it was assumed that the eastbound dual left-turn lane storage would be extended.
- Closure of Glenview Lane and conversion to a continuous flow intersection could also be considered.

East Old Shakopee Road/28th Avenue

- Two intersection control options (traffic signal and multi-lane roundabout) were identified under year 2025 conditions. Under year 2040 conditions dual eastbound and southbound left-turn lanes should be considered with the traffic control option. Both are expected to provide acceptable operations. For the year 2040 improvements analysis it was assumed that the traffic signal and intersection improvements would be constructed.

East Old Shakopee Road/30th Avenue

- To accommodate the increase in traffic due to the expansion to the BCS office intersection, traffic control change is needed at this intersection. A traffic signal was assumed. In addition, consider increasing the radius of the East Old Shakopee Road curve by shifting the road south

East Old Shakopee Road/33rd Avenue

- To accommodate the increase in traffic due to the expansion to the BCS office intersection, traffic control change is needed at this intersection. A traffic signal was assumed.

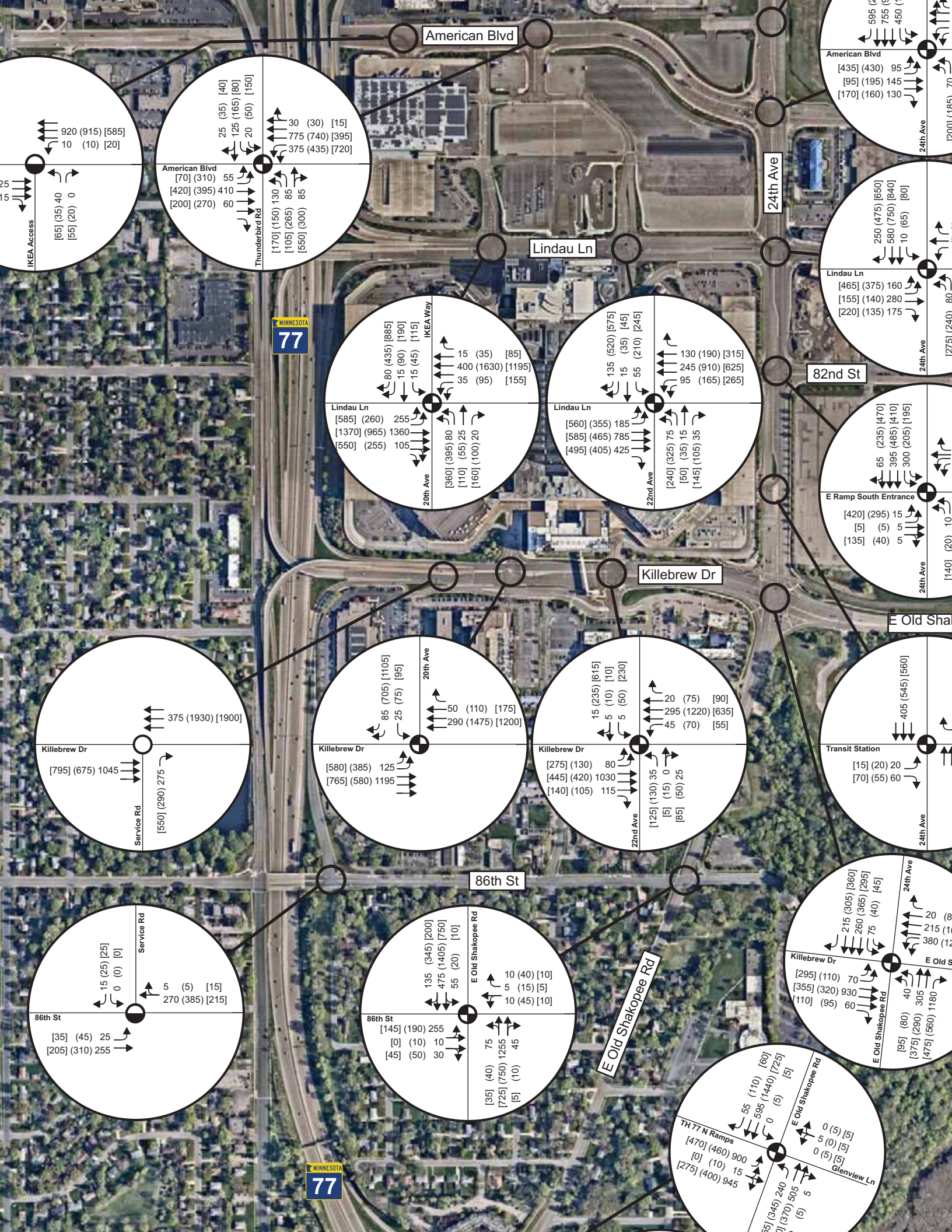
82nd Street Extension between 28th Avenue and 30th Avenue

- While not needed from a traffic capacity perspective, to improve circulation and connectivity in the South Loop District, the City is considering connecting 82nd Street between 28th Avenue and 30th Avenue.

Intersection Operations Analysis with Additional Improvements

A detailed traffic capacity analysis was completed under year 2040 conditions with the additional improvements identified for consideration. Year 2040 traffic volumes with recommended improvements are shown in Figure 55 and Figure 56. Study intersections were once again analyzed using Vissim.

Results of the year 2040 operations analysis shown in Table 11 indicate that with identified additional improvements the study intersections are expected to operate at LOS D or better during the weekday a.m., weekday p.m., and Saturday peak hours except at the 34th Avenue/I-494 Interchange and 34th Avenue/American Boulevard intersections which both operate at the LOS D/E border. The LOS results for the weekday a.m., weekday p.m., and Saturday peak hours are illustrated in Figure 57, Figure 58, and Figure 59, respectively. Detailed traffic operations results are provided in Appendix M.



American Blvd

American Blvd

[435] (430) 95
[95] (195) 145
[170] (160) 130

24th Ave

Lindau Ln

[465] (375) 160
[155] (140) 280
[220] (135) 175

82nd St

E Ramp South Entrance

[420] (295) 15
[5] (5) 5
[135] (40) 5

Killebrew Dr

E Old Shakopee Rd

Transit Station

[15] (20) 20
[70] (55) 60

86th St

E Old Shakopee Rd

Killebrew Dr

[295] (110) 70
[355] (320) 930
[110] (95) 60

E Old Shakopee Rd

[95] (80) 40
[375] (290) 305
[475] (560) 1180

TH 77 N Ramps

[470] (460) 900
[0] (10) 15
[275] (400) 945

E Old Shakopee Rd

[35] (345) 240
[5] (5) 5

Glenview Ln



American Blvd

[70] (310) 55
[420] (395) 410
[200] (270) 60

Thunderbird Rd

[170] (150) 130
[105] (265) 85
[550] (300) 85

Lindau Ln

[80] (435) [885]
[15] (90) [190]
[15] (45) [115]

IKEA Way

[360] (395) 80
[110] (55) 25
[160] (100) 20

Lindau Ln

[135] (520) [575]
[15] (35) [45]
[55] (210) [245]

IKEA Way

[240] (325) 75
[50] (35) 15
[145] (105) 35

Lindau Ln

[585] (260) 255
[1370] (965) 1360
[550] (255) 105

IKEA Way

[360] (395) 80
[110] (55) 25
[160] (100) 20

Lindau Ln

[560] (355) 185
[585] (465) 785
[495] (405) 425

IKEA Way

[240] (325) 75
[50] (35) 15
[145] (105) 35

Killebrew Dr

[795] (675) 1045

Service Rd

[550] (290) 275

Killebrew Dr

[580] (385) 125
[765] (580) 1195

20th Ave

[85] (705) [1105]
[25] (75) [95]
[50] (110) [175]
[290] (1475) [1200]

Killebrew Dr

[275] (130) 80
[445] (420) 1030
[140] (105) 115

22nd Ave

[125] (130) 35
[5] (15) 0
[85] (50) 25

86th St

[15] (25) [25]
[0] (0) [0]

Service Rd

[5] (5) [15]
[270] (385) [215]

86th St

[135] (345) [200]
[475] (1405) [750]
[55] (20) [10]

E Old Shakopee Rd

[10] (40) [10]
[5] (15) [5]
[10] (45) [10]

86th St

[145] (190) 255
[0] (10) 10
[45] (50) 30

E Old Shakopee Rd

[35] (40) 75
[725] (750) 1255
[5] (10) 45

24th Ave

[215] (305) [360]
[260] (365) [295]
[75] (40) [45]

24th Ave

[20] (8)
[215] (1)
[380] (12)

Killebrew Dr

[295] (110) 70
[355] (320) 930
[110] (95) 60

E Old Shakopee Rd

[95] (80) 40
[375] (290) 305
[475] (560) 1180

TH 77 N Ramps

[470] (460) 900
[0] (10) 15
[275] (400) 945

E Old Shakopee Rd

[55] (110) [60]
[595] (1440) [725]
[0] (5) [5]

E Old Shakopee Rd

[0] (5) [5]
[5] (0) [5]
[0] (5) [5]

Glenview Ln

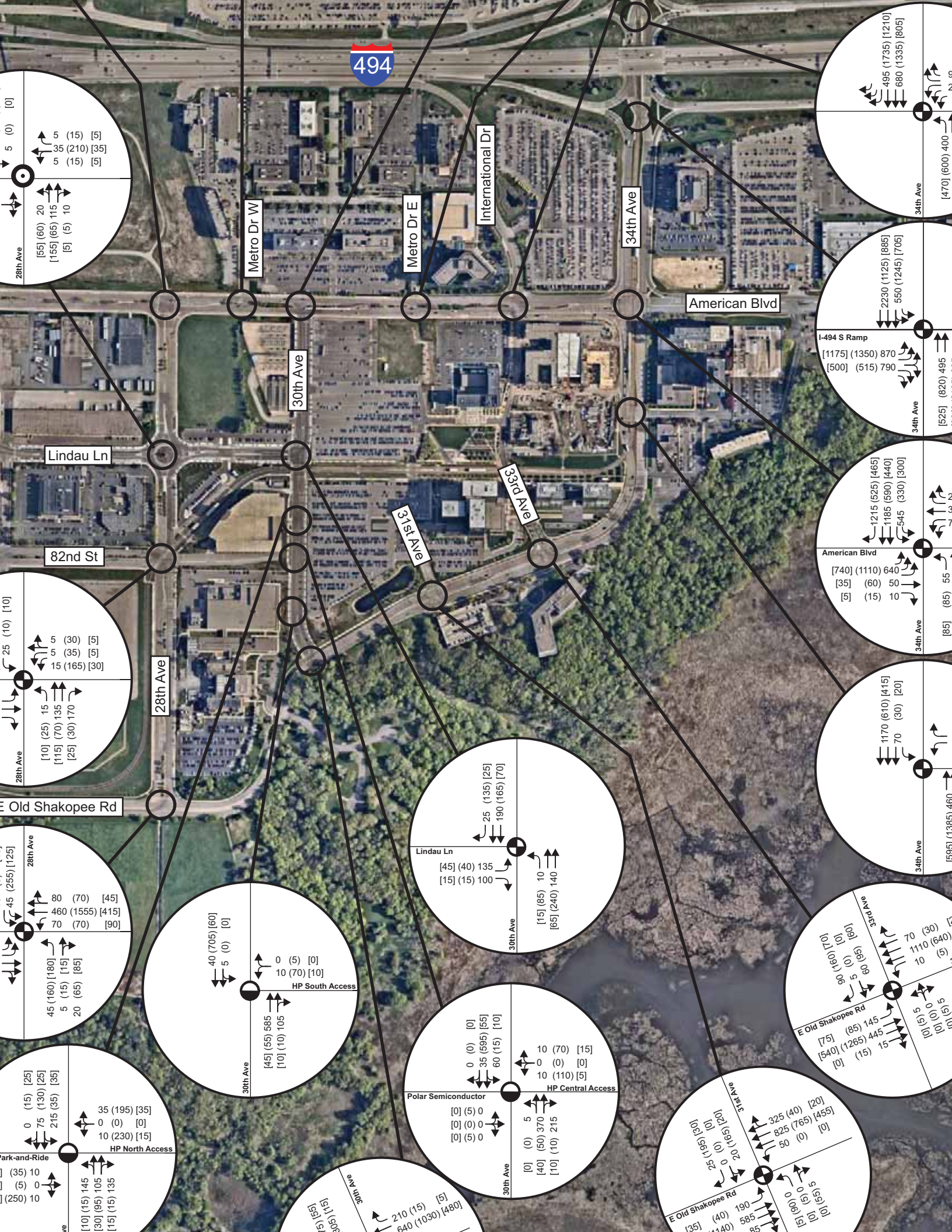


Table 11. Year 2040 Conditions Peak Hour Capacity Analysis (Additional Improvements)

Intersection	AM Peak Hour	PM Peak Hour	Sat Peak Hour
24th Avenue/I-494 Interchange	C	C	D
24th Avenue/79th Avenue	A	A	B
24th Avenue/American Boulevard	C	C	C
24th Avenue/Lindau Lane	C	C	C
24th Avenue/82nd St	B	B	C
24th Avenue/Transit Station	A	A	A
24th Avenue/Killebrew Drive /East Old Shakopee Road	D	D	D
34th Avenue/I-494 Interchange	D	E (2)	C
34th Avenue/American Boulevard	D	E (2)	D
34th Avenue/Appletree Square	A	A	A
American Boulevard/IKEA Access (1)	A/C	A/C	A/B
American Boulevard/Thunderbird Road	C	C	D
American Boulevard/28th Avenue/Airport Access	A	A	A
American Boulevard/Metro Drive West (1)	A/D	A/B	A/A
American Boulevard/30th Avenue	A	B	A
American Boulevard/Metro Drive East	A	D	A
American Boulevard/33rd Avenue/International Drive (1)	A/A	C/C	A/A
Lindau Lane/IKEA Way	B	D	D
Lindau Lane/22nd Avenue	B	C	C
SB TH 77/NB TH 77 Merge at Killebrew Drive (1)	A/A	A/A	A/A
Killebrew Drive/20th Avenue	A	C	C
Killebrew Drive/22nd Avenue	A	B	B
East Old Shakopee Road/TH 77 S Ramps (1)	A/A	A/A	A/A
East Old Shakopee Road/TH 77 N Ramps	C	C	B
East Old Shakopee Road/86th Street	B	B	A
East Old Shakopee Road/28th Avenue	C	C	B
East Old Shakopee Road/30th Avenue	A	A	A
East Old Shakopee Road/31st Avenue	A	A	A
East Old Shakopee Road/33rd Avenue/Ceridian Access (1)	A/B	A/C	A/A
28th Avenue/Lindau Lane	A	A	A
28th Avenue/82nd Street	C	C	B
30th Avenue/Lindau Lane	B	B	A
30th Avenue/North HP Driveway/METRO Park-and-Ride (1)	A/B	A/B	A/A
30th Avenue/Central HP Driveway (1)	A/A	A/B	A/A
30th Avenue/South HP Driveway (1)	A/C	A/C	A/A
E 86th Street/Service Road (1)	A/A	A/A	A/A

(1) Side-street stop controlled intersection. Overall intersection LOS followed by the worst approach.

(2) Intersection operates at the LOS D/E border.



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd



494

34th Ave

American Blvd

24th Ave

30th Ave

Lindau Ln

82nd St

28th Ave

Killebrew Dr

E Old Shakopee Rd

86th St

E Old Shakopee Rd

Wayfinding

The South Loop District currently has seven (7) Freeway Plans that adjust dynamic message signage (DMS) on the adjacent freeway system to direct motorists on the preferred way to access the South Loop District. The Bloomington Police Department (BPD) and MOA work together to determine which plan should be implemented and then communicate with MnDOT TMC, who determines if the sign change request is appropriate. The signs default to reset back to Plan 1, which is the default plan, at 5:00 p.m. and 10:00 p.m. every day. Note that based on sign change protocol, sign changes will not occur more than one change per hour. The freeway sign change protocol is provided in Appendix N.

Dynamic messaging signage is located on TH 5, I-494 (west of Portland Avenue, at the I-494 eastbound to southbound ramp, and east of TH 5), and on TH 77 (north of I-494, and south of TH 77). Depending on the traffic conditions, each plan provides a different combination for how vehicles are guided to access the South Loop District, including the ability to direct to the following interchange options: I-494/24th Avenue, I-494/34th Avenue, TH 77/Lindau Lane, TH 77/Killebrew Drive, and TH 77/East Old Shakopee Road.

The South Loop District also has four local road wayfinding plans that adjust DMS installed on the local roads. The BPD and MOA work together to determine the plan request where the MOA requests a sign plan change and the Bloomington Traffic Engineer or Patrol Supervisor determines if the sign plan change is appropriate. Differing from the freeway plans, the local road plans will not automatically reset, and sign changes will not occur more than one change per 15 minutes.

The four local road wayfinding plans include conditions for when both ramps are open (A), when the west ramp is full (B), when the east ramp is full (C), and for when both ramps are full (D). To help direct motorists, DMS are located on 24th Avenue, 34th Avenue, American Boulevard, Lindau Lane, Killebrew Lane, and East Old Shakopee Road. The plans direct motorists to where available parking is located and work in coordination with the freeway plans to provide the best possible operations.

As recommended in the *Mall of America Phase 2B Traffic Study*, dated November 2015, when the MOA Phase 2 development occurs, the existing wayfinding plan for the South Loop District should be revisited. This includes revisiting the freeway and local road plan DMS to determine which plans should be utilized when Gate Closures occur and if any new plans should be developed. For example, Plan 7 should be used when Phase 1 and 2 have gate closures. This plan will direct traffic to use the I-494/34th Avenue interchange and the TH 77/East Old Shakopee Road interchange. This will provide relief to 24th Avenue and Lindau Lane.

The wayfinding plans are an integral component of current and future operations in the South Loop District. As new development occurs both the dynamic and static wayfinding signs should be reviewed and updated if needed to better accommodate traffic. Efficient use of the freeway and local wayfinding sign plans has the potential to reduce congestion and limit the intersection capacity improvements needed in the South Loop District.

Autonomous/Connected Vehicle Impacts

In the past when estimating future traffic forecasts, it has been assumed that the current assumptions relating to travel trends, capacity, and mode preference will not significantly change under future conditions. However, based on upcoming new technology and several behavioral trends it is likely these base assumptions will be different under future conditions compared to what they are now. The transportation industry is undergoing rapid change. One of the most revolutionary changes expected to impact traffic forecasts/patterns is the introduction of autonomous/connected vehicles (AV/CV) or self-driving vehicles.

A recent paper (*Traffic Forecasting and Autonomous Vehicles*) submitted for the 2016 European Transport conference surveyed industry experts on how AV/CV technology will impact traffic models and projects. The conclusion of this study is that there is a wide spread view on when and how AV/CV technology will impact current travel conditions. Based on the current information that is available, it is very difficult to estimate how the technology will be used and how it will affect mobility. The following information summarizes key information based on what is known or thought most likely to occur in the upcoming years.

Adoption

- AV and CV are emerging technologies.
- Some components already exist, additional concepts and applications are being tested.
- Some expect that broad adoption will occur within the next 10 to 15 years.
- Market acceptance, liability and other issues are currently unknown.

Operations/Safety

- Safety improvements, increasing the reliability of transportation system.
- Performance/efficiency improvement, such as vehicle spacing/headways increasing roadway capacity without increasing the number of lanes.
- Efficiencies due to dynamic routing and parking location.

Travel Behavior

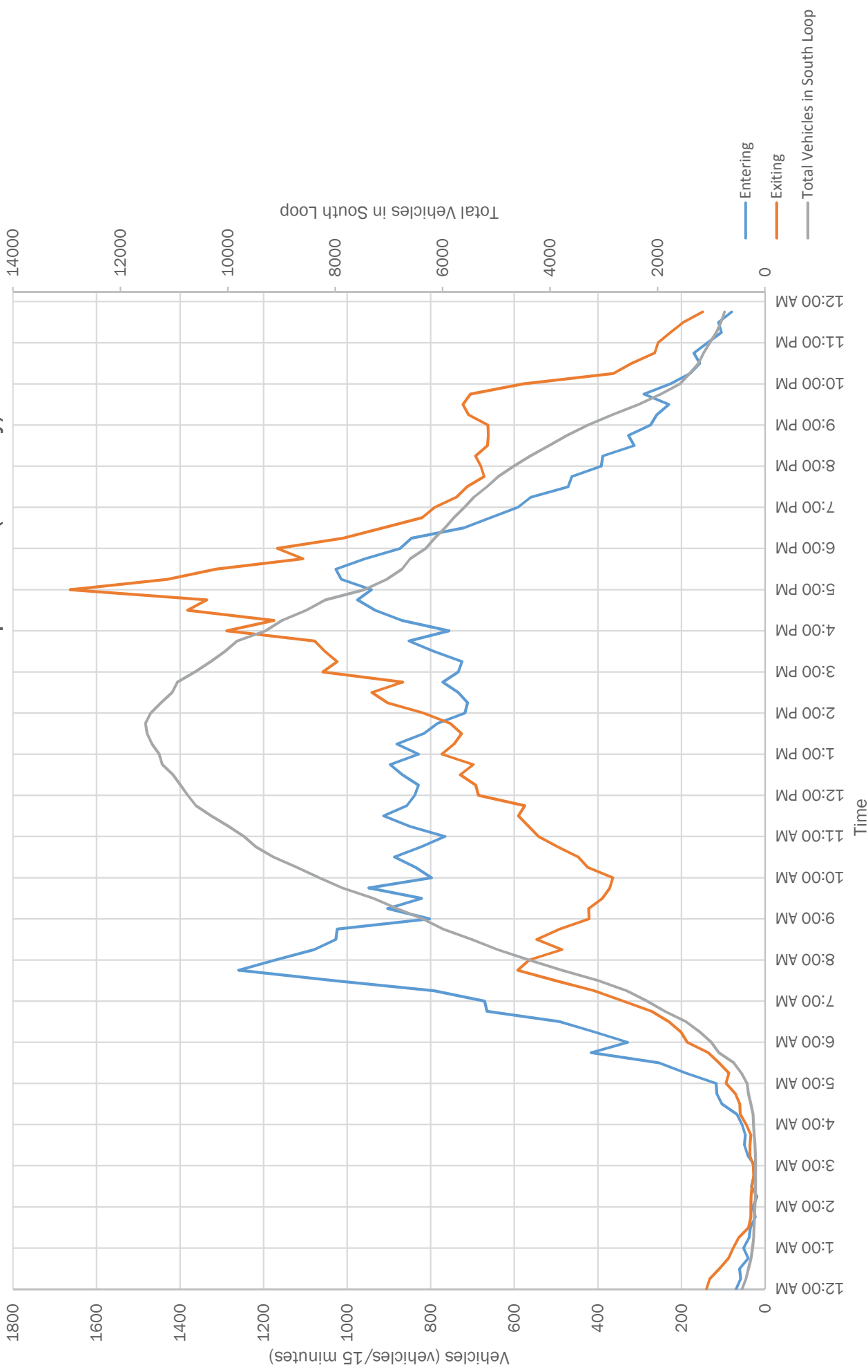
- It is unclear whether the overall impact would increase or decrease vehicle miles of travel. This will depend on how the technology emerges and its cost.
- Autonomous and shared vehicles provide accessibility and opportunity for people who may not otherwise travel.
- Extra circulation of vehicles (seeking remote parking, etc.) may increase traffic.
- Reduce parking supply needed since AV technology provides potential for remote parking or no parking if a shared vehicle system is implemented.
- Increase in the number of drop-offs since motorists will no longer be parking their vehicles.
- Transit last mile/first mile could reduce long-haul travel by automobile, but increase traffic around transit station.

There is currently too much uncertainty with how AV/CV technology will be implemented and the impact to the transportation network. It is recommended that this be reviewed once again when the South Loop District Update occurs in approximately five years. At that time more information will likely be known about AV/CV technologies and better assumptions/decisions can be developed to assess what the infrastructure needs are needed in the long-term (year 2025 and beyond).

Appendix A
24-Hour Counts: Hourly Profiles and
Traffic Counts

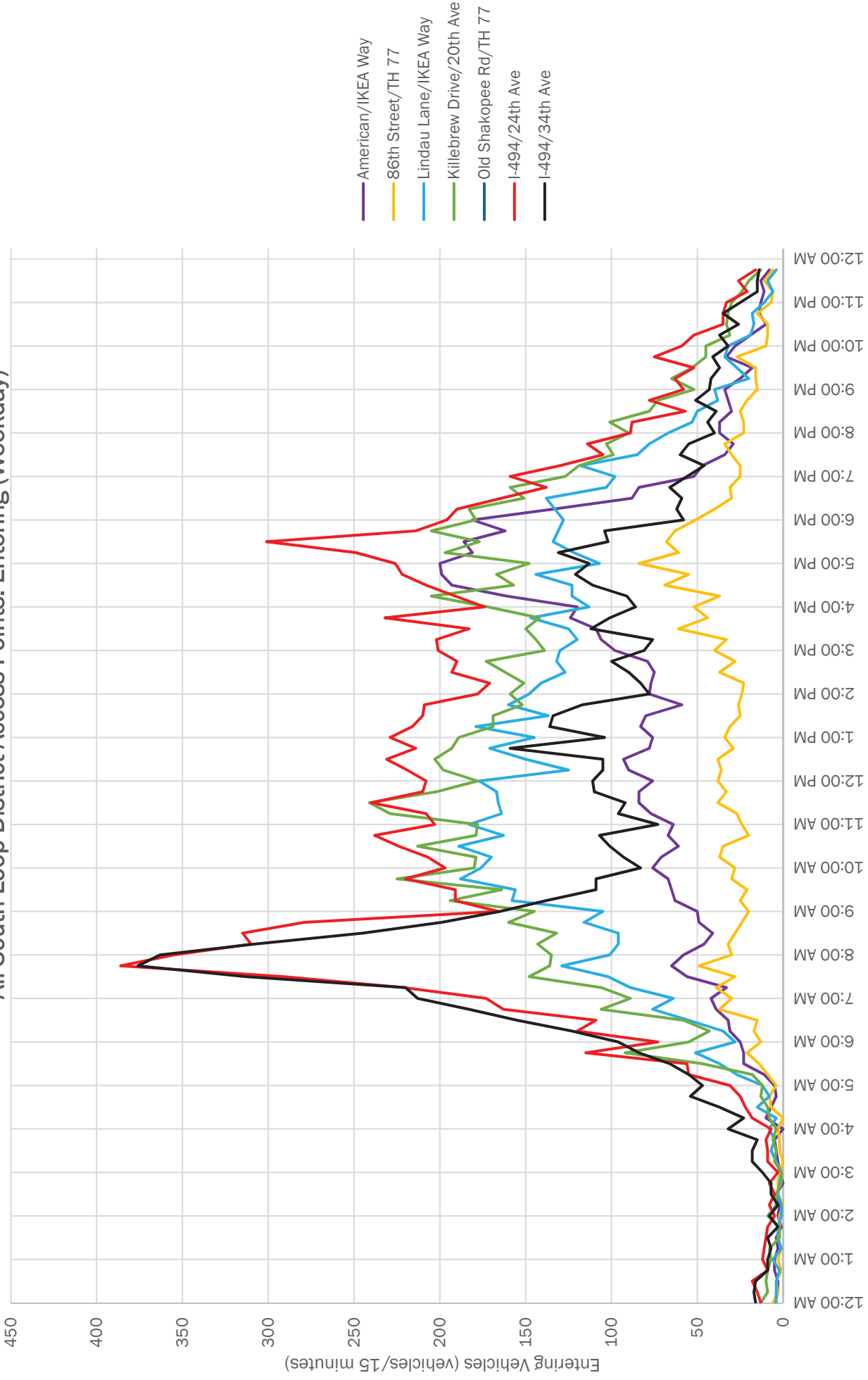
South Loop District Traffic Study: Data Collection Summary

All Access Points to South Loop District (Weekday)



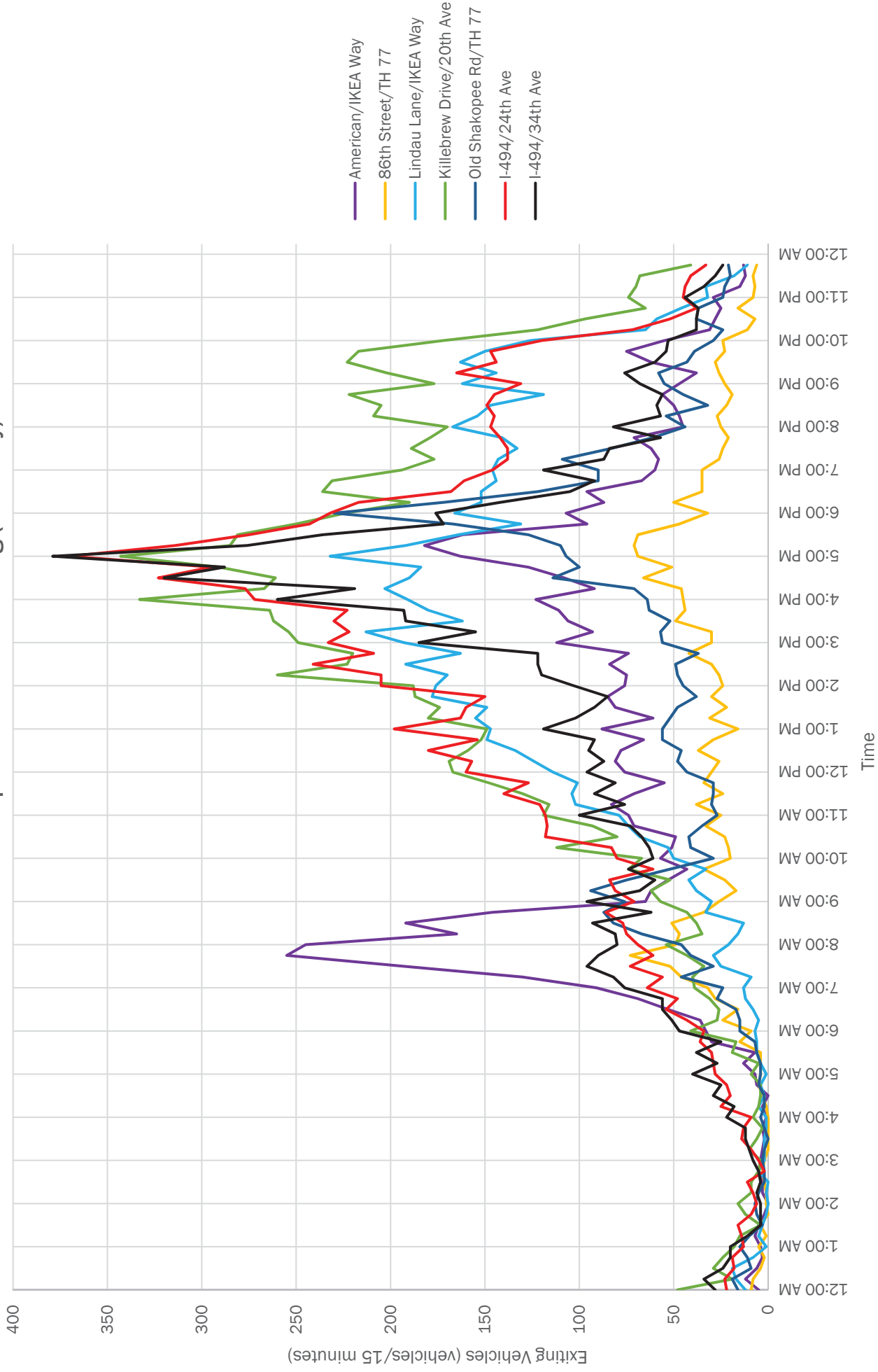
South Loop District Traffic Study: Data Collection Summary

All South Loop District Access Points: Entering (Weekday)



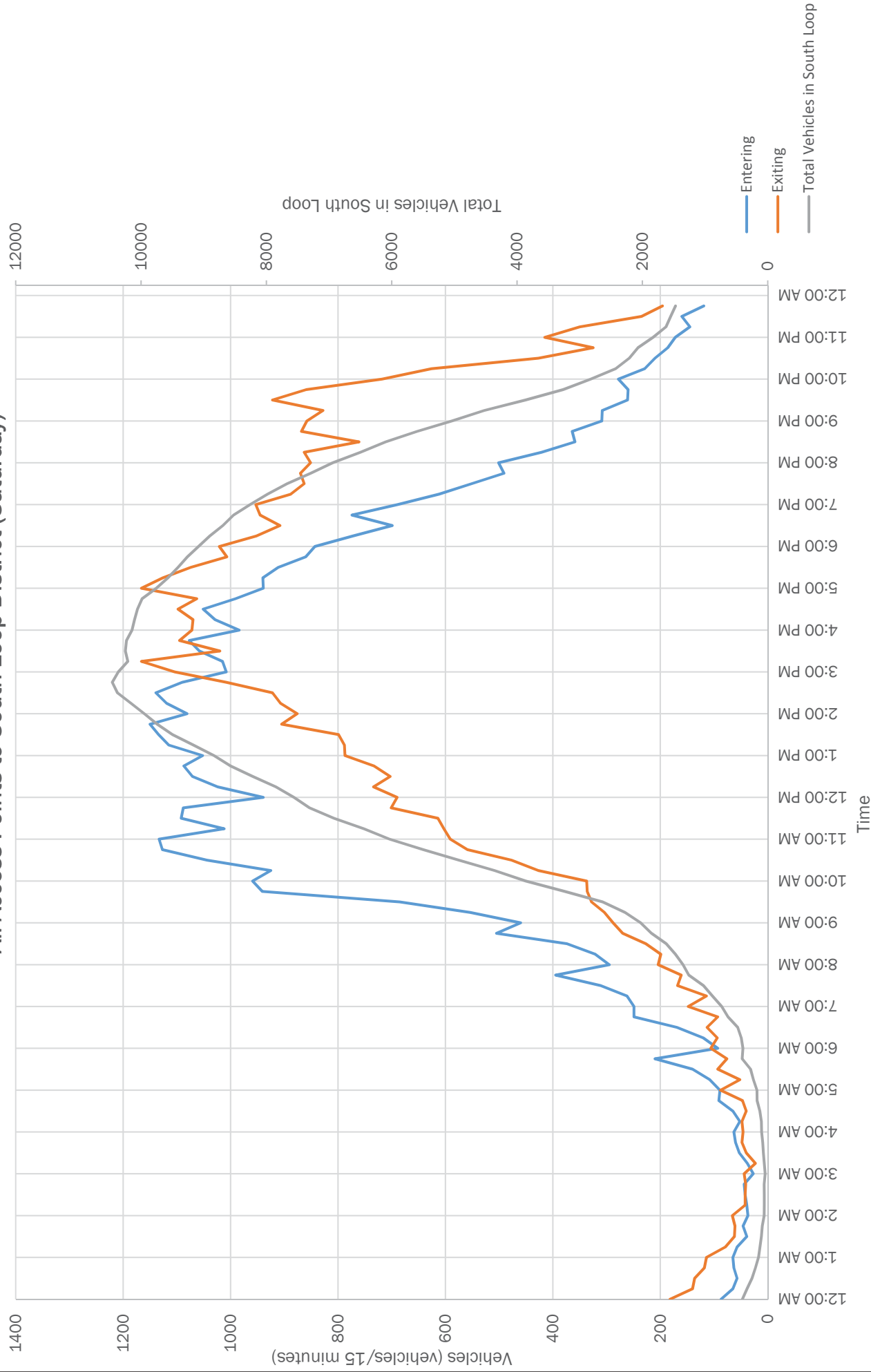
South Loop District Traffic Study:
Data Collection Summary

All South Loop Access Points: Exiting (Weekday)



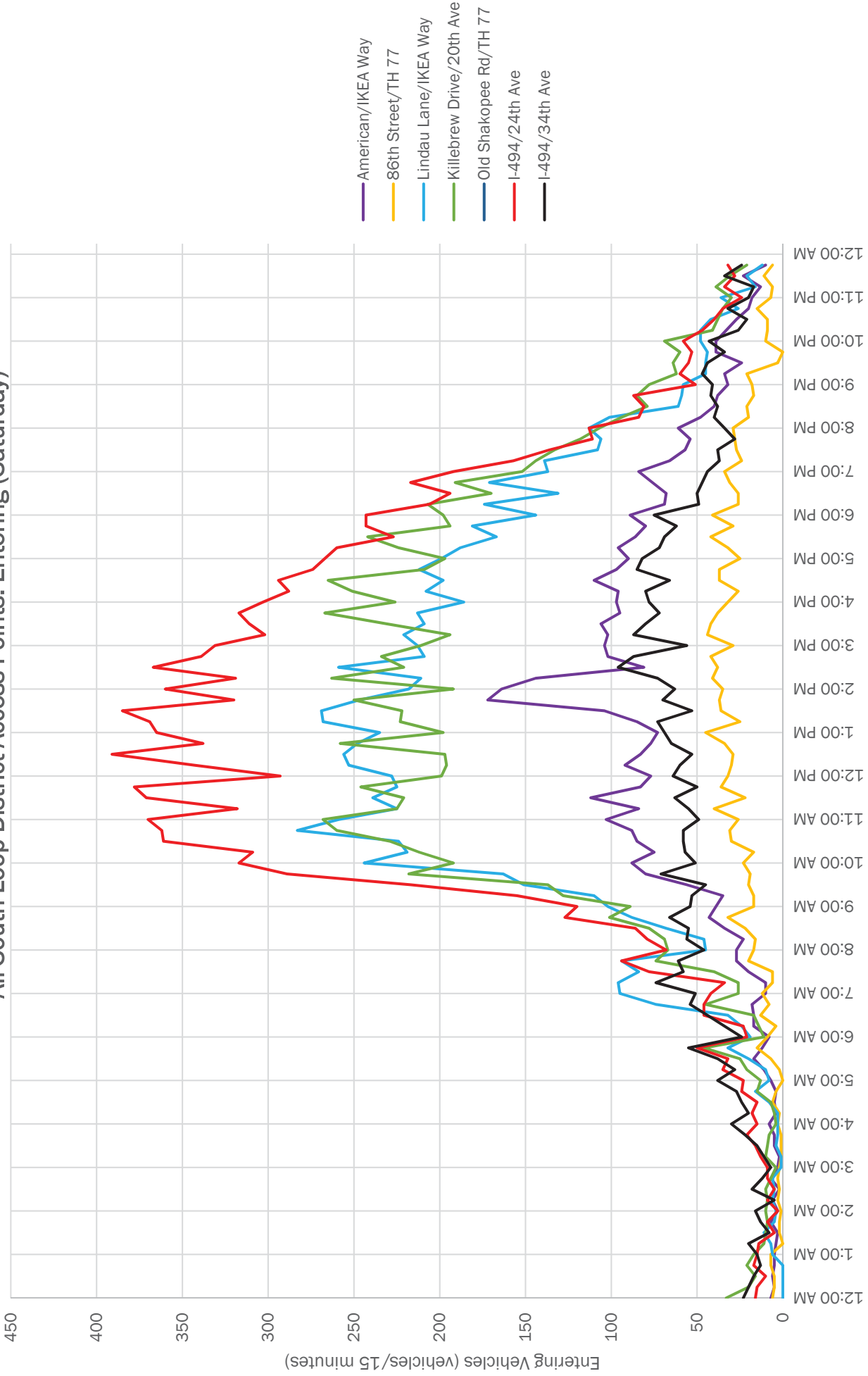
South Loop District Traffic Study: Data Collection Summary

All Access Points to South Loop District (Saturday)



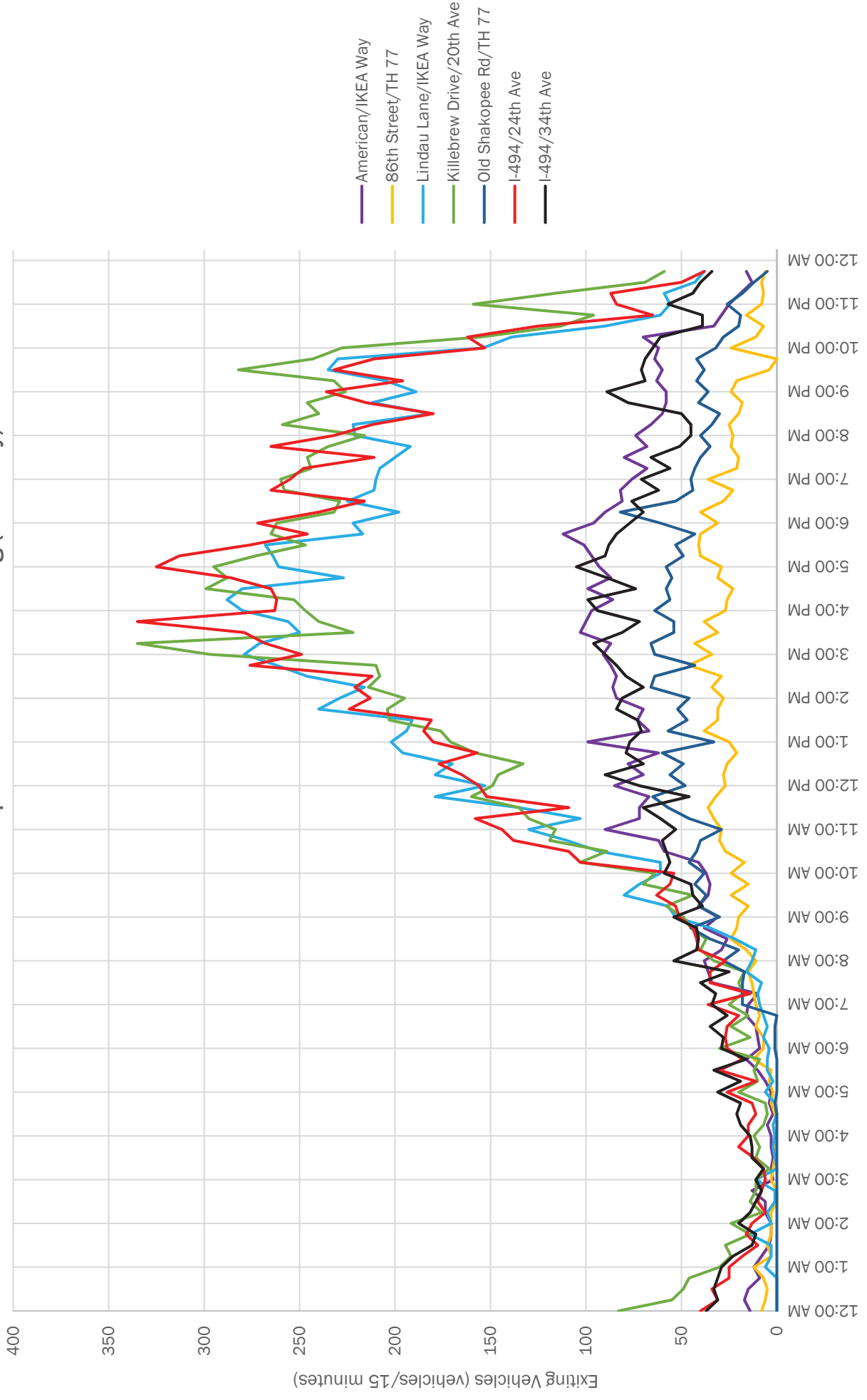
South Loop District Traffic Study: Data Collection Summary

All South Loop District Access Points: Entering (Saturday)



South Loop District Traffic Study: Data Collection Summary

All South Loop Access Points: Exiting (Saturday)



SRF Consulting Group Turning Movement Count

Count 3/31/2016
Date

Start Time	American Blvd					American Blvd					Ikea Way					Thunderbird Rd					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total		
	L	T	EB R	Ped	Bikes	L	T	WB R	Ped	Bikes	L	T	NB R	Ped	Bikes	L	T	SB R	Ped	Bikes						
000	-		5	-	-	-		5	-	-	-											10	-	-	-	42
015	-		3	-	-	-		11	-	-	-		1	-	-	-						15	-	-	13%	41
030	-		3	-	-	-		6	-	-	-			-	-	-						9	-	-	11%	36
045	-		5	-	-	-		3	-	-	-			1	-	-						8	1	-	11%	36
100	-		5	-	-	-		4	-	-	-			-	-	-						9	-	-	-	33
115	-		3	-	-	-		7	-	-	-			-	-	-						10	-	-	20%	27
130	-		2	2	-	-		5	-	-	-			-	-	-						9	-	-	11%	22
145	-		1	-	-	-		2	2	-	-			-	-	-						5	-	-	40%	21
200	-		2	1	-	-		2	-	-	-			-	-	-						3	-	-	-	21
215	-		2	-	-	-		3	-	-	-			-	-	-						5	-	-	20%	24
230	-		4	-	-	-		1	3	-	-			-	-	-						8	-	-	-	25
245	-		-	-	-	-		5	-	-	-			-	-	-						1	5	-	20%	23
300	-		2	-	-	-		4	-	-	-			-	-	-						6	-	-	17%	26
315	-		3	-	-	-		3	-	-	-			-	-	-						6	-	-	-	21
330	-		4	-	-	-		2	-	-	-			-	-	-						6	-	-	-	28
345	-		5	-	-	-		3	-	-	-			-	-	-						8	-	-	13%	29
400	-		-	-	-	-		1	-	-	-			-	-	-						1	-	-	-	31
415	-		10	-	-	-		3	-	-	-			-	-	-						13	-	-	15%	42
430	-		7	-	-	-		-	-	-	-			-	-	-						7	-	-	14%	53
445	-		4	-	-	-		6	-	-	-			1	-	-						10	-	-	40%	76
500	-		5	-	-	-		7	-	-	-			-	-	-						12	-	-	17%	121
515	-		10	1	-	-		13	-	-	-			-	-	-						24	-	-	17%	167
530	-		20	3	-	-		6	-	-	-			1	-	-						30	-	-	3%	210
545	-		23	-	-	-		2	30	-	-			-	-	-						55	-	-	13%	265
600	-		25	-	-	-		33	-	-	-			-	-	-						58	-	-	9%	320
615	-		29	2	-	-		36	-	-	-			-	-	1						2	67	3	9%	396
630	-		31	1	-	-		49	-	-	-			4	-	-						85	1	-	11%	494
645	-		36	3	-	-		2	65	-	-			4	-	-						110	-	-	8%	658
700	-		40	2	-	-		1	89	-	-			2	-	-						134	-	-	3%	872
715	-		32	1	-	-		2	121	-	-			9	-	-						165	-	-	9%	1,042
730	-		54	2	-	-		-	184	-	-			9	-	-						249	-	-	3%	1,090
745	-		63	2	-	1		4	242	-	-			13	-	-						324	1	-	3%	1,075
800	-		55	3	-	-		1	239	-	-			6	-	-						304	-	-	3%	947
815	-		42	4	-	-		2	158	-	-			7	-	-						213	-	-	4%	759
830	-		41	-	-	-		1	182	-	-			10	-	-						234	-	-	3%	672
845	-		45	4	-	-		1	141	-	-			5	-	1						196	-	-	5%	558
900	-		47	3	-	-		-	61	-	-			4	-	1						116	-	-	7%	477
915	-		54	9	-	-		1	56	-	-			6	-	1						126	-	-	10%	495
930	-		60	5	-	1		2	50	-	-			3	-	-						120	1	-	7%	500
945	-		62	5	-	-		5	41	-	1			2	-	-						115	-	-	3%	497
1000	-		70	6	-	-		1	51	-	-			6	-	-						134	-	-	4%	525
1015	-		64	7	-	-		4	48	-	-			3	-	5						131	-	-	4%	535
1030	-		51	10	-	-		5	45	-	-			4	-	2						117	-	-	4%	566
1045	-		63	4	-	-		2	68	-	-			3	-	3						143	-	-	5%	606
1100	-		59	5	-	-		2	67	-	-			7	-	4						144	-	-	6%	608
1115	-		70	7	-	-		1	75	-	-			8	-	1						162	-	-	5%	621
1130	-		77	7	-	-		-	63	-	-			8	-	2						157	-	-	3%	641
1145	-		79	5	-	-		3	46	-	1			9	-	3	1					145	1	-	3%	661
1200	-		65	11	-	-		4	67	-	-			9	-	1	1					157	-	-	3%	666
1215	-		80	10	-	-		5	67	-	-			14	-	6	-					182	-	-	5%	680
1230	-		86	7	-	-		-	65	-	-			13	-	6	-					177	-	-	2%	650
1245	-		71	7	-	-		2	60	-	-			6	-	4	1					150	-	-	2%	640
1300	-		71	5	-	-		1	81	-	-			7	-	6	-					171	-	-	5%	641
1315	-		75	8	-	-		2	51	-	-			10	-	6	-					152	-	-	3%	629
1330	-		73	7	-	-		4	71	-	-		1	10	-	2	-					167	2	-	5%	636
1345	-		53	6	-	-		3	77	-	-			8	-	4	1	1				151	3	-	5%	641
1400	-		74	4	-	-		1	69	-	-			7	-	4	1					159	-	-	6%	650
1415	-		70	7	-	-		3	71	-	-			4	-	4	2					159	-	-	5%	703
1430	-		66	9	-	-		6	75	-	-			9	-	7	1					172	1	-	3%	747
1445	-		75	4	-	-		1	66	-	-			8	-	6	-					160	-	-	4%	793
1500	-		85	13	-	-		-	99	-	-			13	-	2	-	1				212	1	-	5%	871
1515	-		101	5	-	-		1	83	-	-			10	-	3	1					203	-	-	1%	909
1530	-		97	12	-	-		1	99	-	-			7	-	2	1					218	1	-	3%	965
1545	-		115	9	-	-		-	102	-	-			9	-	3	-					238	-	-	2%	1,055
1600	-		107	13	-	-		4	114	-	-			9	-	3	-					250	-	-	6%	1,148
1615	-		149	12	-	-		2	90	-	-			2	-	4	2					259	-	-	2%	1,270
1630	-		183	10	-	-		2	101	-	-			7	-	5	-					308	1	-	3%	1,381
1645	-		192	7	-	-		-	120	-	-			7	-	5	-					331	-	-	2%	1,426
1700	-		189	11	-	-		7	152	-	-			11	-	2	-					372	-	-	4%	1,363
1715	-		169	12	-	-		-	175	-	-			7	-	7	-					370	-	-	1%	1,285
1730	-		179	7	-	-		2	156	-	-			6	-	3	-					353	-	-	4%	1,141
1745	-		155	7	-	-		2	89	-	-			7	-	8	-					268	-	-	2%	976
1800	-		172	9	1	-		-	102	-	-			5	-	6	-					294	-	-	4%	860
1815	-		122	12	-	-		2	77	-	-			10	-	3	-	1				226	1	-	3%	682
1830	-		80	8	-	-		3	86	-	-			10	-	1	1	1				188	1	-	6%	565
1845	-		78	6	-	-		-	60	-	-			7	-	1	2					152	-	-	3%	476
1900	-		50	2	-	-		1	54	-	1			6	-	3	-					116	1	-	4%	429
1915	-		41	6	-	-		1	52	-	-			6	-	3	1					109	-	-	5%	400
1930	-		34	-	-	-		-	58	-	-			4	-	3	-	1				99	1	-	6%	379
1945	-		28	1	-	-		-	67	-	-			4	-	5	-					105	-	-	2%	361
2000	-		32	5	-	-		-	39	-	-															

SRF Consulting Group Turning Movement Count

Start Time	American Blvd EB					American Blvd WB					Ikea Way NB					Thunderbird Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
Peak 1 0000 to 1000																							
730	-	54	2	-	-	-	184	-	-	-	9	-	-	-	-	-	-	-	-	-	249	-	3%
745	-	63	2	-	1	4	242	-	-	-	13	-	-	-	-	-	-	-	1	-	324	1	3%
800	-	55	3	-	-	1	239	-	-	-	6	-	-	-	-	-	-	-	-	-	304	-	3%
815	-	42	4	-	-	2	158	-	-	-	7	-	-	-	-	-	-	-	-	-	213	-	4%
Total	-	214	11	-	1	7	823	-	-	-	35	-	-	-	-	-	-	-	1	-	1,090	1	3%
PHF	-	0.85	0.69	-	-	0.44	0.85	-	-	-	0.67	-	-	-	-	-	-	-	-	-	0.84	-	-
Trucks	-	5%	-	-	-	-	3%	-	-	-	-	-	-	-	-	-	-	-	-	-	3%	-	-
Peak 2 1000 to 1400																							
1215	-	80	10	-	-	5	67	-	-	-	14	-	6	-	-	-	-	-	-	-	182	-	5%
1230	-	86	7	-	-	-	65	-	-	-	13	-	6	-	-	-	-	-	-	-	177	-	2%
1245	-	71	7	-	-	2	60	-	-	-	6	-	4	1	-	-	-	-	-	-	150	1	2%
1300	-	71	5	-	-	1	81	-	-	-	7	-	6	-	-	-	-	-	6	-	171	6	5%
Total	-	308	29	-	-	8	273	-	-	-	40	-	22	1	-	-	-	-	6	-	680	7	4%
PHF	-	0.90	0.73	-	-	0.40	0.84	-	-	-	0.71	-	0.92	-	-	-	-	-	-	-	0.93	-	-
Trucks	-	2%	-	-	-	-	6%	-	-	-	-	-	-	-	-	-	-	-	-	-	4%	-	-
Peak 3 1400 to 2400																							
1645	-	192	7	-	-	-	120	-	-	-	7	-	5	-	-	-	-	-	1	-	331	1	2%
1700	-	189	11	-	-	7	152	-	-	-	11	-	2	-	-	-	-	-	-	-	372	-	4%
1715	-	169	12	-	-	-	175	-	-	-	7	-	7	-	-	-	-	-	-	-	370	-	1%
1730	-	179	7	-	-	2	156	-	-	-	6	-	3	-	-	-	-	-	1	-	353	1	4%
Total	-	729	37	-	-	9	603	-	-	-	31	-	17	-	-	-	-	-	2	-	1,426	2	3%
PHF	-	0.95	0.77	-	-	0.32	0.86	-	-	-	0.70	-	0.61	-	-	-	-	-	-	-	0.96	-	-
Trucks	-	2%	-	-	-	-	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	3%	-	-

SRF Consulting Group Turning Movement Count

Count
Date 4/2/2016

Start Time	American BLVD					American BLVD					IKEA				Thunderbird Rd				15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total		
	L	T	EB R	Ped	Bikes	L	T	WB R	Ped	Bikes	L	T	NB R	Ped	Bikes	L	T	SB R					Ped	Bikes
000	-	7	-	-	1	-	11	-	-	-	3	-	-	-	-	-	-	-	-	-	21	1	5%	78
015	-	5	-	-	-	-	16	-	-	-	1	-	-	-	-	-	-	-	-	-	22	-	14%	74
030	-	6	-	-	-	-	14	-	-	-	1	-	-	-	-	-	-	-	-	-	21	-	-	64
045	-	5	-	-	-	-	9	-	-	-	-	-	-	1	-	-	-	-	-	-	14	1	7%	50
100	-	5	-	-	-	-	12	-	-	-	-	-	-	1	-	-	-	-	-	-	17	1	-	46
115	-	4	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	8%	35
130	-	3	-	-	-	-	3	-	-	-	1	-	-	-	-	-	-	-	-	-	7	-	14%	35
145	-	7	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	10%	36
200	-	3	-	-	-	-	3	-	-	-	-	-	-	1	-	-	-	-	-	-	6	1	-	46
215	-	6	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	45
230	-	2	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	38
245	-	7	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	-	37
300	-	3	-	-	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	5	1	-	25
315	-	2	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	31
330	-	5	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	35
345	-	5	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	8	-	-	35
400	-	7	1	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	11	-	9%	35
415	-	4	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	9	-	22%	34
430	-	5	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	29%	42
445	-	4	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	1	-	8	1	25%	62
500	-	7	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	10	-	20%	83
515	-	10	1	-	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	17	-	18%	90
530	-	16	1	-	-	-	9	-	-	-	1	-	-	-	-	-	-	-	-	-	27	-	19%	100
545	-	11	1	-	-	1	16	-	-	-	-	-	-	-	-	-	-	-	-	-	29	-	17%	101
600	-	7	1	-	-	-	9	-	-	-	-	-	-	1	-	-	-	-	-	-	17	-	12%	106
615	-	16	1	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	7%	114
630	-	17	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-	-	28	-	7%	107
645	-	16	2	-	-	-	15	-	-	-	1	-	-	-	-	-	-	-	-	-	34	-	9%	133
700	-	10	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	-	25	-	4%	165
715	-	10	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	20	-	10%	205
730	-	18	2	-	-	-	32	-	-	-	2	-	-	-	-	-	-	-	-	-	54	-	2%	237
745	-	24	3	-	-	3	36	-	-	-	-	-	-	-	-	-	-	-	-	-	66	-	4%	245
800	-	25	2	-	-	-	37	-	-	-	1	-	-	-	-	-	-	-	-	-	65	-	2%	262
815	-	22	1	-	-	-	27	-	-	-	2	-	-	-	-	-	-	-	-	-	52	-	8%	270
830	-	33	1	-	-	2	25	-	-	-	1	-	-	-	-	-	-	-	-	-	62	-	3%	300
845	-	35	8	-	-	2	36	-	-	-	2	-	-	-	-	-	-	-	-	-	83	-	2%	332
900	-	38	1	-	-	2	29	-	-	-	1	-	-	-	-	-	-	-	-	-	73	-	4%	368
915	-	29	6	-	-	3	37	-	-	-	4	-	3	-	-	-	-	-	-	-	82	-	5%	424
930	-	49	7	-	-	2	35	-	-	-	1	-	-	1	-	-	-	-	-	-	94	-	6%	468
945	-	68	12	-	-	4	32	-	-	-	3	-	-	-	-	-	-	-	-	-	119	-	3%	525
1000	-	83	5	-	-	4	35	-	-	-	2	-	-	-	-	-	-	-	-	-	129	-	7%	560
1015	-	67	8	-	-	6	37	-	-	-	4	-	4	-	-	-	-	-	-	-	126	-	3%	634
1030	-	76	9	-	-	4	52	-	-	-	7	-	3	-	-	-	-	-	-	-	151	-	6%	675
1045	-	77	11	-	-	2	53	-	-	-	9	-	2	-	-	-	-	-	-	-	154	-	5%	717
1100	-	86	17	-	-	1	80	-	-	-	10	-	9	2	-	-	-	-	-	-	203	-	4%	722
1115	-	67	17	-	-	3	62	-	-	-	10	-	8	-	-	-	-	-	-	-	167	-	3%	689
1130	-	104	8	-	-	3	63	-	1	-	9	-	6	2	-	-	-	-	-	-	193	-	3%	695
1145	-	75	8	-	-	3	60	-	-	-	7	-	6	-	-	-	-	-	-	-	159	-	3%	669
1200	-	69	8	-	-	1	78	-	-	-	7	-	7	-	-	-	-	-	-	-	170	-	8%	666
1215	-	80	12	2	-	4	64	-	-	-	6	-	7	2	2	-	-	-	-	-	173	2	4%	687
1230	-	73	10	-	-	2	70	-	-	-	8	-	4	-	-	-	-	-	-	-	167	-	4%	689
1245	-	65	12	-	-	9	49	-	-	-	13	-	8	1	1	-	-	-	-	-	156	1	4%	715
1300	-	62	11	-	-	5	75	-	-	-	24	-	14	-	-	-	-	-	-	-	191	-	3%	816
1315	-	74	11	-	-	7	57	-	-	-	10	-	16	-	-	-	-	-	-	-	175	-	5%	890
1330	-	87	17	-	-	4	62	-	-	-	11	-	12	-	1	-	-	-	-	-	193	1	5%	964
1345	-	152	20	-	-	4	59	-	-	-	11	-	11	-	-	-	-	-	-	-	257	-	1%	950
1400	-	141	23	-	-	3	70	-	-	-	14	-	14	-	-	-	-	-	-	-	265	-	4%	906
1415	-	122	22	-	-	3	65	-	-	-	21	-	16	1	-	-	-	-	-	-	249	-	3%	846
1430	-	70	11	-	-	4	74	-	-	-	10	-	10	1	-	-	-	-	-	-	179	-	3%	802
1445	-	90	12	-	-	5	65	-	-	-	22	-	19	-	-	-	-	-	-	-	213	-	2%	855
1500	-	92	12	-	-	2	74	-	-	-	17	-	8	-	1	-	-	-	-	-	205	1	4%	857
1515	-	88	14	-	1	5	75	-	1	-	12	-	11	-	-	-	-	-	-	-	205	1	2%	870
1530	-	93	13	-	-	5	87	-	1	-	16	-	18	-	-	-	-	-	-	-	232	-	3%	863
1545	-	77	18	-	-	5	82	-	-	-	18	-	15	-	-	-	-	-	-	-	215	-	3%	862
1600	-	85	12	-	-	6	74	-	1	-	23	-	18	1	-	-	-	-	-	-	218	-	3%	861
1615	-	90	6	-	-	3	66	-	-	-	20	-	13	2	-	-	-	-	-	-	198	-	3%	845
1630	-	101	9	-	-	2	74	-	-	-	25	-	20	1	-	-	-	-	-	-	231	-	2%	849
1645	-	81	16	-	-	9	66	-	-	-	21	-	21	1	-	-	-	-	-	-	214	-	1%	811
1700	-	78	12	-	-	3	79	-	-	-	14	-	16	1	-	-	-	-	-	-	202	-	3%	798
1715	-	85	11	-	-	3	74	-	-	-	23	-	6	-	-	-	-	-	-	-	202	-	3%	797
1730	-	78	8	-	-	1	85	-	-	-	16	-	5	-	-	-	-	-	-	-	193	-	3%	766
1745	-	71	9	-	-	1	96	-	-	-	16	-	8	-	-	-	-	-	-	-	201	-	6%	733
1800	-	83	6	-	-	1	85	-	-	-	11	-	15	-	-	-	-	-	-	-	201	-	1%	698
1815	-	63	6	-	-	-	81	-	-	-	9	-	12	-	-	-	-	-	-	-	171	-	3%	667
1830	-	65	3	-	-	3	64	-	-	-	17	-	8	-	-	-	-	-	-	-	160	-	4%	643
1845	-	70	6	-	-	1	71	-	-	-	11	-	7	-	-	-	-	-	-	-	166	-	3%	635
1900	-	82	2	-	-	1	67	-	-	-	9	-	9	-	-	-	-	-	-	-	170	-	2%	601
1915	-	61	5	-	-	-	62	-	-	-	6	-	13	-	-	-	-	-	-	-	147	-	3%	576
1930	-	55	2	-	-	5	73	-	-	-	7	-	10	-	-	-	-	-	-	-	152	-	3%	550
1945	-	47	7	-	-	1	61	-	-	-	7	-	9	-	-	-	-	-	-	-	132	-	4%	506
2000	-	56	5	-	-	2	64	-	-	-	10	-	8	-	-	-	-	-	-	-	145	-	5%	480
2015	-	43	5	-	-	2	56	-	-															

SRF Consulting Group Turning Movement Count

Start Time	American BLVD EB					American BLVD WB					IKEA NB					Thunderbird Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1330	-	87	17	-	-	4	62	-	-	-	11	-	12	-	1	-	-	-	-	-	193	-	5%
1345	-	152	20	-	-	4	59	-	-	-	11	-	11	-	-	-	-	-	-	-	257	-	1%
1400	-	141	23	-	-	3	70	-	-	-	14	-	14	-	-	-	-	-	-	-	265	-	4%
1415	-	122	22	-	-	3	65	-	-	-	21	-	16	1	-	-	-	-	-	-	249	1	3%
Total	-	502	82	-	-	14	256	-	-	-	57	-	53	1	1	-	-	-	-	-	964	1	3%
PHF	-	0.83	0.89	-	-	0.88	0.91	-	-	-	0.68	-	0.83	-	-	-	-	-	-	-	0.91	-	-
Trucks	-	4%	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	3%	-	-

SRF Consulting Group Turning Movement Count

Count 3/17/2016
Date

Start Time	TH 77 EB					TH 77 WB					Service Rd NB					Service Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total	
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
000	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	13
015	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	12
030	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	14
045	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	10
100	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	11
115	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	8
130	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	5
145	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	6
200	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
215	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	4
230	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	5
245	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	10
315	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	13
330	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	11
345	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	14
400	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	33%	-	15
415	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	16
430	-	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	27
445	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	44
500	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	79
515	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	8%	-	102
530	-	21	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	113
545	-	36	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	40	-	-	-	120
600	-	23	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27	-	-	-	134
615	-	20	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	-	157
630	-	28	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30	-	-	-	188
645	-	46	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	-	-	-	236
700	-	46	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-	255
715	-	45	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	54	-	-	-	274
730	-	70	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	1%	-	280
745	-	61	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	-	1%	-	280
800	-	63	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	-	-	-	286
815	-	55	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	300
830	-	63	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	-	332
845	-	68	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	-	1%	-	331
900	-	66	17	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	83	-	1%	-	352
915	-	86	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	-	1%	-	355
930	-	72	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	-	-	-	336
945	-	93	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	2%	-	339
1000	-	84	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	-	-	308
1015	-	71	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	73	-	-	-	292
1030	-	76	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	1%	-	317
1045	-	66	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	-	-	-	336
1100	-	69	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	1%	-	360
1115	-	96	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	-	-	-	369
1130	-	95	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	-	-	-	362
1145	-	85	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93	-	-	-	328
1200	-	77	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	-	-	-	311
1215	-	88	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	-	-	-	328
1230	-	63	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	-	-	-	312
1245	-	65	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	-	1%	-	312
1300	-	90	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	96	-	1%	-	297
1315	-	71	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	75	-	-	-	267
1330	-	64	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	-	-	-	251
1345	-	59	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	61	-	-	-	255
1400	-	63	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	66	-	-	-	274
1415	-	54	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	59	-	-	-	275
1430	-	63	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69	-	-	-	287
1445	-	71	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	1%	-	283
1500	-	63	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	-	-	-	290
1515	-	67	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-	-	-	307
1530	-	61	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	65	-	-	-	333
1545	-	79	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	87	-	1%	-	326
1600	-	81	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	84	-	1%	-	325
1615	-	94	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	97	-	-	-	321
1630	-	55	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	-	-	-	309
1645	-	81	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	1%	-	337
1700	-	77	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-	-	332
1715	-	73	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-	-	328
1730	-	83	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	1%	-	317
1745	-	78	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81	-	-	-	289
1800	-	70	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	76	-	-	-	278
1815	-	70	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	74	-	-	-	262
1830	-	54	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	58	-	-	-	227
1845	-	67	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	70	-	1%	-	219
1900	-	57	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	191
1915	-	38	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39	-	-	-	163
1930	-	48	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	50	-	-	-	158
1945	-	40	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	42	-	-	-	139
2000	-	30	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	32	-	-	-	118
2015	-	31	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34	-	-	-	102
2030	-	31	-	-	-	-																			

SRF Consulting Group Turning Movement Count

Start Time	TH 77 EB					TH 77 WB					Service Rd NB					Service Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
Peak 1 0000 to 1000																							
915	-	86	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92	-	1%
930	-	72	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77	-	-
945	-	93	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100	-	2%
1000	-	84	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	-
Total	-	335	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	355	-	1%
PHF	-	0.90	0.71	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.89	-	-
Trucks	-	1%	5%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1%	-	-
Peak 2 1000 to 1400																							
1115	-	96	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	98	-	-
1130	-	95	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99	-	-
1145	-	85	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93	-	-
1200	-	77	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	79	-	-
Total	-	353	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	369	-	-
PHF	-	0.92	0.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.93	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Peak 3 1400 to 2400																							
1645	-	81	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	1%
1700	-	77	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	80	-	-
1715	-	73	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85	-	-
1730	-	83	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	86	-	1%
Total	-	314	23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	337	-	1%
PHF	-	0.95	0.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.98	-	-
Trucks	-	0%	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1%	-	-

SRF Consulting Group Turning Movement Count

Start Time	77 Service Rd EB					77 Service Rd WB					Parking Lot Entrance NB					Parking Lot Entrance SB					15 min Veh. Total	15 min Ped Total	% Trucks	
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
1400	-	156	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	163	-	-
1415	-	147	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	163	-	1%
1430	-	168	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	176	-	1%
1445	-	128	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153	-	-
Total	-	599	56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	655	-	0%
PHF	-	0.89	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.93	-	-
Trucks	-	0%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-

SRF Consulting Group Turning Movement Count

Count Date 3/31/2016

Start Time	86th St EB					86th St WB					E Service Rd NB				E Service Rd SB				15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R					Ped	Bikes	
000	3	3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	6	-	-	15	-	-	-	39
015	-	3	-	-	-	-	6	1	-	-	-	-	-	-	-	-	-	2	-	-	12	-	-	-	32
030	1	3	-	-	-	-	2	-	-	-	-	-	-	-	-	1	-	2	-	-	9	-	-	-	23
045	-	1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	21
100	-	3	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	1	-	-	8	-	-	-	22
115	-	1	-	-	-	-	1	1	-	-	-	-	1	-	-	-	-	-	-	-	3	1	-	-	17
130	-	3	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	15
145	-	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	13
200	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	3	-	-	-	15
215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	-	-	1	1	-	-	16
230	-	3	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	15
245	-	3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	-	12
300	2	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	8
315	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
330	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	8
345	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	17
400	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	29
415	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	-	1	1	-	-	34
430	-	7	-	-	-	-	2	1	-	-	-	-	-	-	-	-	-	1	1	-	11	1	-	-	46
445	2	6	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	1	-	-	14	-	-	7%	53
500	1	3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	1	-	-	8	-	-	13%	75
515	-	9	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	13	-	-	-	90
530	4	10	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-	-	-	118
545	4	17	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	2	-	-	36	-	-	3%	132
600	4	9	-	-	-	-	9	1	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	9%	163
615	6	11	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	4	-	-	41	-	-	5%	203
630	2	13	-	-	-	-	16	1	-	-	-	-	-	-	-	-	-	-	-	-	32	-	-	6%	249
645	9	28	-	-	-	-	26	2	-	-	-	-	-	-	-	-	-	2	-	-	67	-	-	4%	297
700	-	30	-	-	-	-	29	1	-	-	-	-	1	2	-	-	-	3	-	-	63	2	-	3%	352
715	9	30	-	-	-	-	42	2	-	-	-	-	-	-	-	-	-	4	-	-	87	-	-	10%	369
730	3	25	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-	2	-	-	80	-	-	4%	361
745	9	40	-	1	-	-	67	-	-	-	-	-	1	-	-	-	-	6	-	-	122	-	-	2%	360
800	7	23	-	-	-	-	45	1	-	-	-	-	-	-	-	-	-	4	-	-	80	-	-	6%	298
815	5	27	-	-	-	-	45	-	-	-	-	-	-	-	-	-	-	2	-	-	79	-	-	6%	264
830	5	23	-	-	-	-	49	-	-	-	-	-	-	-	-	-	-	2	-	-	79	-	-	9%	227
845	10	14	-	-	1	-	31	2	-	-	-	-	1	-	-	-	-	3	-	-	60	1	-	3%	193
900	7	13	-	-	-	-	23	-	-	-	-	-	-	-	-	-	-	3	-	-	46	-	-	13%	200
915	9	16	-	1	-	-	15	-	-	-	-	-	1	-	-	-	-	2	-	-	42	-	-	10%	204
930	5	16	-	1	-	-	21	1	-	-	-	-	-	-	-	-	-	2	-	-	45	-	-	7%	221
945	6	24	-	-	-	-	29	2	-	-	-	-	1	-	-	-	-	5	1	-	67	-	-	4%	235
1000	9	19	-	1	-	-	17	2	-	-	-	-	-	-	-	-	-	3	2	-	50	-	-	2%	224
1015	6	31	-	1	-	-	18	1	-	-	-	-	1	-	-	-	-	3	-	1	59	1	-	5%	224
1030	9	26	-	-	-	-	20	1	-	-	-	-	1	-	-	-	-	3	-	-	59	-	-	5%	234
1045	4	16	-	-	-	-	29	3	-	-	-	-	-	-	-	-	-	4	-	-	56	-	-	-	240
1100	7	17	-	-	-	-	23	1	1	-	-	-	1	-	-	-	-	2	1	-	50	-	-	2%	252
1115	8	19	-	-	-	-	32	4	-	-	-	-	-	-	-	-	-	6	-	-	69	-	-	9%	273
1130	10	28	-	1	-	-	20	2	-	-	-	-	1	-	-	-	-	4	-	-	65	-	-	2%	266
1145	11	22	-	-	-	-	29	1	-	-	-	-	-	-	-	-	-	5	-	-	68	-	-	3%	276
1200	8	30	-	1	-	-	29	2	-	-	-	-	1	-	-	-	-	1	2	-	71	-	-	8%	269
1215	8	28	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	4	-	-	62	-	-	3%	249
1230	8	30	-	-	-	-	31	-	-	-	-	-	-	-	-	-	-	6	-	-	75	-	-	3%	249
1245	5	24	-	-	-	-	26	2	-	-	-	-	1	-	-	-	-	3	-	-	61	-	-	3%	222
1300	7	27	-	-	-	-	13	1	-	-	-	-	-	-	-	-	-	3	-	-	51	-	-	6%	218
1315	7	24	-	-	-	-	28	-	-	-	-	-	-	-	-	-	-	3	-	-	62	-	-	3%	216
1330	7	18	-	1	1	-	20	1	-	-	-	-	1	-	-	-	-	2	1	-	48	2	-	4%	204
1345	5	21	-	-	-	-	28	1	-	-	-	-	-	-	-	-	-	2	-	-	57	-	-	-	224
1400	5	19	-	-	-	-	20	1	-	-	-	-	-	-	-	-	-	4	-	-	49	-	-	6%	237
1415	4	19	-	-	-	-	23	-	-	-	-	-	1	-	-	-	-	3	-	-	50	-	-	2%	260
1430	12	25	-	-	-	-	27	1	-	-	-	-	1	-	-	-	-	3	2	-	68	-	-	6%	278
1445	7	21	-	-	-	-	36	-	-	-	-	-	1	-	-	-	-	6	-	-	70	1	-	11%	321
1500	6	34	-	-	-	-	27	2	-	-	-	-	1	-	-	-	-	3	-	-	72	-	-	6%	343
1515	12	21	-	-	-	-	29	5	-	-	-	-	2	-	-	-	-	1	1	2	68	2	-	1%	369
1530	8	53	-	-	-	-	44	-	2	-	-	-	-	1	-	-	-	5	2	1	111	1	-	6%	388
1545	12	32	-	-	-	-	41	2	1	-	-	-	-	1	1	3	1	-	-	-	92	-	-	3%	412
1600	10	42	-	-	-	-	43	1	-	-	-	-	-	-	-	-	-	2	1	-	98	-	-	4%	427
1615	6	31	-	-	-	-	44	3	-	-	-	-	2	1	-	-	-	2	-	-	87	2	-	1%	484
1630	13	56	-	-	-	-	59	-	1	-	-	-	3	1	-	-	-	7	-	-	135	2	-	2%	531
1645	7	48	-	-	-	-	47	1	-	-	-	-	1	-	-	-	-	4	-	1	107	2	-	2%	533
1700	9	75	-	-	-	-	65	2	1	-	-	-	-	1	-	-	-	4	-	-	155	1	-	4%	536
1715	12	49	-	-	-	-	64	2	-	-	-	-	-	-	-	-	-	7	-	1	134	1	-	2%	466
1730	11	57	-	-	-	-	63	-	-	-	-	-	-	-	-	-	-	6	-	1	137	1	-	1%	425
1745	8	55	-	-	-	-	43	-	-	-	-	-	-	-	-	-	-	4	2	-	110	-	-	4%	356
1800	11	40	-	-	-	-	29	2	-	-	-	-	-	-	-	-	-	3	2	-	85	-	-	1%	312
1815	5	35	-	-	-	-	49	3	-	-	-	-	-	-	-	-	-	1	-	-	93	-	-	2%	290
1830	11	19	-	-	-	-	34	2	-	-	-	-	-	1	-	-	-	1	-	-	68	-	-	4%	252
1845	4	27	-	-	-	-	32	-	-	-	-	-	-	-	-	-	-	3	-	-	66	1	-	3%	238
1900	2	23	-	-	-	-	32	2	-	-	-	-	1	-	-	-	-	3	-	-	63	-	-	5%	228
1915	7	18	-	-	-	-	20	4	-	-	-	-	-	-	-	-	-	6	-	-	66	-	-	2%	214
1930	1	29	-	-	-	-	22	-	-	-	-	-	2	-	-	-	-	-	-	2	54	3	-	2%	210
1945	5	29	-	-	-	-	19	-	1	-	-	-	2	-											

SRF Consulting Group Turning Movement Count

Start Time	86th St EB					86th St WB					E Service Rd NB					E Service Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
Peak 1	0000 to 1000																						
715	9	30	-	-	-	-	42	2	-	-	-	-	-	-	-	-	-	4	-	-	87	-	10%
730	3	25	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-	2	-	-	80	-	4%
745	9	40	-	1	-	-	67	-	-	-	-	-	-	1	-	-	-	6	-	-	122	2	2%
800	7	23	-	-	-	-	45	1	-	-	-	-	-	-	-	-	-	4	-	-	80	-	6%
Total	28	118	-	1	-	-	204	3	-	-	-	-	-	1	-	-	-	16	-	-	369	2	5%
PHF	0.78	0.74	-	-	-	-	0.76	0.38	-	-	-	-	-	-	-	-	-	0.67	-	-	0.76	-	-
Trucks	7%	7%	-	-	-	-	4%	-	-	-	-	-	-	-	-	-	-	6%	-	-	5%	-	-
Peak 2	1000 to 1400																						
1145	11	22	-	-	-	-	29	1	-	-	-	-	-	-	-	-	-	5	-	-	68	-	3%
1200	8	30	-	1	-	-	29	2	-	-	-	-	-	-	-	1	-	1	2	-	71	3	8%
1215	8	28	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	4	-	-	62	-	3%
1230	8	30	-	-	-	-	31	-	-	-	-	-	-	-	-	-	-	6	-	-	75	-	3%
Total	35	110	-	1	-	-	111	3	-	-	-	-	-	-	-	1	-	16	2	-	276	3	4%
PHF	0.80	0.92	-	-	-	-	0.90	0.38	-	-	-	-	-	-	-	0.25	-	0.67	-	-	0.92	-	-
Trucks	-	7%	-	-	-	-	4%	-	-	-	-	-	-	-	-	-	-	-	-	-	4%	-	-
Peak 3	1400 to 2400																						
1700	9	75	-	-	-	-	65	2	1	-	-	-	-	-	1	-	-	4	-	-	155	1	4%
1715	12	49	-	-	-	-	64	2	-	-	-	-	-	-	-	-	-	7	-	1	134	-	2%
1730	11	57	-	-	-	-	63	-	-	-	-	-	-	-	-	-	-	6	-	1	137	-	1%
1745	8	55	-	-	-	-	43	-	-	-	-	-	-	1	-	-	-	4	2	-	110	3	4%
Total	40	236	-	-	-	-	235	4	1	-	-	-	-	-	1	1	-	21	2	2	536	4	3%
PHF	0.83	0.79	-	-	-	-	0.90	0.50	-	-	-	-	-	-	-	-	-	0.75	-	-	0.86	-	-
Trucks	-	4%	-	-	-	-	3%	-	-	-	-	-	-	-	-	-	-	5%	-	-	3%	-	-

SRF Consulting Group
Turning Movement Count

Start Time	86th St EB					86th St WB					E Service Rd NB					E Service Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1445	11	31	-	-	-	-	41	4	-	-	-	-	-	-	-	-	-	5	-	-	92	-	1%
1500	4	25	-	-	-	-	30	5	1	-	-	-	-	1	-	-	-	4	1	-	68	3	-
1515	9	35	-	-	-	-	35	-	2	-	-	-	-	-	-	-	-	8	-	1	87	2	3%
1530	9	33	-	-	-	-	29	2	3	-	-	-	-	-	-	-	-	2	2	-	75	5	4%
Total	33	124	-	-	-	-	135	11	6	-	-	-	1	-	-	-	-	19	3	1	322	10	2%
PHF	0.75	0.89	-	-	-	-	0.82	0.55	-	-	-	-	-	-	-	-	-	0.59	-	-	0.88	-	-
Trucks	-	2%	-	-	-	-	1%	-	-	-	-	-	-	-	-	-	-	16%	-	-	2%	-	-

SRF Consulting Group Turning Movement Count

Count
Date 4/23/2016

Start Time	TH 77 SB Ramps EB					TH 77 SB Ramps WB					Old Shakopee NB					Old Shakopee SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	17	-	68	-	-	-	-	-	-	1	-	91	93	-	-	-	105	1	-	-	375	-	1%
1515	19	-	69	-	-	-	-	-	-	-	-	81	93	-	-	-	94	-	-	-	356	-	1%
1530	12	-	67	-	-	-	-	-	-	-	-	94	100	-	-	-	112	-	-	-	385	-	1%
1545	22	-	82	-	-	-	-	-	-	-	-	84	72	-	-	-	95	-	-	-	355	-	1%
Total	70	-	286	-	-	-	-	-	-	1	-	350	358	-	-	-	406	1	-	-	1,471	-	1%
PHF	0.80	-	0.87	-	-	-	-	-	-	-	-	0.93	0.90	-	-	-	0.91	0.25	-	-	0.96	-	-
Trucks	-	-	0%	-	-	-	-	-	-	-	-	1%	1%	-	-	-	1%	-	-	-	1%	-	-

SRF Consulting Group Turning Movement Count

Count 4/23/2016
Date

Start Time	American Blvd EB					American Blvd WB					Ikea Way NB					Thunderbird Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
1430	1	47	29	-	-	6	43	1	-	-	21	4	11	-	-	6	1	1	-	1	171	1	6%	788
1445	2	35	31	2	-	32	55	6	-	-	22	4	20	-	-	3	-	1	-	-	211	-	3%	804
1500	3	41	25	3	-	22	52	3	-	-	20	3	25	-	-	3	3	3	-	-	203	-	5%	837
1515	1	37	32	-	-	32	38	2	-	-	30	1	28	-	-	1	-	1	-	-	203	-	3%	860
1530	3	44	30	1	-	29	31	2	-	-	18	2	21	1	-	4	1	2	-	2	187	2	4%	864
1545	4	60	32	3	-	36	55	5	-	1	29	1	20	-	-	1	-	1	-	15	244	16	3%	677
1600	-	54	26	3	-	30	55	3	-	-	23	1	28	1	-	3	3	-	3	-	226	-	5%	433
1615	2	58	30	-	-	22	44	4	-	-	24	-	18	-	2	2	-	3	-	-	207	2	3%	207

Start Time	American Blvd EB					American Blvd WB					Ikea Way NB					Thunderbird Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1530	3	44	30	1	-	29	31	2	-	-	18	2	21	1	-	4	1	2	-	2	187	2	4%
1545	4	60	32	3	-	36	55	5	-	1	29	1	20	-	-	1	-	1	-	15	244	3	3%
1600	-	54	26	3	-	30	55	3	-	-	23	1	28	1	-	3	3	-	3	-	226	7	5%
1615	2	58	30	-	-	22	44	4	-	-	24	-	18	-	2	2	-	3	-	-	207	-	3%
Total	9	216	118	7	-	117	185	14	-	1	94	4	87	2	2	10	4	6	3	17	864	12	4%
PHF	0.56	0.90	0.92	-	-	0.81	0.84	0.70	-	-	0.81	0.50	0.78	-	-	0.63	0.33	0.50	-	-	0.89		
Trucks	-	2%	4%	-	-	4%	3%	7%	-	-	6%	-	7%	-	-	10%	-	-	-	-	4%		

SRF Consulting Group Turning Movement Count

Count
Date 3/17/2016

Start Time	Lindau Ln EB					Lindau Ln WB					Ikea Way NB					Ikea Way SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
000	-	2	2	2	1	-	4	-	-	-	6	-	2	-	-	-	1	2	-	-	19	1	-	76
015	2	2	-	-	-	-	5	1	-	-	7	-	-	-	-	-	1	5	-	-	23	-	-	64
030	1	3	-	-	-	-	5	-	-	-	8	-	1	-	-	-	-	6	-	-	24	-	-	48
045	-	2	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	1	-	-	10	-	-	30
100	2	4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	14%	25
115	1	-	-	-	-	-	4	-	-	-	-	1	-	-	-	-	-	1	-	-	7	-	-	20
130	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	6	-	-	17
145	3	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	5	-	-	14
200	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	2	-	-	17
215	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	1	1	-	-	4	-	-	18
230	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	20
245	1	1	-	-	-	-	1	-	-	-	4	-	1	-	-	-	-	-	-	-	8	-	-	27
300	-	1	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	3	-	-	26
315	1	3	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1	-	-	6	-	-	34
330	1	6	-	-	-	-	1	-	-	-	2	-	-	-	-	-	-	-	-	-	10	-	-	38
345	2	3	-	-	-	-	1	-	-	-	-	-	-	-	-	1	-	-	-	-	7	-	-	47
400	1	7	-	-	-	-	1	-	-	-	1	-	-	-	-	-	1	-	-	-	11	-	9%	52
415	-	4	-	-	-	-	1	-	-	-	3	-	1	-	-	-	-	1	-	-	10	-	-	56
430	-	14	1	-	-	-	1	2	-	-	-	-	1	-	-	-	-	-	-	-	19	-	11%	81
445	1	7	-	-	-	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	12	-	-	110
500	-	11	1	-	-	-	1	-	-	-	-	1	-	-	-	-	1	-	-	-	15	-	-	166
515	2	17	8	-	-	-	1	2	-	-	1	2	1	-	-	-	-	1	-	-	35	-	11%	189
530	6	26	5	-	-	-	4	2	-	-	3	-	1	-	-	-	-	1	-	-	48	-	-	196
545	1	31	19	-	-	-	7	2	-	-	4	-	2	-	-	-	2	-	-	-	68	-	1%	218
600	5	20	3	2	-	-	2	1	-	-	5	-	-	-	-	-	1	1	-	-	38	-	3%	247
615	5	25	5	-	-	-	2	2	-	-	1	-	-	-	-	-	2	-	-	-	42	-	-	294
630	6	30	19	-	-	-	2	4	-	-	3	1	2	-	-	-	2	1	-	-	70	-	4%	361
645	19	36	21	-	-	-	3	7	1	-	4	1	-	-	-	-	4	1	-	-	97	-	1%	434
700	12	39	13	-	-	-	1	8	-	-	3	4	1	-	-	-	2	2	-	-	85	-	2%	523
715	37	37	15	-	-	-	3	3	2	-	4	2	1	-	-	-	3	2	-	-	109	-	-	573
730	32	49	21	-	-	-	7	20	-	-	2	3	1	-	-	-	1	4	3	-	143	-	3%	595
745	29	69	31	-	-	-	12	15	-	-	7	6	4	-	-	-	2	4	7	-	186	-	2%	582
800	26	56	19	1	-	-	5	10	-	-	8	6	-	-	-	-	1	1	3	-	135	-	4%	578
815	25	49	22	-	-	-	8	3	-	1	10	7	2	1	-	-	2	3	-	-	131	-	2%	611
830	24	46	26	-	-	-	8	7	2	-	2	6	2	-	-	-	1	2	4	-	130	-	3%	710
845	13	61	42	1	-	-	17	9	1	-	20	4	2	1	-	-	2	7	4	-	182	-	2%	818
900	13	42	50	-	-	-	14	12	2	-	12	5	3	-	-	-	3	6	6	-	168	-	2%	906
915	21	53	84	-	-	-	14	19	2	-	8	4	4	-	-	-	3	7	11	-	230	-	3%	1,033
930	22	44	90	-	-	-	23	12	2	-	24	3	4	-	-	-	1	7	6	-	238	-	3%	1,081
945	41	48	99	-	-	-	24	14	1	-	14	3	7	-	-	-	2	12	5	-	270	-	1%	1,156
1000	37	42	97	-	-	-	29	12	8	-	28	8	4	-	-	-	5	15	10	-	295	-	1%	1,201
1015	39	38	93	-	-	-	21	16	7	-	17	5	5	-	-	-	2	15	20	-	278	-	2%	1,232
1030	41	33	115	-	-	-	16	12	8	-	40	4	8	-	-	-	6	14	16	-	313	-	-	1,293
1045	45	29	89	-	-	-	44	20	1	-	31	7	5	-	-	-	3	18	23	-	315	-	1%	1,308
1100	31	45	107	-	-	-	26	15	2	-	41	7	8	-	-	-	4	17	23	-	326	-	2%	1,329
1115	42	29	93	-	-	-	24	17	6	-	50	9	7	-	-	-	4	23	35	-	339	-	2%	1,363
1130	32	31	103	-	-	-	19	21	3	-	54	8	7	-	-	-	2	19	29	-	328	-	1%	1,334
1145	43	41	83	-	-	-	23	18	3	-	48	8	8	-	-	-	3	23	35	-	336	-	1%	1,375
1200	46	36	95	-	-	-	27	17	5	-	59	11	11	-	-	-	4	11	38	-	360	-	1%	1,439
1215	23	24	78	-	-	-	20	17	3	1	67	8	8	1	-	-	7	15	40	-	310	-	2%	1,455
1230	37	32	81	-	-	-	25	25	4	-	71	15	11	-	-	-	5	25	38	-	369	-	1%	1,547
1245	41	43	87	-	-	-	23	33	3	-	65	16	11	-	-	-	6	21	51	-	400	-	2%	1,546
1300	36	45	64	-	-	-	21	17	5	-	93	13	16	-	-	-	7	22	37	-	376	-	1%	1,559
1315	45	56	78	-	-	-	25	25	7	-	100	10	10	-	-	-	4	12	30	-	402	-	0%	1,578
1330	32	43	62	-	-	-	21	14	8	-	101	14	17	-	-	-	3	19	34	-	368	-	1%	1,557
1345	36	39	85	1	-	-	25	30	4	-	98	10	14	-	-	-	5	17	50	-	413	-	1%	1,580
1400	43	41	84	-	-	-	21	34	4	-	92	12	16	-	-	-	4	14	50	-	395	-	2%	1,536
1415	42	36	83	-	-	-	22	21	2	-	109	11	16	-	-	-	5	14	40	-	381	-	2%	1,519
1430	31	41	55	-	-	-	23	32	2	-	91	16	12	-	-	-	7	12	69	-	391	-	1%	1,536
1445	27	41	64	-	-	-	10	33	8	-	88	13	21	-	-	-	5	17	42	-	369	-	1%	1,501
1500	34	36	60	-	-	-	11	43	2	-	101	12	9	-	-	-	5	16	49	-	378	-	2%	1,523
1515	22	34	64	-	-	-	22	37	3	-	123	11	10	-	-	-	3	16	53	-	398	-	1%	1,517
1530	16	50	59	-	-	-	20	40	6	-	79	9	13	-	-	-	3	18	43	-	356	-	1%	1,529
1545	38	43	66	-	-	-	23	40	2	-	99	6	12	-	-	-	2	19	41	1	391	-	1%	1,550
1600	29	24	60	-	-	-	19	50	2	-	106	12	14	-	-	-	3	18	35	-	372	-	2%	1,568
1615	20	35	68	-	-	-	19	41	7	-	117	15	16	-	-	-	8	19	45	-	410	-	1%	1,604
1630	26	35	62	-	-	-	19	46	3	-	96	11	7	-	-	-	4	20	48	-	377	-	1%	1,593
1645	29	36	79	-	-	-	27	47	4	-	85	16	9	-	-	-	2	23	52	-	409	-	1%	1,595
1700	25	24	58	-	-	-	18	84	4	-	103	7	13	-	-	-	6	21	45	-	408	-	1%	1,536
1715	28	38	56	-	-	-	26	49	3	1	102	10	16	1	-	-	7	23	41	-	399	-	1%	1,484
1730	33	44	57	-	-	-	23	48	5	-	79	16	10	-	-	-	3	24	37	-	379	-	1%	1,437
1745	32	29	70	-	-	-	20	27	4	-	86	11	26	-	-	-	3	24	18	-	350	-	1%	1,420
1800	28	33	67	-	-	-	19	29	4	-	98	15	14	-	-	-	3	7	39	-	356	-	2%	1,379
1815	24	32	77	-	-	-	17	29	4	-	85	13	11	-	-	-	3	19	38	-	352	-	2%	1,313
1830	27	41	70	-	-	-	18	39	4	-	69	13	16	-	-	-	7	14	44	-	362	-	1%	1,278
1845	21	31	51	-	-	-	21	31	4	-	80	7	11	-	-	-	3	16	33	-	309	-	1%	1,182
1900	24	13	61	-	-	-	9	21	3	-	80	7	14	-	-	-	5	8	45	-	290	-	3%	1,1

SRF Consulting Group Turning Movement Count

Start Time	Lindau Ln EB					Lindau Ln WB					Ikea Way NB					Ikea Way SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
Peak 1	0000 to 1000																						
1000	37	42	97	-	-	29	12	8	-	-	28	8	4	-	-	5	15	10	-	-	295	-	1%
1015	39	38	93	-	-	21	16	7	-	-	17	5	5	-	-	2	15	20	-	-	278	-	2%
1030	41	33	115	-	-	16	12	8	-	-	40	4	8	-	-	6	14	16	-	-	313	-	-
1045	45	29	89	-	-	44	20	1	-	-	31	7	5	-	-	3	18	23	-	-	315	-	1%
Total	162	142	394	-	-	110	60	24	-	-	116	24	22	-	-	16	62	69	-	-	1201	-	1%
PHF	0.90	0.85	0.86	-	-	0.63	0.75	0.75	-	-	0.73	0.75	0.69	-	-	0.67	0.86	0.75	-	-	0.95	-	-
Trucks	2%	4%	-	-	-	-	2%	-	-	-	-	-	-	-	-	-	-	3%	-	-	1%	-	-
Peak 2	1000 to 1400																						
1345	36	39	85	1	-	25	30	4	-	-	98	10	14	-	-	5	17	50	-	-	413	1	1%
1400	43	41	64	-	-	21	34	4	-	-	92	12	16	-	-	4	14	50	-	-	395	-	2%
1415	42	36	63	-	-	22	21	2	-	-	109	11	16	-	-	5	14	40	-	-	381	-	2%
1430	31	41	55	-	-	23	32	2	-	-	91	16	12	-	-	7	12	69	-	-	391	-	1%
Total	152	157	267	1	-	91	117	12	-	-	390	49	58	-	-	21	57	209	-	-	1580	1	1%
PHF	0.88	0.96	0.79	-	-	0.91	0.86	0.75	-	-	0.89	0.77	0.91	-	-	0.75	0.84	0.76	-	-	0.96	-	-
Trucks	5%	2%	-	-	-	-	2%	-	-	-	1%	-	-	-	-	5%	2%	2%	-	-	1%	-	-
Peak 3	1400 to 2400																						
1615	20	35	68	-	-	19	41	7	-	-	117	15	16	-	-	8	19	45	-	-	410	-	1%
1630	26	35	62	-	-	19	46	3	-	-	96	11	7	-	-	4	20	48	-	-	377	-	1%
1645	29	36	79	-	-	27	47	4	-	-	85	16	9	-	-	2	23	52	-	-	409	-	1%
1700	25	24	58	-	-	18	84	4	-	-	103	7	13	-	-	6	21	45	-	-	408	-	1%
Total	100	130	267	-	-	83	218	18	-	-	401	49	45	-	-	20	83	190	-	-	1,604	-	1%
PHF	0.86	0.90	0.84	-	-	0.77	0.65	0.64	-	-	0.86	0.77	0.70	-	-	0.63	0.90	0.91	-	-	0.98	-	-
Trucks	4%	5%	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	2%	-	-	1%	-	-

SRF Consulting Group
Turning Movement Count

Start Time	Lindau Ln EB					Lindau Ln WB					Ikea Way NB					Ikea Way SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1430	81	46	132	1	-	21	41	11	-	-	130	20	29	2	-	13	30	75	-	-	629	3	-
1445	51	41	117	-	-	24	40	4	-	-	158	20	24	-	-	10	28	64	-	-	581	-	0%
1500	43	60	110	1	-	28	28	14	-	-	177	16	20	-	-	7	24	74	1	-	601	2	-
1515	68	46	107	-	-	31	46	5	-	-	167	17	27	-	-	3	17	58	-	-	592	-	-
Total	243	193	466	2	-	104	155	34	-	-	632	73	100	2	-	33	99	271	1	-	2,403	5	0%
PHF	0.75	0.80	0.88			0.84	0.84	0.61			0.89	0.91	0.86			0.63	0.83	0.90			0.96		
Trucks	0%	1%	-			-	-	-			-	-	-			-	-	-			0%		

SRF Consulting Group Turning Movement Count

Count
Date 4/23/2016

Start Time	Killebrew Dr EB					Killebrew Dr WB					20th Ave NB					20th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
000	6	27	-	-	-	-	54	2	-	-	-	-	-	-	-	21	5	29	-	-	144	-	1%	367
015	7	13	-	1	-	-	36	2	-	-	-	-	-	-	-	5	-	19	-	-	82	-	-	273
030	4	12	-	-	-	-	29	4	-	-	-	-	-	-	-	3	-	20	-	-	72	-	-	228
045	2	19	-	-	-	-	34	1	-	-	-	-	-	-	-	1	-	12	-	-	69	-	-	196
100	2	15	-	-	-	-	23	2	-	-	-	-	-	-	-	1	-	7	-	-	50	-	2%	150
115	4	7	-	-	-	-	22	1	-	-	-	-	-	-	-	1	-	2	-	-	37	-	-	138
130	3	7	-	-	-	-	20	-	-	-	-	-	-	-	-	3	-	7	-	-	40	-	-	119
145	-	9	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	-	23	-	-	105
200	4	6	-	-	-	-	17	1	-	-	-	-	-	-	-	3	-	7	-	-	38	-	3%	100
215	1	8	-	-	-	-	7	1	-	-	-	-	-	-	-	-	-	1	-	-	18	-	-	77
230	-	10	-	-	-	-	11	2	-	-	-	-	-	-	-	-	-	3	-	-	26	-	-	74
245	-	7	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	1	-	-	18	-	-	68
300	-	4	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	1	-	-	15	-	-	69
315	-	10	-	-	-	-	4	1	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-	70
330	1	8	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	1	-	-	20	-	-	68
345	-	8	-	-	-	-	6	2	-	-	-	-	-	-	-	-	-	3	-	-	19	-	5%	60
400	-	4	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	3	-	-	16	-	6%	64
415	-	5	-	-	-	-	5	1	-	-	-	-	-	-	-	-	-	2	-	-	13	-	-	81
430	2	5	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	100
445	3	12	-	-	-	-	3	1	-	-	-	-	-	-	-	1	-	3	-	-	23	-	-	125
500	1	12	-	-	-	-	16	-	-	-	-	-	-	-	-	-	-	4	-	-	33	-	-	159
515	3	18	-	-	-	-	9	-	-	-	-	-	-	-	-	1	-	1	-	-	32	-	-	172
530	5	20	-	-	-	-	9	-	-	-	-	-	-	-	-	-	-	3	-	-	37	-	-	171
545	10	36	-	-	-	-	7	2	-	-	-	-	-	-	-	-	-	2	-	-	57	-	-	178
600	4	7	-	-	-	-	28	5	-	-	-	-	-	-	-	-	-	2	-	-	46	-	2%	183
615	8	6	-	-	-	-	11	1	-	-	-	-	-	-	-	2	-	3	-	-	31	-	3%	189
630	7	10	-	-	-	-	18	2	-	-	-	-	-	-	-	1	-	6	-	-	44	-	-	205
645	14	31	-	1	-	-	5	1	-	-	-	-	-	-	-	1	-	10	-	-	62	-	-	224
700	11	15	-	-	-	-	13	-	-	-	-	-	-	-	-	1	-	12	-	-	52	-	-	264
715	14	12	-	-	-	-	12	-	-	-	-	-	-	-	-	3	-	6	-	-	47	-	4%	319
730	18	22	-	1	-	-	12	2	-	-	-	-	-	-	-	-	1	8	-	-	63	-	-	393
745	20	54	-	-	-	-	1	9	4	-	-	-	-	-	-	6	-	8	-	-	102	-	1%	455
800	21	46	-	-	-	-	24	3	-	-	-	-	-	-	-	4	-	9	-	-	107	-	1%	523
815	24	45	-	-	-	-	30	9	-	-	-	-	-	-	-	3	-	10	-	-	121	-	2%	567
830	30	48	-	-	-	-	19	6	-	-	-	-	-	-	-	4	-	18	-	-	125	-	2%	650
845	42	59	-	-	-	-	30	16	-	-	-	-	-	-	-	7	1	15	-	-	170	-	1%	731
900	38	51	-	-	-	-	27	8	-	-	-	-	-	-	-	5	-	22	1	-	151	-	1%	889
915	56	72	-	-	-	-	29	13	-	-	-	-	-	-	-	5	-	29	-	-	204	-	1%	1,039
930	84	53	-	-	-	-	25	16	-	-	-	-	-	-	-	9	-	19	-	-	206	-	-	1,189
945	122	96	-	-	-	-	34	31	-	-	-	-	-	-	-	9	-	36	-	-	328	-	1%	1,331
1000	124	68	-	-	-	-	35	34	-	-	-	-	-	-	-	11	-	29	-	-	301	-	-	1,421
1015	135	77	-	-	-	-	57	19	1	-	-	-	-	-	-	9	11	46	-	-	354	-	1%	1,530
1030	155	74	-	-	-	-	55	24	-	-	-	-	-	-	-	6	-	34	-	-	348	-	-	1,569
1045	157	103	-	-	-	-	51	34	-	-	-	-	-	-	-	5	-	68	-	-	418	-	0%	1,606
1100	177	91	-	-	-	-	44	20	-	-	-	-	-	-	-	6	-	72	-	-	410	-	0%	1,627
1115	145	80	-	-	-	-	42	28	-	-	-	-	-	-	-	7	3	88	-	-	393	-	1%	1,606
1130	138	83	1	-	-	-	55	19	-	-	-	-	-	-	-	9	-	80	1	-	385	-	-	1,582
1145	132	114	3	-	-	-	56	21	-	-	-	-	-	-	-	7	2	104	-	-	439	-	0%	1,568
1200	117	82	-	-	-	-	52	26	1	-	-	-	-	-	-	15	-	97	-	-	389	-	-	1,577
1215	128	68	-	-	-	-	65	16	-	-	-	-	-	-	-	11	-	81	-	-	369	-	1%	1,588
1230	123	74	-	-	-	-	49	27	2	-	-	-	-	-	-	14	-	84	2	-	371	-	-	1,654
1245	155	103	-	-	-	-	55	26	-	-	-	-	-	-	-	5	1	103	-	-	448	-	0%	1,744
1300	136	62	1	-	-	-	71	22	-	-	-	-	-	-	-	8	-	100	-	-	400	-	0%	1,781
1315	137	86	-	-	-	-	82	25	-	-	-	-	-	-	-	11	-	94	1	-	435	-	0%	1,809
1330	133	89	-	-	-	-	85	22	-	-	-	-	-	-	-	13	1	118	1	-	461	-	0%	1,889
1345	176	74	-	-	-	-	82	18	-	-	-	-	-	-	-	13	-	122	-	-	485	-	1%	1,905
1400	122	70	-	-	-	-	89	19	-	-	-	-	-	-	-	22	-	106	-	-	428	-	1%	1,892
1415	175	88	-	-	-	-	89	16	-	-	-	-	-	-	-	21	1	125	1	-	515	-	0%	2,013
1430	145	76	-	-	-	-	76	22	-	-	-	-	-	-	-	26	-	132	-	-	477	-	0%	2,073
1445	151	83	-	-	-	-	89	15	-	-	-	-	-	-	-	13	-	121	-	-	472	-	1%	2,087
1500	131	80	-	-	-	-	1	96	20	-	-	-	-	-	-	20	-	201	-	-	549	-	-	2,164
1515	117	77	-	-	-	-	106	27	1	-	-	-	-	-	-	19	-	229	-	-	575	-	0%	2,128
1530	147	84	-	-	-	-	2	88	16	1	-	-	-	-	-	20	-	134	-	-	491	-	-	2,112
1545	168	99	-	-	-	-	109	17	-	-	-	-	-	-	-	25	-	131	-	-	549	-	1%	2,229
1600	144	82	-	-	-	-	103	15	-	-	-	-	-	-	-	25	-	144	-	-	513	-	-	2,216
1615	147	104	-	-	-	-	98	34	-	-	-	-	-	-	-	21	-	155	-	-	559	-	0%	2,227
1630	161	104	-	-	-	-	127	20	1	-	-	-	-	-	-	24	-	172	-	-	608	-	-	2,195
1645	123	86	-	-	-	-	145	16	-	-	-	-	-	-	-	1	21	143	-	-	536	1	0%	2,105
1700	114	83	-	-	-	-	103	14	-	-	-	-	-	-	-	18	-	192	-	-	524	-	0%	2,064
1715	139	85	-	-	-	-	98	14	-	-	-	-	-	-	-	16	-	175	-	-	527	-	0%	2,038
1730	152	90	-	-	-	-	100	12	-	-	-	-	-	-	-	17	-	147	1	-	518	-	-	1,980
1745	107	87	-	-	-	-	113	17	-	-	-	-	-	-	-	19	-	152	-	-	495	-	1%	1,899
1800	126	72	-	-	-	-	119	11	-	-	-	-	-	-	-	27	-	143	-	-	498	-	-	1,877
1815	128	79	-	-	-	-	98	6	-	-	-	-	-	-	-	24	-	134	-	-	469	-	1%	1,821
1830	86	84	-	-	-	-	76	26	-	-	-	-	-	-	-	12	-	153	-	-	437	-	0%	1,768
1845	103	88	-	-	-	-	100	9	-	-	-	-	-	-	-	15	-	158	-	-	473	-	1%	1,732
1900	88	64	1	-	-	-	88	14	-	-	-	-	-	-	-	15	-	172	-	-	442	-	0%	1,642
1915	83	61	-	-	-	-	99	6	-	-	-	-	-	-	-	22	-	145	-	-	416	-	0%	1,552
1930	90	43	-	-	-	-	107	8	-	-	-	-	-	-	-	14	-	139	-	-	401	-	0%	1,512
19																								

SRF Consulting Group Turning Movement Count

Start Time	Killebrew Dr EB					Killebrew Dr WB					20th Ave NB					20th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1545	168	99	-	-	-	-	109	17	-	-	-	-	-	-	-	25	-	131	-	-	549	-	1%
1600	144	82	-	-	-	-	103	15	-	-	-	-	-	-	-	25	-	144	-	-	513	-	-
1615	147	104	-	-	-	-	98	34	-	-	-	-	-	-	-	21	-	155	-	-	559	-	0%
1630	161	104	-	-	-	-	127	20	1	-	-	-	-	-	-	24	-	172	-	-	608	1	-
Total	620	389	-	-	-	-	437	86	1	-	-	-	-	-	-	95	-	602	-	-	2,229	1	0%
PHF	0.92	0.94	-	-	-	-	0.86	0.63	-	-	-	-	-	-	-	0.95	-	0.88	-	-	0.92	-	-
Trucks	-	0%	-	-	-	-	1%	1%	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-

SRF Consulting Group Turning Movement Count

Count
Date 3/17/2016

Start Time	Killebrew Dr EB					Killebrew Dr WB					20th Ave NB					20th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
000	2	11	-	-	-	-	34	1	-	-	-	-	-	-	-	6	-	14	-	-	68	-	3%	179
015	2	7	-	-	-	-	12	4	-	-	-	-	-	-	-	1	-	7	-	-	33	-	3%	136
030	2	8	-	-	-	-	23	3	1	-	-	-	-	-	-	1	-	6	-	-	43	1	-	129
045	1	8	-	-	-	-	18	1	-	-	-	-	-	-	-	1	-	6	-	-	35	-	3%	93
100	1	6	-	-	-	-	16	-	-	-	-	-	-	-	-	-	2	-	-	-	25	-	-	75
115	1	7	-	-	-	-	14	3	-	-	-	-	-	-	-	-	1	-	1	-	26	-	4%	77
130	-	2	-	-	-	-	4	-	-	-	-	-	-	-	-	1	-	-	-	-	7	-	-	66
145	-	2	-	-	-	-	12	2	-	-	-	-	-	-	-	1	-	-	-	-	17	-	-	75
200	1	8	-	-	-	-	14	2	-	-	-	-	-	-	-	-	2	-	-	-	27	-	4%	64
215	1	3	-	-	-	-	6	1	-	-	-	-	-	-	-	1	-	3	-	-	15	-	-	42
230	-	4	-	-	-	-	9	2	-	-	-	-	-	-	-	1	-	-	-	-	16	-	-	45
245	-	1	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	1	-	6	1	-	40
300	-	1	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	20%	44
315	-	5	-	-	-	-	10	1	-	-	-	-	-	-	-	2	-	-	-	-	18	-	15%	51
330	1	3	-	-	-	-	6	-	-	-	-	-	-	-	-	1	-	-	-	-	11	-	-	49
345	1	5	-	-	-	-	2	1	-	-	-	-	-	-	-	-	1	-	-	-	10	-	18%	55
400	-	4	-	-	-	-	4	-	-	-	-	-	-	-	-	-	4	-	-	-	12	-	15%	66
415	1	7	-	-	-	-	3	2	-	-	-	-	-	-	-	1	-	2	-	-	16	-	6%	77
430	2	7	-	-	-	-	4	1	-	-	-	-	-	-	-	3	-	-	-	-	17	-	17%	89
445	1	12	-	-	-	-	1	1	-	-	-	-	-	-	-	3	-	3	-	-	21	-	9%	140
500	2	10	-	-	-	-	4	2	-	-	-	-	-	-	-	-	5	-	-	-	23	-	13%	229
515	2	16	-	-	-	-	5	1	-	-	-	-	-	-	-	4	-	-	-	-	28	-	7%	310
530	10	37	-	-	-	-	15	2	-	-	-	-	-	-	-	-	4	-	-	-	68	-	6%	355
545	27	65	-	-	-	-	14	1	-	-	-	-	-	-	-	-	3	-	-	-	110	-	4%	377
600	15	40	-	-	-	-	32	6	-	-	-	-	-	-	-	2	-	9	-	-	104	-	8%	415
615	12	31	-	-	-	-	22	2	-	-	-	-	-	-	-	1	-	5	-	-	73	-	1%	447
630	19	39	-	-	-	-	20	5	-	-	-	-	-	-	-	1	-	6	-	-	90	-	5%	533
645	34	72	-	-	-	-	23	9	-	-	-	-	-	-	-	2	-	8	-	-	148	-	2%	640
700	12	77	-	-	-	-	21	5	-	-	-	-	-	-	-	3	-	18	-	-	136	-	2%	685
715	20	86	-	-	-	-	29	10	-	-	-	-	-	-	-	3	-	11	-	-	159	-	2%	759
730	24	124	-	-	-	-	19	8	-	-	-	-	-	-	-	7	-	15	-	-	197	-	4%	796
745	29	107	-	-	-	-	25	9	-	-	-	-	-	-	-	5	-	18	-	-	193	-	2%	782
800	30	105	-	-	-	-	31	14	-	-	-	-	-	-	-	7	-	23	1	-	210	-	2%	805
815	28	115	-	-	-	-	17	14	-	-	-	-	-	-	-	4	-	18	-	-	196	-	1%	812
830	45	87	-	-	-	-	28	11	-	-	-	-	-	-	-	2	-	10	1	-	183	-	3%	896
845	63	97	-	-	-	-	19	10	-	-	-	-	-	-	-	3	-	24	-	-	216	-	4%	955
900	63	82	-	-	-	-	28	7	-	-	-	-	-	-	-	8	-	29	-	-	217	-	4%	1058
915	111	83	-	-	-	-	29	16	-	-	-	-	-	-	-	8	-	33	-	-	280	-	2%	1,135
930	89	75	-	-	-	-	42	15	-	-	-	-	-	-	-	11	-	10	-	-	242	-	3%	1,174
945	128	97	-	-	-	-	45	14	-	-	-	-	-	-	-	6	-	29	-	-	319	-	2%	1,245
1000	118	62	-	-	-	-	39	39	-	-	-	-	-	-	-	7	-	28	-	-	294	-	2%	1,228
1015	101	78	-	-	-	-	42	20	-	-	-	-	-	-	-	8	-	70	-	-	319	-	2%	1,266
1030	127	86	-	-	-	-	42	15	-	-	-	-	-	-	-	5	-	38	-	-	313	-	2%	1,325
1045	111	68	-	-	-	-	46	20	-	-	-	-	-	-	-	10	-	47	-	-	302	-	2%	1,410
1100	108	70	-	-	-	-	54	31	-	-	-	-	-	-	-	4	-	65	-	-	332	-	2%	1,490
1115	138	91	-	-	-	-	60	26	-	-	-	-	-	-	-	7	-	56	-	-	378	-	1%	1,543
1130	166	75	-	-	-	-	66	20	-	-	-	-	-	-	-	7	-	64	-	-	398	-	1%	1,570
1145	132	70	-	-	-	-	79	19	-	-	-	-	-	-	-	13	-	69	-	-	382	-	1%	1,574
1200	126	52	-	-	-	-	85	22	-	-	-	-	-	-	-	18	-	82	-	-	385	-	1%	1,577
1215	125	73	-	-	-	-	96	25	-	-	-	-	-	-	-	13	-	73	-	-	405	-	1%	1,567
1230	120	83	-	-	-	-	72	24	-	-	-	-	-	-	-	16	-	87	-	-	402	-	2%	1,548
1245	115	78	-	-	-	-	70	24	-	-	-	-	-	-	-	16	-	82	-	-	385	-	1%	1,514
1300	122	67	-	-	-	-	51	21	-	-	-	-	-	-	-	16	-	98	-	-	375	-	3%	1,502
1315	108	61	-	-	-	-	66	19	-	-	-	-	-	-	-	18	-	114	-	-	386	-	1%	1,501
1330	108	61	-	-	-	-	93	16	-	-	-	-	-	-	-	9	-	81	-	-	368	-	1%	1,565
1345	92	60	-	-	-	-	87	21	-	-	-	-	-	-	-	13	-	100	1	-	373	-	1%	1,602
1400	102	57	-	-	-	-	81	15	-	-	-	-	-	-	-	12	-	107	-	-	374	-	1%	1,655
1415	103	48	-	-	-	-	112	25	-	-	-	-	-	-	-	14	-	148	-	-	450	-	1%	1,707
1430	105	57	-	-	-	-	105	11	-	-	-	-	-	-	-	9	-	118	-	-	405	-	2%	1,689
1445	107	66	-	-	-	-	108	18	-	-	-	-	-	-	-	15	-	112	-	-	426	-	1%	1,726
1500	77	62	-	-	-	-	135	21	1	-	-	-	-	-	-	17	-	114	-	-	426	-	2%	1,742
1515	91	53	-	-	-	-	125	17	-	-	-	-	-	-	-	17	-	129	-	-	432	-	1%	1,864
1530	94	56	-	-	-	-	146	16	-	-	-	-	-	-	-	14	-	116	-	-	442	-	2%	1,947
1545	79	63	-	-	-	-	158	17	-	-	-	-	-	-	-	19	-	106	-	-	442	-	1%	1,966
1600	94	78	-	-	-	-	178	27	-	-	-	-	-	-	-	16	-	155	-	-	548	-	1%	2,031
1615	127	78	-	-	-	-	141	25	-	-	-	-	-	-	-	18	-	126	-	-	515	-	1%	2,022
1630	85	72	-	-	-	-	164	29	-	-	-	-	-	-	-	14	-	97	-	-	461	-	2%	2,029
1645	100	67	-	-	-	-	175	26	-	-	-	-	-	-	-	23	-	116	-	-	507	-	1%	2,057
1700	79	69	-	-	-	-	210	26	-	-	-	-	-	-	-	22	-	133	-	-	539	-	1%	2,035
1715	120	77	-	-	-	-	176	27	-	-	-	-	-	-	-	13	-	109	-	-	522	-	1%	1,938
1730	90	87	-	-	-	-	152	24	-	-	-	-	-	-	-	7	-	129	-	-	489	-	1%	1,827
1745	121	84	-	1	-	-	133	16	-	-	-	-	-	-	-	14	-	117	1	-	485	-	1%	1,757
1800	105	74	-	-	-	-	114	22	-	-	-	-	-	-	-	17	-	110	-	-	442	-	1%	1,690
1815	131	52	-	-	-	-	96	21	-	-	-	-	-	-	-	17	-	94	-	-	411	-	1%	1,600
1830	90	61	-	-	-	-	119	20	-	-	-	-	-	-	-	12	-	117	-	-	419	-	1%	1,507
1845	108	51	-	-	-	-	107	12	-	-	-	-	-	-	-	16	-	124	-	-	418	-	1%	1,399
1900	80	47	-	-	-	-	92	19	-	-	-	-	-	-	-	12	-	102	-	-	352	-	2%	1,283
1915	73	46	-	-	-	-	75	11	-	-	-	-	-	-	-	11	-	102	-	-	318	-	2%	1,212
1930	54	45	-	-	-	-	81	14	-	-	-	-	-	-	-	9	-	108	-	-	311	-	2%	1,233</

SRF Consulting Group Turning Movement Count

Start Time	Killebrew Dr EB					Killebrew Dr WB					20th Ave NB					20th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
Peak 1	0000 to 1000																						
945	128	97	-	-	-	-	45	14	-	-	-	-	-	-	6	-	29	-	-	319	-	2%	
1000	118	62	-	-	-	-	39	39	-	-	1	-	-	-	7	-	28	-	-	294	-	2%	
1015	101	78	-	-	-	-	42	20	-	-	-	-	-	-	8	-	70	-	-	319	-	2%	
1030	127	86	-	-	-	-	42	15	-	-	-	-	-	-	5	-	38	-	-	313	-	2%	
Total	474	323	-	-	-	-	168	88	-	-	1	-	-	-	26	-	165	-	-	1,245	-	2%	
PHF	0.93	0.83	-	-	-	-	0.93	0.56	-	-	0.25	-	-	-	0.81	-	0.59	-	-	0.98	-		
Trucks	-	2%	-	-	-	-	8%	-	-	-	-	-	-	-	4%	-	-	-	-	2%	-		
Peak 2	1000 to 1400																						
1400	102	57	-	-	-	-	81	15	-	-	-	-	-	-	12	-	107	-	-	374	-	1%	
1415	103	48	-	-	-	-	112	25	-	-	-	-	-	-	14	-	148	-	-	450	-	1%	
1430	105	57	-	-	-	-	105	11	-	-	-	-	-	-	9	-	118	-	-	405	-	2%	
1445	107	66	-	-	-	-	108	18	-	-	-	-	-	-	15	-	112	-	-	426	-	1%	
Total	417	228	-	-	-	-	406	69	-	-	-	-	-	-	50	-	485	-	-	1,655	-	1%	
PHF	0.97	0.86	-	-	-	-	0.91	0.69	-	-	-	-	-	-	0.83	-	0.82	-	-	0.92	-		
Trucks	-	2%	-	-	-	-	4%	1%	-	-	-	-	-	-	-	-	-	-	-	1%	-		
Peak 3	1400 to 2400																						
1645	100	67	-	-	-	-	175	26	-	-	-	-	-	-	23	-	116	-	-	507	-	1%	
1700	79	69	-	-	-	-	210	26	-	-	-	-	-	-	22	-	133	-	-	539	-	1%	
1715	120	77	-	-	-	-	176	27	-	-	-	-	-	-	13	-	109	-	-	522	-	1%	
1730	90	87	-	-	-	-	152	24	-	-	-	-	-	-	7	-	129	-	-	489	-	1%	
Total	389	300	-	-	-	-	713	103	-	-	-	-	-	-	65	-	487	-	-	2,057	-	1%	
PHF	0.81	0.86	-	-	-	-	0.85	0.95	-	-	-	-	-	-	0.71	-	0.92	-	-	0.95	-		
Trucks	-	1%	-	-	-	-	3%	1%	-	-	-	-	-	-	-	-	-	-	-	1%	-		

SRF Consulting Group Turning Movement Count

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					TH 77 NB Ramps NB					TH 77 NB Ramps SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1245	44	47	1	-	-	-	55	5	-	-	1	-	-	1	1	14	-	56	-	-	223	1	-
1300	56	43	2	-	-	-	26	7	-	-	-	-	-	-	-	20	-	75	-	-	229	-	0%
1315	51	45	1	-	-	-	46	11	-	-	1	-	1	-	-	23	-	69	-	-	248	-	-
1330	59	38	-	-	-	1	37	9	-	-	-	-	-	-	2	23	2	74	-	-	243	-	1%
Total	210	173	4	-	-	1	164	32	-	-	2	-	1	1	3	80	2	274	-	-	943	1	0%
PHF	0.89	0.92	0.50			0.25	0.75	0.73	-	-	0.50	-	0.25	-	-	0.87	0.25	0.91	-	-	0.95		
Trucks	-	-	-			-	-	-	-	-	-	-	-	-	-	5%	-	-	-	-	0%		

SRF Consulting Group Turning Movement Count

Count
Date 4/21/2016

Start Time	Old Shakopee Rd					Old Shakopee Rd					TH 77 NB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total						
	L	T	EB R	Ped	Bikes	L	T	WB R	Ped	Bikes	L	T	NB R	Ped	Bikes					L	T	SB R	Ped	Bikes	
000	5	7	-	-	-	-	14	2	-	-	-	-	-	-	-	4	-	6	-	-	38	-	-	3%	155
015	11	6	-	-	-	-	14	5	-	-	-	-	-	-	-	1	1	9	-	-	47	-	-	-	143
030	3	3	-	-	-	-	8	1	-	-	-	-	-	-	-	4	-	20	-	-	39	-	-	3%	120
045	5	2	-	-	-	-	9	2	-	-	-	-	-	-	-	3	-	10	-	-	31	-	-	-	92
100	-	7	-	-	-	-	14	1	-	-	-	-	-	-	-	1	-	3	-	-	26	-	-	-	76
115	2	2	-	-	-	-	9	1	-	-	-	-	-	-	-	3	-	7	-	-	24	-	-	-	65
130	-	3	-	-	-	-	3	-	-	-	-	-	-	-	-	1	-	4	-	-	11	-	-	-	53
145	2	3	-	-	-	-	4	2	-	-	-	-	-	-	-	-	1	3	-	-	15	-	-	-	53
200	4	-	-	-	-	-	7	-	-	-	-	-	-	1	-	1	-	3	-	-	15	1	-	-	51
215	3	-	-	-	-	-	5	-	-	-	-	-	-	-	-	1	-	3	-	-	12	-	-	-	45
230	1	4	-	-	-	-	2	-	-	-	-	1	-	-	-	2	-	1	-	-	11	-	-	-	38
245	2	2	-	-	-	-	-	2	-	-	-	-	-	-	-	3	-	4	-	-	13	-	-	-	36
300	2	1	-	-	-	-	2	1	-	-	-	-	-	-	-	2	-	1	-	-	9	-	-	-	38
315	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	1	-	2	-	-	5	-	-	-	41
330	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	-	9	-	-	-	44
345	7	2	-	-	-	-	2	-	-	-	-	1	-	-	-	1	-	2	-	-	15	-	-	-	49
400	3	-	-	-	-	-	4	-	-	-	-	-	-	-	-	1	-	4	-	-	12	-	-	-	51
415	1	2	-	-	-	-	1	1	-	-	-	-	-	-	-	2	-	1	-	-	8	-	-	-	55
430	3	2	-	-	-	-	1	1	-	-	-	-	-	-	-	3	-	4	-	-	14	-	-	-	77
445	5	-	-	-	-	-	2	3	-	-	-	-	-	-	-	3	-	4	-	-	17	-	-	-	108
500	1	3	-	-	-	-	3	1	-	-	-	-	-	-	-	5	-	3	-	-	16	-	-	13%	146
515	9	7	-	-	-	-	1	3	-	-	-	-	-	-	-	6	-	4	-	-	30	-	-	-	212
530	14	3	1	-	-	-	5	1	-	-	-	-	-	-	-	6	-	15	-	-	45	-	-	-	284
545	8	8	-	-	-	-	4	3	-	-	-	-	-	-	-	19	-	13	-	-	55	-	-	2%	386
600	16	13	-	-	-	-	11	4	-	-	-	-	-	-	-	22	-	16	-	-	82	-	-	-	466
615	25	12	-	-	-	-	6	9	-	-	-	-	-	-	-	24	-	26	-	-	102	-	-	1%	543
630	41	19	-	-	-	-	10	7	-	-	-	-	-	1	-	44	3	23	-	-	147	1	-	1%	655
645	19	21	-	-	-	-	18	9	-	-	-	1	-	-	-	34	1	32	-	-	135	-	-	2%	743
700	36	22	-	-	-	-	19	5	-	-	1	1	-	-	-	35	1	39	-	-	159	-	-	1%	908
715	39	28	1	-	-	-	26	20	-	-	1	1	-	-	-	47	1	50	-	-	214	-	-	0%	1,104
730	48	25	-	-	-	-	20	9	-	-	-	1	-	3	1	65	-	67	-	-	235	1	-	1%	1,272
745	45	42	-	-	-	-	27	14	-	-	-	1	-	-	-	65	-	106	1	-	300	-	-	0%	1,464
800	45	47	-	1	-	-	34	12	-	-	3	-	-	-	1	82	1	131	2	-	355	1	-	2%	1,590
815	70	45	-	-	-	-	62	5	-	-	1	-	-	-	1	95	1	103	8	-	382	1	-	1%	1,579
830	68	60	1	-	-	-	68	14	-	-	1	-	1	-	-	96	3	115	-	-	427	-	-	0%	1,535
845	59	59	-	-	-	-	1	75	11	-	-	-	-	-	-	127	-	94	-	-	426	-	-	1%	1,441
900	50	60	-	-	-	-	67	9	-	-	-	-	-	-	-	78	-	80	-	-	344	-	-	3%	1,276
915	46	42	-	-	-	-	81	13	-	-	1	-	2	-	-	89	-	64	1	-	338	-	-	2%	1,112
930	60	47	-	-	-	-	66	11	-	-	1	-	-	-	-	64	-	84	-	-	333	-	-	2%	980
945	44	46	-	-	-	-	40	13	-	-	-	-	-	1	1	56	-	62	-	-	261	1	-	3%	800
1000	38	22	-	-	-	-	21	8	-	-	-	-	-	-	-	34	2	55	-	-	180	-	-	2%	677
1015	43	39	-	-	-	-	29	12	-	-	-	-	-	-	-	40	5	38	-	-	206	-	-	1%	631
1030	19	38	-	-	-	-	36	6	-	-	-	-	-	1	-	23	-	31	-	-	153	1	-	1%	564
1045	28	25	-	-	-	-	28	7	-	-	-	-	-	-	2	23	-	27	-	-	138	2	-	1%	550
1100	25	19	-	-	-	-	23	4	-	-	1	1	-	-	-	23	-	38	-	-	134	-	-	2%	553
1115	32	27	1	-	-	-	1	23	6	-	-	-	-	-	-	21	1	27	-	-	139	-	-	2%	568
1130	30	26	-	-	-	-	20	9	-	-	-	-	-	-	-	23	-	31	-	-	139	-	-	1%	591
1145	40	29	-	-	-	-	25	4	-	-	-	1	-	-	-	17	1	24	-	-	141	-	-	3%	600
1200	37	26	-	-	-	-	1	37	5	-	-	-	-	-	-	21	1	21	-	-	149	-	-	2%	624
1215	29	31	-	-	-	-	43	5	-	-	-	-	-	-	-	23	-	31	-	-	162	-	-	4%	646
1230	37	30	-	-	-	-	1	40	5	-	-	-	-	-	-	17	1	17	-	-	148	-	-	1%	672
1245	27	27	2	-	-	-	50	7	-	-	1	1	-	-	-	16	-	34	-	-	165	-	-	2%	703
1300	32	30	-	-	-	-	1	49	6	-	-	-	-	-	-	17	2	34	-	-	171	-	-	2%	718
1315	33	38	-	-	-	-	46	6	-	-	-	-	-	-	-	26	-	39	-	-	188	-	-	2%	711
1330	38	40	1	-	-	-	43	5	-	-	-	1	-	-	-	24	1	26	-	-	179	-	-	2%	700
1345	30	38	2	-	-	-	32	6	-	-	2	1	-	-	-	25	5	39	-	-	180	-	-	3%	689
1400	42	37	-	-	-	-	1	39	5	-	-	-	-	-	-	12	-	28	-	-	164	-	-	2%	677
1415	30	49	-	-	-	-	2	1	38	9	-	-	-	-	1	16	5	29	-	-	177	3	-	3%	682
1430	34	33	1	-	-	-	41	8	-	-	-	-	-	-	-	12	-	39	-	-	168	-	-	1%	675
1445	29	48	-	-	-	-	1	31	5	-	-	-	-	-	-	15	-	39	-	-	168	-	-	2%	705
1500	28	27	-	-	-	-	52	4	-	-	-	-	-	-	-	15	1	42	-	-	169	-	-	1%	761
1515	21	29	1	-	-	-	50	7	-	-	-	1	1	2	-	14	-	47	-	-	170	2	-	2%	806
1530	42	35	1	-	-	-	1	42	9	-	-	1	-	-	-	14	-	53	-	-	198	-	-	1%	876
1545	43	42	-	-	-	-	58	5	-	-	-	-	3	-	-	15	5	56	-	-	224	-	-	2%	970
1600	49	27	-	-	-	-	1	56	7	-	-	-	-	-	-	11	-	63	-	-	214	-	-	1%	1,028
1615	66	36	1	-	-	-	1	59	11	-	-	1	1	-	-	22	2	41	-	-	240	-	-	1%	1,098
1630	37	55	3	-	-	-	106	8	-	-	-	1	1	-	-	14	2	65	2	-	292	-	-	2%	1,164
1645	39	38	-	-	-	-	1	87	12	-	-	-	-	-	-	26	-	79	1	-	282	-	-	2%	1,214
1700	41	44	2	-	-	-	103	4	-	-	-	-	-	1	3	18	1	71	-	-	284	3	-	0%	1,328
1715	78	33	1	-	-	-	101	9	-	-	2	-	-	1	-	30	-	52	-	-	306	-	-	2%	1,489
1730	87	39	1	-	-	-	1	114	12	-	-	-	1	-	-	17	-	70	-	-	342	-	-	1%	1,601
1745	88	51	1	-	1	-	159	8	-	-	-	-	1	-	-	24	3	61	-	-	396	1	-	1%	1,620
1800	91	44	1	-	-	-	220	10	-	-	-	-	-	-	-	29	-	49	-	-	445	-	-	1%	1,502
1815	69	62	1	-	-	-	164	8	-	-	1	-	-	-	-	40	-	73	-	-	418	-	-	1%	1,345
1830	78	51	1	-	-	-	120	2	-	-	-	1	-	-	-	34	-	74	-	-	361	-	-	2%	1,217
1845	60	54	1	-	-	-	82	8	-	-	-	-	-	-	-	19	2	52	-	-	278	-	-	1%	1,109
1900	58	49	-	-	-	-	81	9	-	-	-	-	-</												

SRF Consulting Group Turning Movement Count

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					NB					TH 77 NB SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
Peak 1	0000 to 1000																						
800	45	47	-	1	-	-	34	12	-	-	3	-	-	-	1	82	1	131	2	-	355	3	2%
815	70	45	-	-	-	-	62	5	-	-	1	-	-	-	1	95	1	103	8	-	382	8	1%
830	68	60	1	-	-	-	68	14	-	-	1	-	1	-	-	96	3	115	-	-	427	-	0%
845	59	59	-	-	-	-	75	11	-	-	-	-	-	-	-	127	-	94	-	-	426	-	1%
Total	242	211	1	1	-	1	239	42	-	-	5	-	1	-	2	400	5	443	10	-	1,590	11	1%
PHF	0.86	0.88	0.25	-	-	0.25	0.80	0.75	-	-	0.42	-	0.25	-	-	0.79	0.42	0.85	-	-	0.93	-	-
Trucks	0%	0%	-	-	-	100%	2%	-	-	-	-	-	-	-	2%	-	0%	-	-	-	1%	-	-
Peak 2	1000 to 1400																						
1300	32	30	-	-	-	1	49	6	-	-	-	-	-	-	17	2	34	-	-	171	-	2%	
1315	33	38	-	-	-	-	46	6	-	-	-	-	-	-	26	-	39	-	-	168	-	2%	
1330	38	40	1	-	-	-	43	5	-	-	-	1	-	-	24	1	26	-	-	179	-	2%	
1345	30	38	2	-	-	-	32	6	-	-	2	1	-	-	25	5	39	-	-	180	-	3%	
Total	133	146	3	-	-	1	170	23	-	-	2	2	-	-	-	92	8	138	-	-	718	-	2%
PHF	0.88	0.91	0.38	-	-	0.25	0.87	0.96	-	-	0.25	0.50	-	-	-	0.88	0.40	0.88	-	-	0.95	-	-
Trucks	1%	1%	-	-	-	-	2%	-	-	-	-	-	-	-	9%	-	-	-	-	-	2%	-	-
Peak 3	1400 to 2400																						
1745	88	51	1	-	1	-	159	8	-	-	-	-	1	-	24	3	61	-	-	396	-	1%	
1800	91	44	1	-	-	-	220	10	-	-	-	1	-	-	29	-	49	-	-	445	-	1%	
1815	69	62	1	-	-	-	164	8	-	-	-	1	-	-	40	-	73	-	-	418	-	1%	
1830	78	51	1	-	-	-	120	2	-	-	-	1	-	-	34	-	74	-	-	361	-	2%	
Total	326	208	4	-	1	-	663	28	-	-	2	-	2	-	-	127	3	257	-	-	1,620	-	1%
PHF	0.90	0.84	1.00	-	-	-	0.75	0.70	-	-	0.50	-	0.50	-	-	0.79	0.25	0.87	-	-	0.91	-	-
Trucks	2%	1%	-	-	-	-	0%	-	-	-	-	-	-	-	5%	-	-	-	-	-	1%	-	-

SRF Consulting Group

Turning Movement Count

Count 4/16/2016
Date

Start Time	Lindau Ln EB					Lindau Ln WB					22nd Ave NB					22nd Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
1430	1	62	47	-	-	47	51	7	-	-	26	7	16	4	-	5	4	1	-	-	274	-	0%	1,017
1445	4	33	49	-	-	32	25	13	-	-	32	5	20	-	-	14	5	4	-	-	236	-	2%	1,003
1500	4	43	44	-	-	43	56	13	-	-	18	11	23	-	-	6	3	5	-	-	269	-	4%	1,009
1515	3	44	26	-	-	20	37	21	-	-	27	9	19	1	-	13	9	10	-	-	238	-	4%	973
1530	8	50	43	-	-	48	33	14	-	-	13	7	18	-	-	8	10	8	-	-	260	-	2%	999
1545	2	41	37	-	-	49	29	9	-	-	18	10	26	-	-	8	8	5	2	-	242	-	2%	739
1600	3	48	41	-	-	28	35	12	-	-	21	6	15	-	-	10	8	6	-	-	233	-	3%	497
1615	2	39	39	-	-	39	36	14	-	-	31	8	27	-	-	7	12	10	-	-	264	-	3%	264

Start Time	Lindau Ln EB					Lindau Ln WB					22nd Ave NB					22nd Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1430	1	62	47	-	-	47	51	7	-	-	26	7	16	4	-	5	4	1	-	-	274	4	0%
1445	4	33	49	-	-	32	25	13	-	-	32	5	20	-	-	14	5	4	-	-	236	-	2%
1500	4	43	44	-	-	43	56	13	-	-	18	11	23	-	-	6	3	5	-	-	269	-	4%
1515	3	44	26	-	-	20	37	21	-	-	27	9	19	1	-	13	9	10	-	-	238	1	4%
Total	12	182	166	-	-	142	169	54	-	-	103	32	78	5	-	38	21	20	-	-	1,017	5	2%
PHF	0.75	0.73	0.85	-	-	0.76	0.75	0.64	-	-	0.80	0.73	0.85	-	-	0.68	0.58	0.50	-	-	0.93		
Trucks	8%	2%	-	-	-	-	-	19%	-	-	-	-	1%	-	-	21%	-	-	-	-	2%		

SRF Consulting Group

Turning Movement Count

Count 4/16/2016
Date

Start Time	Killebrew Dr EB					Killebrew Dr WB					22nd Ave NB					22nd Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total									
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes													
1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	625		
1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	975		
1430	49	30	17	-	-	2	49	19	2	-	19	1	15	-	-	12	1	66	-	-	-	-	-	-	-	-	-	-	-	280	-	1%	1,277
1445	48	33	32	-	-	15	52	14	1	-	26	4	14	4	-	28	2	77	-	-	-	-	-	-	-	-	-	-	-	345	-	1%	1,309
1500	48	36	33	2	-	12	23	18	-	-	23	2	43	1	-	27	2	83	-	-	-	-	-	-	-	-	-	-	-	350	-	1%	1,316
1515	45	33	24	3	-	9	45	16	-	-	21	1	5	1	-	23	2	78	-	-	-	-	-	-	-	-	-	-	-	302	-	1%	1,275
1530	47	27	23	-	-	11	38	19	1	-	27	-	14	-	-	26	1	79	-	-	-	-	-	-	-	-	-	-	-	312	-	3%	1,351
1545	52	35	27	2	-	8	52	17	-	2	23	-	10	-	-	28	-	100	-	-	-	-	-	-	-	-	-	-	-	352	2	1%	1,039
1600	28	32	19	-	-	11	47	17	1	-	18	2	9	-	-	22	5	99	-	-	-	-	-	-	-	-	-	-	-	309	-	1%	687
1615	50	43	30	-	1	11	78	24	-	-	28	-	9	-	-	16	4	85	-	-	-	-	-	-	-	-	-	-	-	378	1	2%	378

Start Time	Killebrew Dr EB					Killebrew Dr WB					22nd Ave NB					22nd Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks									
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes												
1530	47	27	23	-	-	11	38	19	1	-	27	-	14	-	-	26	1	79	-	-	-	-	-	-	-	-	-	-	-	312	1	3%
1545	52	35	27	2	-	8	52	17	-	2	23	-	10	-	-	28	-	100	-	-	-	-	-	-	-	-	-	-	-	352	2	1%
1600	28	32	19	-	-	11	47	17	1	-	18	2	9	-	-	22	5	99	-	-	-	-	-	-	-	-	-	-	-	309	1	1%
1615	50	43	30	-	1	11	78	24	-	-	28	-	9	-	-	16	4	85	-	-	-	-	-	-	-	-	-	-	-	378	-	2%
Total	177	137	99	2	1	41	215	77	2	2	96	2	42	-	-	92	10	363	-	-	-	-	-	-	-	-	-	-	1,351	4	2%	
PHF	0.85	0.80	0.83	-	-	0.93	0.69	0.80	-	-	0.86	0.25	0.75	-	-	0.82	0.50	0.91	-	-	-	-	-	-	-	-	-	-	-	0.89	-	-
Trucks	-	1%	2%	-	-	12%	3%	-	-	-	2%	-	10%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2%	-	-

SRF Consulting Group

Turning Movement Count

Count 4/2/2016
Date

Start Time	79th ST EB					79th ST WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total	
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
1300	-	-	6	-	-	-	-	-	-	-	2	-	-	-	-	-	-	6	-	-	14	-	-	-	41
1315	1	-	9	-	-	-	-	-	-	-	1	-	-	-	-	-	-	10	-	-	21	-	-	-	39
1330	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	4	-	-	-	24
1345	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	29
1400	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	12	-	-	-	28
1415	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	6	-	-	-	27
1430	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	9	-	-	-	23
1445	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	24
1500	-	-	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	11	-	-	-	39
1515	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	28
1530	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	10	-	-	10%	26
1545	3	-	6	-	-	-	-	-	-	-	1	-	-	-	-	-	-	6	-	-	16	-	-	6%	16

Start Time	79th ST EB					79th ST WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks		
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
1300	-	-	6	-	-	-	-	-	-	-	2	-	-	-	-	-	-	6	-	-	14	-	-	-	-
1315	1	-	9	-	-	-	-	-	-	-	1	-	-	-	-	-	-	10	-	-	21	-	-	-	-
1330	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	4	-	-	-	-
1345	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-
Total	1	-	19	-	-	-	-	-	-	-	3	-	-	-	-	-	-	18	-	-	41	-	-	-	-
PHF	0.25	-	0.53	-	-	-	-	-	-	-	0.38	-	-	-	-	-	-	0.45	-	-	0.49	-	-	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SRF Consulting Group Turning Movement Count

Count
Date 3/31/2016

Start Time	I-494 EB					I-494 WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total	
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
000	1	-	4	-	-	9	-	7	-	-	8	3	11	-	-	6	-	6	-	-	55	-	-	5%	187
015	1	-	5	-	-	9	-	6	-	-	6	2	15	-	-	5	1	3	-	-	53	-	-	7%	172
030	-	-	3	-	-	15	-	3	-	-	6	3	9	-	-	1	-	2	-	-	42	-	-	7%	151
045	-	-	3	-	-	5	-	4	-	-	4	2	14	-	-	4	1	1	-	-	37	-	-	5%	146
100	2	-	3	-	-	8	-	6	-	-	2	3	8	-	-	5	1	2	-	-	40	-	-	15%	131
115	-	-	1	-	-	8	-	5	-	-	7	-	7	-	-	2	2	-	-	-	32	-	-	13%	115
130	1	-	2	-	-	8	-	5	-	-	4	-	12	-	-	5	-	-	-	-	37	-	-	19%	108
145	-	-	1	-	-	8	-	1	-	-	1	4	4	-	-	1	-	2	-	-	22	-	-	14%	108
200	2	-	2	-	-	2	-	7	-	-	1	-	5	-	-	2	1	2	-	-	24	-	-	8%	105
215	1	-	1	-	-	6	-	7	-	-	3	2	3	-	-	1	1	-	-	-	25	-	-	8%	100
230	1	-	2	-	-	3	-	14	-	-	1	1	9	-	-	4	-	2	-	-	37	-	-	13%	107
245	4	-	1	-	-	7	-	3	-	-	-	-	2	-	-	2	-	-	-	-	19	-	-	5%	111
300	2	-	(1)	-	-	4	-	5	-	-	1	-	4	-	-	2	-	2	-	-	19	-	-	5%	137
315	4	-	3	-	-	5	-	9	-	-	-	3	6	-	-	1	1	-	-	-	32	-	-	6%	176
330	3	-	1	-	-	8	-	10	-	-	1	2	11	-	-	5	-	-	-	-	41	-	-	17%	212
345	8	-	6	-	-	4	-	12	-	-	1	3	9	-	-	2	-	-	-	-	45	-	-	2%	242
400	12	-	2	-	-	4	-	21	-	-	-	1	8	-	-	6	1	3	-	-	58	-	-	10%	293
415	9	-	5	-	-	10	-	12	-	-	2	10	13	-	-	3	3	1	-	-	68	-	-	10%	321
430	7	-	8	-	-	13	-	19	-	-	2	6	12	-	-	2	1	1	-	-	71	-	-	6%	379
445	23	-	8	-	-	16	-	23	-	-	4	5	13	-	-	1	1	2	-	-	96	-	-	7%	445
500	4	-	12	-	-	18	-	12	-	-	3	9	16	-	-	5	1	6	-	-	86	-	-	14%	567
515	16	-	19	-	-	31	-	17	-	-	4	7	18	-	-	4	5	5	-	-	126	-	-	13%	640
530	16	-	19	-	-	35	-	23	-	-	5	10	15	-	-	3	2	9	-	-	137	-	-	5%	756
545	26	-	45	-	-	67	-	28	-	-	5	9	22	-	-	5	3	8	-	-	218	-	-	11%	842
600	15	-	35	-	-	33	-	22	-	1	6	6	22	-	-	9	5	6	-	-	159	1	-	10%	902
615	14	-	45	-	-	67	-	24	-	-	9	7	27	-	-	13	8	28	-	-	242	-	-	13%	1,044
630	11	-	46	-	-	60	-	21	-	-	6	16	32	-	-	11	3	17	-	-	223	-	-	8%	1,126
645	10	-	60	-	-	97	-	23	-	-	8	10	30	-	-	15	6	19	-	-	278	-	-	12%	1,326
700	14	-	61	1	-	107	-	21	-	-	9	5	50	-	-	12	5	17	-	-	301	-	-	2%	1,559
715	7	-	73	-	-	136	-	16	-	-	17	4	35	-	-	10	12	14	-	-	324	-	-	5%	1,744
730	16	-	60	-	-	220	-	29	-	-	19	8	46	-	-	10	11	4	-	-	423	-	-	4%	1,878
745	22	-	74	-	-	292	-	34	-	-	8	12	41	-	-	6	20	2	-	-	511	-	-	4%	1,909
800	12	-	76	-	-	257	-	16	-	-	13	9	47	-	-	16	22	18	-	-	486	-	-	3%	1,827
815	12	-	88	1	-	210	-	32	-	-	19	5	51	-	-	20	12	9	-	-	458	-	-	4%	1,640
830	10	-	72	-	-	231	-	25	-	-	17	12	48	-	-	17	12	10	-	-	454	-	-	4%	1,523
845	12	-	91	-	-	182	-	34	-	-	20	16	50	-	-	11	6	7	-	-	429	-	-	3%	1,399
900	12	-	77	-	1	83	-	17	-	-	24	9	38	-	-	21	6	12	-	-	299	1	-	5%	1,321
915	5	-	51	-	-	131	-	34	-	-	19	12	50	-	-	18	9	12	-	-	341	-	-	7%	1,382
930	11	-	39	-	-	145	-	24	-	-	32	12	40	-	-	13	7	7	-	-	330	-	-	3%	1,395
945	10	-	44	-	-	169	-	31	-	-	25	9	27	-	-	17	7	12	-	-	351	-	-	3%	1,450
1000	8	-	31	-	-	155	-	37	-	-	29	9	42	-	-	22	11	16	-	-	360	-	-	4%	1,512
1015	8	-	51	-	1	151	-	28	-	-	27	10	46	-	-	17	5	11	-	-	354	1	-	5%	1,524
1030	5	-	49	-	-	172	-	23	-	-	30	11	77	-	-	10	3	5	-	-	385	-	-	2%	1,574
1045	7	-	57	-	-	174	-	26	-	-	47	10	60	-	-	11	7	14	-	-	413	-	-	4%	1,623
1100	5	-	46	1	-	150	-	25	-	-	41	17	60	-	-	12	7	9	-	-	372	-	-	4%	1,614
1115	16	-	54	-	-	147	-	27	-	-	49	13	59	-	-	20	7	12	-	-	404	-	-	4%	1,648
1130	8	-	46	-	-	189	-	23	-	-	55	12	73	-	-	14	5	9	-	-	434	-	-	2%	1,678
1145	6	-	40	-	-	156	-	37	-	-	49	10	68	-	-	14	14	10	-	-	404	-	-	3%	1,719
1200	10	-	48	-	-	148	-	6	-	-	51	24	85	-	-	15	12	7	-	-	406	-	-	3%	1,771
1215	7	-	49	-	-	156	-	19	-	-	39	27	91	-	-	15	14	17	-	-	434	-	-	5%	1,868
1230	12	-	77	-	-	145	-	28	-	-	52	22	106	-	-	12	9	12	-	-	475	-	-	3%	1,849
1245	14	-	62	-	-	145	-	45	-	-	42	19	93	-	-	12	7	17	-	-	456	-	-	3%	1,800
1300	16	-	55	-	-	159	-	28	-	-	51	29	118	-	-	15	15	17	-	-	503	-	-	5%	1,758
1315	9	-	55	-	-	149	-	14	-	-	48	16	99	-	-	5	12	8	-	-	415	-	-	5%	1,713
1330	17	-	59	-	-	147	-	13	-	-	42	25	93	-	-	13	4	13	-	-	426	-	-	3%	1,756
1345	8	-	42	-	-	156	-	28	-	-	39	12	99	-	-	7	11	12	-	-	414	-	-	3%	1,855
1400	8	-	31	-	-	139	-	27	-	-	63	19	123	-	-	21	8	19	-	-	458	-	-	4%	1,919
1415	16	-	33	-	-	131	-	39	-	-	56	21	128	-	-	11	7	16	-	-	458	-	-	3%	1,955
1430	28	-	44	-	1	137	-	19	-	-	73	24	144	-	-	24	12	20	-	-	525	1	-	3%	1,991
1445	11	-	52	-	-	133	-	40	-	-	60	22	127	-	-	17	5	11	-	-	478	-	-	4%	1,973
1500	8	-	41	-	-	150	-	3	-	-	59	19	155	-	-	22	10	27	-	-	494	-	-	3%	2,030
1515	8	-	35	-	-	162	-	28	-	-	62	29	131	-	-	17	5	17	-	-	494	-	-	4%	2,063
1530	9	-	31	-	-	143	-	44	-	-	69	19	142	-	-	18	9	23	-	-	507	-	-	3%	2,086
1545	17	-	40	-	-	185	-	28	-	-	74	23	126	-	-	18	7	17	-	-	535	-	-	3%	2,174
1600	8	-	26	-	1	139	-	37	-	-	97	31	144	-	-	21	9	15	-	-	527	1	-	1%	2,239
1615	2	-	19	-	-	156	-	14	-	-	65	28	184	-	-	16	16	17	-	-	517	-	-	2%	2,397
1630	5	-	27	-	-	175	-	25	-	1	81	30	212	-	-	16	6	18	-	-	595	1	-	2%	2,506
1645	5	-	17	1	-	201	-	41	-	-	87	25	183	-	-	26	4	11	-	-	600	-	-	2%	2,555
1700	5	-	20	-	-	193	-	52	-	-	96	49	225	-	-	16	13	16	-	-	685	-	-	2%	2,454
1715	5	-	16	-	-	224	-	30	-	1	78	45	191	-	-	9	9	19	-	-	626	1	-	2%	2,257
1730	8	-	21	-	-	273	-	33	-	4	69	34	172	-	-	17	7	10	-	-	644	4	-	2%	2,116
1745	10	-	32	-	-	175	-	6	-	-	59	22	162	-	-	18	7	8	-	-	499	-	-	4%	1,892
1800	16	-	30	-	-	155	-	17	-	-	47	26	159	-	-	14	11	13	-	-	488	-	-	5%	1,768
1815	12	-	38	-																					

SRF Consulting Group Turning Movement Count

Start Time	I-494 EB						I-494 WB						24th Ave NB						24th Ave SB						15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes		L	T	R	Ped	Bikes		L	T	R	Ped	Bikes		L	T	R	Ped	Bikes				
Peak 1 0000 to 1000																											
745	22	-	74	-	-	292	-	34	-	-	8	12	41	-	-	6	20	2	-	-	511	-	4%				
800	12	-	76	-	-	257	-	16	-	-	13	9	47	-	-	16	22	18	-	-	486	-	3%				
815	12	-	88	1	-	210	-	32	-	-	19	5	51	-	-	20	12	9	-	-	458	1	4%				
830	10	-	72	-	-	231	-	25	-	-	17	12	48	-	-	17	12	10	-	-	454	-	4%				
Total	56	-	310	1	-	990	-	107	-	-	57	38	187	-	-	59	66	39	-	-	1909	1	4%				
PHF	0.64	-	0.88	-	-	0.85	-	0.79	-	-	0.75	0.79	0.92	-	-	0.74	0.75	0.54	-	-	0.93	-	-				
Trucks	13%	-	-	-	-	2%	-	-	-	-	12%	13%	-	-	-	22%	11%	23%	-	-	4%	-	-				
Peak 2 1000 to 1400																											
1400	8	-	31	-	-	139	-	27	-	-	63	19	123	-	-	21	8	19	-	-	458	-	4%				
1415	16	-	33	-	-	131	-	39	-	-	56	21	128	-	-	11	7	16	-	-	458	-	3%				
1430	28	-	44	-	1	137	-	19	-	-	73	24	144	-	-	24	12	20	-	-	525	-	3%				
1445	11	-	52	-	-	133	-	40	-	-	60	22	127	-	-	17	5	11	-	-	478	-	4%				
Total	63	-	160	-	1	540	-	125	-	-	252	86	522	-	-	73	32	66	-	-	1919	-	3%				
PHF	0.56	-	0.77	-	-	0.97	-	0.78	-	-	0.86	0.90	0.91	-	-	0.76	0.67	0.83	-	-	0.91	-	-				
Trucks	5%	-	-	-	-	3%	-	-	-	-	5%	10%	-	-	-	15%	22%	11%	-	-	3%	-	-				
Peak 3 1400 to 2400																											
1645	5	-	17	1	-	201	-	41	-	-	87	25	183	-	-	26	4	11	-	-	600	1	2%				
1700	5	-	20	-	-	193	-	52	-	-	96	49	225	-	-	16	13	16	-	-	685	-	2%				
1715	5	-	16	-	-	224	-	30	-	1	78	45	191	-	-	9	9	19	-	-	626	-	2%				
1730	8	-	21	-	-	273	-	33	-	4	69	34	172	-	-	17	7	10	-	-	644	-	2%				
Total	23	-	74	1	-	891	-	156	-	5	330	153	771	-	-	68	33	56	-	-	2,555	1	2%				
PHF	0.72	-	0.88	-	-	0.82	-	0.75	-	-	0.86	0.78	0.86	-	-	0.65	0.63	0.74	-	-	0.93	-	-				
Trucks	22%	-	-	-	-	3%	-	-	-	-	1%	5%	-	-	-	10%	12%	-	-	-	2%	-	-				

SRF Consulting Group

Turning Movement Count

Count
Date 4/2/2016

Start Time	79th ST EB					79th ST WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total	
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
1300	-	-	6	-	-	-	-	-	-	-	2	-	-	-	-	-	-	6	-	-	14	-	-	-	41
1315	1	-	9	-	-	-	-	-	-	-	1	-	-	-	-	-	-	10	-	-	21	-	-	-	39
1330	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	4	-	-	-	24
1345	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	29
1400	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	12	-	-	-	28
1415	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	6	-	-	-	27
1430	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	9	-	-	-	23
1445	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1	-	-	-	24
1500	-	-	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	6	-	-	11	-	-	-	39
1515	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	28
1530	-	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	10	-	-	10%	26
1545	3	-	6	-	-	-	-	-	-	-	1	-	-	-	-	-	-	6	-	-	16	-	-	6%	16

Start Time	79th ST EB					79th ST WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks		
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
1300	-	-	6	-	-	-	-	-	-	-	2	-	-	-	-	-	-	6	-	-	14	-	-	-	-
1315	1	-	9	-	-	-	-	-	-	-	1	-	-	-	-	-	-	10	-	-	21	-	-	-	-
1330	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	4	-	-	-	-
1345	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	2	-	-	-	-
Total	1	-	19	-	-	-	-	-	-	-	3	-	-	-	-	-	-	18	-	-	41	-	-	-	-
PHF	0.25	-	0.53	-	-	-	-	-	-	-	0.38	-	-	-	-	-	-	0.45	-	-	0.49	-	-	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SRF Consulting Group

Turning Movement Count

Count
Date 4/2/2016

Start Time	American Blvd EB					American Blvd WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
1430	38	10	25	-	-	7	15	17	-	-	20	164	13	-	-	8	284	60	-	-	661	-	1%	2,636
1445	54	7	28	-	-	14	18	15	-	-	27	173	10	-	-	9	251	60	-	-	666	-	2%	2,679
1500	63	13	30	-	-	19	15	16	-	-	18	170	13	-	-	16	255	49	1	-	677	-	3%	2,711
1515	64	17	30	-	-	13	15	14	-	-	24	169	15	-	-	10	208	53	-	-	632	-	3%	2,698
1530	50	18	29	-	-	17	11	15	-	-	35	221	15	-	-	12	226	55	-	-	704	-	2%	2,671
1545	60	17	20	1	-	23	12	10	-	-	25	236	12	-	-	5	214	64	-	-	698	-	3%	1,969
1600	45	10	24	-	-	18	14	15	-	-	20	197	13	-	-	9	254	45	-	-	664	-	3%	1,271
1615	43	18	27	-	-	16	7	15	-	-	15	176	11	-	-	17	209	51	-	-	605	-	4%	607

Start Time	American Blvd EB					American Blvd WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	63	13	30	-	-	19	15	16	-	-	18	170	13	-	-	16	255	49	1	-	677	1	3%
1515	64	17	30	-	-	13	15	14	-	-	24	169	15	-	-	10	208	53	-	-	632	-	3%
1530	50	18	29	-	-	17	11	15	-	-	35	221	15	-	-	12	226	55	-	-	704	-	2%
1545	60	17	20	1	-	23	12	10	-	-	25	236	12	-	-	5	214	64	-	-	698	1	3%
Total	237	65	109	1	-	72	53	55	-	-	102	796	55	-	-	43	903	221	1	-	2,711	2	3%
PHF	0.93	0.90	0.91	-	-	0.76	0.88	0.86	-	-	0.73	0.84	0.92	-	-	0.67	0.89	0.86	-	-	0.96		
Trucks	4%	11%	6%	-	-	15%	2%	2%	-	-	4%	1%	11%	-	-	7%	1%	3%	-	-	3%		

SRF Consulting Group Turning Movement Count

Count 4/16/2016
Date

Start Time	Lindau Ln EB					Lindau Ln WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total						
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes										
1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	835
1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,273
1430	41	4	24	3	-	3	2	3	-	-	21	97	3	18	-	2	156	78	-	-	-	434	-	-	-	-	-	2%	1,692	
1445	34	4	29	-	-	1	1	1	-	-	20	112	3	7	-	2	137	57	-	-	-	401	1	-	-	-	-	3%	1,679	
1500	50	-	25	-	-	1	-	9	3	-	25	120	4	5	-	1	120	83	1	-	-	438	-	-	-	-	-	5%	1,696	
1515	44	1	23	-	-	3	2	4	-	-	14	142	2	14	-	7	119	58	-	-	-	419	-	-	-	-	-	4%	1,682	
1530	40	5	28	-	-	1	3	3	-	-	12	101	4	2	-	6	133	85	-	-	-	421	-	-	-	-	-	2%	1,675	
1545	55	5	24	-	-	3	2	6	-	-	5	121	5	7	-	-	124	68	-	-	-	418	-	-	-	-	-	4%	1,256	
1600	43	3	21	-	2	2	3	4	-	-	22	124	2	4	-	3	135	62	-	-	-	424	2	-	-	-	-	4%	838	
1615	37	4	27	-	-	4	6	3	3	-	17	124	1	3	-	2	121	66	-	-	-	412	-	-	-	-	-	5%	414	
1630	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	2

Start Time	Lindau Ln EB					Lindau Ln WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks						
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes									
1500	50	-	25	-	-	1	-	9	3	-	25	120	4	5	-	1	120	83	1	-	-	438	9	-	-	-	-	5%	
1515	44	1	23	-	-	3	2	4	-	-	14	142	2	14	-	7	119	58	-	-	-	419	14	-	-	-	-	4%	
1530	40	5	28	-	-	1	3	3	-	-	12	101	4	2	-	6	133	85	-	-	-	421	2	-	-	-	-	2%	
1545	55	5	24	-	-	3	2	6	-	-	5	121	5	7	-	-	124	68	-	-	-	418	7	-	-	-	-	4%	
Total	189	11	100	-	-	8	7	22	3	-	56	484	15	28	-	14	496	294	1	-	-	1,696	32	-	-	-	-	4%	
PHF	0.86	0.55	0.89	-	-	0.67	0.58	0.61	-	-	0.56	0.85	0.75	-	-	0.50	0.93	0.86	-	-	-	0.97	-	-	-	-	-	-	4%
Trucks	4%	-	7%	-	-	50%	-	-	-	-	-	3%	20%	-	-	-	3%	4%	-	-	-	-	-	-	-	-	-	-	-

SRF Consulting Group

Turning Movement Count

Count Date 3/17/2016

Start Time	82nd Ave EB					82nd Ave WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	93
630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	203
645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	328
700	2	-	1	-	-	1	-	1	-	-	4	25	2	-	-	11	35	11	-	-	-	93	-	-	14%	486	
715	2	1	-	-	-	3	-	1	-	-	-	32	1	-	-	7	55	8	-	-	-	110	-	-	19%	540	
730	2	-	1	-	-	5	1	4	-	-	1	30	1	-	-	3	73	4	-	-	-	125	-	-	13%	577	
745	1	1	-	-	-	5	-	1	-	-	-	33	7	-	-	6	89	15	-	-	-	158	-	-	14%	583	
800	2	-	1	-	-	5	-	3	-	-	1	24	3	-	-	5	87	16	-	-	-	147	-	-	12%	571	
815	4	-	2	-	-	4	-	4	-	-	5	31	6	-	-	3	67	21	-	-	-	147	-	-	11%	424	
830	4	-	1	-	-	4	-	3	-	-	4	35	6	3	-	2	53	19	-	-	-	131	-	-	18%	277	
845	5	1	2	-	-	5	-	3	-	-	5	26	3	-	-	2	51	43	-	-	-	146	-	-	13%	146	
900	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
915	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
930	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
945	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

1600	81	1	8	-	-	8	1	16	-	-	6	31	2	3	-	4	54	50	-	-	-	262	-	-	5%	1,060
1615	76	1	15	-	-	5	1	11	-	-	6	47	2	2	-	2	64	35	1	-	-	265	-	-	6%	1,111
1630	68	2	9	-	-	8	1	9	-	-	8	42	1	1	-	-	78	50	-	-	-	276	-	-	4%	1,132
1645	46	1	9	-	-	8	2	5	-	-	1	49	3	1	-	2	91	40	-	-	-	257	-	-	5%	1,121
1700	79	1	12	-	-	8	2	9	-	-	7	40	2	-	-	2	87	64	-	-	-	313	-	-	6%	1,128
1715	68	1	6	-	-	12	1	12	-	-	3	40	2	2	-	1	95	45	-	-	-	286	-	-	5%	815
1730	64	-	4	-	-	7	1	7	-	-	6	42	-	-	-	3	72	59	-	-	-	265	-	-	6%	529
1745	63	1	15	-	-	5	-	9	-	-	4	43	2	3	-	-	76	46	-	-	-	264	-	-	6%	264
1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Start Time	82nd Ave EB					82nd Ave WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			

Peak 1 0000 to 1000

745	1	1	-	-	-	5	-	1	-	-	-	33	7	-	-	6	89	15	-	-	-	158	-	-	14%
800	2	-	1	-	-	5	-	3	-	-	1	24	3	-	-	5	87	16	-	-	-	147	-	-	12%
815	4	-	2	-	-	4	-	4	-	-	5	31	6	-	-	3	67	21	-	-	-	147	-	-	11%
830	4	-	1	-	-	4	-	3	-	-	4	35	6	3	-	2	53	19	-	-	-	131	3	-	18%
Total	11	1	4	-	-	18	-	11	-	-	10	123	22	3	-	16	296	71	-	-	-	583	3	-	14%
PHF	0.69	0.25	0.50	-	-	0.90	-	0.69	-	-	0.50	0.88	0.79	-	-	0.67	0.83	0.85	-	-	-	0.92	-	-	-
Trucks	-	-	-	-	-	67%	-	9%	-	-	-	20%	-	-	-	14%	-	-	-	-	-	14%	-	-	-

Peak 3 1400 to 2400

1630	68	2	9	-	-	8	1	9	-	-	8	42	1	1	-	-	78	50	-	-	-	276	1	-	4%
1645	46	1	9	-	-	8	2	5	-	-	1	49	3	1	-	2	91	40	-	-	-	257	1	-	5%
1700	79	1	12	-	-	8	2	9	-	-	7	40	2	-	-	2	87	64	-	-	-	313	-	-	6%
1715	68	1	6	-	-	12	1	12	-	-	3	40	2	2	-	1	95	45	-	-	-	286	2	-	5%
Total	261	5	36	-	-	36	6	35	-	-	19	171	8	4	-	5	351	199	-	-	-	1,132	4	-	5%
PHF	0.83	0.63	0.75	-	-	0.75	0.75	0.73	-	-	0.59	0.87	0.67	-	-	0.63	0.92	0.78	-	-	-	0.90	-	-	-
Trucks	-	-	-	-	-	28%	-	-	-	-	-	12%	-	-	-	20%	7%	-	-	-	-	5%	-	-	-

SRF Consulting Group

Turning Movement Count

Count
Date 4/16/2016

Start Time	82nd St EB					82nd St WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total				
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes								
1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	599
1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	905
1430	70	3	11	-	-	3	1	3	-	-	8	40	2	2	-	1	59	70	-	-	271	-	-	-	-	3%	1,255	
1445	65	-	14	-	-	1	1	2	-	-	9	54	2	8	-	1	74	105	-	-	328	-	-	-	-	3%	1,260	
1500	89	1	10	-	-	1	-	4	-	-	7	62	-	3	-	1	58	73	-	-	306	-	-	-	5%	1,250		
1515	88	1	16	-	-	6	-	-	-	-	11	68	-	7	-	1	61	98	-	-	350	-	-	-	4%	1,263		
1530	60	-	11	-	-	-	2	1	-	-	5	52	2	3	-	1	48	94	-	-	276	-	-	-	3%	1,248		
1545	73	1	22	-	-	5	2	4	-	-	8	46	2	-	1	-	66	89	-	-	318	2	-	-	3%	973		
1600	110	1	12	-	-	-	2	1	-	-	8	45	2	-	-	-	64	74	-	-	319	-	-	-	2%	655		
1615	105	2	23	-	-	6	1	3	-	-	6	35	2	4	-	3	66	83	-	-	335	-	-	-	3%	336		
1630	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1	

Start Time	82nd St EB					82nd St WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes						
1515	88	1	16	-	-	6	-	-	-	-	11	68	-	7	-	1	61	98	-	-	350	7	-	-	4%	
1530	60	-	11	-	-	-	2	1	-	-	5	52	2	3	-	1	48	94	-	-	276	3	-	-	3%	
1545	73	1	22	-	-	5	2	4	-	-	8	46	2	-	1	-	66	89	-	-	318	-	-	-	3%	
1600	110	1	12	-	-	-	2	1	-	-	8	45	2	-	-	-	64	74	-	-	319	-	-	-	2%	
Total	331	3	61	-	-	11	6	6	-	1	32	211	6	10	1	2	239	355	-	-	1,263	10	-	-	3%	
PHF	0.75	0.75	0.69	-	-	0.46	0.75	0.38	-	-	0.73	0.78	0.75	-	-	0.50	0.91	0.91	-	-	0.90	-	-	-	3%	
Trucks	-	-	-	-	-	64%	-	17%	-	-	-	7%	-	-	-	-	7%	-	-	-	-	3%	-	-	-	-

SRF Consulting Group Turning Movement Count

Count 4/16/2016
Date

Start Time	Killebrew Dr EB					Killebrew Dr WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total						
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes										
1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	453
1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	672
1430	23	12	22	-	-	23	5	1	-	-	21	17	30	-	-	3	29	45	-	-	231	-	-	-	-	-	-	3%	924	
1445	30	17	23	-	-	13	9	2	-	-	19	25	14	-	-	-	17	53	-	-	222	-	-	-	-	-	-	1%	899	
1500	38	19	20	-	-	10	8	1	-	-	13	25	17	-	1	3	29	36	-	-	219	1	-	-	-	-	3%	903		
1515	32	18	20	-	-	12	10	2	-	-	23	44	21	-	-	1	37	32	-	-	252	-	-	-	-	-	2%	912		
1530	23	15	23	-	-	12	4	2	-	-	19	27	24	-	-	-	20	37	-	-	206	-	-	-	-	-	4%	886		
1545	34	18	18	-	-	18	7	1	-	-	20	19	15	-	-	2	20	54	-	-	226	-	-	-	-	-	1%	680		
1600	28	20	19	-	-	17	14	2	-	-	17	18	26	-	-	-	21	46	-	-	228	-	-	-	-	-	2%	454		
1615	20	8	32	-	-	12	14	2	-	-	28	17	14	-	-	2	19	58	-	-	226	-	-	-	-	-	2%	226		

Start Time	Killebrew Dr EB					Killebrew Dr WB					24th Ave NB					24th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks						
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes									
1430	23	12	22	-	-	23	5	1	-	-	21	17	30	-	-	3	29	45	-	-	185	-	-	-	-	-	3%		
1445	30	17	23	-	-	13	9	2	-	-	19	25	14	-	-	-	17	53	-	-	167	-	-	-	-	-	1%		
1500	38	19	20	-	-	10	8	1	-	-	13	25	17	-	1	3	29	36	-	-	182	-	-	-	-	-	3%		
1515	32	18	20	-	-	12	10	2	-	-	23	44	21	-	-	1	37	32	-	-	218	-	-	-	-	-	2%		
Total	123	66	85	-	-	58	32	6	-	-	76	111	82	-	1	7	112	166	-	-	752	-	-	-	-	-	2%		
PHF	0.81	0.87	0.92	-	-	0.63	0.80	0.75	-	-	0.83	0.63	0.68	-	-	0.58	0.76	0.78	-	-	0.86	-	-	-	-	-	-	-	
Trucks	-	8%	-	-	-	2%	-	-	-	-	-	2%	5%	-	-	-	3%	-	-	-	2%	-	-	-	-	-	-	-	

SRF Consulting Group Turning Movement Count

Count
Date 4/2/2016

Start Time	86th St EB					86th St WB					Old Shakopee Rd NB					Old Shakopee Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
1215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	139	
1230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	265
1245	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	409
1300	17	1	10	-	-	3	1	1	-	-	8	39	-	-	-	2	41	16	-	-	139	-	-	-	2%	545	
1315	13	-	6	-	-	1	1	1	-	1	9	45	-	-	-	1	36	13	-	-	126	1	-	-	3%	531	
1330	9	2	13	-	-	1	2	1	-	-	14	47	1	-	-	1	34	19	-	-	144	-	-	-	4%	575	
1345	17	1	10	-	-	2	1	-	-	-	9	46	-	-	-	1	37	12	-	-	136	-	-	-	2%	585	
1400	11	1	7	5	-	1	1	5	-	-	4	44	1	-	-	1	38	13	2	-	125	-	-	-	2%	630	
1415	19	-	11	-	-	-	1	-	-	-	11	49	1	-	-	-	56	22	-	-	170	-	-	-	2%	657	
1430	7	1	6	-	1	3	-	-	-	1	10	56	2	-	-	1	42	26	1	-	154	2	-	-	2%	656	
1445	16	-	8	-	-	-	1	2	-	-	10	61	4	-	-	3	43	33	-	-	181	-	-	-	1%	662	
1500	17	-	8	-	-	1	2	2	-	1	11	53	1	-	-	1	40	16	-	1	152	2	-	-	1%	655	
1515	15	-	10	-	-	1	1	-	-	-	4	50	-	-	-	-	57	31	-	-	169	-	-	-	2%	503	
1530	17	-	10	-	-	-	-	-	-	-	7	38	2	-	-	1	56	29	-	-	160	1	-	-	2%	334	
1545	15	-	11	-	-	-	1	1	-	-	8	48	-	-	-	1	52	37	-	-	174	-	-	-	1%	174	

Start Time	86th St EB					86th St WB					Old Shakopee Rd NB					Old Shakopee Rd SB					15 min Veh. Total	15 min Ped Total	% Trucks		
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
1445	16	-	8	-	-	-	1	2	-	-	10	61	4	-	-	3	43	33	-	-	181	-	-	-	1%
1500	17	-	8	-	-	1	2	2	-	1	11	53	1	-	-	1	40	16	-	1	152	-	-	-	1%
1515	15	-	10	-	-	1	1	-	-	-	4	50	-	-	-	-	57	31	-	-	169	-	-	-	2%
1530	17	-	10	-	-	-	-	-	-	-	7	38	2	-	-	1	56	29	-	1	160	-	-	-	2%
Total	65	-	36	-	-	2	4	4	-	1	32	202	7	-	-	5	196	109	-	2	662	-	-	-	2%
PHF	0.96	-	0.90	-	-	0.50	0.50	0.50	-	-	0.73	0.83	0.44	-	-	0.42	0.86	0.83	-	-	0.91	-	-	-	-
Trucks	3%	-	3%	-	-	-	-	-	-	-	-	2%	-	-	-	-	-	3%	-	-	2%	-	-	-	-

SRF Consulting Group

Turning Movement Count

Count
Date 4/9/2016

Start Time	American Blvd EB					American Blvd WB					28th Ave NB					28th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	-	18	2	-	-	4	30	-	-	-	1	-	3	-	-	-	-	-	-	-	58	-	9%
1515	-	17	1	-	-	4	32	-	-	-	-	-	1	1	-	-	-	-	-	-	55	1	11%
1530	-	31	2	-	-	1	41	-	-	-	-	-	1	-	-	-	-	-	-	-	76	-	4%
1545	-	23	-	-	-	3	30	-	-	-	3	-	2	-	-	-	-	-	-	-	61	-	5%
Total	-	89	5	-	-	12	133	-	-	-	4	-	7	1	-	-	-	-	-	-	250	1	7%
PHF	-	0.72	0.63	-	-	0.75	0.81	-	-	-	0.33	-	0.58	-	-	-	-	-	-	-	0.82		
Trucks	-	9%	-	-	-	8%	5%	-	-	-	25%	-	-	-	-	-	-	-	-	-	7%		

SRF Consulting Group

Turning Movement Count

Count
Date 4/9/2016

Start Time	Lindau Lane EB					Lindau Lane WB					28th Ave NB					28th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	2	1	-	-	-	-	2	-	-	-	1	-	-	-	-	-	3	3	-	-	12	-	15%
1515	1	4	-	-	-	-	1	-	-	-	1	-	-	-	-	-	1	4	-	-	12	-	17%
1530	1	2	-	-	-	1	1	1	1	-	-	1	2	-	-	-	2	1	-	-	12	1	8%
1545	-	2	-	-	-	-	4	1	-	-	-	2	-	-	-	-	-	3	-	-	12	-	25%
Total	4	9	-	-	-	1	8	2	1	-	2	3	2	-	-	-	6	11	-	-	48	1	16%
PHF	0.50	0.56	-	-	-	0.25	0.50	0.50	-	-	0.50	0.38	0.25	-	-	-	0.50	0.69	-	-	1.00		
Trucks	-	44%	-	-	-	-	50%	-	-	-	-	-	-	-	-	-	-	-	-	-	17%		

SRF Consulting Group

Turning Movement Count

Count
Date 4/9/2016

Start Time	82nd St EB					82nd St WB					28th Ave NB					28th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	-	1	-	-	-	1	-	-	-	-	3	2	-	-	-	-	3	1	2	-	11	2	8%
1515	-	1	-	-	-	3	1	-	-	-	3	1	1	-	-	-	1	-	3	-	11	3	25%
1530	1	1	3	-	-	2	-	1	-	-	1	5	2	-	-	1	1	-	1	1	18	1	5%
1545	-	-	-	-	-	-	1	-	-	-	1	2	1	-	-	-	2	-	1	-	7	1	14%
Total	1	3	3	-	-	6	2	1	-	-	8	10	4	-	-	1	7	1	7	1	47	7	12%
PHF	0.25	0.75	0.25	-	-	0.50	0.50	0.25	-	-	0.67	0.50	0.50	-	-	0.25	0.58	0.25	-	-	0.65		
Trucks	-	-	-	-	-	-	-	-	-	-	75%	-	-	-	-	-	-	-	-	-	13%		

SRF Consulting Group Turning Movement Count

Count 4/2/2016
Date

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					28th Ave NB					28th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
1215	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	55	
1230	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	106
1245	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	164
1300	4	29	-	-	-	-	19	-	-	-	-	-	-	-	1	-	2	-	-	-	-	55	-	-	-	2%	229
1315	8	26	-	-	-	-	14	1	-	-	-	1	-	-	1	-	1	-	-	-	-	51	1	-	-	6%	230
1330	6	29	-	-	-	-	17	-	-	-	-	-	-	-	1	-	5	-	-	-	-	58	-	-	-	2%	238
1345	2	39	-	-	-	-	18	-	-	-	-	-	-	-	-	-	6	-	-	-	-	65	-	-	-	2%	270
1400	6	29	-	-	-	-	19	1	-	-	-	-	-	-	1	-	-	-	-	-	-	56	-	-	-	2%	291
1415	10	24	-	-	-	-	11	1	-	-	-	-	-	-	1	-	12	-	-	-	-	59	-	-	-	5%	310
1430	8	49	-	-	-	-	26	1	-	-	-	-	-	-	-	-	6	-	-	-	-	90	-	-	-	1%	331
1445	7	49	-	-	-	-	27	-	-	-	-	-	-	-	-	-	3	-	-	-	-	86	-	-	-	2%	306
1500	13	36	-	-	-	-	20	-	-	-	-	-	-	-	2	-	4	-	-	-	-	75	-	-	-	3%	300
1515	7	39	-	-	-	-	1	30	-	-	-	-	-	-	-	-	3	-	-	-	-	80	-	-	-	5%	225
1530	6	34	1	-	-	-	18	-	-	-	-	-	-	-	-	-	6	-	-	-	-	65	-	-	-	1%	145
1545	7	51	-	-	-	-	1	15	-	-	-	-	-	-	-	-	6	-	-	-	-	80	-	-	-	1%	80

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					28th Ave NB					28th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks				
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
1430	8	49	-	-	-	-	26	1	-	-	-	-	-	-	-	-	6	-	-	-	-	90	-	-	-	1%	
1445	7	49	-	-	-	-	27	-	-	-	-	-	-	-	-	-	3	-	-	-	-	86	-	-	-	2%	
1500	13	36	-	-	-	-	20	-	-	-	-	-	-	-	2	-	4	-	-	-	-	75	-	-	-	3%	
1515	7	39	-	-	-	-	1	30	-	-	-	-	-	-	-	-	3	-	-	-	-	80	-	-	-	5%	
Total	35	173	-	-	-	1	103	1	-	-	-	-	-	-	2	-	16	-	-	-	-	331	-	-	-	3%	
PHF	0.67	0.88	-	-	-	0.25	0.86	0.25	-	-	-	-	-	-	0.25	-	0.67	-	-	-	-	0.92	-	-	-		
Trucks	14%	1%	-	-	-	-	2%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3%	-	-	-		

SRF Consulting Group Turning Movement Count

Count
Date 4/7/2016

Start Time	American Blvd EB					American Blvd WB					Metro Dr W NB					Metro Dr W SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	99
630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	246
645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	412
700	26	42	-	-	-	-	19	1	-	-	-	-	-	-	-	5	-	6	-	-	-	99	-	-	5%	619	
715	26	71	-	-	-	-	29	6	-	-	-	-	-	-	-	3	-	12	-	-	-	147	-	-	3%	709	
730	37	67	-	-	-	-	35	5	-	-	-	-	-	-	-	7	-	15	-	-	-	166	-	-	4%	739	
745	48	76	-	-	-	-	58	4	-	-	-	-	-	-	-	6	-	14	-	-	-	207	-	-	1%	729	
800	42	78	-	-	-	-	52	4	-	-	-	-	-	-	-	5	-	8	-	-	-	189	-	-	2%	654	
815	35	60	-	-	-	-	59	9	-	-	-	-	-	-	-	7	-	7	-	-	-	177	-	-	5%	466	
830	37	67	-	-	-	-	34	3	-	-	-	-	-	-	-	4	-	11	-	-	-	156	-	-	3%	289	
845	27	59	-	-	-	-	22	5	-	-	-	-	-	-	-	4	-	15	1	-	-	132	-	-	6%	133	

1600	13	41	-	-	-	-	107	2	-	-	-	-	-	-	-	1	-	35	-	-	-	199	-	-	5%	793
1615	13	37	-	-	-	-	91	-	-	-	-	-	-	-	-	6	-	24	-	-	-	171	-	-	6%	910
1630	13	46	-	-	-	-	135	3	-	-	-	-	-	-	-	2	-	29	-	-	-	228	-	-	3%	932
1645	10	53	-	-	-	-	106	3	-	-	-	-	-	-	-	-	-	23	-	-	-	195	-	-	4%	875
1700	9	46	-	-	-	-	192	4	-	-	-	-	-	-	-	10	-	55	-	-	-	316	-	-	2%	814
1715	19	40	-	-	-	-	94	-	1	-	-	-	-	-	-	5	-	35	-	-	-	193	-	-	2%	498
1730	12	50	-	-	-	-	88	1	-	-	-	-	-	-	-	4	-	16	-	-	-	171	-	-	4%	305
1745	8	39	-	-	-	-	62	2	-	-	-	-	-	-	-	5	-	18	-	-	-	134	-	-	1%	134
1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Start Time	American Blvd EB					American Blvd WB					Metro Dr W NB					Metro Dr W SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			

Peak 1 0000 to 1000

730	37	67	-	-	-	-	35	5	-	-	-	-	-	-	-	7	-	15	-	-	-	166	-	-	4%
745	48	76	-	-	-	-	58	4	-	-	-	-	-	-	-	6	-	14	-	-	-	207	-	-	1%
800	42	78	-	-	-	-	52	4	-	-	-	-	-	-	-	5	-	8	-	-	-	189	-	-	2%
815	35	60	-	-	-	-	59	9	-	-	-	-	-	-	-	7	-	7	-	-	-	177	-	-	5%
Total	162	281	-	-	-	-	1 204	22	-	-	-	-	-	-	-	25	-	44	-	-	-	739	-	-	3%
PHF	0.84	0.90	-	-	-	-	0.25	0.86	0.61	-	-	-	-	-	-	0.89	-	0.73	-	-	-	0.89	-	-	-
Trucks	1%	2%	-	-	-	-	-	5%	5%	-	-	-	-	-	-	8%	-	2%	-	-	-	3%	-	-	-

Peak 3 1400 to 2400

1630	13	46	-	-	-	-	135	3	-	-	-	-	-	-	-	2	-	29	-	-	-	228	-	-	3%
1645	10	53	-	-	-	-	106	3	-	-	-	-	-	-	-	-	-	23	-	-	-	195	-	-	4%
1700	9	46	-	-	-	-	192	4	-	-	-	-	-	-	-	10	-	55	-	-	-	316	-	-	2%
1715	19	40	-	-	-	-	94	-	1	-	-	-	-	-	-	5	-	35	-	-	-	193	1	-	2%
Total	51	185	-	-	-	-	527	10	1	-	-	-	-	-	-	17	-	142	-	-	-	932	1	-	2%
PHF	0.67	0.87	-	-	-	-	0.69	0.63	-	-	-	-	-	-	-	0.43	-	0.65	-	-	-	0.74	-	-	-
Trucks	4%	3%	-	-	-	-	-	2%	20%	-	-	-	-	-	-	-	-	1%	-	-	-	2%	-	-	-

SRF Consulting Group

Turning Movement Count

Count
Date 4/9/2016

Start Time	American Blvd EB					American Blvd WB					Metro Drive W NB					Metro Drive W SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	7	13	-	-	-	-	25	1	-	-	-	-	-	-	-	1	-	8	-	-	55	-	7%
1515	3	13	-	-	-	-	31	2	-	-	-	-	-	-	-	2	-	6	-	-	57	-	11%
1530	8	24	-	-	-	-	36	2	-	-	-	-	-	-	-	1	-	1	-	-	72	-	4%
1545	4	22	-	-	-	-	31	1	-	-	-	-	-	-	-	-	-	5	-	-	63	-	3%
Total	22	72	-	-	-	-	123	6	-	-	-	-	-	-	-	4	-	20	-	-	247	-	6%
PHF	0.69	0.75	-	-	-	-	0.85	0.75	-	-	-	-	-	-	-	0.50	-	0.63	-	-	0.86	-	
Trucks	9%	7%	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	10%	-	-	6%	-	

SRF Consulting Group Turning Movement Count

Count Date 4/7/2016

Start Time	American Blvd. EB					American Blvd. WB					30th Ave NB					30th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total				
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes								
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	92
630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238
645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	406
700	-	32	15	-	-	18	16	3	-	-	3	-	4	-	-	-	-	1	-	-	-	-	-	-	-	92	8%	613
715	-	49	25	-	-	22	33	9	-	-	2	-	5	-	-	-	1	1	-	-	-	-	-	-	-	146	6%	711
730	-	51	22	-	-	40	35	15	2	-	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	168	4%	750
745	-	50	30	-	-	40	59	18	2	-	3	-	5	-	-	-	2	-	-	-	-	-	-	-	-	207	2%	729
800	-	48	35	-	-	44	55	3	1	-	-	-	4	-	-	-	1	1	-	-	-	-	-	-	-	190	4%	641
815	-	47	23	-	-	43	60	6	-	-	2	-	2	-	-	-	2	-	-	-	-	-	-	-	-	185	5%	451
830	-	46	22	-	-	32	39	4	-	-	1	-	3	-	-	-	-	-	-	-	-	-	-	-	-	147	5%	266
845	-	47	16	-	-	24	23	3	-	-	1	-	3	-	-	-	1	1	-	-	-	-	-	-	-	119	8%	119

1600	-	36	1	-	-	3	49	1	-	-	49	-	33	-	-	-	13	-	-	-	-	-	-	-	-	185	-	4%	748
1615	-	43	2	-	-	3	50	-	-	-	31	-	16	-	-	-	9	-	-	-	-	-	-	-	-	154	-	10%	863
1630	-	43	2	-	-	3	71	-	1	-	59	-	21	-	-	-	12	1	-	-	-	-	-	-	-	211	-	3%	871
1645	-	53	2	-	-	5	70	1	-	-	35	-	21	-	-	-	11	-	-	-	-	-	-	-	-	198	-	5%	817
1700	-	63	1	-	-	9	95	-	-	-	47	-	32	-	-	-	53	-	-	-	-	-	-	-	-	300	-	2%	734
1715	-	40	1	-	-	4	62	-	1	-	29	-	21	-	-	-	5	-	-	-	-	-	-	-	-	162	-	4%	434
1730	-	54	-	-	-	5	56	-	-	-	27	-	12	-	-	-	3	-	-	-	-	-	-	-	-	157	-	4%	272
1745	-	41	2	-	-	3	40	-	-	-	17	-	9	-	-	-	3	-	-	-	-	-	-	-	-	115	-	3%	115
1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Start Time	American Blvd. EB					American Blvd. WB					30th Ave NB					30th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			

Peak 1 0000 to 1000

730	-	51	22	-	-	40	35	15	2	-	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	168	2	4%
745	-	50	30	-	-	40	59	18	2	-	3	-	5	-	-	-	2	-	-	-	-	-	-	-	-	207	2	2%
800	-	48	35	-	-	44	55	3	1	-	-	-	4	-	-	-	1	1	-	-	-	-	-	-	-	190	2	4%
815	-	47	23	-	-	43	60	6	-	-	2	-	2	-	-	-	2	-	-	-	-	-	-	-	-	185	-	5%
Total	-	196	110	-	-	167	209	42	5	-	8	-	13	-	-	-	5	1	-	-	-	-	-	-	-	750	6	4%
PHF	-	0.96	0.79	-	-	0.95	0.87	0.58	-	-	0.67	-	0.65	-	-	-	0.63	-	-	-	-	-	-	-	-	0.91	-	-
Trucks	-	5%	-	-	-	2%	4%	-	-	-	25%	-	31%	-	-	-	-	-	-	-	-	-	-	-	-	4%	-	-

Peak 3 1400 to 2400

1630	-	43	2	-	-	3	71	-	1	-	59	-	21	-	-	-	12	1	-	-	-	-	-	-	-	211	2	3%
1645	-	53	2	-	-	5	70	1	-	-	35	-	21	-	-	-	11	-	-	-	-	-	-	-	-	198	-	5%
1700	-	63	1	-	-	9	95	-	-	-	47	-	32	-	-	-	53	-	-	-	-	-	-	-	-	300	-	2%
1715	-	40	1	-	-	4	62	-	1	-	29	-	21	-	-	-	5	-	-	-	-	-	-	-	-	162	1	4%
Total	-	199	6	-	-	21	298	1	2	-	170	-	95	-	-	-	81	1	-	-	-	-	-	-	-	871	3	3%
PHF	-	0.79	0.75	-	-	0.58	0.78	0.25	-	-	0.72	-	0.74	-	-	-	0.38	-	-	-	-	-	-	-	-	0.73	-	-
Trucks	-	4%	17%	-	-	24%	4%	-	-	-	-	-	5%	-	-	-	-	-	-	-	-	-	-	-	-	3%	-	-

SRF Consulting Group

Turning Movement Count

Count
Date 4/9/2016

Start Time	American Blvd EB					American Blvd WB					30th Ave NB					30th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
1500	-	15	-	-	-	3	27	-	-	-	1	-	1	-	-	-	-	-	-	-	-	47	-	9%
1515	-	15	1	-	-	1	26	-	-	-	6	-	2	-	1	-	-	-	-	-	-	51	-	12%
1530	1	25	1	-	-	2	40	-	-	-	-	-	5	-	-	-	-	-	-	-	-	74	-	5%
1545	-	19	1	-	-	3	28	-	-	-	3	-	1	-	-	-	-	-	-	-	-	55	-	5%
Total	1	74	3	-	-	9	121	-	-	-	10	-	9	-	1	-	-	-	-	-	-	227	-	7%
PHF	0.25	0.74	0.75	-	-	0.75	0.76	-	-	-	0.42	-	0.45	-	-	-	-	-	-	-	-	0.77	-	
Trucks	-	7%	-	-	-	44%	3%	-	-	-	-	-	44%	-	-	-	-	-	-	-	-	7%	-	

SRF Consulting Group Turning Movement Count

Count 3/5/2016
Date

Start Time	Lindau Ln EB					Lindau Ln WB					30th Ave NB					30th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	3	-	1	-	-	-	-	-	-	-	3	2	-	-	-	-	-	1	-	-	10	-	10%
1515	10	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	1	1	-	-	14	-	21%
1530	5	-	1	-	-	-	-	-	-	-	-	4	-	-	-	-	-	3	-	-	13	-	15%
1545	2	-	-	-	-	-	-	-	-	-	1	1	-	-	-	-	1	1	2	-	6	2	33%
Total	20	-	2	-	-	-	-	-	-	1	5	8	-	-	-	-	2	6	2	-	43	2	19%
PHF	0.50	-	0.50	-	-	-	-	-	-	-	0.42	0.50	-	-	-	-	0.50	0.50	-	-	0.77	-	-
Trucks	20%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67%	-	-	19%	-	-

SRF Consulting Group Turning Movement Count

Count 3/5/2016
Date

Start Time	North HP Dwy EB					PNR WB					30th Ave NB					30th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	-	-	1	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	1	-
1515	1	-	-	-	-	-	-	1	-	1	1	-	-	-	-	-	-	1	-	-	4	-	-
1530	1	-	2	-	-	1	-	2	-	-	2	-	-	-	-	-	-	-	-	-	8	-	-
1545	1	-	4	-	-	1	-	-	-	-	-	1	-	-	-	-	-	1	-	-	8	-	-
Total	3	-	7	-	-	3	-	3	1	1	3	-	1	-	-	-	-	2	-	-	22	1	-
PHF	0.75	-	0.44	-	-	0.75	-	0.38	-	-	0.38	-	0.25	-	-	-	-	0.50	-	-	0.69	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SRF Consulting Group Turning Movement Count

Count 4/16/2016
Date

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					30th Ave NB					30th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total									
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes													
1345	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	52	
1400	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	119	
1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	200	
1430	-	31	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	267	
1445	1	42	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	286	
1500	2	50	-	-	-	-	25	1	-	-	-	-	-	-	3	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	297	
1515	2	40	-	-	1	-	23	1	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	264	
1530	2	46	-	-	-	-	18	1	-	-	-	-	-	-	-	-	-	4	-	1	-	-	-	-	-	-	-	-	-	-	-	261	
1545	1	46	-	-	-	-	25	1	-	-	-	-	-	-	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	190
1600	-	35	-	-	-	-	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	112
1615	2	38	-	-	-	-	22	1	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	64

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					30th Ave NB					30th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks														
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes																	
1500	2	50	-	-	-	-	25	1	-	-	-	-	-	3	1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	81	-	-			
1515	2	40	-	-	1	-	23	1	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	67	2	1%		
1530	2	46	-	-	-	-	18	1	-	-	-	-	-	-	-	-	4	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	71	-	-		
1545	1	46	-	-	-	-	25	1	-	-	-	-	-	-	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	78	-	-	
Total	7	182	-	-	1	-	91	4	-	-	-	-	-	3	4	-	9	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	297	2	0%		
PHF	0.88	0.91	-	-	-	-	0.91	1.00	-	-	-	-	-	-	0.33	-	0.56	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.92	-	-	
Trucks	-	-	-	-	-	-	1%	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-

SRF Consulting Group

Turning Movement Count

Count Date 4/27/2016

Start Time	American Blvd EB					American Blvd WB					Metro Dr East NB					Metro Dr East SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	30
645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	69
700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	114
715	13	-	-	-	-	-	-	15	-	-	-	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	30
730	18	-	-	-	-	-	-	18	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	39
745	14	-	-	-	-	-	-	27	-	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	45
800	24	-	-	-	-	-	-	23	-	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	51
815	8	-	-	-	-	-	-	15	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-	-	-	-	28
830	19	-	-	-	-	-	-	24	-	-	-	-	-	-	4	-	1	-	-	-	-	-	-	-	-	-	48
845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	77
1615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	153
1630	4	-	-	-	-	-	-	7	-	-	-	-	-	-	20	-	13	-	-	-	-	-	-	-	-	-	187
1645	2	-	-	-	-	-	-	3	-	-	-	-	-	-	18	-	10	-	-	-	-	-	-	-	-	-	163
1700	3	-	-	-	-	-	-	5	-	-	-	-	-	-	32	-	36	-	-	-	-	-	-	-	-	-	76
1715	2	-	-	-	-	-	-	1	-	-	-	-	-	-	15	-	16	-	-	-	-	-	-	-	-	-	34
1730	3	-	-	-	-	-	-	5	-	-	-	-	-	-	5	-	7	-	-	-	-	-	-	-	-	-	20
1745	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Start Time	American Blvd EB					American Blvd WB					Metro Dr East NB					Metro Dr East SB					15 min Veh. Total	15 min Ped Total	% Trucks				
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
Peak 1	0000 to 1000																										
745	14	-	-	-	-	-	-	27	-	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	45
800	24	-	-	-	-	-	-	23	-	-	-	-	-	-	1	-	3	-	-	-	-	-	-	-	-	-	51
815	8	-	-	-	-	-	-	15	-	-	-	-	-	-	2	-	3	-	-	-	-	-	-	-	-	-	28
830	19	-	-	-	-	-	-	24	-	-	-	-	-	-	4	-	1	-	-	-	-	-	-	-	-	-	48
Total	65	-	-	-	-	-	-	89	-	-	-	-	-	-	8	-	10	-	-	-	-	-	-	-	-	-	172
PHF	0.68	-	-	-	-	-	-	0.82	-	-	-	-	-	-	0.50	-	0.83	-	-	-	-	-	-	-	-	-	0.84
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Start Time	American Blvd EB					American Blvd WB					Metro Dr East NB					Metro Dr East SB					15 min Veh. Total	15 min Ped Total	% Trucks				
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
Peak 3	1400 to 2400																										
1630	4	-	-	-	-	-	-	7	-	-	-	-	-	-	20	-	13	-	-	-	-	-	-	-	-	-	44
1645	2	-	-	-	-	-	-	3	-	-	-	-	-	-	18	-	10	-	-	-	-	-	-	-	-	-	33
1700	3	-	-	-	-	-	-	5	-	-	-	-	-	-	32	-	36	-	-	-	-	-	-	-	-	-	76
1715	2	-	-	-	-	-	-	1	-	-	-	-	-	-	15	-	16	-	-	-	-	-	-	-	-	-	34
Total	11	-	-	-	-	-	-	16	-	-	-	-	-	-	85	-	75	-	-	-	-	-	-	-	-	-	187
PHF	0.69	-	-	-	-	-	-	0.57	-	-	-	-	-	-	0.66	-	0.52	-	-	-	-	-	-	-	-	-	0.62
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SRF Consulting Group

Turning Movement Count

Count 3/5/2016
Date

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					81st Ave NB					81st Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	-	53	-	-	-	-	25	1	-	-	-	-	-	-	3	2	-	4	-	-	85	-	1%
1515	1	40	-	-	-	-	22	1	-	-	-	-	-	-	2	-	-	4	-	-	66	4	-
1530	-	42	1	-	-	-	15	1	-	-	1	-	-	-	2	-	2	-	-	1	64	-	-
1545	5	43	-	-	-	-	22	-	-	-	1	-	-	-	-	-	1	-	-	-	72	-	-
Total	6	178	1	-	-	-	84	3	-	-	2	-	-	3	6	-	7	4	1	287	4	0%	
PHF	0.30	0.84	0.25	-	-	-	0.84	0.75	-	-	0.50	-	-	-	0.75	-	0.44	-	-	-	0.84	-	-
Trucks	-	-	-	-	-	-	1%	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-

SRF Consulting Group

Turning Movement Count

Count
Date 4/9/2016

Start Time	American Blvd EB					American Blvd WB					33rd Ave NB					33rd Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	-	18	1	-	-	2	21	5	-	-	4	-	4	-	-	8	-	4	-	-	67	-	13%
1515	-	20	2	-	-	4	20	6	-	-	1	-	12	-	-	8	-	5	-	-	78	-	17%
1530	3	21	4	-	-	2	32	9	1	-	2	-	1	1	-	9	-	5	-	-	88	2	13%
1545	-	19	2	-	-	1	22	8	-	-	2	-	1	-	-	9	-	5	-	-	69	-	12%
Total	3	78	9	-	-	9	95	28	1	-	9	-	18	1	-	34	-	19	-	-	302	2	14%
PHF	0.25	0.93	0.56	-	-	0.56	0.74	0.78	-	-	0.56	-	0.38	-	-	0.94	-	0.95	-	-	0.86	-	-
Trucks	33%	9%	22%	-	-	-	6%	43%	-	-	11%	-	-	-	-	29%	-	11%	-	-	14%	-	-

SRF Consulting Group Turning Movement Count

Count 3/8/2016
Date

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					33rd Ave NB					33rd Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94
630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238
645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	383
700	6	28	1	-	-	-	40	6	-	-	-	-	1	-	-	7	-	5	-	-	94	-	1%	-	575		
715	3	60	1	1	-	-	50	10	-	-	1	-	-	-	15	-	4	-	1	144	1	-	-	-	635		
730	4	53	2	2	-	3	59	13	-	-	1	-	2	-	2	4	-	4	-	145	2	-	-	-	618		
745	6	56	8	-	-	-	95	9	-	-	-	-	-	-	10	-	8	-	1	192	1	-	-	-	580		
800	4	52	-	1	-	-	75	10	1	-	1	-	-	-	1	4	1	7	-	154	1	-	-	-	486		
815	2	46	4	-	-	4	54	10	-	-	-	-	2	-	2	-	3	1	127	-	-	-	-	-	332		
830	2	34	1	-	-	1	53	9	-	-	1	-	-	-	3	-	3	1	107	-	-	-	-	-	205		
845	3	30	3	1	-	5	37	12	-	-	-	-	1	1	-	3	-	4	-	98	-	-	-	-	-	98	

1600	1	78	-	1	-	-	44	1	1	-	-	-	-	1	-	9	-	11	4	-	144	-	-	-	-	568	
1615	-	63	1	2	-	1	39	9	-	-	1	-	-	-	7	-	2	1	-	123	-	1%	-	-	-	592	
1630	-	74	3	1	1	1	43	5	-	-	2	-	1	-	8	-	7	-	-	144	1	-	-	-	-	624	
1645	4	70	2	4	-	-	56	6	-	-	1	-	2	-	9	-	7	-	1	157	1	-	-	-	-	618	
1700	2	86	3	1	-	1	56	3	-	-	-	-	1	2	-	10	-	6	-	-	168	-	1%	-	-	570	
1715	1	63	4	1	-	1	66	4	-	-	2	-	1	-	11	-	2	-	-	155	-	-	-	-	-	402	
1730	-	61	2	-	1	2	50	3	-	-	1	-	1	-	15	-	3	-	1	138	2	-	-	-	-	247	
1745	1	52	1	-	-	2	41	-	-	1	1	-	2	-	7	-	2	-	-	109	2	-	-	-	-	109	
1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					33rd Ave NB					33rd Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			

Peak 1 0000 to 1000

715	3	60	1	1	-	-	50	10	-	-	1	-	-	-	15	-	4	-	1	144	1	-	-	-	-	-	
730	4	53	2	2	-	3	59	13	-	-	1	-	2	-	2	4	-	4	-	145	2	-	-	-	-	-	
745	6	56	8	-	-	-	95	9	-	-	-	-	-	-	10	-	8	-	-	192	-	-	-	-	-	-	
800	4	52	-	1	-	-	75	10	1	-	1	-	-	-	1	4	1	7	-	154	2	-	-	-	-	-	
Total	17	221	11	4	-	3	279	42	1	-	3	-	2	-	3	33	1	23	-	2	635	5	-	-	-	-	
PHF	0.71	0.92	0.34	-	-	0.25	0.73	0.81	-	-	0.75	-	0.25	-	-	0.55	0.25	0.72	-	-	0.83	-	-	-	-	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Peak 3 1400 to 2400

1630	-	74	3	1	1	1	43	5	-	-	2	-	1	-	8	-	7	-	-	144	1	-	-	-	-	-	
1645	4	70	2	4	-	-	56	6	-	-	1	-	2	-	9	-	7	-	1	157	4	-	-	-	-	-	
1700	2	86	3	1	-	1	56	3	-	-	-	-	1	2	-	10	-	6	-	168	3	1%	-	-	-	-	
1715	1	63	4	1	-	1	66	4	-	-	2	-	1	-	11	-	2	-	-	155	1	-	-	-	-	-	
Total	7	293	12	7	1	3	221	18	-	-	5	-	5	2	-	38	-	22	-	1	624	9	0%	-	-	-	
PHF	0.44	0.85	0.75	-	-	0.75	0.84	0.75	-	-	0.63	-	0.63	-	-	0.86	-	0.79	-	-	0.93	-	-	-	-	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

SRF Consulting Group

Turning Movement Count

Count 3/5/2016
Date

Start Time	Old Shakopee Rd EB					Old Shakopee Rd WB					33rd Ave NB					33rd Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	-	53	-	-	-	-	21	2	-	-	-	-	-	-	3	8	-	2	-	-	86	-	-
1515	3	42	-	-	-	-	20	1	-	-	-	-	-	-	-	4	-	3	1	-	73	1	1%
1530	2	41	-	-	-	-	19	4	-	-	-	-	-	-	-	7	-	-	1	1	73	1	-
1545	3	44	-	2	-	-	20	5	-	-	-	-	-	-	-	4	-	2	-	-	78	2	-
Total	8	180	-	2	-	-	80	12	-	-	-	-	-	3	23	-	7	2	1	310	4	0%	
PHF	0.67	0.85	-	-	-	-	0.95	0.60	-	-	-	-	-	-	-	0.72	-	0.58	-	-	0.90	-	-
Trucks	-	-	-	-	-	-	1%	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-

SRF Consulting Group Turning Movement Count

Count
Date 4/7/2016

Start Time	I-494 WB Ramps EB					I-494 WB Ramps WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	286
645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	603
700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	940
715	-	-	-	-	-	-	-	90	-	-	15	112	-	-	-	4	29	36	-	-	-	286	-	-	2%	1,292	
730	-	-	-	-	-	18	74	-	-	19	125	-	-	-	49	32	-	-	-	-	317	-	-	1%	1,373		
745	-	-	-	1	-	-	94	-	-	12	140	-	-	-	61	30	-	-	-	-	337	-	-	2%	1,365		
800	-	-	-	1	-	-	98	-	-	22	130	-	-	-	49	53	-	-	-	-	352	-	-	1%	1,029		
815	-	-	-	1	-	-	108	-	-	9	126	-	-	-	56	68	-	-	-	-	367	-	-	2%	677		
830	-	-	-	-	-	-	71	-	-	12	136	-	-	-	41	49	-	-	-	-	309	-	-	3%	310		
845	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	1	

1600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,432
1615	-	-	-	-	-	-	66	-	-	36	112	-	-	-	91	112	-	-	-	-	417	-	-	0%	1,862		
1630	-	-	-	-	-	-	75	-	-	52	110	-	-	-	114	148	-	-	-	-	499	-	-	1%	1,907		
1645	-	-	-	-	-	-	55	-	-	72	103	-	-	-	129	157	-	-	-	-	516	-	-	1%	1,869		
1700	-	-	-	-	-	-	58	-	-	67	84	-	-	-	116	105	-	-	-	-	430	-	-	1%	1,774		
1715	-	-	-	1	-	-	60	2	-	50	80	-	-	-	135	137	-	-	-	-	462	-	-	1%	1,344		
1730	-	-	-	-	-	-	63	-	-	44	89	-	-	-	132	133	-	-	-	-	461	-	-	1%	882		
1745	-	-	-	-	-	-	44	-	-	41	95	-	-	-	95	146	-	-	-	-	421	-	-	1%	421		
1800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1815	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1830	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
1845	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	

Start Time	I-494 WB Ramps EB					I-494 WB Ramps WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			

Peak 1 0000 to 1000

730	-	-	-	-	-	18	74	-	-	19	125	-	-	-	49	32	-	-	-	317	-	-	1%		
745	-	-	-	1	-	-	94	-	-	12	140	-	-	-	61	30	-	-	-	-	337	1	-	2%	
800	-	-	-	1	-	-	98	-	-	22	130	-	-	-	49	53	-	-	-	-	352	1	-	1%	
815	-	-	-	1	-	-	108	-	-	9	126	-	-	-	56	68	-	-	-	-	367	1	-	2%	
Total	-	-	-	3	-	-	18	374	-	-	62	521	-	-	-	215	183	-	-	-	1,373	3	-	2%	
PHF	-	-	-	-	-	-	0.25	0.87	-	-	0.70	0.93	-	-	-	0.88	0.67	-	-	-	0.94	-	-	-	
Trucks	-	-	-	-	-	-	-	2%	-	-	2%	1%	-	-	-	3%	1%	-	-	-	2%	-	-	-	-

Peak 3 1400 to 2400

1630	-	-	-	-	-	-	75	-	-	52	110	-	-	-	114	148	-	-	-	499	-	-	1%		
1645	-	-	-	-	-	-	55	-	-	72	103	-	-	-	129	157	-	-	-	-	516	-	-	1%	
1700	-	-	-	-	-	-	58	-	-	67	84	-	-	-	116	105	-	-	-	-	430	-	-	1%	
1715	-	-	-	-	-	-	60	2	-	50	80	-	-	-	135	137	-	-	-	-	462	3	-	1%	
Total	-	-	-	1	-	-	248	2	-	241	377	-	-	-	494	547	-	-	-	-	1,907	3	-	1%	
PHF	-	-	-	-	-	-	0.83	-	-	0.84	0.86	-	-	-	0.91	0.87	-	-	-	-	0.92	-	-	-	
Trucks	-	-	-	-	-	-	2%	-	-	-	1%	-	-	-	1%	1%	-	-	-	-	1%	-	-	-	-

SRF Consulting Group

Turning Movement Count

Count
Date 4/9/2016

Start Time	I-494 WB Ramps EB					I-494 WB Ramps WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total			
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes							
1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	297	
1430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	647
1445	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1,054
1500	-	-	-	-	-	4	-	50	-	-	33	74	1	-	-	-	69	66	-	-	-	297	-	-	1%	1,446	
1515	-	-	-	-	-	-	-	72	1	-	39	98	-	-	-	-	55	86	-	-	-	350	-	-	1%	1,149	
1530	-	-	-	-	1	-	-	47	1	-	18	117	-	-	-	-	105	120	-	-	-	407	1	-	0%	799	
1545	-	-	-	-	-	-	-	50	-	2	32	94	-	-	-	-	83	133	-	-	-	392	2	-	1%	392	

Start Time	I-494 WB Ramps EB					I-494 WB Ramps WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks		
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
1500	-	-	-	-	-	4	-	50	-	-	33	74	1	-	-	-	69	66	-	-	-	297	-	-	1%
1515	-	-	-	-	-	-	-	72	1	-	39	98	-	-	-	-	55	86	-	-	-	350	1	-	1%
1530	-	-	-	-	1	-	-	47	1	-	18	117	-	-	-	-	105	120	-	-	-	407	1	-	0%
1545	-	-	-	-	-	-	-	50	-	2	32	94	-	-	-	-	83	133	-	-	-	392	-	-	1%
Total	-	-	-	-	1	4	-	219	2	2	122	383	1	-	-	-	312	405	-	-	-	1,446	2	-	1%
PHF	-	-	-	-	-	0.25	-	0.76	-	-	0.78	0.82	0.25	-	-	-	0.74	0.76	-	-	-	0.89	-	-	-
Trucks	-	-	-	-	-	-	-	2%	-	-	1%	0%	-	-	-	-	1%	-	-	-	-	1%	-	-	-

SRF Consulting Group Turning Movement Count

Count Date 4/7/2016

Start Time	I-494 EB Ramp					I-494 EB Ramp					34th Ave					34th Ave					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total		
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes						
000	23	-	1	-	-	-	-	-	-	-	-	10	18	-	-	85	15	-	-	-	152	-	-	1%	401	
015	17	-	4	-	-	-	-	-	-	-	-	22	12	-	-	31	13	-	-	-	99	-	-	2%	312	
030	11	-	3	-	-	-	-	-	-	-	-	12	12	-	-	29	13	-	-	-	80	-	-	3%	267	
045	12	-	-	-	-	-	-	-	-	-	-	12	8	-	-	29	9	-	-	-	70	-	-	1%	220	
100	6	-	2	-	-	-	-	-	-	-	-	11	9	-	-	28	7	-	-	-	63	-	-	2%	178	
115	8	-	1	-	-	-	-	-	-	-	-	2	9	-	-	28	6	-	-	-	54	-	-	-	155	
130	11	-	1	-	-	-	-	-	-	-	-	2	2	-	-	9	8	-	-	-	33	-	-	3%	134	
145	14	-	2	-	-	-	-	-	-	-	-	3	1	-	-	7	1	-	-	-	28	-	-	-	137	
200	13	-	1	-	-	-	-	-	-	-	-	4	-	-	-	15	7	-	-	-	40	-	-	-	161	
215	18	-	2	-	-	-	-	-	-	-	-	3	3	-	-	6	1	-	-	-	33	-	-	-	178	
230	21	-	5	-	-	-	-	-	-	-	-	1	3	-	-	4	2	-	-	-	36	-	-	-	216	
245	37	-	3	-	-	-	-	-	-	-	-	3	2	-	-	3	4	-	-	-	52	-	-	-	265	
300	36	-	6	-	-	-	-	-	-	-	-	1	7	-	-	1	6	-	-	-	57	-	-	-	336	
315	35	-	10	-	-	-	-	-	-	-	-	4	6	-	-	8	8	-	-	-	71	-	-	1%	428	
330	51	-	6	-	-	-	-	-	-	-	-	5	7	-	-	4	12	-	-	-	85	-	-	2%	532	
345	82	-	8	-	-	-	-	-	-	-	-	7	5	-	-	14	7	-	-	-	123	-	-	1%	655	
400	86	-	14	-	-	-	-	-	-	-	-	8	14	-	-	9	18	-	-	-	149	-	-	-	774	
415	110	-	10	-	-	-	-	-	-	-	-	11	7	-	-	24	13	-	-	-	175	-	-	1%	894	
430	122	-	21	-	-	-	-	-	-	-	-	12	17	-	-	20	16	-	-	-	208	-	-	1%	1,029	
445	135	-	35	-	-	-	-	-	-	-	-	9	16	-	-	27	19	1	-	-	242	-	-	1%	1,143	
500	136	-	17	-	-	-	-	-	1	-	-	15	25	-	-	46	30	-	-	-	269	1	-	1%	1,201	
515	180	-	19	-	-	-	-	-	-	-	-	7	20	-	-	48	36	-	-	-	310	-	-	1%	1,237	
530	175	-	17	-	-	-	-	-	-	-	-	13	25	-	-	43	49	-	-	-	322	-	-	2%	1,266	
545	160	-	35	-	-	-	-	-	-	-	-	8	17	-	-	31	49	-	-	-	300	-	-	1%	1,322	
600	118	-	41	-	-	-	-	-	-	-	-	14	33	-	-	44	55	-	-	-	305	-	-	2%	1,429	
615	124	-	51	-	-	-	-	-	-	-	-	16	35	-	-	41	72	-	-	-	339	-	-	1%	1,520	
630	122	-	50	-	-	-	-	-	-	-	-	15	41	-	-	45	105	-	-	-	378	-	-	1%	1,597	
645	124	-	55	1	-	-	-	-	-	-	-	27	29	-	-	44	128	-	-	-	407	-	-	1%	1,775	
700	76	-	67	-	-	-	-	-	-	-	-	28	48	-	-	31	146	-	-	-	396	-	-	2%	1,979	
715	88	-	67	-	-	-	-	-	-	-	-	31	51	-	-	26	153	-	-	-	416	-	-	1%	2,184	
730	104	-	66	1	1	-	-	-	-	-	-	32	64	-	-	43	247	-	-	-	556	1	-	1%	2,317	
745	101	-	112	-	-	-	-	-	-	-	-	32	58	-	-	44	264	-	-	-	611	-	-	1%	2,237	
800	120	-	122	1	-	-	-	-	-	-	-	33	47	-	-	38	241	-	-	-	601	-	-	1%	2,000	
815	105	-	94	-	1	-	-	-	-	-	-	25	56	-	-	55	214	-	-	-	549	1	-	1%	1,795	
830	102	-	78	-	-	-	-	-	-	-	-	35	58	-	-	36	167	-	-	-	476	-	-	2%	1,552	
845	80	-	80	-	-	-	-	-	1	-	-	25	37	-	-	33	119	-	-	-	374	1	-	2%	1,356	
900	88	-	77	-	-	-	-	-	1	-	-	36	60	-	-	46	88	1	-	-	396	-	-	2%	1,277	
915	63	-	59	-	-	-	-	-	1	-	-	26	42	-	-	37	79	-	-	-	306	-	-	1%	1,123	
930	69	-	42	-	-	-	-	-	-	-	-	25	35	-	-	42	67	-	-	-	280	-	-	2%	1,094	
945	73	-	35	-	-	-	-	-	-	-	-	38	36	-	-	39	74	-	-	-	295	-	-	1%	1,066	
1000	57	-	30	1	-	-	-	-	1	-	-	30	31	-	-	41	53	-	-	-	242	1	-	2%	1,037	
1015	66	-	45	-	-	-	-	-	-	-	-	27	36	-	-	55	48	-	-	-	277	-	-	3%	1,061	
1030	46	-	45	-	-	-	-	-	-	-	-	33	34	-	-	38	56	-	-	-	252	-	-	2%	1,064	
1045	39	-	42	-	-	-	-	-	-	-	-	32	41	-	-	47	65	-	-	-	266	-	-	2%	1,105	
1100	55	-	31	1	-	-	-	-	-	-	-	49	51	-	-	38	42	-	-	-	266	-	-	2%	1,148	
1115	62	-	39	-	-	-	-	-	-	-	-	30	46	-	-	46	57	-	-	-	280	-	-	1%	1,193	
1130	58	-	40	-	-	-	-	-	-	-	-	45	47	-	-	51	52	-	-	-	293	-	-	3%	1,219	
1145	70	-	27	-	-	-	-	-	1	-	-	26	55	-	-	48	83	-	-	-	309	-	-	2%	1,264	
1200	68	-	23	-	-	-	-	-	-	-	-	43	53	2	-	36	88	-	-	-	311	-	-	2%	1,393	
1215	73	-	39	-	-	-	-	-	-	-	-	44	43	-	-	41	66	-	-	-	306	-	-	1%	1,451	
1230	82	-	46	1	1	-	-	-	-	-	-	43	52	1	-	55	59	1	-	-	338	1	-	2%	1,520	
1245	122	-	79	-	-	-	-	-	1	-	-	52	40	-	-	65	80	-	-	-	438	1	-	2%	1,589	
1300	97	-	35	-	-	-	-	-	-	-	-	48	71	-	-	49	69	-	-	-	369	1	-	1%	1,537	
1315	97	-	43	-	-	-	-	-	-	-	-	54	48	-	-	40	93	-	-	-	375	-	-	1%	1,509	
1330	116	-	42	-	-	-	-	-	-	-	-	48	44	-	-	65	92	-	-	-	407	-	-	1%	1,533	
1345	98	-	47	-	-	-	-	-	1	-	-	38	47	-	-	86	70	-	-	-	386	1	-	1%	1,523	
1400	80	-	19	-	-	-	-	-	-	-	-	44	59	-	-	80	59	-	-	-	341	-	-	1%	1,525	
1415	100	-	28	-	-	-	-	-	-	-	-	45	75	-	-	96	55	-	-	-	399	-	-	2%	1,625	
1430	79	-	27	-	-	-	-	-	-	-	-	57	65	-	-	106	63	-	-	-	397	-	-	1%	1,622	
1445	73	-	33	-	-	-	-	-	1	-	-	55	67	-	-	93	67	-	-	-	388	-	-	2%	1,713	
1500	94	-	30	-	-	-	-	-	-	-	-	66	119	2	-	81	51	-	-	-	441	-	-	2%	1,785	
1515	100	-	31	-	-	-	-	-	-	-	-	71	84	-	-	65	45	-	-	-	396	-	-	1%	1,866	
1530	82	-	32	-	-	-	-	-	-	-	-	69	123	-	-	102	80	-	-	-	488	-	-	1%	1,924	
1545	76	-	30	-	-	-	-	-	-	-	-	72	121	-	-	90	71	-	-	-	460	-	-	1%	2,075	
1600	78	-	21	1	-	-	-	-	-	-	-	95	165	1	-	98	65	-	-	-	522	-	-	1%	2,188	
1615	69	-	27	1	-	-	-	-	-	-	-	53	166	-	-	75	64	-	-	-	454	-	-	1%	2,320	
1630	81	-	22	-	-	-	-	-	-	-	-	106	214	1	-	125	89	2	-	-	639	-	-	1%	2,450	
1645	57	1	24	-	-	-	-	-	-	-	-	82	206	-	-	104	97	-	-	-	573	-	-	1%	2,318	
1700	47	-	21	-	-	-	-	-	-	-	-	114	265	-	-	114	92	-	-	-	654	-	-	0%	2,163	
1715	65	-	23	1	-	-	-	-	-	-	-	77	199	-	-	112	108	-	-	-	584	-	-	1%	1,888	
1730	62	-	15	-	-	-	-	-	-	-	-	71	165	-	-	107	87	-	-	-	507	-	-	1%	1,638	
1745	65	-	30	-	-	-	-	-	-	-	-	55	117	-	-	77	74	-	-	-	418	-	-	1%	1,391	
1800	62	-	17	-	-	-	-	-	1	-	-	52	124	-	-	83	41	-	-	-	379	1	-	1%	1,221	
1815	63	-	18	-	-	-	-	-	1	-	-	1	41	101	-	-	66	44	-	-	-	334	-	-	2%	1,151
1830	49	-	19	-	-	-	-	-	-	-	-	35	70	-	-	47	40	-	-	-	260	-	-	1%	1,043	
1845	56	-	22	-	-	-	-	-																		

SRF Consulting Group Turning Movement Count

Start Time	I-494 EB Ramp EB					I-494 EB Ramp WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes				
Peak 1 0000 to 1000																								
730	104	-	66	1	1	-	-	-	-	-	-	32	64	-	-	43	247	-	-	-	556	1	1%	
745	101	-	112	-	-	-	-	-	-	-	-	32	58	-	-	44	264	-	-	-	611	-	1%	
800	120	-	122	1	-	-	-	-	-	-	-	33	47	-	-	38	241	-	-	-	601	1	1%	
815	105	-	94	-	1	-	-	-	-	-	-	25	56	-	-	55	214	-	-	-	549	-	1%	
Total	430	-	394	2	2	-	-	-	-	-	-	122	225	-	-	180	966	-	-	-	2,317	2	1%	
PHF	0.90	-	0.81	-	-	-	-	-	-	-	-	0.92	0.88	-	-	0.82	0.91	-	-	-	0.95	-	-	
Trucks	1%	-	1%	-	-	-	-	-	-	-	-	2%	1%	-	-	3%	1%	-	-	-	1%	-	-	
Peak 2 1000 to 1400																								
1245	122	-	79	-	-	-	-	-	-	-	1	-	52	40	-	-	65	80	-	-	-	438	-	2%
1300	97	-	35	-	-	-	-	-	-	-	1	-	48	71	-	-	49	69	-	-	-	369	-	1%
1315	97	-	43	-	-	-	-	-	-	-	-	-	54	48	-	-	40	93	-	-	-	375	-	1%
1330	116	-	42	-	-	-	-	-	-	-	-	-	48	44	-	-	65	92	-	-	-	407	-	1%
Total	432	-	199	-	-	-	-	-	-	-	2	-	202	203	-	-	219	334	-	-	-	1,589	-	1%
PHF	0.89	-	0.63	-	-	-	-	-	-	-	-	-	0.94	0.71	-	-	0.84	0.90	-	-	-	0.91	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	4%	1%	-	-	2%	1%	-	-	-	1%	-	-
Peak 3 1400 to 2400																								
1630	81	-	22	-	-	-	-	-	-	-	-	106	214	1	-	125	89	2	-	-	639	1	1%	
1645	57	1	24	-	-	-	-	-	-	-	2	82	206	-	-	104	97	-	-	-	573	-	1%	
1700	47	-	21	-	-	-	-	-	-	-	1	114	265	-	-	114	92	-	-	-	654	-	0%	
1715	65	-	23	1	-	-	-	-	-	-	-	77	199	-	-	112	108	-	-	-	584	1	1%	
Total	250	1	90	1	-	-	-	-	-	-	3	379	884	1	-	455	386	2	-	-	2,450	2	1%	
PHF	0.77	0.25	0.94	-	-	-	-	-	-	-	0.38	0.83	0.83	-	-	0.91	0.89	0.25	-	-	0.94	-	-	
Trucks	-	-	-	-	-	-	-	-	-	-	-	1%	0%	-	-	2%	1%	-	-	-	1%	-	-	

SRF Consulting Group
Turning Movement Count

Start Time	I-494 EB Ramps					I-494 EB Ramps					34th Ave					34th Ave					15 min Veh. Total	15 min Ped Total	% Trucks
	EB					WB					NB					SB							
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1515	94	-	31	-	-	-	-	-	-	-	-	44	52	-	-	40	56	-	-	-	317	-	1%
1530	109	-	43	-	-	-	-	-	-	1	-	30	51	-	-	104	37	-	-	-	374	-	1%
1545	96	-	21	-	-	-	-	-	-	2	-	25	47	-	-	68	51	-	-	-	308	-	1%
1600	72	-	21	-	-	-	-	-	-	1	-	40	54	-	-	84	57	-	-	-	328	-	1%
Total	371	-	116	-	-	-	-	-	-	4	-	139	204	-	-	296	201	-	-	-	1,327	-	1%
PHF	0.85	-	0.67	-	-	-	-	-	-	-	-	0.79	0.94	-	-	0.71	0.88	-	-	-	0.89	-	-
Trucks	0%	-	-	-	-	-	-	-	-	-	-	1%	2%	-	-	2%	2%	-	-	-	1%	-	-

SRF Consulting Group

Turning Movement Count

Count 4/9/2016
Date

Start Time	American Blvd EB					American Blvd WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total										
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes														
1415	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	174
1430	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	363
1445	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	535
1500	23	5	-	-	-	4	4	21	1	-	1	46	9	-	-	28	12	21	-	-	174	-	-	-	-	-	-	-	-	-	-	7%	-	716
1515	33	4	-	-	-	1	4	24	3	-	1	40	8	-	-	29	21	24	1	-	189	-	-	-	-	-	-	-	-	-	-	10%	-	542
1530	20	3	2	-	-	2	5	23	1	-	1	28	4	-	-	34	18	32	-	-	172	-	-	-	-	-	-	-	-	-	-	8%	-	353
1545	23	8	1	-	-	2	10	16	-	-	-	36	10	-	-	38	12	25	-	-	181	-	-	-	-	-	-	-	-	-	-	9%	-	181

Start Time	American Blvd EB					American Blvd WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks		
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes					
1500	23	5	-	-	-	4	4	21	1	-	1	46	9	-	-	28	12	21	-	-	174	1	-	-	7%
1515	33	4	-	-	-	1	4	24	3	-	1	40	8	-	-	29	21	24	1	-	189	4	-	-	10%
1530	20	3	2	-	-	2	5	23	1	-	1	28	4	-	-	34	18	32	-	-	172	1	-	-	8%
1545	23	8	1	-	-	2	10	16	-	-	-	36	10	-	-	38	12	25	-	-	181	-	-	-	9%
Total	99	20	3	-	-	9	23	84	5	-	3	150	31	-	-	129	63	102	1	-	716	6	-	-	8%
PHF	0.75	0.63	0.38	-	-	0.56	0.58	0.88	-	-	0.75	0.82	0.78	-	-	0.85	0.75	0.80	-	-	0.95	-	-	-	0.95
Trucks	16%	10%	-	-	-	-	9%	13%	-	-	-	1%	6%	-	-	9%	3%	15%	-	-	9%	-	-	-	9%

SRF Consulting Group Turning Movement Count

Count 3/8/2016
Date

Start Time	Appletree Square EB					Appletree Square WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks	1 hr. Veh. Total				
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes								
600	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
615	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	94
630	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	238
645	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	382
700	-	-	-	1	-	1	1	1	-	1	-	29	10	1	-	10	42	-	-	-	-	94	1	1%	-	-	578	
715	-	-	-	-	1	1	-	-	-	-	53	18	-	-	8	64	-	-	-	-	144	1	-	-	-	-	643	
730	-	-	-	-	-	4	-	5	-	-	44	12	-	-	14	65	-	-	-	-	144	-	-	-	-	-	624	
745	-	-	-	-	1	2	-	1	1	2	49	17	-	-	19	108	-	-	-	-	196	3	1%	-	-	-	578	
800	-	-	-	-	-	1	-	1	-	-	52	10	-	-	21	74	-	-	-	-	159	-	-	-	-	-	489	
815	-	-	-	-	-	-	-	-	1	1	33	12	1	-	8	71	-	-	-	-	125	1	-	-	-	-	330	
830	-	-	-	-	-	-	-	3	-	-	28	4	1	1	9	54	-	-	-	-	98	1	-	-	-	-	205	
845	-	-	-	-	-	1	-	2	-	-	35	4	-	-	7	58	-	-	-	-	107	-	-	-	-	-	107	

Start Time	Appletree Square EB					Appletree Square WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			

Peak 1 0000 to 1000

715	-	-	-	-	1	1	-	-	-	-	53	18	-	-	8	64	-	-	-	-	144	-	-	-	-	-	-
730	-	-	-	-	-	4	-	5	-	-	44	12	-	-	14	65	-	-	-	-	144	-	-	-	-	-	-
745	-	-	-	-	1	2	-	1	1	2	49	17	-	-	19	108	-	-	-	-	196	1	1%	-	-	-	-
800	-	-	-	-	-	1	-	1	-	-	52	10	-	-	21	74	-	-	-	-	159	-	-	-	-	-	-
Total	-	-	-	-	2	8	-	7	1	2	198	57	-	-	62	311	-	-	-	-	643	1	0%	-	-	-	-
PHF	-	-	-	-	-	0.50	-	0.35	-	-	0.93	0.79	-	-	0.74	0.72	-	-	-	-	0.82	-	-	-	-	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-	-	-	-

Peak 3 1400 to 2400

1645	-	-	-	-	-	12	-	5	1	-	84	3	-	-	5	53	-	-	-	-	162	1	-	-	-	-	-
1700	-	-	-	-	-	21	-	9	3	-	96	1	-	-	-	39	-	-	-	-	166	3	-	-	-	-	-
1715	-	-	-	-	-	13	-	5	-	-	86	2	-	-	4	52	-	-	-	-	162	-	-	1%	-	-	-
1730	-	-	-	-	1	12	-	2	1	-	75	5	-	-	3	44	-	1	-	-	141	2	-	-	-	-	-
Total	-	-	-	-	1	58	-	21	5	-	341	11	-	-	12	188	-	1	-	-	631	6	0%	-	-	-	-
PHF	-	-	-	-	-	0.69	-	0.58	-	-	0.89	0.55	-	-	0.60	0.89	-	-	-	-	0.95	-	-	-	-	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1%	-	-	-	-	-	-	-	-	-	-	-

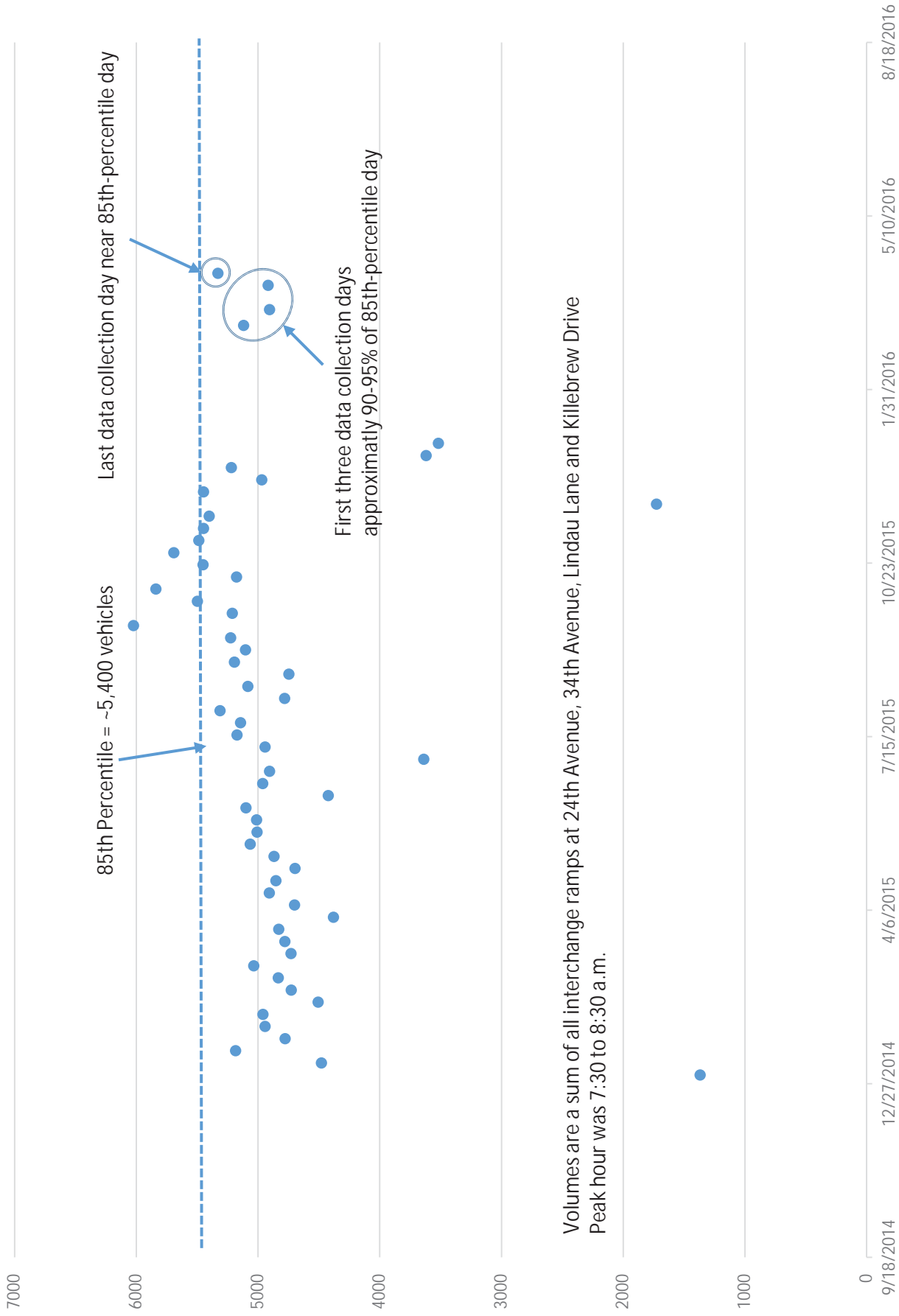
SRF Consulting Group Turning Movement Count

Count 3/5/2016
Date

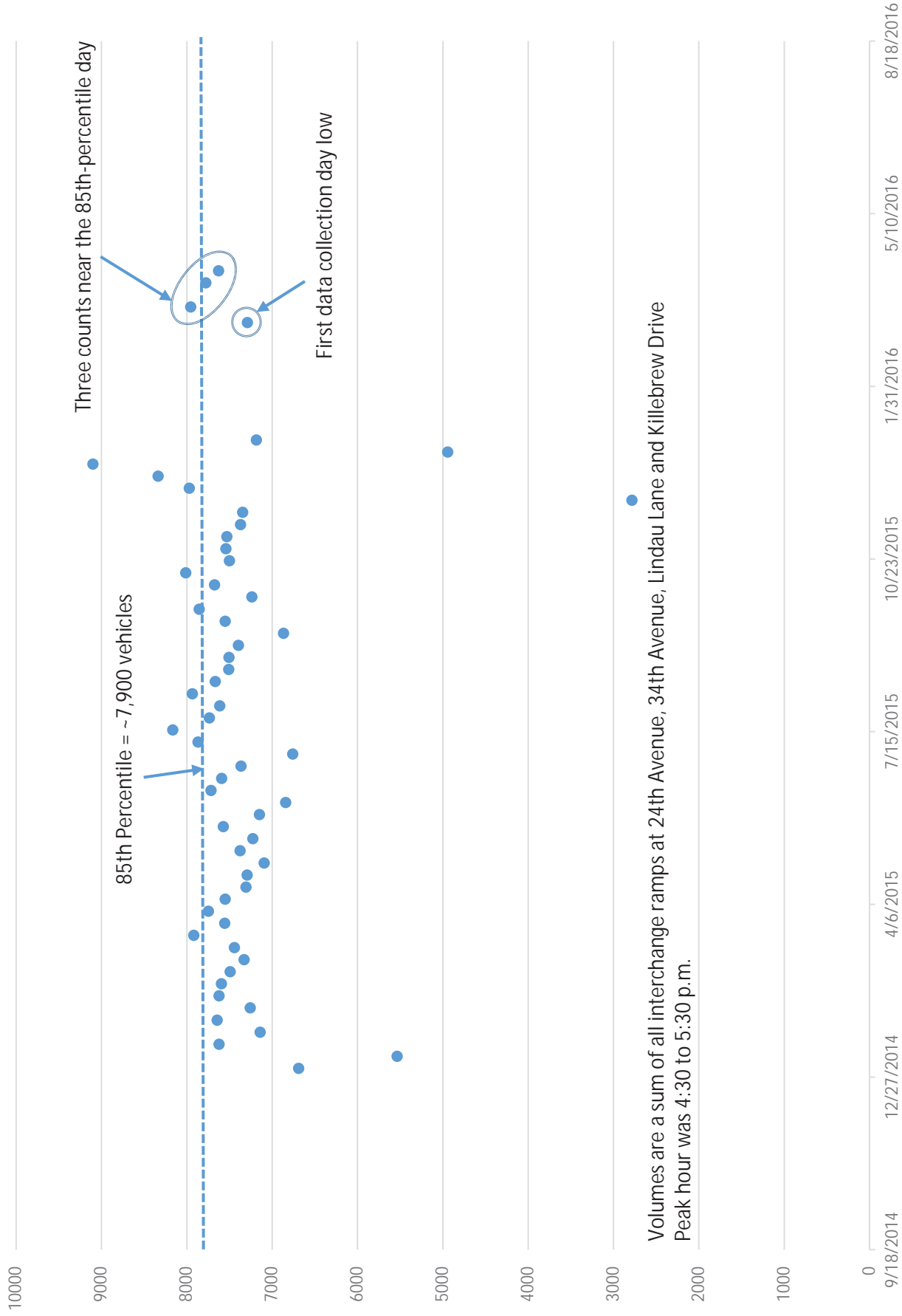
Start Time	Appletree Square EB					Appletree Square WB					34th Ave NB					34th Ave SB					15 min Veh. Total	15 min Ped Total	% Trucks
	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes	L	T	R	Ped	Bikes			
1500	-	-	-	-	-	-	-	1	-	4	-	58	1	-	1	2	20	-	-	-	82	-	-
1515	-	-	-	-	-	-	-	1	-	-	-	50	1	-	-	2	25	-	-	-	79	-	1%
1530	-	-	-	-	-	-	-	1	-	-	-	44	2	-	-	2	24	-	-	-	73	-	-
1545	-	-	-	-	-	2	-	2	-	-	-	47	1	-	-	4	23	-	-	-	79	-	-
Total	-	-	-	-	-	2	-	5	-	4	-	199	5	-	1	10	92	-	-	-	313	-	0%
PHF	-	-	-	-	-	0.25	-	0.63	-	-	-	0.86	0.63	-	-	0.63	0.92	-	-	-	0.95	-	-
Trucks	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1%	-	-	-	0%	-	-

Appendix B
Gate Count/MnDOT Loop Detector Analysis

AM Peak Hour Interchange Volumes

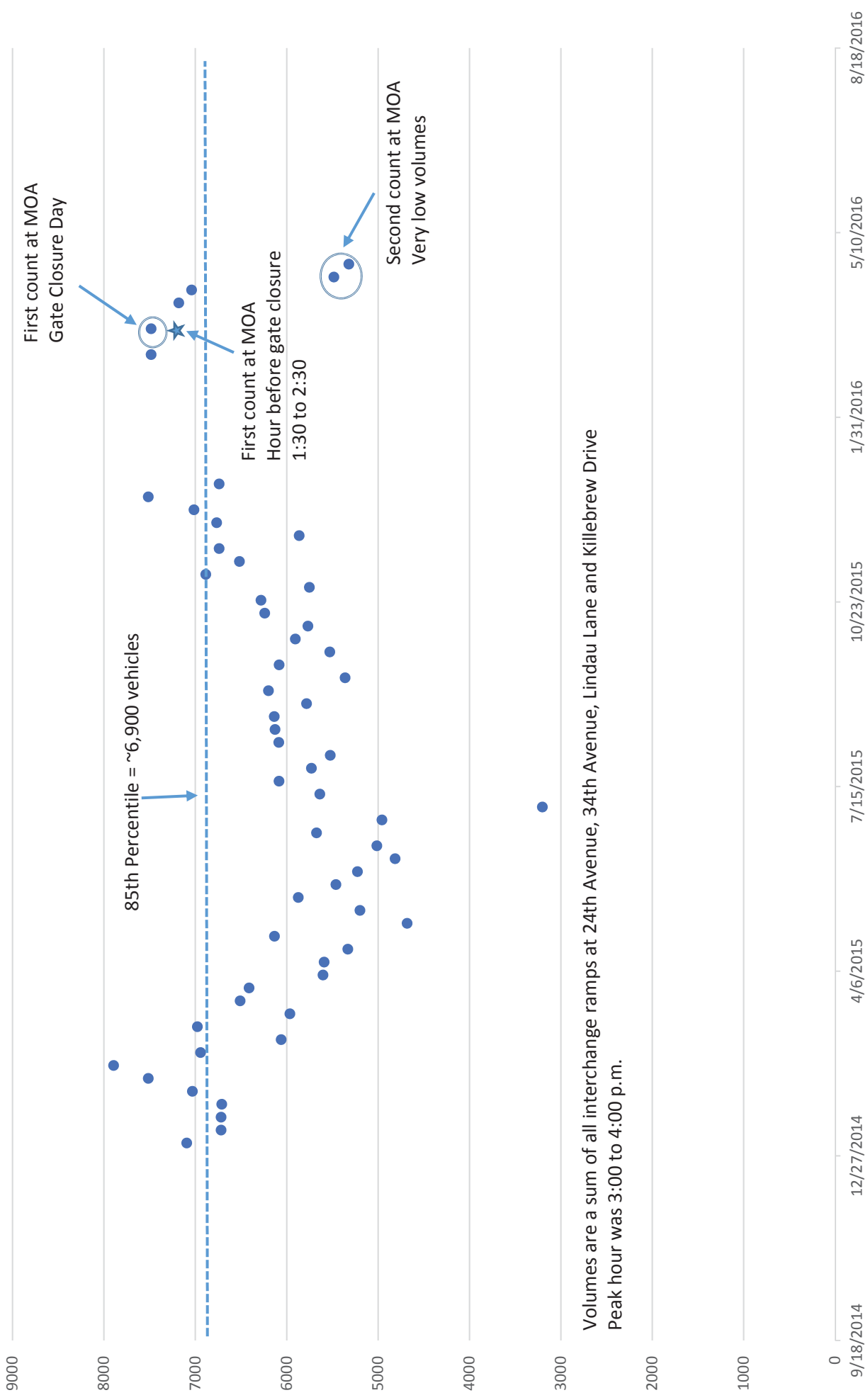


PM Peak Hour Interchange Volumes

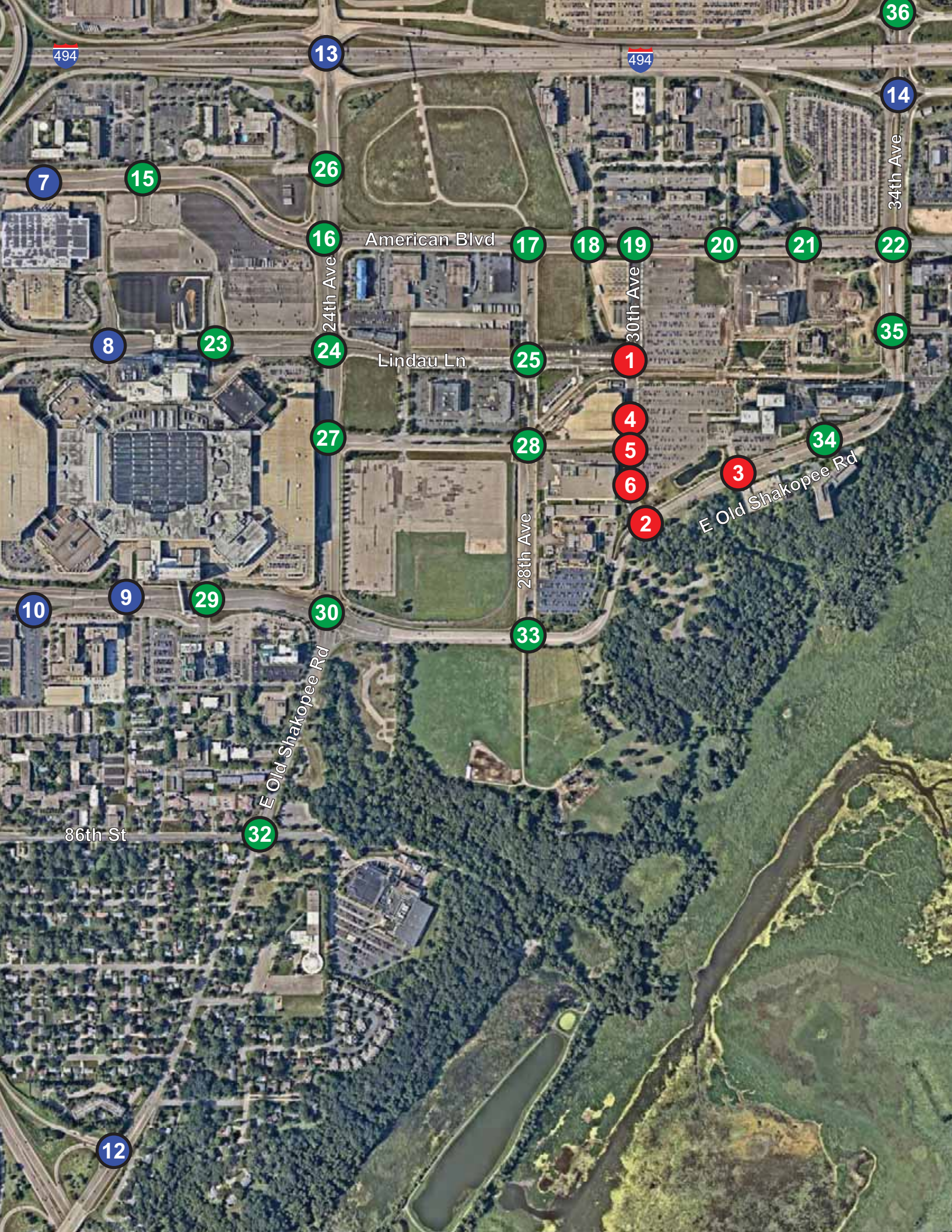


South Loop District Traffic Study: Data Collection Summary

Saturday Peak Hour Interchange Volumes



Appendix C
Data Collection Intersection Adjustment Factors



494

494

13

36

14

34th Ave

7

15

26

American Blvd

17

18

19

20

21

22

8

23

24

24th Ave

Lindau Ln

25

1

4

5

6

2

3

34

E Old Shakopee Rd

27

28

28th Ave

10

9

29

30

33

86th St

32

E Old Shakopee Rd

12

**South Loop District Traffic Study:
Data Collection Summary**

Intersection Number	Intersection Name	Count Type	A.M. Collection Date	P.M. Collection Date	Saturday Collection Date	AM Adjustment Factor	PM Adjustment Factor	Saturday Adjustment Factor	Notes
1	Lindau Lane/30th Avenue	Peak Hour	3/8/2016	3/8/2016	3/5/2016	1.05	1.08	0.92	-
2	E Old Shakopee Road/30th Avenue	Peak Hour	3/8/2016	3/8/2016	3/5/2016	1.05	1.08	0.92	-
3	E Old Shakopee Road/South HP Driveway/31st Avenue	Peak Hour	3/8/2016	3/8/2016	3/5/2016	1.05	1.08	0.92	-
4	30th Avenue/North HP Driveway	Peak Hour	3/8/2016	3/8/2016	3/5/2016	1.05	1.08	0.92	-
5	30th Avenue/Middle HP Driveway	Peak Hour	3/8/2016	3/8/2016	3/5/2016	1.05	1.08	0.92	-
6	30th Avenue/South HP Driveway	Peak Hour	3/8/2016	3/8/2016	3/5/2016	1.05	1.08	0.92	-
7	American Boulevard/IKEA Access	24 Hour	3/31/2016	3/31/2016	4/2/2016	1.10	1.00	0.96	-
8	Lindau Lane/IKEA Way	24 Hour	3/17/2016	3/17/2016	4/16/2016	1.10	1.00	1.25	-
9	Killebrew Drive/20th Avenue	24 Hour	3/17/2016	3/17/2016	3/19, 4/23	1.10	1.00	1.30	-
10	Killebrew Drive/E Service Road	24 Hour	3/17/2016	3/17/2016	3/19/2016	1.10	1.00	1.30	-
11	86th Street/E Service Road	24 Hour	3/31/2016	3/31/2016	4/2/2016	1.05	1.02	1.04	-
12	E Old Shakopee Road/North 77 Ramps	24 Hour	4/24/2016	4/20/2016	4/23/2016	1.00	1.00	1.00	-
13	I-494/24th Avenue	24 Hour	3/31/2016	3/31/2016	4/2/2016	1.10	1.00	0.96	-
14	I-494 S Ramps/34th Avenue	24 Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-
15	American Boulevard/Thunderbird Road	Peak Hour	July 2015	July 2015	4/23/2016	1.10	1.00	0.96	Used counts collected for MOA Phase 2B Traffic Study (July 2015)
16	American Boulevard/24th Avenue	Peak Hour	3/31/2016	3/31/2016	4/2/2016	1.10	1.00	0.96	-
17	American Boulevard/28th Avenue	Peak Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-
18	American Boulevard/Metro Drive W	Peak Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-
19	American Boulevard/30th Avenue	Peak Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-
20	American Boulevard/Metro Drive E	Peak Hour	4/27/2016	4/27/2016	---	1.00	1.03	1.00	Did not collect on Saturday
21	American Boulevard/International Drive	Peak Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-
22	American Boulevard/34th Avenue	Peak Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-
23	Lindau Lane/22nd Avenue	Peak Hour	3/17/2016	3/17/2016	4/16/2016	1.10	1.00	1.25	-
24	Lindau Lane/24th Avenue	Peak Hour	3/17/2016	3/17/2016	4/16/2016	1.10	1.00	1.25	-
25	Lindau Lane/28th Avenue	Peak Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-
26	24th Avenue/79th Street	Peak Hour	3/31/2016	3/31/2016	4/2/2016	1.10	1.00	0.96	-
27	24th Avenue/82nd Street	Peak Hour	3/17/2016	3/17/2016	4/16/2016	1.10	1.00	1.25	-
28	28th Avenue/82nd Street	Peak Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-
29	Killebrew Drive/22nd Avenue	Peak Hour	3/17/2016	3/17/2016	4/16/2016	1.10	1.00	1.25	-
30	Killebrew Drive/24th Avenue	Peak Hour	3/17/2016	3/17/2016	4/16/2016	1.10	1.00	1.25	-
31	E Old Shakopee Road/South TH 77 Ramps	Peak Hour	4/27/2016	4/20/2016	4/23/2016	1.03	1.00	1.00	-
32	E Old Shakopee Road/86th Street	Peak Hour	3/31/2016	3/31/2016	4/2/2016	1.05	1.02	1.04	-
33	E Old Shakopee Road/28th Avenue	Peak Hour	3/31/2016	3/31/2016	4/2/2016	1.10	1.00	0.96	-
34	E Old Shakopee Road/33rd Avenue/Ceridian Access	Peak Hour	3/8/2016	3/8/2016	3/5/2016	1.05	1.08	0.92	-
35	34th Avenue/Appletree Square	Peak Hour	3/8/2016	3/8/2016	3/5/2016	1.05	1.08	0.92	-
36	I-494 N Ramps/34th Avenue	Peak Hour	4/7/2016	4/7/2016	4/9/2016	1.00	1.03	1.00	-

Appendix D
Existing MOE

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	2	53	13.7	B	13.7	B	0.7	A
	Right	0	-	-	-	A				
Eastbound	Thru	226	0	0	0.1	A	0.1	A		
	Right	10	0	0	0.4	A				
Westbound	Left	7	0	7	1.8	A	0.3	A		
	Thru	895	0	0	0.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	37	-1
0	0	0
228	226	-2
12	10	-2
8	7	-1
909	895	-14

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	337	0	0	0.0	A	0.5	A	0.5	A
	-	278	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
344	337	-7
274	278	4

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.0	A	3.5	A
	Right	13	1	69	7.0	A				
Eastbound	Left	25	0	22	3.9	A	1.5	A		
	Thru	121	0	0	1.0	A				
Westbound	Thru	209	0	0	4.7	A	4.7	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
15	13	-2
25	25	0
122	121	-1
216	209	-7
1	0	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	503	0	0	0.2	A	0.2	A	1.3	A
	Thru	1,187	0	5	0.4	A				
Southbound	Right	42	0	5	0.5	A	0.4	A		
	Left	10	2	29	35.5	E				
Eastbound	Left	10	2	29	35.5	E	6.0	A		
	Right	358	0	0	5.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
505	503	-2
1,200	1,187	-13
40	42	2
10	10	0
360	358	-2

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	115	10	62	23.2	C	21.9	C	8.5	A
	Thru	4	1	15	25.5	C				
	Right	9	0	0	2.6	A				
Southbound	Left	33	5	87	26.4	C	20.1	C		
	Thru	4	5	87	30.2	C				
	Right	18	0	15	6.4	A				
Eastbound	Left	19	3	28	31.0	C	7.3	A		
	Thru	186	3	46	5.7	A				
	Right	23	0	3	0.9	A				
Westbound	Left	27	4	39	27.4	C	6.0	A		
	Thru	768	7	93	5.3	A				
	Right	27	7	120	5.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
115	115	0
5	4	-1
11	9	-2
32	33	1
4	4	0
20	18	-2
16	19	3
189	186	-3
23	23	0
29	27	-2
782	768	-14
29	27	-2

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	30	3	38	23.2	C	18.5	B	10.2	B
	Thru	25	2	34	16.4	B				
	Right	7	0	35	5.6	A				
Southbound	Left	4	0	13	12.3	B	14.5	B		
	Thru	11	1	27	21.5	C				
	Right	18	1	29	10.7	B				
Eastbound	Left	123	8	58	16.6	B	8.5	A		
	Thru	245	4	61	6.4	A				
	Right	101	10	100	3.7	A				
Westbound	Left	32	2	39	17.4	B	12.2	B		
	Thru	51	2	35	8.9	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
30	30	0
24	25	1
8	7	-1
4	4	0
12	11	-1
18	18	0
123	123	0
245	245	0
102	101	-1
35	32	-3
51	51	0
0	0	0

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	27	2	32	17.2	B	6.3	A	3.6	A
	Right	78	0	20	2.6	A				
Eastbound	Left	121	5	61	10.4	B	3.0	A		
	Thru	492	5	61	1.2	A				
Westbound	Thru	101	2	48	5.6	A	4.0	A		
	Right	47	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	27	2
81	78	-3
122	121	-1
496	492	-4
101	101	0
49	47	-2

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	232	6	96	7.9	A	6.3	A	11.0	B
	Thru	276	3	59	4.9	A				
	Right	5	3	59	5.9	A				
Southbound	Left	0	-	-	-	A	9.6	A		
	Thru	284	8	74	11.1	B				
	Right	45	0	0	0.4	A				
Eastbound	Left	375	30	139	27.7	C	13.1	B		
	Thru	10	30	141	27.6	C				
	Right	945	0	25	7.1	A				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
235	232	-3
275	276	1
5	5	0
0	0	0
295	284	-11
49	45	-4
382	375	-7
11	10	-1
945	945	0
0	0	0
2	0	-2
0	0	0

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	20	1	27	11.9	B	9.1	A	4.8	A
	Thru	10	0	25	14.4	B				
	Right	25	1	57	4.9	A				
Southbound	Left	4	0	15	10.2	B	11.4	B		
	Thru	9	0	24	11.9	B				
	Right	0	-	-	-	A				
Eastbound	Left	2	0	9	6.9	A	2.9	A		
	Thru	206	2	51	3.1	A				
	Right	50	0	53	2.0	A				
Westbound	Left	18	1	31	19.4	B	6.5	A		
	Thru	63	0	24	3.3	A				
	Right	5	0	5	1.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
21	20	-1
10	10	0
23	25	2
4	4	0
9	9	0
1	0	-1
2	2	0
211	206	-5
44	50	6
15	18	3
64	63	-1
7	5	-2

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	33	4	43	26.2	C	16.3	B	6.1	A
	Thru	0	-	-	-	A				
	Right	21	0	2	0.6	A				
Southbound	Left	4	1	24	18.2	B	9.0	A		
	Thru	4	1	24	21.0	C				
	Right	12	0	2	2.0	A				
Eastbound	Left	81	3	46	11.2	B	4.5	A		
	Thru	323	3	61	4.1	A				
	Right	115	0	13	1.1	A				
Westbound	Left	45	2	43	13.9	B	7.4	A		
	Thru	102	2	43	5.6	A				
	Right	18	0	5	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
34	33	-1
0	0	0
22	21	-1
4	4	0
4	4	0
13	12	-1
78	81	3
329	323	-6
114	115	1
44	45	1
103	102	-1
16	18	2

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	57	12	64	46.6	D	16.2	B	13.3	B
	Thru	32	7	39	45.1	D				
	Right	176	0	0	1.2	A				
Southbound	Left	55	13	86	43.9	D	34.4	C		
	Thru	72	13	64	44.0	D				
	Right	36	0	0	0.8	A				
Eastbound	Left	68	3	55	9.7	A	3.0	A		
	Right	324	0	0	1.6	A				
Westbound	Left	1,057	51	356	13.7	B	13.2	B		
	Right	120	7	91	8.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
59	57	-2
33	32	-1
183	176	-7
57	55	-2
71	72	1
36	36	0
68	68	0
324	324	0
1,065	1,057	-8
122	120	-2

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.4	A	2.3	A
	Thru	268	0	0	0.4	A				
Southbound	Thru	1,433	0	32	2.7	A	2.7	A		
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
274	268	-6
1,440	1,433	-7
0	0	0
1	0	-1
0	0	0

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	35	13	71	63.0	E	32.8	C	20.8	C
	Thru	140	18	82	43.1	D				
	Right	82	0	22	2.3	A				
Southbound	Left	305	33	162	29.1	C	14.5	B		
	Thru	416	21	124	20.4	C				
	Right	710	0	45	4.8	A				
Eastbound	Left	68	20	87	60.3	E	36.6	D		
	Thru	110	16	88	36.7	D				
	Right	51	0	6	4.8	A				
Westbound	Left	22	7	46	65.9	E	35.7	D		
	Thru	79	16	81	47.7	D				
	Right	61	19	88	9.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	35	-3
145	140	-5
86	82	-4
304	305	1
411	416	5
725	710	-15
71	68	-3
110	110	0
51	51	0
26	22	-4
77	79	2
59	61	2

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	3	21	72.5	E	11.2	B	9.7	A
	Thru	136	4	65	10.3	B				
	Right	12	0	0	1.2	A				
Southbound	Left	42	5	63	24.6	C	8.2	A		
	Thru	370	6	97	7.5	A				
	Right	76	0	7	2.3	A				
Eastbound	Left	102	7	72	17.1	B	11.5	B		
	Thru	62	4	52	14.3	B				
	Right	70	0	7	0.7	A				
Westbound	Left	4	1	43	48.4	D	12.2	B		
	Thru	6	1	18	26.4	C				
	Right	21	0	2	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	4	0
146	136	-10
13	12	-1
42	42	0
369	370	1
77	76	-1
103	102	-1
65	62	-3
70	70	0
5	4	-1
5	6	1
20	21	1

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	10	1	25	17.7	B	5.5	A	6.0	A
	Thru	132	2	53	5.2	A				
	Right	21	0	5	2.0	A				
Southbound	Left	22	2	38	18.1	B	5.2	A		
	Thru	358	4	104	5.1	A				
	Right	65	0	4	1.1	A				
Eastbound	Left	10	1	23	19.4	B	14.7	B		
	Thru	0	-	-	-	A				
	Right	4	0	1	2.9	A				
Westbound	Left	20	3	51	24.6	C	15.2	B		
	Thru	0	-	-	-	A				
	Right	13	0	0	0.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	10	2
138	132	-6
21	21	0
20	22	2
360	358	-2
64	65	1
11	10	-1
1	0	-1
4	4	0
23	20	-3
1	0	-1
14	13	-1

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	123	0	30	1.4	A	1.4	A	5.7	A
Southbound	Thru	233	1	36	2.0	A	5.8	A		
	Right	135	6	95	12.5	B				
Eastbound	Left	40	2	54	16.7	B	12.4	B		
	Right	30	0	1	6.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
126	123	-3
251	233	-18
136	135	-1
40	40	0
33	30	-3

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	12	54	78.7	E	12.5	B	20.1	C
	Thru	102	12	72	34.7	C				
	Right	509	0	0	3.3	A				
Southbound	Left	14	3	30	45.0	D	17.5	B		
	Thru	185	11	91	18.0	B				
	Right	79	5	80	11.3	B				
Eastbound	Left	20	6	35	64.4	E	32.1	C		
	Thru	273	33	151	35.7	D				
	Right	53	0	0	1.0	A				
Westbound	Left	75	12	71	36.0	D	32.2	C		
	Thru	50	5	43	27.8	C				
	Right	4	0	3	15.8	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
35	37	2
101	102	1
518	509	-9
16	14	-2
188	185	-3
80	79	-1
23	20	-3
281	273	-8
51	53	2
85	75	-10
48	50	2
2	4	2

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	74	6	102	7.0	A	5.2	A	7.1	A
	Thru	519	6	102	5.0	A				
	Right	29	11	130	2.9	A				
Southbound	Left	38	3	70	8.4	A	5.3	A		
	Thru	163	3	69	4.5	A				
	Right	83	6	100	5.4	A				
Eastbound	Left	122	9	126	20.3	C	18.1	B		
	Thru	6	9	126	16.4	B				
	Right	26	9	148	8.4	A				
Westbound	Left	4	0	19	12.2	B	10.9	B		
	Thru	3	0	18	13.3	B				
	Right	2	0	6	4.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
75	74	-1
524	519	-5
28	29	1
37	38	1
172	163	-9
85	83	-2
123	122	-1
6	6	0
28	26	-2
4	4	0
2	3	1
2	2	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	7	1	21	18.2	B	3.5	A	1.9	A
	Thru	0	-	-	-	A				
	Right	40	0	0	1.0	A				
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	2.0	A		
	Thru	400	1	57	2.0	A				
	Right	20	0	3	1.4	A				
Westbound	Left	24	1	32	12.1	B	1.5	A		
	Thru	217	0	15	0.3	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	7	2
0	0	0
37	40	3
0	0	0
0	0	0
0	0	0
0	0	0
404	400	-4
21	20	-1
24	24	0
217	217	0
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	0	1	2.2	A	1.5	A	2.7	A
	Thru	36	0	1	1.5	A				
	Right	8	0	1	0.8	A				
Southbound	Left	2	0	0	2.4	A	1.1	A		
	Thru	20	0	0	1.3	A				
	Right	24	0	0	0.9	A				
Eastbound	Left	8	0	5	3.1	A	4.0	A		
	Thru	35	0	5	4.4	A				
	Right	3	0	4	1.9	A				
Westbound	Left	0	-	-	-	A	9.4	A		
	Thru	7	0	3	12.3	B				
	Right	4	0	0	4.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	4	0
29	36	7
6	8	2
2	2	0
21	20	-1
22	24	2
9	8	-1
38	35	-3
3	3	0
1	0	-1
9	7	-2
4	4	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	13	3	48	29.4	C	8.1	A	9.8	A
	Thru	42	2	30	9.6	A				
	Right	67	1	53	3.1	A				
Southbound	Left	6	1	18	25.3	C	13.1	B		
	Thru	11	1	17	12.9	B				
	Right	7	1	28	2.9	A				
Eastbound	Left	3	0	15	21.7	C	17.4	B		
	Thru	8	0	16	15.8	B				
	Right	0	-	-	-	A				
Westbound	Left	3	0	11	22.3	C	22.3	C		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
15	13	-2
39	42	3
68	67	-1
6	6	0
12	11	-1
7	7	0
4	3	-1
6	8	2
1	0	-1
2	3	1
1	0	-1
1	0	-1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



E Old Shakopee Rd & 28th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	4	0	29	13.4	B	3.9	A	1.1	A
	Right	11	0	0	0.5	A				
Eastbound	Left	187	0	30	2.3	A	1.1	A		
	Thru	608	0	0	0.7	A				
Westbound	Thru	118	0	0	0.6	A	0.7	A		
	Right	21	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
3	4	1
12	11	-1
187	187	0
628	608	-20
123	118	-5
20	21	1

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	24	3	61	14.4	B	9.7	A	1.7	A
	Right	45	4	77	7.2	A				
Eastbound	Left	164	1	65	3.0	A	1.3	A		
	Thru	278	0	0	0.3	A				
Westbound	Thru	198	0	0	0.1	A	0.1	A		
	Right	24	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	24	-1
44	45	1
162	164	2
279	278	-1
197	198	1
22	24	2

American Blvd & 30th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	9	1	40	15.5	C	10.7	B	1.4	A
	Right	14	0	44	7.6	A				
Eastbound	Thru	195	0	3	0.2	A	0.4	A		
	Right	106	0	0	0.8	A				
Westbound	Left	161	1	48	3.4	A	1.7	A		
	Thru	212	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
10	9	-1
14	14	0
196	195	-1
108	106	-2
167	161	-6
209	212	3

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	2	0	3	8.4	A	7.5	A	8.8	A
	Thru	41	2	45	7.5	A				
Southbound	Thru	77	3	46	8.8	A	8.5	A		
	Right	6	0	23	4.4	A				
Eastbound	Left	21	1	47	13.2	B	10.7	B		
	Right	22	0	30	8.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	2	0
45	41	-4
78	77	-1
7	6	-1
24	21	-3
22	22	0

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	19	0	2	0.6	A	0.5	A	0.8	A
	Thru	40	0	7	0.4	A				
	Right	63	0	8	0.5	A				
Southbound	Left	58	0	4	1.4	A	1.1	A		
	Thru	21	0	5	0.4	A				
	Right	21	0	5	0.7	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	5.4	A		
	Thru	0	-	-	-	A				
	Right	4	0	36	5.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
19	19	0
40	40	0
62	63	1
60	58	-2
21	21	0
19	21	2
2	0	-2
0	0	0
0	0	0
1	0	-1
0	0	0
5	4	-1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.4	A	0.4	A
	Thru	120	0	0	0.2	A				
	Right	72	0	0	0.5	A				
Southbound	Left	17	0	14	1.6	A	1.3	A		
	Thru	4	0	0	0.0	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
120	120	0
74	72	-2
18	17	-1
4	4	0
0	0	0
0	0	0
0	0	0
1	0	-1
0	0	0
1	0	-1

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	191	0	0	0.2	A	0.3	A	0.3	A
	Right	56	0	0	0.5	A				
Southbound	Left	0	-	-	-	A	0.0	A		
	Thru	4	0	0	0.0	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
195	191	-4
57	56	-1
1	0	-1
4	4	0
0	0	0
0	0	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	1	0	26	26.0	D	13.0	B	1.7	A
	Right	2	0	22	6.5	A				
Eastbound	Left	239	1	59	2.8	A	1.9	A		
	Thru	373	0	32	1.4	A				
Westbound	Thru	139	0	0	0.5	A	0.5	A		
	Right	9	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	1	-1
2	2	0
243	239	-4
388	373	-15
141	139	-2
9	9	0

American Blvd & Metro Drive E

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	6	1	40	16.8	C	10.6	B	1.1	A
	Right	8	1	46	5.9	A				
Eastbound	Left	68	1	39	3.7	A	1.6	A		
	Thru	141	0	0	0.6	A				
Westbound	Thru	431	0	0	0.5	A	0.6	A		
	Right	81	0	18	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	6	-1
9	8	-1
65	68	3
145	141	-4
434	431	-3
83	81	-2

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	1.2	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	4	0	32	15.1	C	10.1	B		
	Thru	0	-	-	-	A				
	Right	5	0	51	6.1	A				
Eastbound	Left	66	1	32	3.5	A	0.9	A		
	Thru	233	0	0	0.2	A				
	Right	76	0	0	0.8	A				
Westbound	Left	50	1	38	4.3	A	1.4	A		
	Thru	142	0	3	0.2	A				
	Right	122	0	3	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
1	0	-1
4	4	0
0	0	0
7	5	-2
66	66	0
242	233	-9
82	76	-6
47	50	3
143	142	-1
123	122	-1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	24	2	52	11.3	B	8.6	A	2.2	A
	Thru	2	1	53	12.0	B				
	Right	25	1	46	5.7	A				
Southbound	Left	32	4	54	23.7	C	13.9	B		
	Thru	3	3	53	14.9	B				
	Right	24	0	7	0.7	A				
Eastbound	Left	27	1	35	6.4	A	1.4	A		
	Thru	110	0	0	0.2	A				
	Right	12	0	0	0.4	A				
Westbound	Left	53	0	21	4.2	A	0.9	A		
	Thru	465	0	0	0.4	A				
	Right	169	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
27	24	-3
2	2	0
22	25	3
32	32	0
2	3	1
24	24	0
25	27	2
116	110	-6
11	12	1
55	53	-2
466	465	-1
168	169	1

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	5.3	A	1.0	A
	Thru	0	-	-	-	A				
	Right	4	0	46	5.3	A				
Southbound	Left	21	1	47	10.3	B	5.6	A		
	Thru	0	-	-	-	A				
	Right	20	0	11	0.8	A				
Eastbound	Left	16	0	13	1.9	A	0.2	A		
	Thru	207	0	0	0.0	A				
	Right	13	0	0	0.4	A				
Westbound	Left	9	0	8	2.8	A	1.0	A		
	Thru	290	0	0	0.8	A				
	Right	43	0	2	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
4	4	0
21	21	0
1	0	-1
23	20	-3
17	16	-1
215	207	-8
15	13	-2
7	9	2
288	290	2
44	43	-1

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	61	16	73	37.6	D	22.3	C	24.9	C
	Thru	62	16	73	78.0	E				
	Right	211	0	0	1.6	A				
Southbound	Left	179	27	111	37.8	D	21.8	C		
	Thru	35	26	110	46.7	D				
	Right	179	0	0	0.9	A				
Eastbound	Left	431	11	114	23.5	C	25.0	C		
	Right	401	38	176	26.6	C				
Westbound	Left	928	31	223	27.5	C	26.3	C		
	Right	370	30	147	23.3	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
60	61	1
64	62	-2
225	211	-14
178	179	1
37	35	-2
183	179	-4
442	431	-11
396	401	5
932	928	-4
374	370	-4

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	9	1	24	22.3	C	14.1	B	16.0	B
	Thru	137	9	84	17.4	B				
	Right	42	0	5	1.5	A				
Southbound	Left	317	36	151	33.3	C	14.5	B		
	Thru	383	15	120	13.6	B				
	Right	662	0	50	6.0	A				
Eastbound	Left	125	22	119	35.1	D	32.7	C		
	Thru	31	5	40	32.4	C				
	Right	9	0	1	0.5	A				
Westbound	Left	8	2	20	46.1	D	12.4	B		
	Thru	18	3	32	46.4	D				
	Right	75	0	6	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	9	1
144	137	-7
42	42	0
323	317	-6
379	383	4
663	662	-1
130	125	-5
31	31	0
9	9	0
6	8	2
18	18	0
79	75	-4

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	180	2	57	3.6	A	3.5	A	6.3	A
	Right	50	1	38	3.2	A				
Southbound	Left	62	4	68	13.8	B	7.7	A		
	Thru	337	6	89	6.6	A				
Westbound	Left	6	1	20	20.8	C	12.2	B		
	Right	7	0	41	4.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
186	180	-6
54	50	-4
62	62	0
332	337	5
7	6	-1
8	7	-1

Note: Results are the average of ten (10) simulation runs

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	32	4	55	23.2	C	14.5	B	1.0	A
	Right	20	0	4	0.6	A				
Eastbound	Thru	729	0	1	0.4	A	0.5	A		
	Right	40	0	0	0.8	A				
Westbound	Left	11	0	19	7.1	A	0.5	A		
	Thru	552	0	0	0.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
32	32	0
19	20	1
736	729	-7
40	40	0
10	11	1
566	552	-14

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	378	0	0	0.4	A	0.7	A	0.7	A
	-	289	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
383	378	-5
286	289	3

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.1	A	3.1	A
	Right	21	1	71	7.1	A				
Eastbound	Left	42	0	24	3.4	A	1.3	A		
	Thru	230	0	0	0.9	A				
Westbound	Thru	232	0	0	4.8	A	4.8	A		
	Right	5	0	0	3.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
22	21	-1
42	42	0
232	230	-2
240	232	-8
5	5	0

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	525	0	0	0.2	A	0.2	A	1.9	A
	Thru	791	0	18	0.5	A				
Southbound	Right	241	0	18	1.1	A	0.7	A		
	Left	45	4	52	23.2	C				
Eastbound	Left	45	4	52	23.2	C	7.2	A		
	Right	351	0	1	5.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
525	525	0
805	791	-14
252	241	-11
45	45	0
353	351	-2

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	93	9	58	25.1	C	17.9	B	8.3	A
	Thru	5	1	17	27.1	C				
	Right	47	0	0	2.6	A				
Southbound	Left	33	5	89	25.5	C	20.5	C		
	Thru	8	5	89	32.8	C				
	Right	18	0	9	5.9	A				
Eastbound	Left	24	3	33	31.3	C	6.1	A		
	Thru	493	9	104	6.9	A				
	Right	232	0	19	1.8	A				
Westbound	Left	51	7	46	28.1	C	7.5	A		
	Thru	452	5	77	5.4	A				
	Right	28	4	102	4.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
89	93	4
6	5	-1
50	47	-3
34	33	-1
9	8	-1
18	18	0
23	24	1
504	493	-11
228	232	4
53	51	-2
469	452	-17
28	28	0

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	379	57	261	30.6	C	26.8	C	24.5	C
	Thru	46	3	50	16.8	B				
	Right	46	1	55	5.6	A				
Southbound	Left	20	1	30	12.4	B	24.8	C		
	Thru	87	15	98	34.7	C				
	Right	184	20	132	21.4	C				
Eastbound	Left	108	17	76	37.0	D	19.6	B		
	Thru	138	16	92	26.4	C				
	Right	247	34	131	8.1	A				
Westbound	Left	89	15	76	38.2	D	28.6	C		
	Thru	221	22	127	26.4	C				
	Right	15	0	44	4.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
386	379	-7
44	46	2
46	46	0
20	20	0
87	87	0
186	184	-2
108	108	0
137	138	1
255	247	-8
93	89	-4
233	221	-12
15	15	0

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	69	8	61	27.6	C	10.1	B	10.5	B
	Right	455	7	157	7.4	A				
Eastbound	Left	380	19	117	15.0	B	9.5	A		
	Thru	287	19	116	2.2	A				
Westbound	Thru	722	25	192	13.0	B	11.5	B		
	Right	102	0	0	0.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
72	69	-3
455	455	0
384	380	-4
285	287	2
722	722	0
108	102	-6

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	333	9	130	9.8	A	6.7	A	8.5	A
	Thru	230	1	40	2.5	A				
	Right	7	1	40	2.0	A				
Southbound	Left	0	-	-	-	A	10.2	B		
	Thru	634	17	170	10.7	B				
	Right	38	0	0	0.5	A				
Eastbound	Left	102	11	68	26.9	C	8.2	A		
	Thru	8	11	68	26.0	C				
	Right	400	0	1	3.1	A				
Westbound	Left	0	-	-	-	A	4.9	A		
	Thru	0	-	-	-	A				
	Right	4	0	38	4.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
340	333	-7
225	230	5
5	7	2
1	0	-1
656	634	-22
40	38	-2
104	102	-2
9	8	-1
400	400	0
1	0	-1
0	0	0
3	4	1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	64	5	53	19.2	B	13.4	B	11.5	B
	Thru	22	2	31	17.6	B				
	Right	52	1	63	4.6	A				
Southbound	Left	20	1	30	13.9	B	17.7	B		
	Thru	26	2	44	20.1	C				
	Right	11	1	29	19.0	B				
Eastbound	Left	5	1	19	20.7	C	8.9	A		
	Thru	100	4	67	11.7	B				
	Right	97	3	85	5.3	A				
Westbound	Left	96	7	58	23.2	C	11.2	B		
	Thru	250	4	66	7.6	A				
	Right	31	0	50	3.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
65	64	-1
25	22	-3
49	52	3
22	20	-2
27	26	-1
11	11	0
6	5	-1
104	100	-4
93	97	4
99	96	-3
265	250	-15
32	31	-1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	127	16	104	27.0	C	20.7	C	14.4	B
	Thru	12	16	103	27.2	C				
	Right	47	0	4	1.9	A				
Southbound	Left	49	8	86	26.8	C	9.6	A		
	Thru	7	8	86	29.6	C				
	Right	231	1	53	5.3	A				
Eastbound	Left	127	12	71	24.3	C	13.4	B		
	Thru	125	6	64	12.5	B				
	Right	104	0	24	1.1	A				
Westbound	Left	67	8	81	26.8	C	15.5	B		
	Thru	468	19	135	15.8	B				
	Right	70	0	23	2.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
127	127	0
12	12	0
47	47	-2
50	49	-1
7	7	0
233	231	-2
126	127	1
129	125	-4
102	104	2
67	67	0
470	468	-2
72	70	-2

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	322	37	170	33.7	C	14.9	B	14.9	B
	Thru	140	17	90	35.7	D				
	Right	752	0	0	2.9	A				
Southbound	Left	64	16	95	46.9	D	29.7	C		
	Thru	33	8	52	52.4	D				
	Right	64	0	0	0.9	A				
Eastbound	Left	19	1	26	10.4	B	2.7	A		
	Right	81	0	0	0.9	A				
Westbound	Left	854	44	286	14.5	B	13.8	B		
	Right	155	10	103	9.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
323	322	-1
141	140	-1
766	752	-14
67	64	-3
32	33	1
64	64	0
20	19	-1
80	81	1
868	854	-14
158	155	-3

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.7	A	1.1	A
	Thru	1,214	0	19	0.7	A				
Southbound	Thru	940	0	7	1.5	A	1.5	A		
	Right	11	0	13	1.1	A				
Eastbound	Left	3	1	14	54.8	D	22.6	C		
	Right	6	0	50	6.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
1,227	1,214	-13
950	940	-10
10	11	1
3	3	0
6	6	0

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	83	16	84	42.0	D	20.7	C	28.1	C
	Thru	529	24	173	19.0	B				
	Right	45	0	7	1.6	A				
Southbound	Left	38	10	49	53.3	D	18.6	B		
	Thru	652	33	164	23.0	C				
	Right	265	0	24	2.9	A				
Eastbound	Left	326	118	395	66.8	E	46.0	D		
	Thru	148	14	84	26.8	C				
	Right	93	0	12	3.5	A				
Westbound	Left	152	34	127	51.6	D	33.6	C		
	Thru	187	44	169	41.0	D				
	Right	357	50	176	22.0	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
88	83	-5
528	529	1
44	45	1
40	38	-2
652	652	0
264	265	1
342	326	-16
150	148	-2
96	93	-3
156	152	-4
198	187	-11
357	357	0

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	51	14	59	64.5	E	16.5	B	14.8	B
	Thru	457	14	161	11.4	B				
	Right	7	0	0	1.6	A				
Southbound	Left	18	3	47	35.2	D	7.2	A		
	Thru	599	13	124	8.1	A				
	Right	277	0	21	3.4	A				
Eastbound	Left	121	24	113	42.2	D	34.7	C		
	Thru	19	4	35	40.7	D				
	Right	30	0	3	0.7	A				
Westbound	Left	17	6	56	60.6	E	32.8	C		
	Thru	54	16	89	58.5	E				
	Right	71	0	12	6.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
50	51	1
464	457	-7
7	7	0
19	18	-1
598	599	1
287	277	-10
126	121	-5
17	19	2
32	30	-2
20	17	-3
59	54	-5
70	71	1

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	21	7	41	64.2	E	13.7	B	16.0	B
	Thru	192	5	70	8.6	A				
	Right	8	0	1	1.4	A				
Southbound	Left	8	2	25	41.0	D	3.3	A		
	Thru	413	3	78	3.1	A				
	Right	228	0	12	2.3	A				
Eastbound	Left	283	49	228	44.3	D	39.6	D		
	Thru	4	1	12	44.7	D				
	Right	38	0	2	4.2	A				
Westbound	Left	35	13	77	54.0	D	29.2	C		
	Thru	6	2	20	66.4	E				
	Right	39	0	2	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
19	21	2
191	192	1
8	8	0
8	8	0
408	413	5
234	228	-6
291	283	-8
5	4	-1
36	38	2
36	35	-1
6	6	0
39	39	0

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	185	1	38	1.8	A	1.8	A	5.3	A
Southbound	Thru	429	1	61	2.8	A	4.3	A		
	Right	51	1	55	17.2	B				
Eastbound	Left	35	7	72	36.0	D	20.9	C		
	Right	37	0	16	6.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
183	185	2
430	429	-1
50	51	1
35	35	0
37	37	0

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	70	23	92	76.7	E	26.1	C	29.8	C
	Thru	100	11	64	30.9	C				
	Right	170	0	0	2.4	A				
Southbound	Left	7	2	20	55.4	E	19.1	B		
	Thru	198	23	190	26.5	C				
	Right	264	19	207	12.6	B				
Eastbound	Left	75	27	99	87.2	F	40.3	D		
	Thru	54	10	59	41.9	D				
	Right	92	0	0	1.1	A				
Westbound	Left	400	56	213	40.2	D	35.5	D		
	Thru	275	26	129	29.7	C				
	Right	12	1	15	10.6	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
70	70	0
98	100	2
167	170	3
7	7	0
199	198	-1
261	264	3
75	75	0
61	54	-7
92	92	0
418	400	-18
278	275	-3
10	12	2

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	38	4	63	12.6	B	5.7	A	7.6	A
	Thru	257	4	64	4.7	A				
	Right	4	7	91	2.9	A				
Southbound	Left	11	5	114	7.3	A	6.2	A		
	Thru	552	6	115	5.8	A				
	Right	195	10	146	7.3	A				
Eastbound	Left	110	9	107	20.6	C	17.2	B		
	Thru	7	9	102	16.2	B				
	Right	47	10	132	9.2	A				
Westbound	Left	27	2	43	13.6	B	9.2	A		
	Thru	9	2	43	12.6	B				
	Right	19	0	8	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	38	0
254	257	3
5	4	-1
11	11	0
566	552	-14
202	195	-7
112	110	-2
7	7	0
48	47	-1
28	27	-1
10	9	-1
19	19	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	25	3	40	22.4	C	11.4	B	2.6	A
	Thru	0	-	-	-	A				
	Right	26	0	0	0.7	A				
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	2.8	A		
	Thru	220	1	58	2.9	A				
	Right	14	0	3	0.9	A				
Westbound	Left	41	2	41	14.1	B	1.9	A		
	Thru	639	1	52	1.1	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
23	25	2
0	0	0
28	26	-2
0	0	0
0	0	0
1	0	-1
0	0	0
220	220	0
14	14	0
41	41	0
647	639	-8
1	0	-1

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	0	3	2.6	A	1.6	A	3.7	A
	Thru	25	0	3	1.4	A				
	Right	0	-	-	-	A				
Southbound	Left	0	-	-	-	A	1.3	A		
	Thru	39	0	3	1.5	A				
	Right	17	0	4	1.0	A				
Eastbound	Left	13	0	9	2.5	A	4.6	A		
	Thru	14	0	9	8.7	A				
	Right	9	0	9	1.2	A				
Westbound	Left	16	0	7	6.0	A	6.2	A		
	Thru	39	0	7	7.0	A				
	Right	12	0	0	3.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
3	4	1
24	25	1
1	0	-1
0	0	0
37	39	2
13	17	4
14	13	-1
14	14	0
10	9	-1
15	16	1
43	39	-4
13	12	-1

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	23	3	51	22.4	C	15.3	B	18.8	B
	Thru	19	1	20	12.0	B				
	Right	8	0	26	2.8	A				
Southbound	Left	4	0	11	17.3	B	21.5	C		
	Thru	55	5	45	23.3	C				
	Right	6	9	62	7.2	A				
Eastbound	Left	4	1	13	31.8	C	20.2	C		
	Thru	0	-	-	-	A				
	Right	4	0	4	8.6	A				
Westbound	Left	40	4	44	19.8	B	18.7	B		
	Thru	16	2	33	16.1	B				
	Right	7	2	33	18.6	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
21	23	2
21	19	-2
8	8	0
4	4	0
53	55	2
5	6	1
5	4	-1
0	0	0
4	4	0
41	40	-1
15	16	1
7	7	0

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



E Old Shakopee Rd & 28th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	16	2	49	23.6	C	4.8	A	1.4	A
	Right	91	0	0	1.5	A				
Eastbound	Left	56	1	39	4.5	A	1.3	A		
	Thru	175	0	0	0.2	A				
Westbound	Thru	599	0	0	0.8	A	0.8	A		
	Right	9	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
14	16	2
94	91	-3
57	56	-1
178	175	-3
612	599	-13
8	9	1

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	18	9	94	20.0	C	11.3	B	2.3	A
	Right	145	12	109	10.2	B				
Eastbound	Left	54	1	44	4.8	A	1.1	A		
	Thru	194	0	0	0.1	A				
Westbound	Thru	535	0	0	0.2	A	0.2	A		
	Right	10	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
18	18	0
146	145	-1
55	54	-1
193	194	1
543	535	-8
10	10	0

American Blvd & 30th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	176	13	100	21.0	C	17.6	C	6.5	A
	Right	101	1	53	11.6	B				
Eastbound	Thru	204	0	4	0.3	A	0.3	A		
	Right	8	0	0	0.3	A				
Westbound	Left	22	0	15	6.2	A	2.1	A		
	Thru	370	0	0	1.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
176	176	1
102	101	-1
205	204	-1
6	8	2
22	22	0
378	370	-8

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	15	0	4	8.2	A	8.0	A	9.5	A
	Thru	88	5	64	8.0	A				
Southbound	Thru	47	2	34	12.5	B	9.9	A		
	Right	29	0	40	5.7	A				
Eastbound	Left	15	1	41	16.5	B	15.6	B		
	Right	4	0	18	12.0	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
17	15	-2
87	88	1
44	47	3
29	29	0
15	15	0
5	4	-1

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.5	A	5.2	A
	Thru	34	0	3	0.5	A				
	Right	0	-	-	-	A				
Southbound	Left	4	0	2	0.7	A	0.3	A		
	Thru	43	0	6	0.3	A				
	Right	5	0	6	0.5	A				
Eastbound	Left	25	3	69	9.0	A	7.4	A		
	Thru	0	-	-	-	A				
	Right	77	3	71	6.9	A				
Westbound	Left	46	3	60	8.1	A	7.1	A		
	Thru	0	-	-	-	A				
	Right	46	3	63	6.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
33	34	1
0	0	0
4	4	0
41	43	2
4	5	1
24	25	1
1	0	-1
78	77	-1
46	46	0
0	0	0
47	46	-1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.1	A	2.2	A
	Thru	13	0	0	0.1	A				
	Right	0	-	-	-	A				
Southbound	Left	3	0	0	0.5	A	0.2	A		
	Thru	164	0	0	0.2	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	45	3	61	8.2	A	7.7	A		
	Thru	0	-	-	-	A				
	Right	22	3	75	6.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
11	13	2
0	0	0
2	3	1
163	164	1
0	0	0
1	0	-1
0	0	0
1	0	-1
46	45	-1
0	0	0
22	22	0

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	8	0	0	0.1	A	0.1	A	1.4	A
	Right	0	-	-	-	A				
Southbound	Left	0	-	-	-	A	0.5	A		
	Thru	208	0	0	0.5	A				
Eastbound	Left	26	1	47	8.1	A	7.7	A		
	Right	4	1	55	5.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	8	0
0	0	0
0	0	0
210	208	-2
26	26	0
3	4	1

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	22	2	53	16.2	C	9.7	A	3.3	A
	Right	211	15	119	9.1	A				
Eastbound	Left	0	-	-	-	A	0.6	A		
	Thru	187	0	0	0.6	A				
Westbound	Thru	397	0	0	0.9	A	0.8	A		
	Right	8	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
23	22	-1
213	211	-2
1	0	-1
191	187	-4
407	397	-10
7	8	1

American Blvd & Metro Drive E

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	90	18	118	20.3	C	17.6	C	5.3	A
	Right	76	19	125	14.5	B				
Eastbound	Left	14	0	9	2.5	A	2.9	A		
	Thru	349	1	17	2.9	A				
Westbound	Thru	237	0	0	0.6	A	0.6	A		
	Right	17	0	1	0.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
90	90	0
77	76	-1
12	14	2
355	349	-6
242	237	-5
16	17	1

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	88	5	74	12.7	B	10.3	B	4.1	A
	Thru	0	-	-	-	A				
	Right	56	2	55	6.5	A				
Southbound	Left	85	6	76	12.5	B	9.9	A		
	Thru	0	-	-	-	A				
	Right	76	4	77	7.0	A				
Eastbound	Left	13	0	12	2.3	A	0.3	A		
	Thru	193	0	0	0.1	A				
	Right	4	0	0	0.8	A				
Westbound	Left	0	-	-	-	A	0.2	A		
	Thru	243	0	0	0.1	A				
	Right	15	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
89	88	-1
1	0	-1
55	56	1
83	85	2
0	0	0
78	76	-2
13	13	0
198	193	-5
3	4	1
0	0	0
247	243	-4
14	15	1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	15	2	47	26.8	D	17.5	C	9.7	A
	Thru	0	-	-	-	A				
	Right	57	6	72	15.0	C				
Southbound	Left	99	18	95	35.6	E	19.8	C		
	Thru	0	-	-	-	A				
	Right	82	0	5	0.7	A				
Eastbound	Left	9	0	7	3.0	A	8.5	A		
	Thru	414	10	34	8.7	A				
	Right	14	11	38	4.6	A				
Westbound	Left	20	2	29	17.9	C	1.9	A		
	Thru	156	0	0	0.4	A				
	Right	65	0	0	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
15	15	0
0	0	0
58	57	-1
102	99	-3
0	0	0
81	82	1
11	9	-2
421	414	-7
13	14	1
19	20	1
162	156	-6
65	65	0

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	0	41	9.8	A	7.7	A	1.1	A
	Thru	0	-	-	-	A				
	Right	4	0	47	5.6	A				
Southbound	Left	42	2	60	10.0	A	7.0	A		
	Thru	0	-	-	-	A				
	Right	20	0	7	0.6	A				
Eastbound	Left	8	0	4	1.7	A	0.1	A		
	Thru	312	0	0	0.1	A				
	Right	14	0	0	0.4	A				
Westbound	Left	6	0	6	2.8	A	0.7	A		
	Thru	233	0	0	0.6	A				
	Right	19	0	2	1.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	4	-1
0	0	0
5	4	-1
41	42	1
0	0	0
22	20	-2
8	8	0
315	312	-3
13	14	1
5	6	1
234	233	-1
21	19	-2

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	251	30	138	34.0	C	16.2	B	17.4	B
	Thru	127	30	139	64.2	E				
	Right	877	0	0	4.2	A				
Southbound	Left	470	46	214	30.3	C	15.2	B		
	Thru	26	46	213	28.0	C				
	Right	563	0	0	2.0	A				
Eastbound	Left	249	8	79	22.6	C	21.6	C		
	Right	91	7	61	18.9	B				
Westbound	Left	352	13	107	23.4	C	21.3	C		
	Right	257	18	107	18.3	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
250	251	1
131	127	-4
894	877	-17
475	470	-5
28	26	-2
564	563	-1
256	249	-7
89	91	2
354	352	-2
256	257	1

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	1	14	42.5	D	30.2	C	29.0	C
	Thru	374	51	260	30.9	C				
	Right	20	0	2	13.5	B				
Southbound	Left	123	25	107	50.0	D	27.1	C		
	Thru	159	21	101	37.3	D				
	Right	189	0	13	3.5	A				
Eastbound	Left	515	115	452	44.3	D	42.7	D		
	Thru	40	6	45	34.4	C				
	Right	11	0	0	0.5	A				
Westbound	Left	40	13	83	52.6	D	12.2	B		
	Thru	49	12	63	54.3	D				
	Right	349	0	22	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	4	-1
382	374	-8
20	20	0
121	123	2
160	159	-1
190	189	-1
528	515	-13
43	40	-3
10	11	1
40	40	0
51	49	-2
350	349	-1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	376	5	79	5.6	A	5.6	A	8.2	A
	Right	11	2	65	5.4	A				
Southbound	Left	15	1	32	17.9	B	9.2	A		
	Thru	194	5	74	8.5	A				
Westbound	Left	65	6	71	20.8	C	16.4	B		
	Right	26	1	57	5.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
381	376	-5
10	11	1
15	15	0
195	194	-1
65	65	0
26	26	0

Note: Results are the average of ten (10) simulation runs

2016 VISSIM Model: Existing
 South Loop Traffic Study
 Arterial MOEs (SAT Peak Hour)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	58	5	69	14.3	B	7.7	A	1.3	A
	Right	54	0	6	0.6	A				
Eastbound	Thru	351	0	0	0.2	A	0.3	A		
	Right	54	0	0	0.7	A				
Westbound	Left	18	0	20	3.0	A	0.4	A		
	Thru	319	0	0	0.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
61	58	-3
52	54	2
352	351	-1
55	54	-1
17	18	1
326	319	-7

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	496	0	0	0.8	A	1.1	A	1.1	A
	-	549	0	0	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
500	496	-4
548	549	1

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	6.4	A	1.8	A
	Right	20	1	71	6.4	A				
Eastbound	Left	31	0	20	2.5	A	1.0	A		
	Thru	129	0	0	0.7	A				
Westbound	Thru	127	0	0	1.9	A	2.1	A		
	Right	13	0	0	3.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
21	20	-1
31	31	0
128	129	1
131	127	-4
13	13	0

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	344	0	0	0.1	A	0.1	A	2.2	A
	Thru	401	0	1	0.2	A				
Southbound	Right	69	0	1	0.5	A	0.2	A		
	Left	67	4	53	15.9	C				
Eastbound	Left	67	4	53	15.9	C	6.9	A		
	Right	286	0	2	4.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
343	344	1
404	401	-3
70	69	-1
70	67	-3
286	286	0

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	119	24	92	52.3	D	27.8	C	17.3	B
	Thru	10	3	34	51.7	D				
	Right	127	0	3	2.9	A				
Southbound	Left	13	5	78	58.7	E	45.0	D		
	Thru	5	5	78	72.7	E				
	Right	8	0	2	5.4	A				
Eastbound	Left	14	4	25	73.3	E	14.4	B		
	Thru	247	15	95	18.7	B				
	Right	145	0	25	1.4	A				
Westbound	Left	141	15	90	25.7	C	11.3	B		
	Thru	210	1	41	2.4	A				
	Right	17	0	24	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
118	119	1
9	10	1
129	127	-2
13	13	0
5	5	0
8	8	0
13	14	1
250	247	-3
141	145	4
146	141	-5
217	210	-7
16	17	1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour)**



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	619	182	549	51.3	D	41.0	D	36.6	D
	Thru	107	11	99	23.1	C				
	Right	136	3	68	8.4	A				
Southbound	Left	87	6	72	18.3	B	41.0	D		
	Thru	188	61	270	57.4	E				
	Right	479	105	508	38.6	D				
Eastbound	Left	247	40	140	45.9	D	27.2	C		
	Thru	208	36	149	40.2	D				
	Right	531	65	188	13.5	B				
Westbound	Left	149	31	115	52.4	D	43.0	D		
	Thru	144	31	144	48.6	D				
	Right	59	2	66	5.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
632	619	-13
106	107	1
133	136	3
87	87	0
187	188	1
483	479	-4
233	247	14
209	208	-1
549	531	-18
154	149	-5
142	144	2
58	59	1

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	94	26	158	61.5	E	28.1	C	21.8	C
	Right	697	103	625	23.6	C				
Eastbound	Left	567	82	256	41.1	D	25.2	C		
	Thru	473	82	255	6.1	A				
Westbound	Thru	830	33	228	15.5	B	13.2	B		
	Right	164	0	0	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	94	1
701	697	-4
577	567	-10
471	473	2
833	830	-3
171	164	-7

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	245	3	73	4.7	A	3.7	A	5.3	A
	Thru	162	1	35	2.4	A				
	Right	6	1	36	2.3	A				
Southbound	Left	3	0	4	4.8	A	5.6	A		
	Thru	194	4	58	6.8	A				
	Right	41	0	0	0.1	A				
Eastbound	Left	84	7	58	20.9	C	6.8	A		
	Thru	0	-	-	-	A				
	Right	277	0	0	2.5	A				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
249	245	-4
159	162	3
5	6	1
3	3	0
199	194	-5
45	41	-4
87	84	-3
0	0	0
274	277	3
1	0	-1
1	0	-1
1	0	-1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	108	24	93	54.7	D	32.7	C	26.6	C
	Thru	45	12	76	47.7	D				
	Right	114	4	83	6.0	A				
Southbound	Left	45	10	69	40.8	D	41.1	D		
	Thru	38	10	67	49.9	D				
	Right	43	7	54	33.5	C				
Eastbound	Left	25	5	43	39.8	D	9.6	A		
	Thru	221	9	82	10.7	B				
	Right	185	3	69	4.3	A				
Westbound	Left	193	46	135	74.3	E	35.0	C		
	Thru	203	5	60	8.7	A				
	Right	69	0	49	2.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
108	108	0
46	45	-1
116	114	-2
47	45	-2
38	38	0
42	43	1
22	25	3
223	221	-2
184	185	1
198	193	-5
204	203	-1
71	69	-2

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour)**



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	121	44	198	61.6	E	41.9	D	35.6	D
	Thru	4	43	196	56.9	E				
	Right	81	0	6	11.6	B				
Southbound	Left	228	181	727	58.8	E	44.0	D		
	Thru	6	175	707	72.9	E				
	Right	609	36	445	38.1	D				
Eastbound	Left	276	48	171	48.8	D	28.4	C		
	Thru	152	10	80	16.1	B				
	Right	139	0	17	1.2	A				
Westbound	Left	49	15	87	56.4	E	25.1	C		
	Thru	268	20	130	26.2	C				
	Right	91	2	60	5.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
122	121	-1
4	4	0
84	81	-3
229	228	-1
6	6	0
615	609	-6
274	276	2
153	152	-1
137	139	2
51	49	-2
267	268	1
90	91	1

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	270	17	137	19.0	B	9.8	A	18.0	B
	Thru	78	5	55	17.1	B				
	Right	688	0	0	5.4	A				
Southbound	Left	43	14	78	56.9	E	40.4	D		
	Thru	35	10	59	59.8	E				
	Right	35	0	0	0.8	A				
Eastbound	Left	19	2	28	19.9	B	2.7	A		
	Right	222	0	0	1.2	A				
Westbound	Left	910	104	449	29.0	C	28.2	C		
	Right	35	2	76	7.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
273	270	-3
81	78	-3
715	688	-27
47	43	-4
33	35	2
36	35	-1
18	19	1
225	222	-3
918	910	-8
38	35	-3

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	1.4	A	1.7	A
	Thru	1,037	0	13	1.4	A				
Southbound	Thru	1,133	0	16	1.7	A	1.7	A		
	Right	16	0	36	1.2	A				
Eastbound	Left	1	1	18	52.2	D	10.4	B		
	Right	16	1	58	7.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
1,066	1,037	-29
1,140	1,133	-7
16	16	0
3	1	-2
17	16	-1

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	99	25	96	61.3	E	28.0	C	26.9	C
	Thru	763	48	276	25.4	C				
	Right	50	0	14	1.8	A				
Southbound	Left	40	15	68	74.2	E	17.5	B		
	Thru	894	35	239	18.4	B				
	Right	216	0	28	3.5	A				
Eastbound	Left	225	82	287	70.8	E	46.7	D		
	Thru	62	8	64	30.4	C				
	Right	101	0	12	2.8	A				
Westbound	Left	57	15	72	54.5	D	39.1	D		
	Thru	54	11	63	46.0	D				
	Right	51	15	70	14.5	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
105	99	-6
780	763	-17
49	50	1
42	40	-2
895	894	-1
220	216	-4
233	225	-8
59	62	3
100	101	1
65	57	-8
54	54	0
53	51	-2

2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	79	16	81	52.3	D	10.5	B	16.2	B
	Thru	634	9	161	5.6	A				
	Right	17	0	3	1.1	A				
Southbound	Left	16	3	41	39.8	D	13.4	B		
	Thru	652	42	291	17.9	B				
	Right	379	0	45	4.7	A				
Eastbound	Left	252	50	188	47.0	D	33.0	C		
	Thru	13	3	32	44.5	D				
	Right	115	0	13	1.1	A				
Westbound	Left	8	4	48	72.0	E	31.7	C		
	Thru	10	3	26	72.5	E				
	Right	29	0	4	6.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
76	79	3
650	634	-16
18	17	-1
19	16	-3
653	652	-1
388	379	-9
254	252	-2
14	13	-1
118	115	-3
9	8	-1
9	10	1
30	29	-1

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	130	25	114	51.3	D	22.1	C	22.4	C
	Thru	313	8	102	10.2	B				
	Right	4	0	1	1.2	A				
Southbound	Left	4	1	10	48.7	D	8.4	A		
	Thru	310	12	144	11.8	B				
	Right	461	1	73	5.7	A				
Eastbound	Left	410	93	403	52.8	D	41.8	D		
	Thru	4	1	14	37.8	D				
	Right	139	0	15	9.5	A				
Westbound	Left	12	5	48	58.0	E	35.5	D		
	Thru	4	1	18	69.5	E				
	Right	12	0	1	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
137	130	-7
314	313	-1
5	4	-1
4	4	0
308	310	2
468	461	-7
418	410	-8
4	4	0
135	139	4
14	12	-2
5	4	-1
12	12	0

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	409	1	64	2.0	A	2.0	A	4.7	A
Southbound	Thru	389	1	74	3.6	A	4.9	A		
	Right	65	2	57	12.3	B				
Eastbound	Left	40	7	79	32.5	C	18.4	B		
	Right	38	0	14	3.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
417	409	-8
392	389	-3
65	65	0
39	40	1
40	38	-2

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	92	19	91	47.8	D	29.0	C	27.5	C
	Thru	143	16	82	33.0	C				
	Right	88	0	0	2.9	A				
Southbound	Left	8	1	22	33.8	C	17.2	B		
	Thru	143	20	214	28.3	C				
	Right	285	17	229	11.2	B				
Eastbound	Left	260	50	211	56.9	E	36.9	D		
	Thru	95	7	63	22.5	C				
	Right	107	0	0	1.3	A				
Westbound	Left	51	6	52	26.5	C	23.7	C		
	Thru	32	3	37	23.1	C				
	Right	8	0	8	7.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	92	-1
144	143	-1
91	88	-3
9	8	-1
143	143	0
280	285	5
265	260	-5
94	95	1
107	107	0
61	51	-10
35	32	-3
8	8	0

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour)**



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	31	2	50	6.4	A	3.3	A	5.1	A
	Thru	196	2	50	2.9	A				
	Right	3	4	75	2.0	A				
Southbound	Left	3	2	65	5.5	A	3.8	A		
	Thru	206	2	66	3.4	A				
	Right	115	4	96	4.4	A				
Eastbound	Left	68	4	73	15.6	B	12.5	B		
	Thru	0	-	-	-	A				
	Right	39	4	97	7.1	A				
Westbound	Left	3	0	19	9.3	A	8.2	A		
	Thru	4	0	19	14.3	B				
	Right	4	0	1	1.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
31	31	0
198	196	-2
3	3	0
3	3	0
214	206	-8
119	115	-4
67	68	1
0	0	0
41	39	-2
2	3	1
4	4	0
3	4	1

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	0	16	11.8	B	4.4	A	1.1	A
	Thru	0	-	-	-	A				
	Right	8	0	0	0.7	A				
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	0.8	A		
	Thru	93	0	16	0.8	A				
	Right	4	0	0	0.9	A				
Westbound	Left	12	0	26	9.6	A	1.0	A		
	Thru	126	0	6	0.2	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	4	0
0	0	0
7	8	1
0	0	0
0	0	0
0	0	0
90	93	3
5	4	-1
13	12	-1
133	126	-7
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	3	0	0	2.1	A	1.3	A	4.5	A
	Thru	4	0	0	1.3	A				
	Right	3	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	0.9	A		
	Thru	5	0	0	1.2	A				
	Right	11	0	0	0.8	A				
Eastbound	Left	5	0	0	2.5	A	7.2	A		
	Thru	9	0	0	9.8	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	9.2	A		
	Thru	9	0	0	11.1	B				
	Right	2	0	0	0.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	3	1
3	4	1
2	3	1
0	0	0
6	5	-1
12	11	-1
6	5	-1
10	9	-1
0	0	0
1	0	-1
9	9	0
2	2	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	2	42	31.1	C	20.0	C	18.3	B
	Thru	9	1	10	18.2	B				
	Right	4	0	6	2.2	A				
Southbound	Left	1	0	2	18.1	B	12.0	B		
	Thru	4	0	6	10.5	B				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	13.7	B		
	Thru	4	0	12	11.4	B				
	Right	4	0	3	15.9	B				
Westbound	Left	5	1	19	28.0	C	23.0	C		
	Thru	1	0	8	8.6	A				
	Right	1	0	14	12.1	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	8	1
10	9	-1
3	4	1
3	1	-2
7	4	-3
2	0	-2
1	0	-1
4	4	0
3	4	1
6	5	-1
2	1	-1
1	1	0

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour)**



E Old Shakopee Rd & 28th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	2	0	19	9.5	A	2.9	A	0.5	A
	Right	14	0	0	1.9	A				
Eastbound	Left	31	0	5	1.0	A	0.4	A		
	Thru	158	0	0	0.2	A				
Westbound	Thru	77	0	0	0.5	A	0.5	A		
	Right	2	0	0	0.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	2	0
19	14	-5
33	31	-2
161	158	-3
85	77	-8
2	2	0

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	3	1	43	9.3	A	6.5	A	0.7	A
	Right	17	1	62	6.0	A				
Eastbound	Left	24	0	11	1.1	A	0.3	A		
	Thru	76	0	0	0.0	A				
Westbound	Thru	119	0	0	0.0	A	0.1	A		
	Right	8	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	3	-1
20	17	-3
22	24	2
75	76	1
126	119	-7
7	8	1

American Blvd & 30th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	9	0	35	7.1	A	7.5	A	1.3	A
	Right	10	0	41	7.9	A				
Eastbound	Thru	75	0	0	0.1	A	0.1	A		
	Right	5	0	0	0.3	A				
Westbound	Left	9	0	1	9.1	A	1.1	A		
	Thru	117	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
11	9	-2
10	10	0
75	75	0
4	5	1
9	9	0
122	117	-5

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	5	0	0	6.8	A	7.3	A	9.5	A
	Thru	8	1	19	7.6	A				
Southbound	Thru	1	0	3	1.0	A	3.0	A		
	Right	6	0	24	3.4	A				
Eastbound	Left	18	1	38	13.3	B	13.0	B		
	Right	3	0	9	11.1	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
6	5	-1
7	8	1
2	1	-1
6	6	0
19	18	-1
3	3	0

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	2	0	1	0.3	A	0.3	A	2.9	A
	Thru	6	0	1	0.3	A				
	Right	1	0	0	0.2	A				
Southbound	Left	0	-	-	-	A	0.3	A		
	Thru	3	0	0	0.1	A				
	Right	3	0	0	0.4	A				
Eastbound	Left	4	0	40	6.2	A	5.8	A		
	Thru	0	-	-	-	A				
	Right	4	0	43	5.4	A				
Westbound	Left	3	0	33	5.8	A	5.3	A		
	Thru	0	-	-	-	A				
	Right	4	0	36	4.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
3	2	-1
7	6	-1
1	1	0
0	0	0
3	3	0
2	3	1
3	4	1
0	0	0
6	4	-2
3	3	0
0	0	0
3	4	1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour)**



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.0	A	0.1	A
	Thru	10	0	0	0.0	A				
	Right	0	-	-	-	A				
Southbound	Left	0	-	-	-	A	0.1	A		
	Thru	9	0	0	0.1	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
10	10	0
0	0	0
0	0	0
12	9	-3
0	0	0
0	0	0
0	0	0
0	0	0
0	0	0
1	0	-1

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	10	0	0	0.1	A	0.1	A	0.1	A
	Right	0	-	-	-	A				
Southbound	Left	0	-	-	-	A	0.0	A		
	Thru	9	0	0	0.0	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
10	10	0
0	0	0
0	0	0
12	9	-3
0	0	0
0	0	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	4	0	29	7.4	A	6.6	A	0.8	A
	Right	5	0	57	6.0	A				
Eastbound	Left	6	0	1	0.9	A	0.6	A		
	Thru	155	0	0	0.6	A				
Westbound	Thru	74	0	0	0.4	A	0.4	A		
	Right	4	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	4	0
8	5	-3
6	6	0
157	155	-2
79	74	-5
4	4	0

American Blvd & Metro Drive E

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	0.8	A
	Right	0	-	-	-	A				
Eastbound	Left	3	0	3	1.1	A	0.9	A		
	Thru	83	0	0	0.9	A				
Westbound	Thru	126	0	0	0.7	A	0.7	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
2	0	-2
3	3	0
82	83	1
127	126	-1
0	0	0

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	0.4	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	7	0	51	7.6	A	6.8	A		
	Thru	0	-	-	-	A				
	Right	5	0	54	5.5	A				
Eastbound	Left	7	0	2	0.7	A	0.1	A		
	Thru	152	0	0	0.1	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.0	A		
	Thru	74	0	0	0.0	A				
	Right	4	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
0	0	0
6	7	1
0	0	0
6	5	-1
6	7	1
154	152	-2
1	0	-1
0	0	0
75	74	-1
3	4	1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour)**



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	0	41	8.4	A	6.7	A	2.0	A
	Thru	0	-	-	-	A				
	Right	17	1	49	5.9	A				
Southbound	Left	35	1	49	9.3	A	6.1	A		
	Thru	0	-	-	-	A				
	Right	20	0	2	0.4	A				
Eastbound	Left	4	0	2	1.1	A	0.3	A		
	Thru	69	0	0	0.3	A				
	Right	11	0	0	0.4	A				
Westbound	Left	9	0	3	3.4	A	0.6	A		
	Thru	98	0	0	0.4	A				
	Right	28	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
10	8	-2
0	0	0
18	17	-1
34	35	1
0	0	0
21	20	-1
3	4	1
70	69	-1
9	11	2
9	9	0
96	98	2
28	28	0

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	0.8	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	21	1	44	7.6	A	6.5	A		
	Thru	0	-	-	-	A				
	Right	4	0	0	0.3	A				
Eastbound	Left	7	0	2	0.7	A	0.1	A		
	Thru	151	0	0	0.0	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.5	A		
	Thru	73	0	0	0.4	A				
	Right	9	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
0	0	0
21	21	0
0	0	0
6	4	-2
7	7	0
153	151	-2
0	0	0
0	0	0
72	73	1
11	9	-2

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	125	15	73	35.7	D	16.9	B	17.5	B
	Thru	10	15	73	67.0	E				
	Right	185	0	0	1.4	A				
Southbound	Left	255	29	143	30.0	C	14.2	B		
	Thru	64	29	142	30.4	C				
	Right	398	0	0	1.5	A				
Eastbound	Left	363	9	93	23.1	C	22.5	C		
	Right	127	11	75	20.7	C				
Westbound	Left	125	4	62	20.8	C	18.0	B		
	Right	218	14	93	16.3	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
120	125	5
10	10	0
194	185	-9
256	255	-1
61	64	3
405	398	-7
369	363	-6
122	127	5
122	125	3
219	218	-1

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	0	10	21.8	C	12.8	B	19.1	B
	Thru	138	8	76	15.1	B				
	Right	29	0	3	0.8	A				
Southbound	Left	131	19	93	32.8	C	20.4	C		
	Thru	72	7	43	24.3	C				
	Right	108	0	7	2.9	A				
Eastbound	Left	97	17	101	32.7	C	31.1	C		
	Thru	19	3	33	29.4	C				
	Right	4	0	0	0.4	A				
Westbound	Left	12	3	33	41.2	D	12.9	B		
	Thru	23	4	38	43.6	D				
	Right	86	0	11	0.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
3	4	1
142	138	-4
29	29	0
125	131	6
74	72	-2
106	108	2
99	97	-2
20	19	-1
3	4	1
11	12	1
24	23	-1
87	86	-1

**2016 VISSIM Model: Existing
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour)**



34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	167	0	23	0.9	A	1.0	A	3.5	A
	Right	4	0	4	1.6	A				
Southbound	Left	8	0	20	11.0	B	8.1	A		
	Thru	81	2	40	7.8	A				
Westbound	Left	1	0	7	30.5	C	9.0	A		
	Right	5	0	35	4.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
169	167	-2
5	4	-1
7	8	1
81	81	0
2	1	-1
5	5	0

Note: Results are the average of ten (10) simulation runs

Appendix E
Existing Development ITE Comparison and Reductions

Existing Reduction Percentages

		A.M. In Veh.	A.M. Out Veh.	P.M. In Veh.	P.M. Out Veh.	Peak Sat In Veh	Peak Sat Out Veh
TAZ	472D	15%	70%	80%	25%	85%	75%
TAZ	472B/472C	60%	45%	50%	55%	50%	75%
TAZ	471F/471E	45%	55%	50%	30%	65%	65%
TAZ	473A/473B	70%	65%	55%	65%	75%	80%
TAZ	472E/472G	20%	-10%	-20%	20%	15%	10%
TAZ	473D	0%	0%	0%	0%	0%	0%
TAZ	473C/473D	75%	70%	50%	65%	55%	40%
TAZ	471D	45%	80%	60%	55%	100%	95%
TAZ	471B	70%	85%	65%	75%	35%	-30%

Appendix F
Unique Land Use Trip Generation Assumptions

Appendix F – Unique Planned Land Uses Trip Generation Assumptions

Hotel/Retail/Restaurant in 473A

- Trip Generation, reductions, and methodology is consistent with *Bass Pro Shops Development Traffic Study*, August, 2014.
 - ITE code 820 was used to develop trip generation estimates along with information provided by Bass Pro Shops. ITE code 861 (sporting goods superstore) was considered, but limited data was available so it was not used.
 - Restaurant assumed to include a hotel restaurant and a Fishbowl restaurant (includes 300 seats and an 80 seat meeting room).
- A 15% hotel reduction was applied to ITE Trip Generation AM peak hour Volumes. Reduction based on driveway counts and *Spack Consulting's Open Source Trip Generation Data*. Retail assumed not to be open during AM peak hour.

MOA Phase 1C in 473B

- Trip Generation, reductions, and methodology is consistent with *Mall of America Phase 1C Traffic Operations Analysis*, June, 2012.
 - Saturday trip generation estimates were determined using information from ITE Code 710 (General Office) due to insufficient Saturday data for ITE Code 720
 - Trip generation estimates for retail and restaurant land uses are based on the additional square footage being considered as an extension of the current MOA. This results in a multi-use reduction of 23 percent for weekday conditions and 40 percent for Saturday conditions. Retail assumed to be closed during AM peak hour.
 - Saturday trip generation estimates were determined using information from ITE Code 931 (Quality Restaurant) due to insufficient Saturday data for ITE Code 932 (High-Turnover Sit-Down Restaurant). Restaurant assumed to be closed during AM peak hour.

MOA Phase 2B & 2C in 473B

- Trip Generation, reductions, and methodology is consistent with *Mall of America Phase 2B Traffic Operations Analysis*, November, 2015.
 - Shopping Center trip generation estimates were developed using a combination of the existing MOA trip rate and ITE fitted curve rate.
 - A 30 percent multi-use reduction was assumed for weekday conditions and a 50 percent multi-use reduction was assumed for Saturday conditions.

Hotel/Retail in TAZ 473B

- Shopping Center trip generation estimates were developed using a combination of the existing MOA trip rate and ITE fitted curve rate.
- A 30 percent multi-use reduction was assumed for weekday conditions and a 50 percent multi-use reduction was assumed for Saturday conditions.

MOA Transit Station in 473B

- No entrance to MOA at Gate 6 (except emergency vehicles)
- Relocation of Metro bus entrance further north on 24th Avenue
- Relocation of delivery/employee entrance to Killebrew Drive

Proposed Waterpark Hotel in 472F

- A Waterpark Hotel trip rate was developed and used based on WaterPark of America driveway counts.
- Applied a 5 percent light rail reduction

Proposed Banquet Space in 472F

- Weekday Conditions: Frequent conferences (similar to MCC).
 - Estimated capacity is 3,300 people
 - Expected to operate similar to an office (ITE Office Code) – conference start and end near the commuter a.m. and p.m. peak periods.
 - LRT nearby and would be used by some of the local attendees
 - Assumed that the conference would have arrangements/deals with nearby hotels to offer convenient/close options to the conference
 - Applied a 40 percent modal reduction
- Saturday Conditions: Site used as an event space (weddings, parties)
 - Estimated capacity is 8,000 people
 - Multiple events based on the size, staggered start times and end times.
 - Peak event assumed to occur post Saturday peak hour (after 5:00/6:00 p.m. or later depending on the event)
 - Event attendees likely to stay at nearby hotel (less likely to use LRT than the conference attendees)
 - Used the ITE Multiplex Movie Theater Code
 - Applied a 30 percent modal reduction

Entertainment/Theater in 472 F

- Weekday show time assumed to be 7:00 p.m., Saturday afternoon show time assumed to be 1:00 p.m. and 7:00 p.m.
- Vehicle occupancy assumed to be two (2) people per vehicle
- A modal reduction of 15% (LRT, public bus, shuttle, walking, or biking)
- Unique trips during the peak hour were assumed to be 25% on a weekday (4:30 to 5:30 p.m.) and 50% on Saturday (3:00 to 4:00 p.m.)
- Only entering trips are expected during the peak hours analyzed.

28th Avenue Park-and-Ride in 472E

- The Bloomington Central Station Parking Ramp Traffic Study, June 16, 2016, identified that the existing 28th Avenue Park-and-Ride station is currently only 35 percent utilized on a typical day. This existing utilization was used to predict the following future utilization:
 - Assumed ~67% full under 2025
 - Assumed ~100% full by 2040

Local Hotel Trip Generation Data

Thursday - Bloomington Hotel 1 (Fairfield Inn)

	Trips		Rate
	Enter %	Exit %	Trips per Unit
Daily	50%	50%	4.37
AM Generator	28%	72%	0.29
AM Adjacent Street (7-9am)	26%	74%	0.28
PM Generator	73%	27%	0.33
PM Adjacent Street (4-6pm)	27%	54%	0.31

Weekday - Bloomington Hotels

	Trips		Rate
	Enter %	Exit %	Trips per Unit
Daily	50%	50%	4.99
AM Generator	37%	63%	0.31
AM Adjacent Street (7-9am)	32%	68%	0.29
PM Generator	58%	42%	0.45
PM Adjacent Street (4-6pm)	42%	52%	0.42

Thursday - Bloomington Hotel 2 (Hyatt Hotels)

	Trips		Rate
	Enter %	Exit %	Trips per Unit
Daily	53%	47%	4.32
AM Generator	42%	58%	0.25
AM Adjacent Street (7-9am)	28%	72%	0.20
PM Generator	57%	43%	0.33
PM Adjacent Street (4-6pm)	54%	46%	0.28

Thursday - Bloomington Hotel 3 (Embassy Suites)

	Trips		Rate
	Enter %	Exit %	Trips per Unit
Daily	48%	52%	6.28
AM Generator	41%	59%	0.40
AM Adjacent Street (7-9am)	41%	59%	0.40
PM Generator	44%	56%	0.68
PM Adjacent Street (4-6pm)	44%	56%	0.68

Saturday - Bloomington Hotel 1 (Fairfield Inn)

	Trips		Rate
	Enter %	Exit %	Trips per Unit
Daily	50%	50%	4.81
AM Generator	36%	64%	0.33
AM Adjacent Street (7-9am)	26%	74%	0.26
PM Generator	53%	47%	0.44
PM Adjacent Street (4-6pm)	69%	31%	0.39

Saturday - Bloomington Hotels

	Trips		Rate
	Enter %	Exit %	Trips per Unit
Daily	50%	50%	5.42
AM Generator	28%	72%	0.38
AM Adjacent Street (7-9am)	37%	63%	0.27
PM Generator	55%	45%	0.44
PM Adjacent Street (4-6pm)	63%	37%	0.42

Saturday - Bloomington Hotel 2 (Hyatt Hotels)

	Trips		Rate
	Enter %	Exit %	Trips per Unit
Daily	51%	49%	5.89
AM Generator	25%	75%	0.38
AM Adjacent Street (7-9am)	49%	51%	0.29
PM Generator	60%	40%	0.48
PM Adjacent Street (4-6pm)	60%	40%	0.48

Saturday - Bloomington Hotel 3 (Embassy Suites)

	Trips		Rate
	Enter %	Exit %	Trips per Unit
Daily	49%	51%	5.56
AM Generator	24%	76%	0.43
AM Adjacent Street (7-9am)	35%	65%	0.26
PM Generator	52%	48%	0.41
PM Adjacent Street (4-6pm)	60%	40%	0.39

Appendix G
Year 2025 and Year 2040 Trip Generation Tables

Table 1
Land Use Trip Generation - TAZ 471B
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out
Year 2025								
<u>Proposed/Planned Land Use</u>								
None								
Existing to 2025 Net New System Trips			0	0	0	0	0	0
Year 2040								
<u>Proposed Land Use</u>								
Industrial Park	130	50 ksf	34	7	9	9	6	12
2025 to 2040 Net New System Trips			34	7	9	9	6	12
Existing to 2040 Net New System Trips			34	7	9	9	6	12

(1) A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

(2) A multi-use reduction of 5% was applied to the ITE Trip Generation.

Table 2
Land Use Trip Generation - TAZ 471C
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out
Year 2025								
<i>Proposed/Planned Land Use</i> ⁽¹⁾⁽²⁾								
Hotel ⁽³⁾	310	300 Rooms	70	49	69	66	91	71
Retail	820	75 ksf	40	25	120	130	169	157
Existing to 2025 Net New System Trips			110	74	189	196	260	228
Year 2040								
<i>Proposed Land Use</i> ⁽¹⁾⁽⁴⁾								
Office	710	20 ksf	26	4	5	23	5	4
Industrial Park	130	180 ksf	115	25	31	115	19	41
2025 to 2040 Net New System Trips			141	29	36	138	24	45
Existing to 2040 Net New System Trips			251	103	225	334	284	273

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

⁽³⁾ A 15% hotel reduction was applied to ITE Trip Generation based on driveway counts collected by SRF and Spack Consulting Open Source Trip Generation Data.

⁽⁴⁾ Office/Industrial square footage estimated based on Cypress Solutions office/industrial ratio.

Table 3
Land Use Trip Generation - TAZ 471D
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out
Year 2025								
<u>Proposed/Planned Land Use</u>								
None								
Existing to 2025 Net New System Trips			0	0	0	0	0	0
Year 2040								
<u>Proposed Land Use</u> ⁽¹⁾								
Office	710	250 ksf	326	44	60	294	55	47
2025 to 2040 Net New System Trips			326	44	60	294	55	47
Existing to 2040 Net New System Trips			326	44	60	294	55	47

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

Table 4
Land Use Trip Generation - TAZ 471E
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out
Year 2025								
<i>Proposed/Planned Land Use</i> ⁽¹⁾⁽²⁾								
Apartment	220	100 DU	9	37	36	20	23	23
Retail	820	10 ksf	5	3	16	17	23	21
Existing to 2025 Net New System Trips			14	40	52	37	46	44
Year 2040								
<i>Proposed Land Use</i> ⁽¹⁾								
Apartment	220	50 DU	5	19	19	10	12	12
2025 to 2040 Net New System Trips			5	19	19	10	12	12
Existing to 2040 Net New System Trips			19	59	71	47	58	56

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

Table 5
Land Use Trip Generation - TAZ 471F
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour		P.M. Peak Hour		P.M. Peak Hour	
			In	Out	In	Out	In	Out
Year 2025								
<i>Proposed/Planned Land Use</i> ⁽¹⁾⁽²⁾								
Apartment	220	100 DU	9	37	36	20	23	23
Retail	820	10 ksf	5	3	16	17	23	21
Existing to 2025 Net New System Trips			14	40	52	37	46	44
Year 2040								
<i>Existing Land Use Removed</i> ⁽³⁾								
Park-N-Fly	N/A	N/A	21	12	11	28	16	17
<i>Proposed Land Use</i> ⁽¹⁾⁽²⁾								
Office	710	220 ksf	272	37	50	245	46	40
Retail	820	20 ksf	11	7	32	35	45	41
Apartment	220	350 DU	32	129	127	68	82	82
2025 to 2040 Net New System Trips			294	161	198	320	157	146
Existing to 2040 Net New System Trips			308	201	250	357	203	190

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

⁽³⁾ Existing driveway counts.

Table 6
Land Use Trip Generation - TAZ 472C
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out
Year 2025								
<u>Proposed/Planned Land Use</u>								
None								
Existing to 2025 Net New System Trips			0	0	0	0	0	0
Year 2040								
<u>Existing Land Use Removed</u> ⁽³⁾								
Park-N-Go	N/A	N/A	22	9	6	13	11	8
<u>Proposed Land Use</u> ⁽¹⁾⁽²⁾								
Hotel ⁽⁴⁾	310	700 Rooms	164	114	161	154	212	167
Retail	820	30 ksf	16	10	48	52	68	62
Apartment	220	500 DU	46	184	181	98	117	117
2025 to 2040 Net New System Trips			204	299	384	291	386	338
Existing to 2040 Net New System Trips			204	299	384	291	386	338

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

⁽³⁾ Existing driveway counts.

⁽⁴⁾ A 15% hotel reduction was applied to ITE Trip Generation based on driveway counts collected by SRF and Spack Consulting's Open Source Trip Generation Data.

Table 7
Land Use Trip Generation - TAZ 472D
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out
Year 2025								
<u>Proposed/Planned Land Use</u>								
Apartment ⁽²⁾⁽³⁾	220	395 DU	32	129	127	69	82	82
Apartment ⁽²⁾⁽³⁾	220	445 DU	36	145	143	77	93	93
Retail ⁽²⁾⁽³⁾	820	34 ksf	16	10	48	52	68	63
Office ⁽¹⁾	710	356 ksf	464	63	86	418	79	67
Retail ⁽¹⁾	820	2.35 ksf	1	1	4	4	6	5
Existing to 2025 Net New System Trips			549	348	408	620	328	310
Year 2040								
<u>Proposed Land Use ⁽¹⁾</u>								
Office	710	335.1 ksf	437	60	81	394	74	63
Retail	820	24.4 ksf	14	8	41	45	58	53
Office	710	145 ksf	189	26	35	170	32	28
Office	710	300.2 ksf	392	53	72	353	67	56
2025 to 2040 Net New System Trips			1032	147	229	962	231	200
Existing to 2040 Net New System Trips			1581	495	637	1582	559	510

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

⁽³⁾ Light rail reductions consistent with *Bloomington Central Station Residential Development Traffic Study*, November, 2013 (15%).

Table 8
Land Use Trip Generation - TAZ 472E
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour		P.M. Peak Hour		P.M. Peak Hour	
			In	Out	In	Out	In	Out
Year 2025								
<u>Existing Land Use Increase</u> ⁽³⁾								
28th Station Park-n-Ride	N/A	N/A	118	6	16	166	15	18
<u>Proposed/Planned Land Use</u> ⁽¹⁾								
Hotel ⁽⁵⁾	310	164 Rooms	41	29	40	39	53	42
Retail	820	7.3 ksf	4	3	12	13	17	16
Existing to 2025 Net New System Trips			163	38	68	218	85	76
Year 2040								
<u>Existing Land Use Increase</u> ⁽³⁾								
28th Station Park-n-Ride	N/A	N/A	118	6	16	166	15	18
<u>Proposed Land Use</u> ⁽¹⁾								
Hotel ⁽⁴⁾	310	100 Rooms	25	17	24	24	32	26
2025 to 2040 Net New System Trips			143	23	40	190	47	44
Existing to 2040 Net New System Trips			306	61	108	408	132	120

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

⁽³⁾ Increase based on existing 28th Station Park-n-Ride driveway counts (assumed to be ~35% full under existing, ~67% full under 2025, and 100% full by 2040).

⁽⁴⁾ A 15% hotel reduction was applied to ITE Trip Generation based on driveway counts collected by SRF and Spack Consulting's Open Source Trip Generation Data.

Table 9
Land Use Trip Generation - TAZ 472F
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out
Year 2025								
<u>Proposed/Planned Land Use</u>								
Waterpark Hotel ^{(1) (3)}	N/A	1,000 Rooms	130	212	257	257	303	229
Hotel Banquet Space ⁽⁴⁾	N/A	100 ksf	836	114	155	756	363	141
Entertainment Theater ⁽⁴⁾	N/A	3,000 Seats	0	0	287	0	638	0
Existing to 2025 Net New System Trips			966	326	699	1013	1304	370
Year 2040								
<u>Proposed Land Use</u>								
None								
2025 to 2040 Net New System Trips			0	0	0	0	0	0
Existing to 2040 Net New System Trips			966	326	699	1013	1304	370

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

⁽³⁾ Trip generation estimates developed from driveway counts at the Waterpark of America.

⁽⁴⁾ Custom trip rate was developed for these unique land uses per discussion with city staff.

Table 10
Land Use Trip Generation - TAZ 472G
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour		P.M. Peak Hour		P.M. Peak Hour	
			In	Out	In	Out	In	Out
Year 2025								
<u>Existing Land Use Removed</u> ⁽³⁾								
Interstate Diesel Office	710	10.744 ksf	12	2	3	11	2	2
Interstate Diesel Industrial	110	52.087 ksf	34	6	7	36	3	4
Interstate Diesel Office	710	18.924 ksf	21	4	6	19	3	4
Interstate Diesel Industrial	110	28.201 ksf	18	3	4	19	2	2
Interstate Diesel Office	710	12.152 ksf	13	3	4	12	3	2
Interstate Diesel Industrial	110	17.608 ksf	11	2	2	12	1	1
Alpha Business Office ⁽⁵⁾	770	8.719 ksf	8	2	3	7	2	2
Alpha Business Industrial	130	70.601 ksf	38	11	15	38	7	15
<u>Proposed/Planned Land Use</u> ⁽¹⁾								
Office	710	200 ksf	260	36	48	234	44	38
Hotel ⁽⁴⁾	310	148 Rooms	37	26	36	35	48	38
Retail	820	26 ksf	15	9	44	48	62	57
Existing to 2025 Net New System Trips			157	38	84	163	131	101
Year 2040								
<u>Proposed Land Use</u> ⁽¹⁾								
Office	710	200 ksf	260	36	48	234	44	38
2025 to 2040 Net New System Trips			260	36	48	234	44	38
Existing to 2040 Net New System Trips			417	74	132	397	175	139

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

⁽³⁾ Existing conditions reduction applied to ITE Trip Generation based on driveway counts.

⁽⁴⁾ A 15% hotel reduction was applied to ITE Trip Generation based on driveway counts collected by SRF and Spack Consulting's Open Source Trip Generation Data.

⁽⁵⁾ ITE code 710 used to generate Saturday peak hour trips (ITE code 770 Saturday peak hour trip rate not available.)

Table 111
Land Use Trip Generation - TAZ 473A
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour		P.M. Peak Hour		P.M. Peak Hour	
			In	Out	In	Out	In	Out
Year 2025								
<u>Existing Land Use Removed</u> ⁽³⁾								
Ramada Inn	310	258 Rooms	24	20	36	27	26	16
<u>Proposed/Planned Land Use</u> ⁽⁴⁾								
Hotel	310	325 Rooms	86	60	74	72	99	76
Retail/Restaurant ⁽⁵⁾⁽⁶⁾	820/932	130 ksf	0	0	248	230	462	421
Existing to 2025 Net New System Trips			62	40	286	275	535	481
Year 2040								
<u>Proposed Land Use</u>								
None								
2025 to 2040 Net New System Trips			0	0	0	0	0	0
Existing to 2040 Net New System Trips			62	40	286	275	535	481

⁽¹⁾ A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

⁽²⁾ A multi-use reduction of 5% was applied to the ITE Trip Generation.

⁽³⁾ Existing conditions reduction applied to ITE Trip Generation based on driveway counts.

⁽⁴⁾ A 15% hotel reduction was applied to ITE Trip Generation AM peak hour Volumes. Reduction based on driveway counts and Spack Consulting's Open Source Trip Generation Data. Retail assumed not to be open during AM peak hour.

⁽⁵⁾ ITE code 820 was used to develop trip generation estimates along with information provided by Bass Pro Shops. ITE code 861 (sporting goods superstore) was considered, but limited data was available so it was not used.

⁽⁶⁾ Restaurant assumed to include a hotel restaurant and a Fishbowl restaurant (includes 300 seats and an 80 seat meeting room).

* All reductions and methodology is consistent with Bass Pro Shops Development Traffic Study, August, 2014.

Table 12
Land Use Trip Generation - TAZ 473B
South Loop District Traffic Study

Land Use	ITE Code	Size	Weekday				Saturday	
			A.M. Peak Hour In	A.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour In	P.M. Peak Hour Out
Year 2025								
<i>Proposed/Planned Land Use</i>								
MOA Phase 1C - Mayo/Office ⁽³⁾	720	244 ksf	461	122	167	452	126	107
MOA Phase 1C - Retail ⁽⁴⁾	820	131 ksf	0	0	108	112	140	130
MOA Phase 1C - Restaurant ⁽⁵⁾	932	20 ksf	0	0	101	70	114	79
MOA Phase 2B - Retail ⁽⁶⁾	820	579 ksf	133	82	443	480	818	755
MOA Phase 2B - Hotel ⁽⁷⁾	310	180 Rooms	39	27	39	37	36	29
MOA Phase 2B - Office	710	168 ksf	231	31	43	208	39	33
MOA Phase 2B - Apartment	220	120 DU	12	49	48	26	31	31
Existing to 2025 Net New System Trips			877	311	949	1386	1304	1164
Year 2040								
<i>Proposed Land Use</i>								
MOA Phase 2C - Retail ⁽⁶⁾	820	340.1 ksf	78	48	260	282	480	443
MOA Phase 2C - Hotel ⁽⁷⁾	310	720 Rooms	158	110	154	148	145	114
MOA Phase 2C - Office	710	200 ksf	275	37	51	247	46	40
Hotel ⁽⁷⁾	310	300 Rooms	66	46	64	62	60	48
Retail ⁽⁶⁾	820	170 ksf	39	24	130	141	240	222
2025 to 2040 Net New System Trips			615	265	660	880	972	866
Existing to 2040 Net New System Trips			1492	576	1609	2266	2276	2030

(1) A light rail reduction of 5% was applied to the ITE Trip Generation for all developments within a 1/4 mile of a light rail station.

(2) A multi-use reduction of 5% was applied to the ITE Trip Generation.

(3) Saturday trip generation estimates were determined using information from ITE Code 710 (General Office) due to insufficient Saturday data for ITE Code 720 (Medical-Dental Office).

(4) Trip generation estimates for retail and restaurant land uses are based on the additional square footage being considered as an extension of the current MOA. This results in a 23 percent reduction of multi-use for weekday conditions and 40 percent for Saturday conditions. Retail assumed to be closed during AM peak hour.

(5) Saturday trip generation estimates were determined using information from ITE Code 931 (Quality Restaurant) due to insufficient Saturday data for ITE Code 932 (High-Turnover Sit-Down Restaurant). Restaurant assumed to be closed during AM peak hour.

(6) Shopping Center trip generation estimates were developed using a combination of the existing MOA trip rate and ITE fitted curve rate.

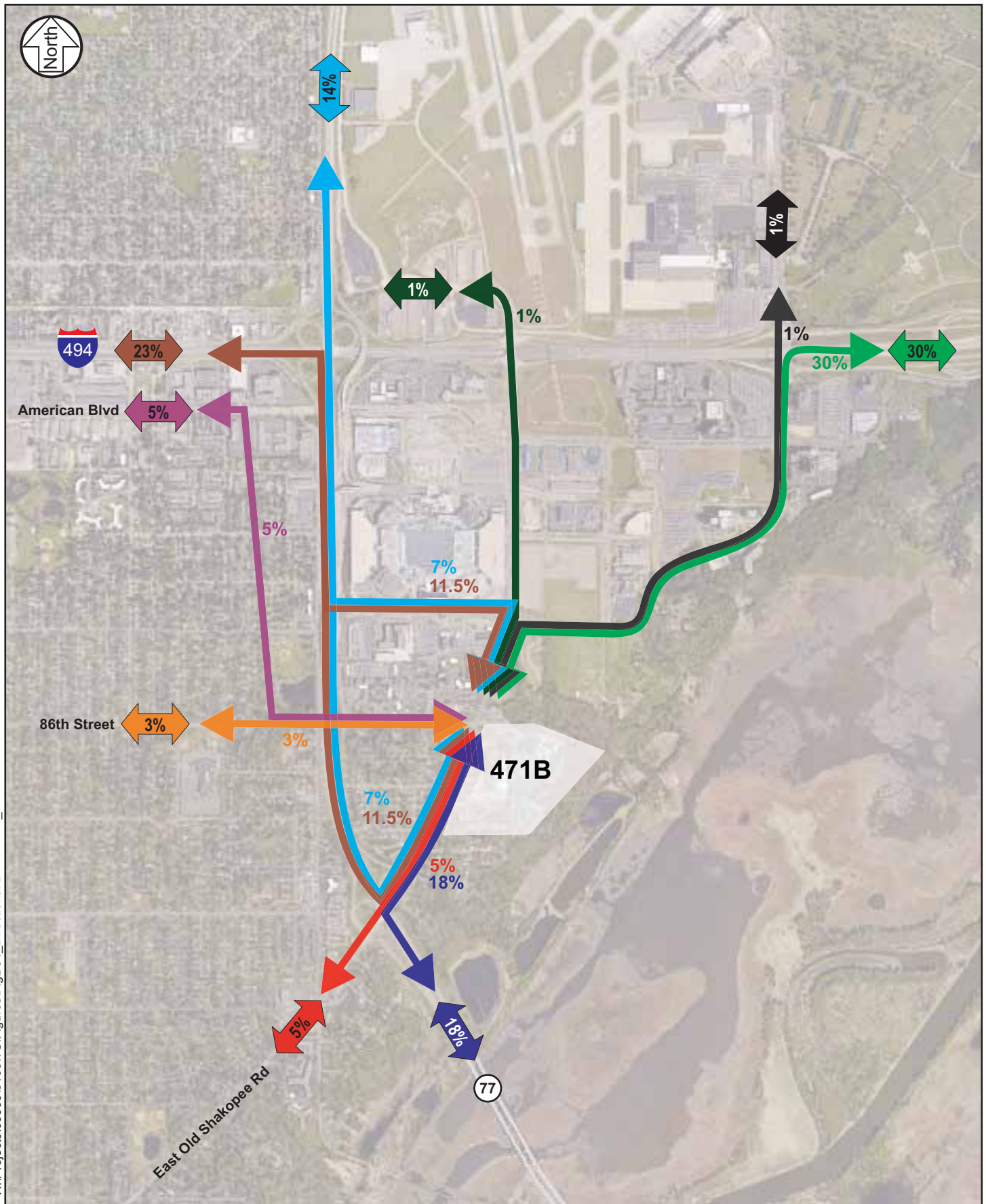
(7) A 30 percent multi-use reduction was assumed for weekday conditions and a 50 percent multi-use reduction was assumed for Saturday conditions.

* Reducations and methodology for MOA Phase 1C land uses consistent with *Mall of America Phase 1C Traffic Operations Analysis, June, 2012*.

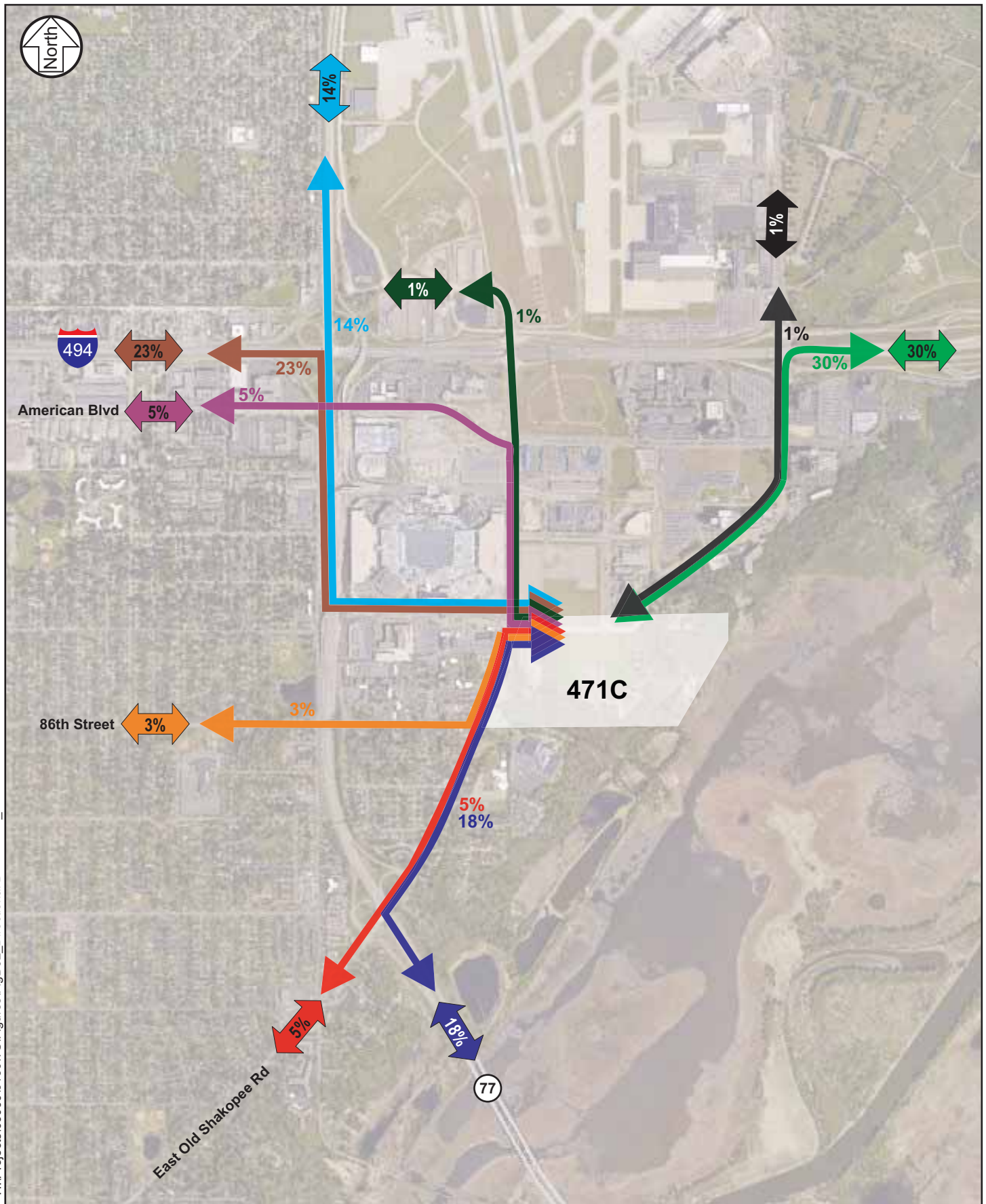
** Reducations and methodology for MOA Phase 2B and 2C land uses consistent with *Mall of America Phase 2B Traffic Operations Analysis, November, 2015*.

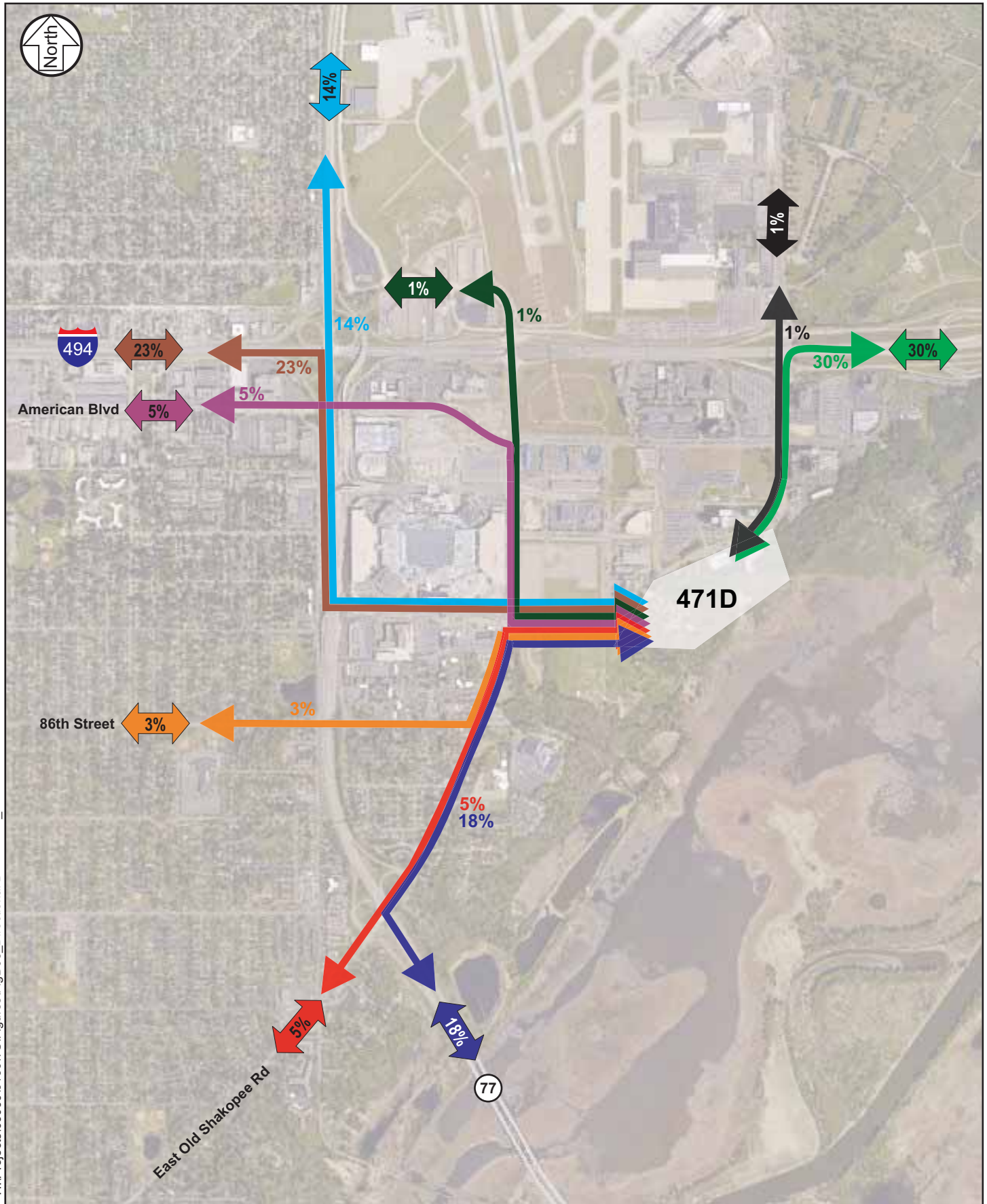
Appendix H
TAZ Directional Distribution Figures

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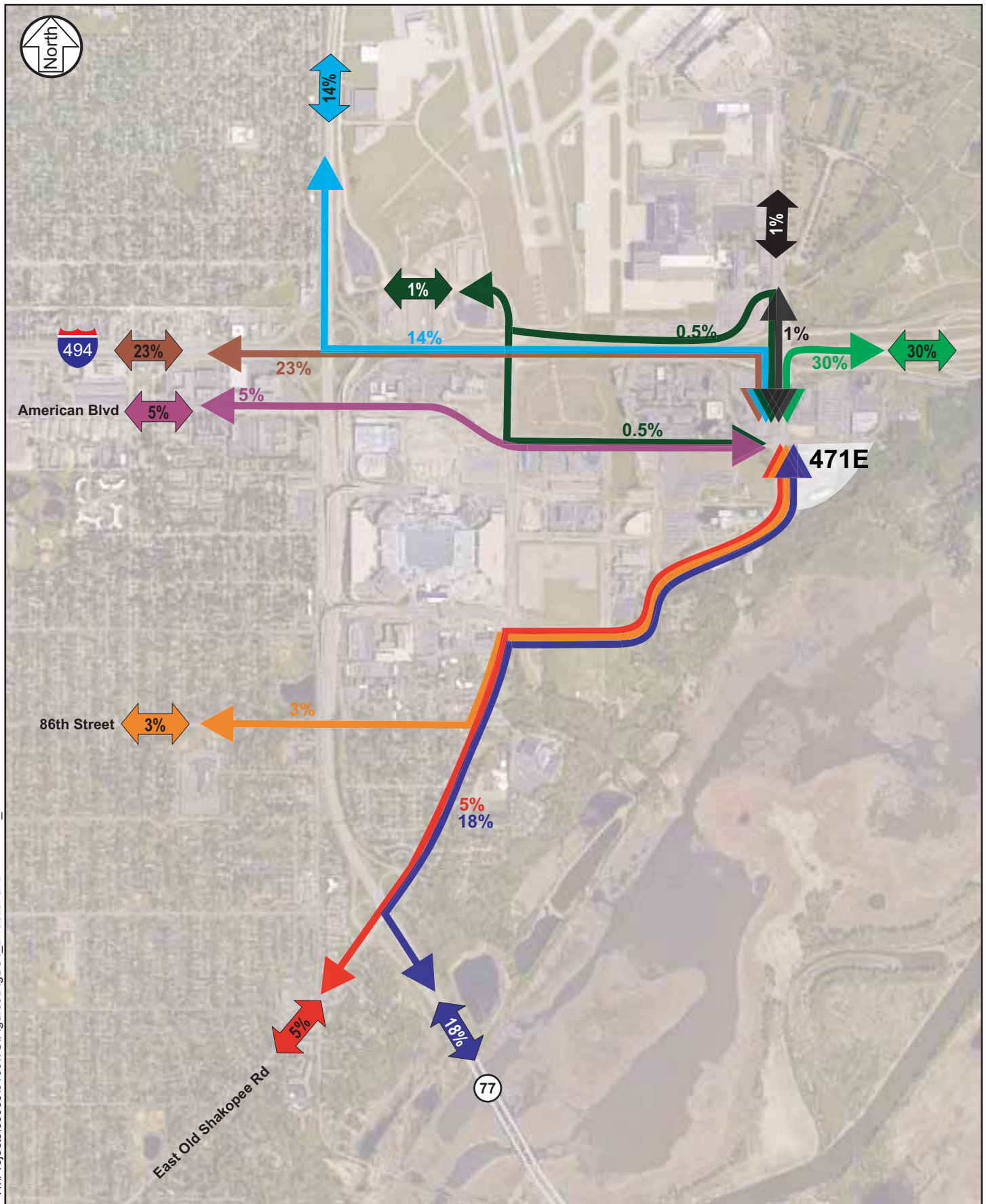


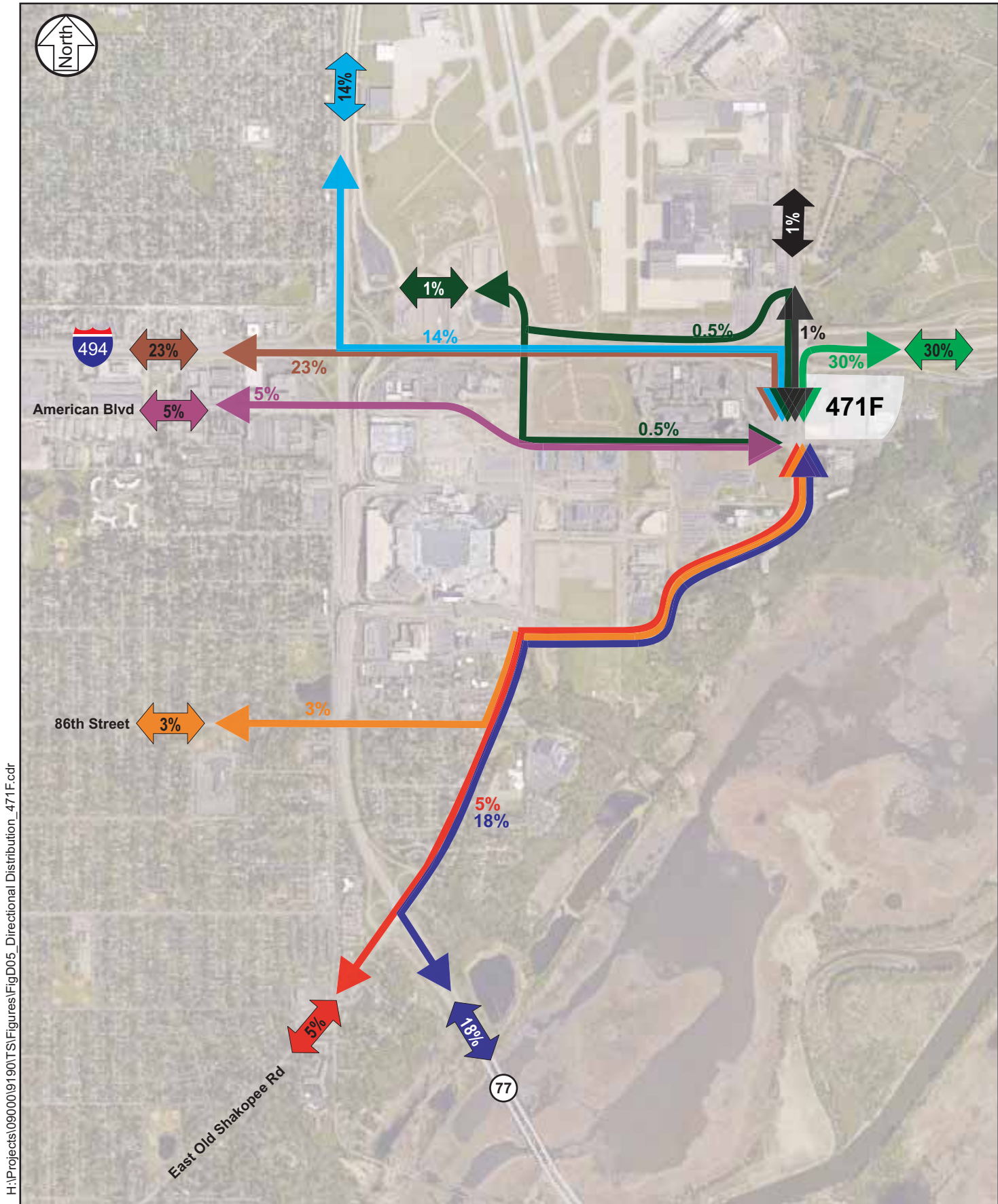
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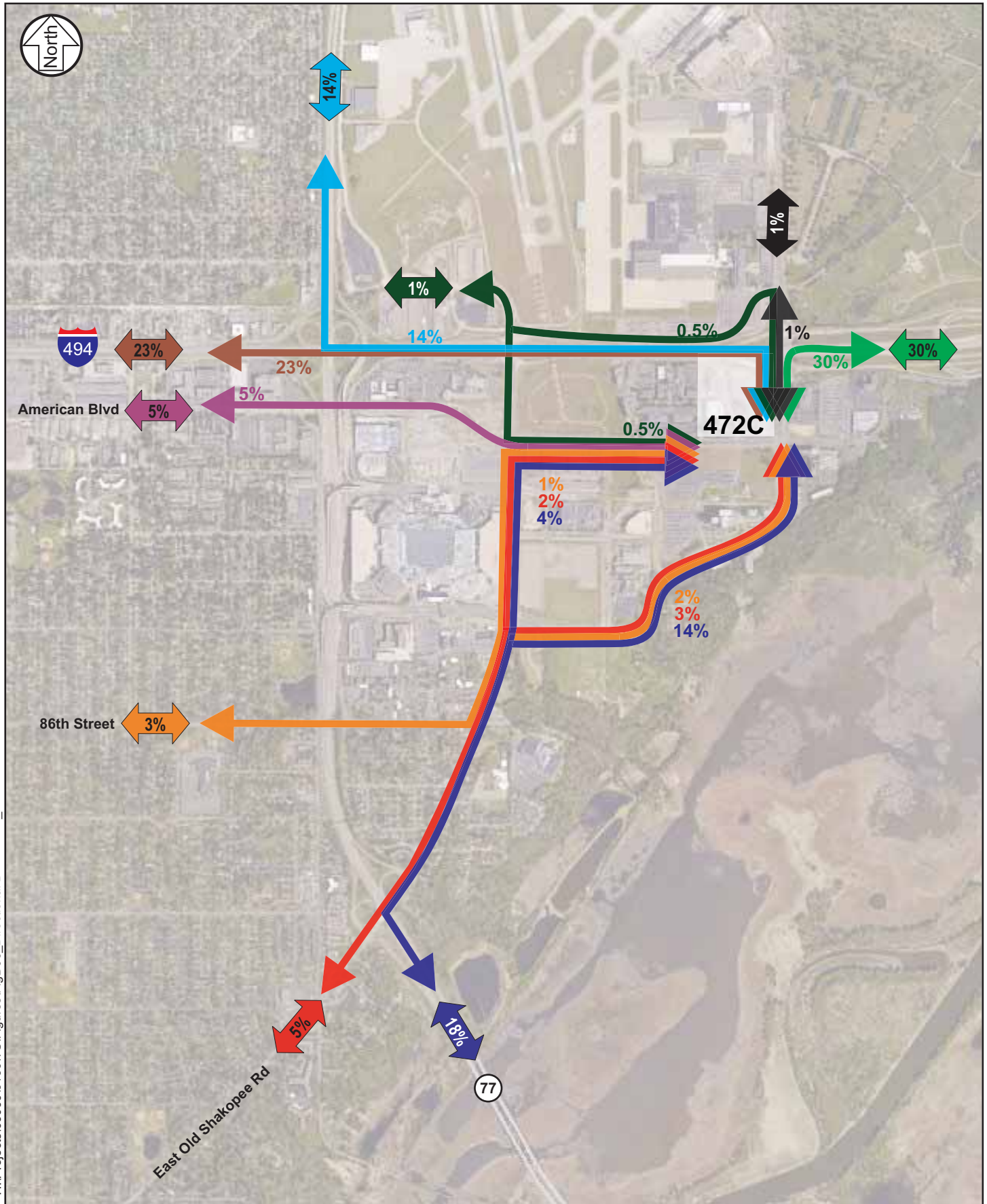


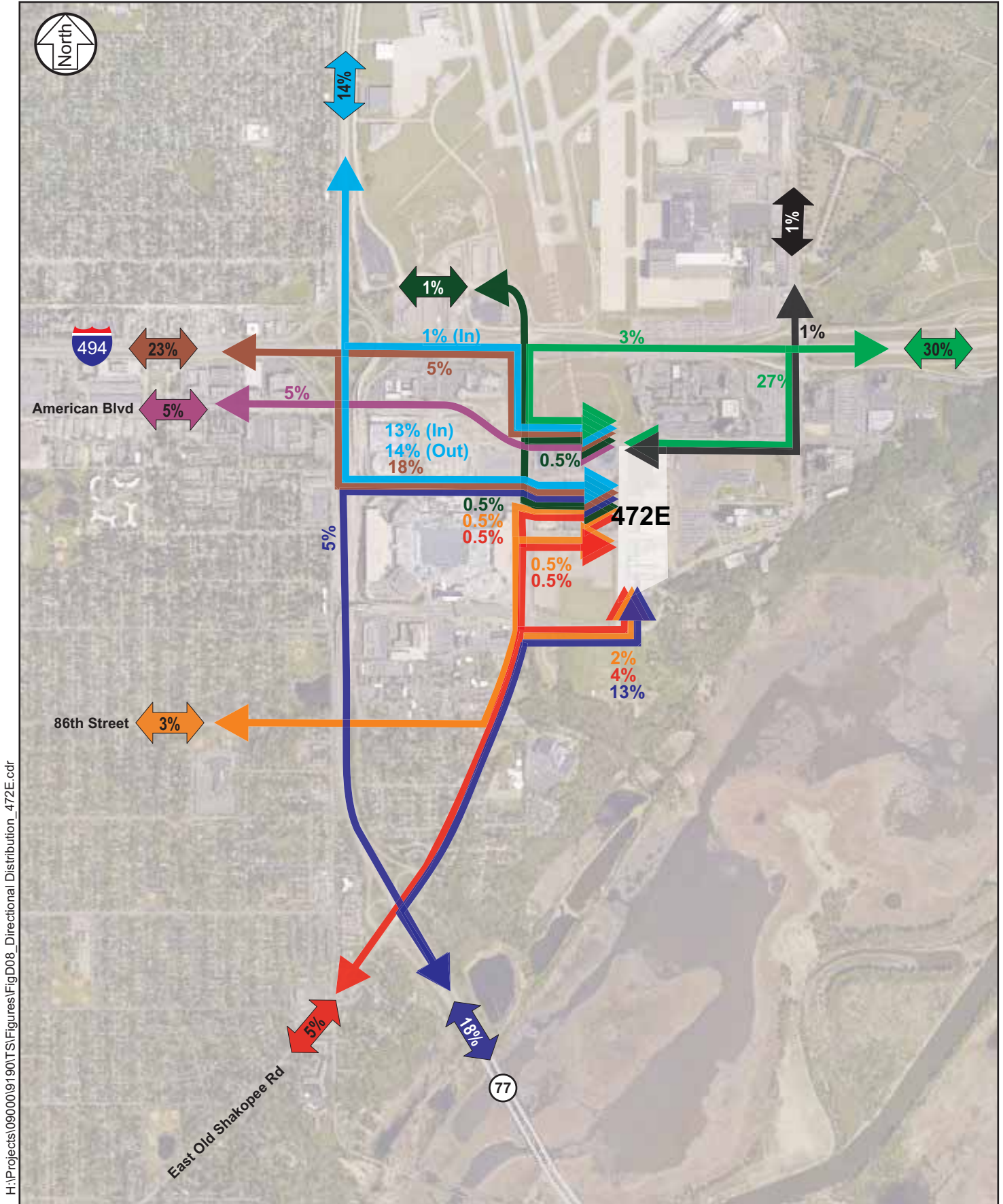
Directional Distribution (TAZ 471F)

South Loop District Traffic Study
City of Bloomington

Figure 5

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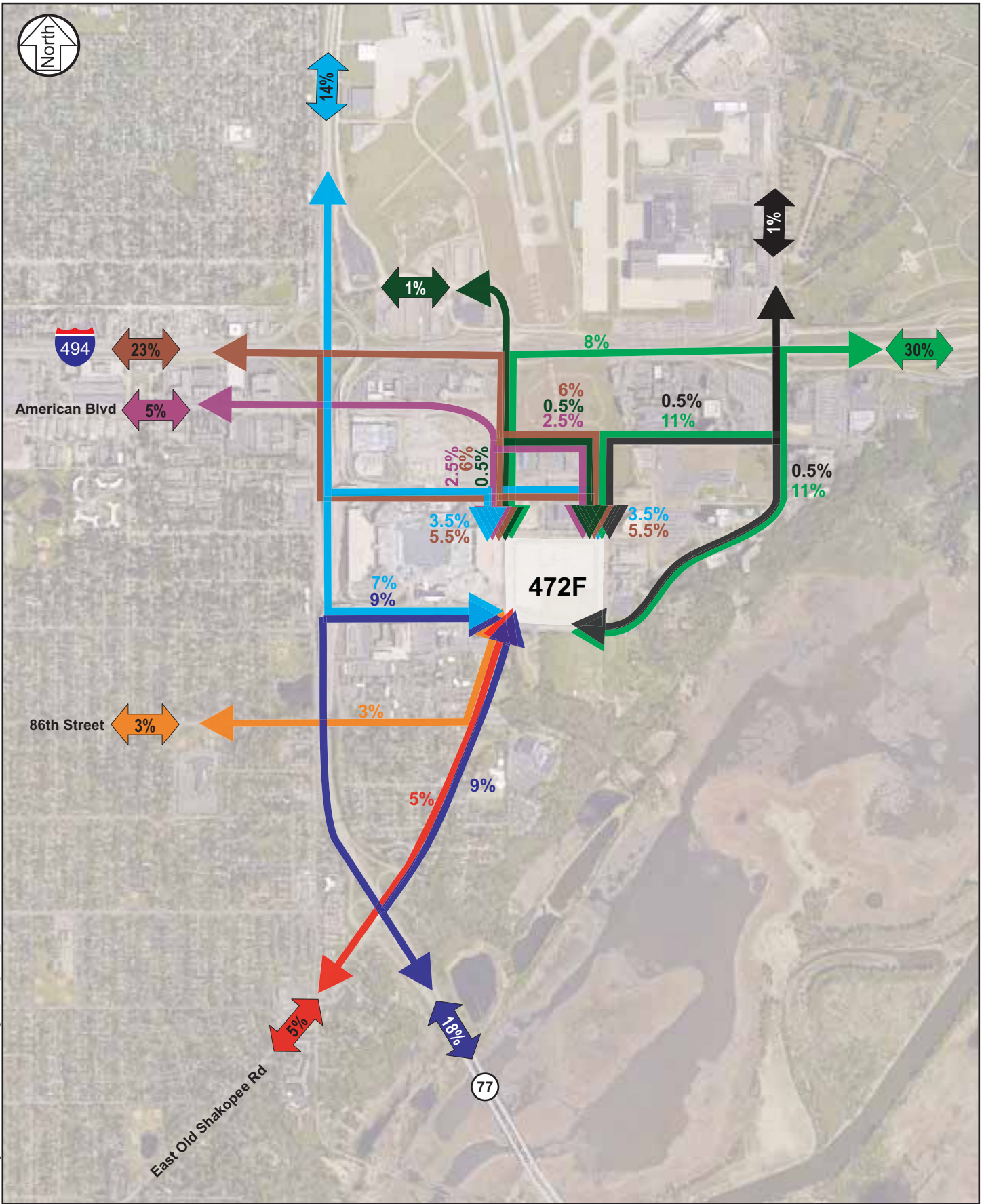
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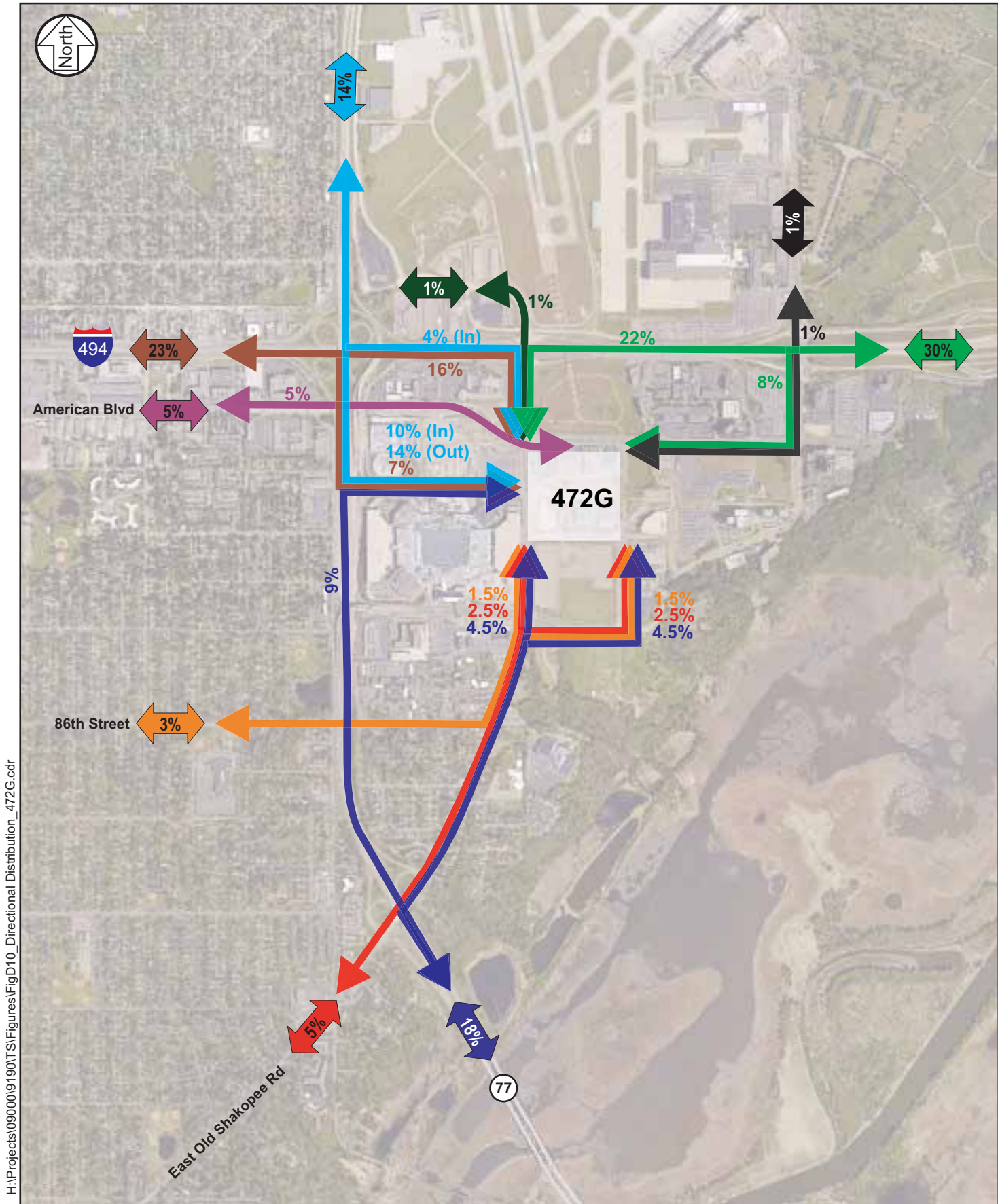


Directional Distribution (TAZ 472E)

South Loop District Traffic Study
City of Bloomington

Figure 8





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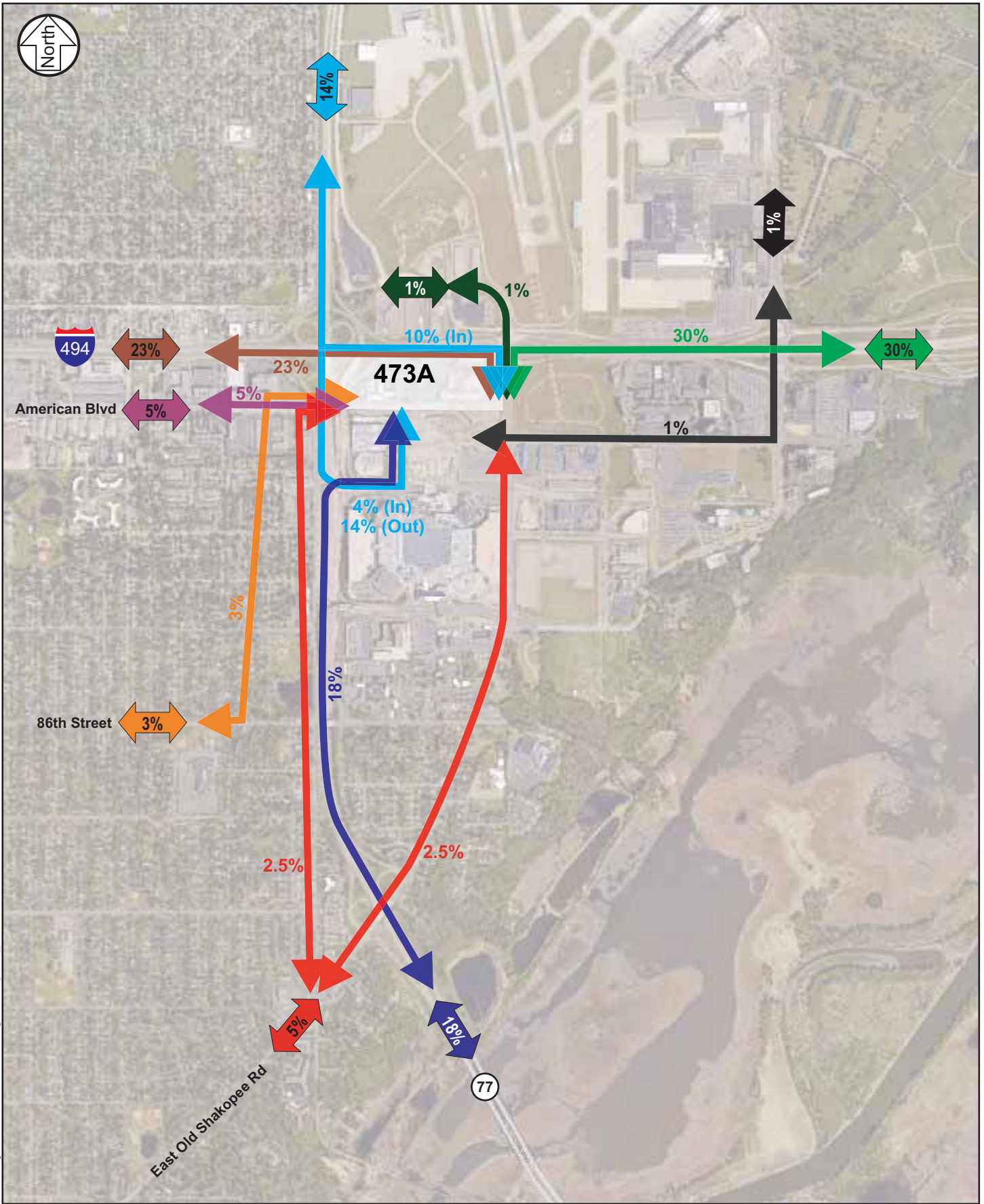


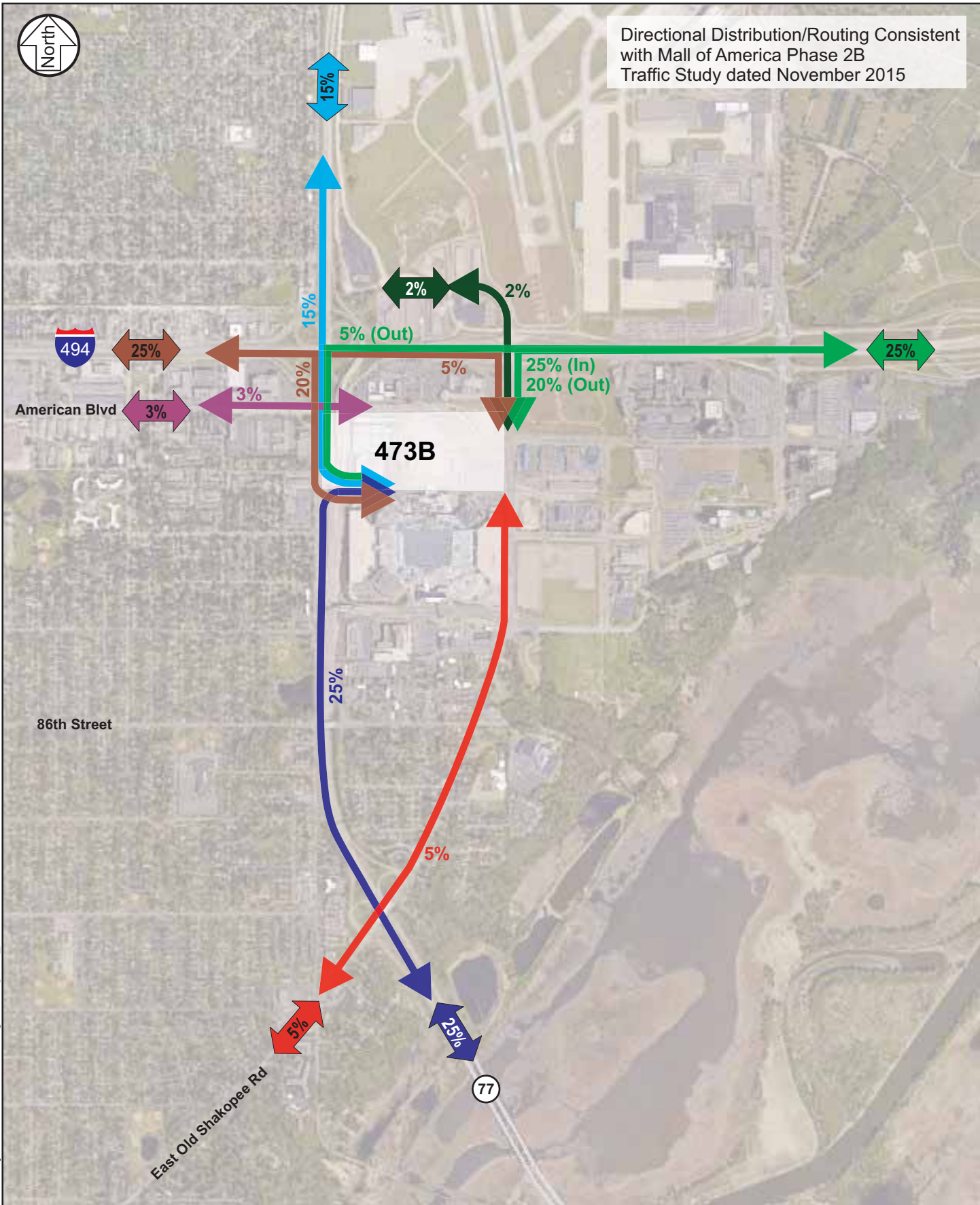
Directional Distribution (TAZ 472G)

South Loop District Traffic Study
City of Bloomington

Figure 10

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Directional Distribution (TAZ 473B)

South Loop District Traffic Study
City of Bloomington

Figure 12

Appendix I
Year 2025 MOE

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	3	54	16.2	C	16.2	C	0.8	A
	Right	0	-	-	-	A				
Eastbound	Thru	357	0	0	0.2	A	0.2	A		
	Right	13	0	0	0.4	A				
Westbound	Left	8	0	9	2.6	A	0.5	A		
	Thru	947	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	37	-1
0	0	0
359	357	-2
12	13	1
8	8	0
969	947	-22

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	664	0	0	0.0	A	0.3	A	0.3	A
	-	278	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
672	664	-8
274	278	4

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.6	A	3.3	A
	Right	13	1	69	7.6	A				
Eastbound	Left	24	0	22	4.0	A	1.2	A		
	Thru	180	0	0	0.8	A				
Westbound	Thru	238	0	0	4.8	A	4.8	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
15	13	-2
25	24	-1
181	180	-1
243	238	-5
1	0	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	614	0	0	0.2	A	0.2	A	1.4	A
	Thru	1,217	0	12	0.5	A				
Southbound	Right	124	0	12	0.8	A	0.5	A		
	Left	10	3	29	52.6	F				
Eastbound	Left	10	3	29	52.6	F	6.5	A		
	Right	359	0	0	5.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
615	614	-1
1,247	1,217	-30
133	124	-9
10	10	0
361	359	-2

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	124	15	77	31.3	C	26.0	C	17.2	B
	Thru	16	2	33	26.8	C				
	Right	29	0	0	2.7	A				
Southbound	Left	39	8	90	33.8	C	25.2	C		
	Thru	8	8	90	28.4	C				
	Right	20	1	37	7.2	A				
Eastbound	Left	24	5	33	41.9	D	14.0	B		
	Thru	288	11	92	13.7	B				
	Right	45	0	5	1.0	A				
Westbound	Left	92	15	77	37.9	D	16.2	B		
	Thru	810	21	186	13.8	B				
	Right	27	19	189	12.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
124	124	0
16	16	0
32	29	-3
40	39	-1
8	8	0
22	20	-2
22	24	2
291	288	-3
45	45	0
93	92	-1
831	810	-21
28	27	-1

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	78	12	81	31.2	C	26.0	C	16.0	B
	Thru	24	2	42	22.5	C				
	Right	18	1	51	8.0	A				
Southbound	Left	13	1	25	17.5	B	18.7	B		
	Thru	13	2	30	33.1	C				
	Right	71	6	61	16.2	B				
Eastbound	Left	227	23	102	27.5	C	14.5	B		
	Thru	1,080	28	176	12.6	B				
	Right	100	44	216	6.1	A				
Westbound	Left	36	6	44	33.5	C	17.6	B		
	Thru	286	16	123	16.1	B				
	Right	10	0	36	3.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
80	78	-2
25	24	-1
18	18	0
12	13	1
12	13	1
73	71	-2
217	227	10
1,096	1,080	-16
102	100	-2
35	36	1
294	286	-8
8	10	2

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	27	2	31	20.9	C	7.6	A	3.4	A
	Right	78	0	30	3.0	A				
Eastbound	Left	119	5	68	10.6	B	2.5	A		
	Thru	821	5	68	1.3	A				
Westbound	Thru	231	4	69	5.9	A	5.0	A		
	Right	47	0	0	0.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	27	2
81	78	-3
122	119	-3
824	821	-3
237	231	-6
49	47	-2

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	237	10	125	10.9	B	8.5	A	17.8	B
	Thru	380	7	82	6.9	A				
	Right	6	7	82	7.0	A				
Southbound	Left	0	-	-	-	A	13.6	B		
	Thru	410	17	125	15.1	B				
	Right	47	0	0	0.5	A				
Eastbound	Left	598	78	678	35.7	D	22.8	C		
	Thru	13	77	670	36.1	D				
	Right	932	28	561	14.4	B				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
240	237	-3
380	380	0
5	6	1
0	0	0
435	410	-25
50	47	-3
600	598	-2
11	13	2
945	932	-13
0	0	0
2	0	-2
0	0	0

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	68	8	55	27.4	C	20.6	C	15.4	B
	Thru	12	1	26	25.0	C				
	Right	34	1	60	5.4	A				
Southbound	Left	39	3	46	17.6	B	15.5	B		
	Thru	14	2	31	24.6	C				
	Right	89	6	57	13.1	B				
Eastbound	Left	172	16	89	23.6	C	14.2	B		
	Thru	530	20	166	13.6	B				
	Right	406	17	218	11.1	B				
Westbound	Left	91	10	61	31.3	C	17.3	B		
	Thru	175	8	65	16.4	B				
	Right	97	3	74	5.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
71	68	-3
11	12	1
33	34	1
40	39	-1
15	14	-1
86	89	3
168	172	4
536	530	-6
422	406	-16
93	91	-2
180	175	-5
99	97	-2

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	32	5	41	31.7	C	19.1	B	6.0	A
	Thru	0	-	-	-	A				
	Right	22	0	4	0.8	A				
Southbound	Left	3	1	24	18.7	B	10.2	B		
	Thru	5	1	24	24.5	C				
	Right	12	0	5	2.1	A				
Eastbound	Left	81	4	49	12.7	B	4.7	A		
	Thru	648	6	89	4.4	A				
	Right	118	0	21	1.0	A				
Westbound	Left	43	2	51	15.8	B	6.9	A		
	Thru	234	3	65	5.6	A				
	Right	15	0	6	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
34	32	-2
0	0	0
22	22	0
4	3	-1
4	5	1
13	12	-1
78	81	3
657	648	-9
114	118	4
44	43	-1
239	234	-5
16	15	-1

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	107	20	95	47.4	D	17.7	B	15.0	B
	Thru	45	8	52	41.9	D				
	Right	273	0	0	2.2	A				
Southbound	Left	69	15	91	41.9	D	34.5	C		
	Thru	99	18	87	42.5	D				
	Right	39	0	0	0.8	A				
Eastbound	Left	74	4	58	11.9	B	3.5	A		
	Right	571	0	0	2.5	A				
Westbound	Left	1,175	61	375	16.2	B	16.5	B		
	Right	366	37	187	17.6	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
111	107	-4
46	45	-1
283	273	-10
70	69	-1
99	99	0
38	39	1
71	74	3
576	571	-5
1,180	1,175	-5
368	366	-2

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	1	1	9	50.3	D	1.6	A	2.8	A
	Thru	417	1	70	1.5	A				
Southbound	Thru	1,788	1	76	2.8	A	2.8	A		
	Right	51	2	113	2.2	A				
Eastbound	Left	13	3	42	48.0	D	48.0	D		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	1	0
426	417	-9
1,794	1,788	-6
54	51	-3
14	13	-1
1	0	-1

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	65	17	84	54.0	D	37.1	D	25.6	C
	Thru	252	29	127	42.0	D				
	Right	69	0	21	3.4	A				
Southbound	Left	456	55	263	33.6	C	20.2	C		
	Thru	751	45	241	24.6	C				
	Right	580	0	40	4.2	A				
Eastbound	Left	88	30	118	67.1	E	31.5	C		
	Thru	135	17	100	36.2	D				
	Right	133	0	17	3.2	A				
Westbound	Left	47	12	58	58.5	E	38.4	D		
	Thru	119	22	101	47.5	D				
	Right	79	27	108	12.8	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
67	65	-2
253	252	-1
68	69	1
449	456	7
753	751	-2
593	580	-13
92	88	-4
143	135	-8
128	133	5
49	47	-2
118	119	1
81	79	-2

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	73	12	71	41.4	D	22.1	C	17.7	B
	Thru	187	12	107	17.9	B				
	Right	30	0	3	1.1	A				
Southbound	Left	114	21	135	36.1	D	15.6	B		
	Thru	569	26	199	17.4	B				
	Right	246	0	23	2.1	A				
Eastbound	Left	159	19	114	28.6	C	18.2	B		
	Thru	272	32	235	22.3	C				
	Right	171	0	30	2.1	A				
Westbound	Left	8	2	48	57.1	E	20.8	C		
	Thru	47	7	62	30.4	C				
	Right	39	0	5	1.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
77	73	-4
195	187	-8
32	30	-2
105	114	9
574	569	-5
249	246	-3
159	159	0
278	272	-6
173	171	-2
8	8	0
47	47	0
35	39	4

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	1	25	32.4	C	15.4	B	17.3	B
	Thru	206	11	96	16.6	B				
	Right	30	0	14	2.7	A				
Southbound	Left	298	32	164	31.6	C	18.6	B		
	Thru	383	14	169	11.3	B				
	Right	64	0	4	1.5	A				
Eastbound	Left	9	2	23	38.7	D	29.3	C		
	Thru	0	-	-	-	A				
	Right	4	0	18	8.1	A				
Westbound	Left	27	6	57	40.4	D	11.5	B		
	Thru	1	0	6	24.4	C				
	Right	79	0	9	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	8	0
211	206	-5
30	30	0
296	298	2
394	383	-11
64	64	0
11	9	-2
1	0	-1
4	4	0
29	27	-2
1	1	0
81	79	-2

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	163	2	80	2.4	A	3.2	A	4.8	A
	Right	131	2	80	4.1	A				
Southbound	Thru	386	2	99	3.2	A	3.2	A		
Eastbound	Left	15	1	51	29.2	C	18.1	B		
	Right	56	3	57	15.1	B				
Westbound	Right	66	3	70	6.9	A	6.9	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
166	163	-3
126	131	5
401	386	-15
16	15	-1
57	56	-1
67	66	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	34	15	56	101.3	F	19.5	B	26.4	C
	Thru	223	32	171	50.8	D				
	Right	769	1	87	6.8	A				
Southbound	Left	28	6	43	52.9	D	21.1	C		
	Thru	211	22	163	26.5	C				
	Right	205	15	203	11.2	B				
Eastbound	Left	62	23	83	74.2	E	35.9	D		
	Thru	552	62	258	34.9	C				
	Right	52	0	6	1.2	A				
Westbound	Left	206	35	127	45.4	D	34.9	C		
	Thru	158	12	81	22.8	C				
	Right	10	0	11	10.9	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
35	34	-1
217	223	6
783	769	-14
29	28	-1
216	211	-5
214	205	-9
66	62	-4
566	552	-14
51	52	1
226	206	-20
160	158	-2
8	10	2

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	75	13	150	11.9	B	7.1	A	9.0	A
	Thru	842	13	150	6.8	A				
	Right	29	20	178	4.7	A				
Southbound	Left	37	6	102	17.0	B	7.6	A		
	Thru	289	6	103	6.3	A				
	Right	109	12	133	7.8	A				
Eastbound	Left	182	16	159	21.8	C	20.2	C		
	Thru	5	16	162	22.9	C				
	Right	26	19	186	8.6	A				
Westbound	Left	4	0	20	14.6	B	13.3	B		
	Thru	3	0	20	17.4	B				
	Right	2	0	6	4.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
75	75	0
846	842	-4
28	29	1
37	37	0
313	289	-24
112	109	-3
182	182	0
6	5	-1
28	26	-2
4	4	0
2	3	1
2	2	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	17	2	33	26.0	C	5.5	A	5.8	A
	Thru	0	-	-	-	A				
	Right	85	0	0	1.4	A				
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	5.6	A		
	Thru	496	5	122	6.2	A				
	Right	111	0	24	3.2	A				
Westbound	Left	159	10	74	15.8	B	6.0	A		
	Thru	298	1	39	0.8	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
17	17	0
0	0	0
84	85	1
0	0	0
0	0	0
0	0	0
0	0	0
499	496	-3
106	111	5
161	159	-2
301	298	-3
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	16	0	11	3.5	A	2.7	A	4.2	A
	Thru	94	0	11	2.6	A				
	Right	7	0	10	1.7	A				
Southbound	Left	3	0	9	2.8	A	2.0	A		
	Thru	196	0	9	2.1	A				
	Right	54	0	9	1.9	A				
Eastbound	Left	48	0	43	7.9	A	6.8	A		
	Thru	98	0	44	7.5	A				
	Right	99	0	44	5.7	A				
Westbound	Left	1	0	4	4.1	A	7.7	A		
	Thru	12	0	3	9.4	A				
	Right	4	0	0	3.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
16	16	0
90	94	4
6	7	1
2	3	1
202	196	-6
49	54	5
50	48	-2
98	98	0
98	99	1
1	1	0
15	12	-3
4	4	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	15	5	50	47.1	D	13.3	B	18.4	B
	Thru	81	6	53	18.1	B				
	Right	121	2	74	6.0	A				
Southbound	Left	17	4	40	44.3	D	17.4	B		
	Thru	135	16	138	18.7	B				
	Right	145	23	156	13.1	B				
Eastbound	Left	36	10	73	52.8	D	45.2	D		
	Thru	13	1	31	24.0	C				
	Right	0	-	-	-	A				
Westbound	Left	3	1	15	45.3	D	37.4	D		
	Thru	0	-	-	-	A				
	Right	1	0	12	13.4	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
15	15	0
83	81	-2
123	121	-2
16	17	1
136	135	-1
149	145	-4
32	36	4
12	13	1
1	0	-1
4	3	-1
1	0	-1
2	1	-1

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



E Old Shakopee Rd & 28th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	42	16	86	61.7	F	24.4	C	4.1	A
	Right	68	0	0	1.3	A				
Eastbound	Left	446	5	138	6.9	A	3.3	A		
	Thru	852	0	0	1.4	A				
Westbound	Thru	298	0	2	0.9	A	1.0	A		
	Right	73	0	2	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
42	42	0
71	68	-3
456	446	-10
868	852	-16
308	298	-10
77	73	-4

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	24	5	64	24.0	C	14.3	B	2.1	A
	Right	45	5	80	9.1	A				
Eastbound	Left	163	3	82	5.5	A	2.0	A		
	Thru	418	0	0	0.6	A				
Westbound	Thru	412	0	0	0.2	A	0.2	A		
	Right	21	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	24	-1
44	45	1
162	163	1
420	418	-2
418	412	-6
22	21	-1

American Blvd & 30th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	21	4	50	35.5	E	19.4	C	2.4	A
	Right	27	0	44	6.8	A				
Eastbound	Thru	259	0	3	0.4	A	0.8	A		
	Right	182	0	1	1.3	A				
Westbound	Left	292	3	73	4.7	A	2.3	A		
	Thru	413	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
22	21	-1
26	27	1
263	259	-4
183	182	-1
298	292	-6
418	413	-5

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	0	15	13.5	B	9.6	A	11.1	B
	Thru	63	4	56	9.1	A				
Southbound	Thru	438	17	148	11.4	B	11.3	B		
	Right	4	0	24	4.4	A				
Eastbound	Left	7	1	40	23.9	C	11.1	B		
	Right	94	3	63	10.1	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
9	8	-1
63	63	0
448	438	-10
6	4	-2
7	7	0
98	94	-4

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	28	0	9	1.3	A	0.8	A	2.8	A
	Thru	35	0	17	0.3	A				
	Right	129	0	16	0.8	A				
Southbound	Left	361	1	84	3.4	A	2.7	A		
	Thru	113	0	19	1.1	A				
	Right	58	0	19	1.1	A				
Eastbound	Left	4	0	38	26.6	D	26.6	D		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	9	2	54	24.1	C	11.1	B		
	Thru	0	-	-	-	A				
	Right	33	1	47	7.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
29	28	-1
34	35	1
131	129	-2
380	361	-19
111	113	2
56	58	2
3	4	1
0	0	0
2	0	-2
10	9	-1
0	0	0
35	33	-2

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.5	A	1.5	A
	Thru	181	0	0	0.4	A				
	Right	109	0	0	0.7	A				
Southbound	Left	108	1	46	3.0	A	2.6	A		
	Thru	16	0	0	0.0	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	4	1	45	21.4	C	11.4	B		
	Thru	0	-	-	-	A				
	Right	9	1	59	6.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
185	181	-4
112	109	-3
108	108	0
14	16	2
0	0	0
0	0	0
0	0	0
0	0	0
6	4	-2
0	0	0
9	9	0

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	294	0	0	0.3	A	0.4	A	0.5	A
	Right	103	0	0	0.7	A				
Southbound	Left	0	-	-	-	A	0.1	A		
	Thru	20	0	0	0.1	A				
Eastbound	Left	4	0	36	10.1	B	10.1	B		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
298	294	-4
104	103	-1
1	0	-1
19	20	1
6	4	-2
0	0	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	3	0	24	34.0	D	10.2	B	3.4	A
	Right	21	1	69	6.8	A				
Eastbound	Left	390	8	169	6.9	A	4.2	A		
	Thru	502	5	140	2.2	A				
Westbound	Thru	352	0	0	0.8	A	0.8	A		
	Right	10	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
3	3	0
22	21	-1
394	390	-4
516	502	-14
365	352	-13
9	10	1

American Blvd & Metro Drive E

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	6	1	40	31.0	D	17.5	C	1.2	A
	Right	8	1	46	7.4	A				
Eastbound	Left	67	3	57	8.4	A	2.4	A		
	Thru	219	0	0	0.5	A				
Westbound	Thru	764	0	0	0.5	A	0.5	A		
	Right	86	0	17	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	6	-1
9	8	-1
65	67	2
223	219	-4
773	764	-9
83	86	3

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	1.9	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	12	2	55	23.0	C	14.4	B		
	Thru	0	-	-	-	A				
	Right	13	1	57	6.4	A				
Eastbound	Left	111	4	82	8.5	A	2.1	A		
	Thru	314	0	0	0.2	A				
	Right	78	0	0	0.8	A				
Westbound	Left	46	1	39	4.8	A	1.2	A		
	Thru	349	0	8	0.3	A				
	Right	179	0	8	2.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
1	0	-1
12	12	0
0	0	0
14	13	-1
111	111	0
326	314	-12
82	78	-4
47	46	-1
360	349	-11
181	179	-2

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	69	8	83	20.8	C	12.0	B	4.2	A
	Thru	2	4	69	23.0	C				
	Right	183	8	95	8.5	A				
Southbound	Left	33	10	67	54.7	F	32.2	D		
	Thru	3	6	63	37.6	E				
	Right	24	0	5	0.6	A				
Eastbound	Left	29	2	40	15.0	B	2.6	A		
	Thru	172	0	0	0.8	A				
	Right	25	0	0	0.4	A				
Westbound	Left	82	1	36	5.1	A	0.9	A		
	Thru	761	0	1	0.4	A				
	Right	166	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
71	69	-2
2	2	0
184	183	-1
32	33	1
2	3	1
24	24	0
25	29	4
181	172	-9
24	25	1
84	82	-2
761	761	0
168	166	-2

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	5.3	A	1.6	A
	Thru	0	-	-	-	A				
	Right	4	0	46	5.3	A				
Southbound	Left	57	4	68	14.0	B	7.3	A		
	Thru	0	-	-	-	A				
	Right	67	0	26	1.6	A				
Eastbound	Left	27	0	22	3.7	A	0.4	A		
	Thru	283	0	0	0.0	A				
	Right	15	0	0	0.4	A				
Westbound	Left	7	0	10	3.1	A	1.0	A		
	Thru	503	0	0	1.0	A				
	Right	36	0	8	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
4	4	0
54	57	3
1	0	-1
70	67	-3
31	27	-4
293	283	-10
15	15	0
7	7	0
516	503	-13
36	36	0

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	191	31	123	46.4	D	23.4	C	45.5	D
	Thru	81	31	123	81.5	F				
	Right	441	0	0	2.7	A				
Southbound	Left	389	61	218	59.7	E	28.2	C		
	Thru	76	61	219	66.8	E				
	Right	577	0	0	1.9	A				
Eastbound	Left	681	17	159	25.2	C	27.5	C		
	Right	438	48	208	31.1	C				
Westbound	Left	1,403	308	928	84.0	F	69.3	E		
	Right	856	328	959	45.0	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
195	191	-4
79	81	2
459	441	-18
395	389	-6
75	76	1
578	577	-1
691	681	-10
437	438	1
1,419	1,403	-16
873	856	-17

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	1	22	28.3	C	22.1	C	24.8	C
	Thru	240	24	158	25.1	C				
	Right	48	0	5	6.0	A				
Southbound	Left	335	55	198	47.7	D	21.7	C		
	Thru	598	35	239	18.9	B				
	Right	979	11	343	14.5	B				
Eastbound	Left	348	73	272	46.2	D	44.8	D		
	Thru	30	6	40	40.8	D				
	Right	8	0	3	0.8	A				
Westbound	Left	26	7	50	53.2	D	18.3	B		
	Thru	25	6	41	52.9	D				
	Right	104	0	23	1.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	8	0
249	240	-9
47	48	1
342	335	-7
606	598	-8
983	979	-4
356	348	-8
32	30	-2
9	8	-1
27	26	-1
22	25	3
106	104	-2

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	289	3	66	3.6	A	3.6	A	4.9	A
	Right	52	1	50	3.4	A				
Southbound	Left	61	4	63	14.4	B	5.5	A		
	Thru	543	6	110	4.5	A				
Westbound	Left	6	1	19	24.1	C	13.9	B		
	Right	7	0	41	5.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
296	289	-7
54	52	-2
62	61	-1
551	543	-8
7	6	-1
8	7	-1

Note: Results are the average of ten (10) simulation runs

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	31	4	56	25.0	C	15.4	C	1.1	A
	Right	20	0	6	0.7	A				
Eastbound	Thru	819	0	1	0.5	A	0.6	A		
	Right	39	0	0	0.9	A				
Westbound	Left	11	0	21	8.8	A	0.6	A		
	Thru	628	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
32	31	-1
19	20	1
824	819	-5
40	39	-1
10	11	1
708	628	-80

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	590	0	0	0.3	A	0.6	A	0.6	A
	-	289	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
596	590	-6
286	289	3

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.7	A	3.3	A
	Right	21	1	71	7.7	A				
Eastbound	Left	40	1	31	5.3	A	1.5	A		
	Thru	278	0	0	0.9	A				
Westbound	Thru	277	0	0	5.1	A	5.1	A		
	Right	4	0	0	5.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
22	21	-1
42	40	-2
279	278	-1
308	277	-31
5	4	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	617	0	0	0.3	A	0.3	A	2.0	A
	Thru	880	0	19	0.7	A				
Southbound	Right	449	0	19	2.0	A	1.2	A		
	Left	44	4	49	24.5	C				
Eastbound	Left	44	4	49	24.5	C	7.4	A		
	Right	359	0	2	5.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
617	617	0
931	880	-51
496	449	-47
45	44	-1
361	359	-2

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	130	22	92	42.6	D	24.2	C	25.3	C
	Thru	58	9	83	29.4	C				
	Right	128	0	10	3.2	A				
Southbound	Left	109	47	197	55.7	E	44.2	D		
	Thru	46	46	196	36.2	D				
	Right	33	35	203	17.5	B				
Eastbound	Left	55	11	59	49.4	D	20.2	C		
	Thru	519	44	206	26.1	C				
	Right	259	0	26	2.2	A				
Westbound	Left	149	27	103	49.1	D	26.8	C		
	Thru	475	24	141	20.3	C				
	Right	22	21	143	16.6	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
127	130	3
58	58	0
133	128	-5
109	109	0
48	46	-2
35	33	-2
53	55	2
538	519	-19
253	259	6
175	149	-26
556	475	-81
27	22	-5

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	629	296	699	78.5	E	66.9	E	80.3	F
	Thru	54	7	62	31.4	C				
	Right	101	4	66	14.0	B				
Southbound	Left	35	5	58	28.7	C	48.8	D		
	Thru	87	36	150	70.4	E				
	Right	434	119	534	46.1	D				
Eastbound	Left	287	58	183	57.1	E	39.4	D		
	Thru	859	89	339	41.4	D				
	Right	244	117	379	11.6	B				
Westbound	Left	65	20	83	123.5	F	176.1	F		
	Thru	799	608	746	183.5	F				
	Right	21	1	51	57.4	E				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
643	629	-14
52	54	2
96	101	5
38	35	-3
87	87	0
439	434	-5
275	287	12
875	859	-16
255	244	-11
93	65	-28
1,164	799	-365
26	21	-5

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	71	9	60	29.4	C	12.2	B	10.9	B
	Right	454	14	219	9.5	A				
Eastbound	Left	378	22	123	17.0	B	8.6	A		
	Thru	500	22	123	2.3	A				
Westbound	Thru	1,035	36	286	13.0	B	11.9	B		
	Right	99	0	0	1.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
72	71	-1
455	454	-1
384	378	-6
498	500	2
1,122	1,035	-87
108	99	-9

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	338	20	171	15.4	B	9.8	A	13.3	B
	Thru	313	3	60	3.8	A				
	Right	7	3	59	2.4	A				
Southbound	Left	0	-	-	-	A	14.2	B		
	Thru	926	38	299	15.1	B				
	Right	62	0	0	1.3	A				
Eastbound	Left	275	31	145	32.3	C	15.5	B		
	Thru	9	31	149	31.0	C				
	Right	406	0	31	3.8	A				
Westbound	Left	1	0	11	5.9	A	4.7	A		
	Thru	0	-	-	-	A				
	Right	4	0	33	4.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
344	338	-6
313	313	0
5	7	2
1	0	-1
1,026	926	-100
70	62	-8
286	275	-11
9	9	0
400	406	6
1	1	0
0	0	0
3	4	1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	241	253	389	261.4	F	199.7	F	135.6	F
	Thru	30	2	37	72.0	E				
	Right	81	2	83	63.4	E				
Southbound	Left	141	141	446	80.2	F	165.8	F		
	Thru	28	7	53	92.1	F				
	Right	273	340	538	217.6	F				
Eastbound	Left	240	38	159	46.8	D	30.0	C		
	Thru	369	37	223	29.9	C				
	Right	388	38	372	19.9	B				
Westbound	Left	111	24	102	96.1	F	245.8	F		
	Thru	403	404	573	347.0	F				
	Right	115	5	88	35.9	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
322	241	-81
33	30	-3
103	81	-22
165	141	-24
32	28	-4
349	273	-76
235	240	5
373	369	-4
401	388	-13
163	111	-52
611	403	-208
158	115	-43

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	126	18	105	30.1	C	22.6	C	15.0	B
	Thru	12	18	104	27.1	C				
	Right	49	0	6	2.0	A				
Southbound	Left	50	8	87	28.8	C	10.5	B		
	Thru	6	8	90	33.0	C				
	Right	231	2	63	6.0	A				
Eastbound	Left	128	14	78	26.9	C	13.4	B		
	Thru	335	12	88	12.1	B				
	Right	106	0	23	1.3	A				
Westbound	Left	65	11	88	33.1	C	15.9	B		
	Thru	778	30	233	15.6	B				
	Right	67	0	20	2.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
127	126	-1
12	12	0
49	49	0
50	50	0
7	6	-1
233	231	-2
126	128	2
342	335	-7
102	106	4
67	65	-2
870	778	-92
72	67	-5

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	565	82	298	74.1	E	29.6	C	41.2	D
	Thru	176	19	98	32.2	C				
	Right	1,087	0	3	6.0	A				
Southbound	Left	153	42	184	49.6	D	45.8	D		
	Thru	59	14	69	86.9	F				
	Right	67	0	0	1.0	A				
Eastbound	Left	22	2	29	24.9	C	49.9	D		
	Right	294	76	189	51.8	D				
Westbound	Left	999	286	784	61.1	E	55.3	E		
	Right	211	15	117	27.5	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
610	565	-45
181	176	-5
1,148	1,087	-61
155	153	-2
61	59	-2
67	67	0
21	22	1
341	294	-47
1,180	999	-181
245	211	-34

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	3.4	A	16.9	B
	Thru	1,777	8	161	3.4	A				
Southbound	Thru	1,149	137	331	31.9	C	32.4	C		
	Right	177	121	336	35.7	D				
Eastbound	Left	78	26	121	50.8	D	55.2	E		
	Right	8	31	149	97.6	F				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
1,857	1,777	-80
1,359	1,149	-210
223	177	-46
81	78	-3
11	8	-3

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	170	25	116	35.9	D	18.8	B	46.1	D
	Thru	952	39	273	16.9	B				
	Right	67	0	6	2.3	A				
Southbound	Left	105	26	94	55.8	E	62.4	E		
	Thru	797	152	326	76.3	E				
	Right	210	0	21	13.3	B				
Eastbound	Left	410	186	573	83.8	F	74.1	E		
	Thru	186	20	105	31.8	C				
	Right	128	98	220	104.6	F				
Westbound	Left	135	38	130	60.2	E	38.4	D		
	Thru	220	59	215	41.1	D				
	Right	419	65	222	29.9	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
183	170	-13
993	952	-41
68	67	-1
117	105	-12
975	797	-178
279	210	-69
430	410	-20
191	186	-5
160	128	-32
150	135	-15
247	220	-27
437	419	-18

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	224	76	209	137.7	F	48.5	D	62.3	E
	Thru	722	56	254	21.4	C				
	Right	9	0	0	1.7	A				
Southbound	Left	46	9	90	38.3	D	62.5	E		
	Thru	648	67	217	30.9	C				
	Right	316	215	350	130.9	F				
Eastbound	Left	340	60	254	46.0	D	34.6	C		
	Thru	124	24	159	34.8	C				
	Right	119	0	20	1.7	A				
Westbound	Left	31	14	78	159.5	F	153.6	F		
	Thru	165	280	515	223.7	F				
	Right	122	42	123	57.3	E				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
239	224	-15
739	722	-17
11	9	-2
61	46	-15
750	648	-102
475	316	-159
371	340	-31
138	124	-14
132	119	-13
38	31	-7
219	165	-54
133	122	-11

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	18	6	39	64.3	E	25.1	C	19.0	B
	Thru	437	27	153	24.7	C				
	Right	22	0	6	2.1	A				
Southbound	Left	182	26	131	35.9	D	11.5	B		
	Thru	418	7	85	4.9	A				
	Right	199	0	23	2.8	A				
Eastbound	Left	284	39	195	35.9	D	32.6	C		
	Thru	4	1	31	28.5	C				
	Right	38	1	35	8.0	A				
Westbound	Left	48	15	77	51.3	D	14.2	B		
	Thru	5	5	30	72.0	E				
	Right	239	3	41	5.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
19	18	-1
447	437	-10
23	22	-1
205	182	-23
482	418	-64
234	199	-35
291	284	-7
5	4	-1
36	38	2
50	48	-2
6	5	-1
251	239	-12

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	251	2	71	2.5	A	2.6	A	5.6	A
	Right	89	2	71	3.0	A				
Southbound	Thru	480	2	69	2.1	A	2.1	A		
Eastbound	Left	17	4	58	45.2	D	32.1	C		
	Right	54	7	72	27.9	C				
Westbound	Right	207	11	105	9.3	A	9.3	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
264	251	-13
91	89	-2
543	480	-63
17	17	0
55	54	-1
208	207	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	69	25	90	99.1	F	40.7	D	64.3	E
	Thru	212	25	120	52.8	D				
	Right	340	44	77	21.3	C				
Southbound	Left	28	7	40	66.3	E	22.6	C		
	Thru	237	28	201	29.3	C				
	Right	268	19	212	12.1	B				
Eastbound	Left	103	35	117	84.7	F	51.9	D		
	Thru	228	45	158	57.8	E				
	Right	94	0	11	1.4	A				
Westbound	Left	714	599	1,232	133.7	F	95.9	F		
	Thru	596	59	226	53.9	D				
	Right	27	1	26	22.8	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
70	69	-1
223	212	-11
360	340	-20
31	28	-3
263	237	-26
303	268	-35
106	103	-3
242	228	-14
92	94	2
822	714	-108
660	596	-64
26	27	1

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	35	17	128	19.5	B	8.5	A	10.5	B
	Thru	510	19	131	7.8	A				
	Right	5	25	159	3.9	A				
Southbound	Left	9	17	223	10.9	B	9.4	A		
	Thru	863	18	224	8.9	A				
	Right	243	25	255	10.9	B				
Eastbound	Left	153	18	141	25.0	C	21.7	C		
	Thru	7	19	142	21.3	C				
	Right	46	22	168	10.7	B				
Westbound	Left	27	3	47	17.4	B	12.0	B		
	Thru	9	3	47	16.5	B				
	Right	19	1	13	2.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	35	-3
525	510	-15
5	5	0
11	9	-2
966	863	-103
270	243	-27
159	153	-6
7	7	0
48	46	-2
28	27	-1
10	9	-1
19	19	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	47	7	65	28.5	C	7.7	A	5.2	A
	Thru	0	-	-	-	A				
	Right	159	0	0	1.6	A				
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	5.9	A		
	Thru	299	4	87	6.8	A				
	Right	72	0	19	2.2	A				
Westbound	Left	131	10	75	17.8	B	4.2	A		
	Thru	723	3	68	1.8	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
54	47	-7
0	0	0
173	159	-14
0	0	0
0	0	0
1	0	-1
0	0	0
311	299	-12
77	72	-5
135	131	-4
766	723	-43
1	0	-1

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	44	0	3	4.3	A	2.6	A	4.7	A
	Thru	149	0	3	2.2	A				
	Right	1	0	2	0.4	A				
Southbound	Left	0	-	-	-	A	4.3	A		
	Thru	169	0	15	3.6	A				
	Right	60	1	15	6.4	A				
Eastbound	Left	41	0	20	6.0	A	5.6	A		
	Thru	20	0	20	9.5	A				
	Right	66	0	20	4.2	A				
Westbound	Left	17	0	37	7.3	A	7.9	A		
	Thru	85	0	36	8.8	A				
	Right	14	0	1	3.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
46	44	-2
159	149	-10
1	1	0
0	0	0
182	169	-13
56	60	4
49	41	-8
22	20	-2
75	66	-9
15	17	2
95	85	-10
13	14	1

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	21	4	52	29.1	C	17.4	B	28.2	C
	Thru	91	6	59	16.6	B				
	Right	12	0	43	3.6	A				
Southbound	Left	5	1	16	30.8	C	30.4	C		
	Thru	141	22	133	40.8	D				
	Right	99	30	150	15.6	B				
Eastbound	Left	81	12	116	28.2	C	27.3	C		
	Thru	0	-	-	-	A				
	Right	4	0	3	7.4	A				
Westbound	Left	95	12	79	40.3	D	34.6	C		
	Thru	24	5	51	23.2	C				
	Right	21	5	51	21.7	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
21	21	0
100	91	-9
16	12	-4
5	5	0
159	141	-18
108	99	-9
91	81	-10
1	0	-1
4	4	0
101	95	-6
23	24	1
21	21	0

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



E Old Shakopee Rd & 28th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	39	599	779	970.9	F	301.9	F	71.5	F
	Right	239	14	33	192.8	F				
Eastbound	Left	192	157	370	141.1	F	62.7	F	71.5	F
	Thru	333	0	0	17.5	C				
Westbound	Left	2	0	2	12.2	B	11.6	B	71.5	F
	Thru	942	21	120	12.0	B				
	Right	47	21	123	4.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
135	39	-96
339	239	-100
209	192	-17
356	333	-23
2	2	0
964	942	-22
49	47	-2

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	18	12	107	32.6	D	15.3	C	2.4	A
	Right	145	16	123	13.1	B				
Eastbound	Left	53	1	44	7.0	A	1.0	A	2.4	A
	Thru	407	0	0	0.2	A				
Westbound	Thru	711	0	0	0.3	A	0.3	A	2.4	A
	Right	9	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
18	18	0
146	145	-1
55	53	-2
429	407	-22
757	711	-46
10	9	-1

American Blvd & 30th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	235	135	340	79.8	F	45.9	E	16.8	C
	Right	267	8	124	16.0	C				
Eastbound	Thru	402	0	30	0.7	A	0.7	A	16.8	C
	Right	22	0	0	0.6	A				
Westbound	Left	43	0	32	6.8	A	2.0	A	16.8	C
	Thru	484	0	0	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
245	235	-10
272	267	-5
422	402	-20
24	22	-2
42	43	1
521	484	-37

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	77	0	38	9.4	A	8.3	A	9.1	A
	Thru	392	15	127	8.1	A				
Southbound	Thru	73	3	48	12.9	B	11.5	B	9.1	A
	Right	16	0	45	5.1	A				
Eastbound	Left	10	1	43	23.3	C	16.9	B	9.1	A
	Right	10	0	24	10.6	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
82	77	-5
398	392	-6
77	73	-4
16	16	0
14	10	-4
13	10	-3

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.7	A	8.5	A
	Thru	107	0	10	0.7	A				
	Right	14	0	10	0.6	A				
Southbound	Left	36	0	3	0.9	A	0.6	A	8.5	A
	Thru	37	0	4	0.3	A				
	Right	10	0	4	0.8	A				
Eastbound	Left	48	7	89	12.3	B	9.5	A	8.5	A
	Thru	1	6	84	14.2	B				
	Right	137	7	88	8.5	A				
Westbound	Left	110	6	79	12.1	B	11.8	B	8.5	A
	Thru	0	-	-	-	A				
	Right	315	13	117	11.6	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
109	107	-2
12	14	2
41	36	-5
40	37	-3
9	10	1
51	48	-3
1	1	0
135	137	2
108	110	2
0	0	0
319	315	-4

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.2	A	3.6	A
	Thru	22	0	0	0.1	A				
	Right	6	0	0	0.4	A				
Southbound	Left	15	0	0	0.5	A	0.3	A		
	Thru	269	0	0	0.3	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	77	8	90	11.1	B	9.5	A		
	Thru	0	-	-	-	A				
	Right	101	10	103	8.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
24	22	-2
7	6	-1
13	15	2
270	269	-1
0	0	0
1	0	-1
0	0	0
1	0	-1
81	77	-4
0	0	0
99	101	2

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	24	0	0	0.1	A	0.2	A	2.5	A
	Right	5	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	1.2	A		
	Thru	345	0	1	1.2	A				
Eastbound	Left	66	3	62	10.2	B	10.0	A		
	Right	3	3	69	5.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
28	24	-4
7	5	-2
0	0	0
352	345	-7
69	66	-3
3	3	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	46	8	72	29.3	D	17.3	C	5.9	A
	Right	366	47	219	15.7	C				
Eastbound	Left	21	0	27	5.7	A	1.2	A		
	Thru	348	0	5	1.0	A				
Westbound	Thru	633	0	4	1.3	A	1.3	A		
	Right	8	0	4	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
48	46	-2
372	366	-6
28	21	-7
461	348	-113
643	633	-10
7	8	1

American Blvd & Metro Drive E

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	89	14	109	23.2	C	18.2	C	3.1	A
	Right	76	15	115	12.3	B				
Eastbound	Left	11	0	13	3.5	A	0.9	A		
	Thru	656	0	0	0.9	A				
Westbound	Thru	372	0	0	0.5	A	0.5	A		
	Right	14	0	1	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
90	89	-1
77	76	-1
12	11	-1
682	656	-26
404	372	-32
16	14	-2

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	89	10	86	20.8	C	15.5	C	4.9	A
	Thru	0	-	-	-	A				
	Right	56	2	57	7.0	A				
Southbound	Left	134	15	115	19.7	C	14.2	B		
	Thru	0	-	-	-	A				
	Right	118	6	87	8.0	A				
Eastbound	Left	18	0	19	3.9	A	0.4	A		
	Thru	376	0	0	0.2	A				
	Right	2	0	0	0.6	A				
Westbound	Left	0	-	-	-	A	0.4	A		
	Thru	436	0	0	0.3	A				
	Right	25	0	0	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
89	89	0
1	0	-1
55	56	1
135	134	-1
0	0	0
120	118	-2
22	18	-4
484	376	-108
3	2	-1
0	0	0
441	436	-5
25	25	0

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	27	414	557	979.8	F	335.9	F	104.3	F
	Thru	0	-	-	-	A				
	Right	138	138	355	209.9	F				
Southbound	Left	48	542	690	940.0	F	516.0	F		
	Thru	0	-	-	-	A				
	Right	66	6	29	207.7	F				
Eastbound	Left	10	0	13	4.7	A	25.3	D		
	Thru	667	46	302	27.4	D				
	Right	59	46	301	4.9	A				
Westbound	Left	119	151	354	172.3	F	47.4	E		
	Thru	293	0	0	5.9	A				
	Right	63	0	0	4.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
45	27	-18
0	0	0
166	138	-28
102	48	-54
0	0	0
81	66	-15
11	10	-1
699	667	-32
62	59	-3
127	119	-8
294	293	-1
65	63	-2

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	1	41	17.0	C	11.2	B	1.5	A
	Thru	0	-	-	-	A				
	Right	4	0	47	5.4	A				
Southbound	Left	64	6	78	15.5	C	9.0	A		
	Thru	0	-	-	-	A				
	Right	53	0	18	1.2	A				
Eastbound	Left	50	0	26	2.4	A	0.3	A		
	Thru	502	0	0	0.1	A				
	Right	11	0	0	0.5	A				
Westbound	Left	6	0	10	6.1	A	0.9	A		
	Thru	403	0	0	0.7	A				
	Right	22	0	5	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	4	-1
0	0	0
5	4	-1
63	64	1
0	0	0
55	53	-2
61	50	-11
601	502	-99
13	11	-2
5	6	1
406	403	-3
23	22	-1

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	312	42	192	43.5	D	21.9	C	40.8	D
	Thru	148	42	192	74.5	E				
	Right	1,306	0	0	10.8	B				
Southbound	Left	982	715	1,534	90.8	F	60.0	E		
	Thru	53	701	1,514	83.0	F				
	Right	1,578	41	169	40.1	D				
Eastbound	Left	1,159	63	341	37.8	D	36.5	D		
	Right	249	24	138	30.2	C				
Westbound	Left	743	39	218	39.1	D	32.6	C		
	Right	556	53	231	24.0	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
351	312	-39
168	148	-20
1,467	1,306	-161
1,050	982	-68
58	53	-5
1,650	1,578	-72
1,177	1,159	-18
245	249	4
739	743	4
561	556	-5

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	3	1	12	45.0	D	51.5	D	42.6	D
	Thru	574	168	526	52.1	D				
	Right	35	0	3	41.2	D				
Southbound	Left	192	53	161	76.8	E	43.4	D		
	Thru	424	58	246	40.9	D				
	Right	425	89	380	30.7	C				
Eastbound	Left	789	346	601	48.5	D	47.8	D		
	Thru	41	7	47	46.1	D				
	Right	11	0	6	3.1	A				
Westbound	Left	60	26	115	76.9	E	20.8	C		
	Thru	55	18	68	84.5	F				
	Right	374	1	48	2.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	3	-2
673	574	-99
37	35	-2
192	192	0
423	424	1
426	425	-1
910	789	-121
47	41	-6
10	11	1
59	60	1
55	55	0
375	374	-1

**2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	589	11	129	8.1	A	8.1	A	9.2	A
	Right	9	7	114	8.0	A				
Southbound	Left	14	2	36	24.3	C	8.2	A		
	Thru	368	7	110	7.6	A				
Westbound	Left	65	8	74	24.9	C	20.9	C		
	Right	27	2	59	11.3	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
689	589	-100
10	9	-1
15	14	-1
369	368	-1
65	65	0
26	27	1

Note: Results are the average of ten (10) simulation runs

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	59	6	74	19.8	C	10.7	B	1.4	A
	Right	54	0	10	0.7	A				
Eastbound	Thru	510	0	0	0.3	A	0.4	A		
	Right	55	0	0	0.7	A				
Westbound	Left	16	0	24	5.8	A	0.5	A		
	Thru	426	0	0	0.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
61	59	-2
52	54	2
516	510	-6
55	55	0
17	16	-1
478	426	-52

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	720	0	0	0.9	A	1.1	A	1.1	A
	-	548	0	0	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
724	720	-4
548	548	0

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	6.6	A	1.8	A
	Right	20	1	71	6.6	A				
Eastbound	Left	30	0	20	3.3	A	1.1	A		
	Thru	174	0	0	0.7	A				
Westbound	Thru	171	0	0	2.1	A	2.1	A		
	Right	10	0	0	1.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
21	20	-1
31	30	-1
175	174	-1
185	171	-14
13	10	-3

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	440	0	0	0.2	A	0.2	A	2.0	A
Southbound	Thru	491	0	11	0.3	A	0.6	A		
	Right	274	0	11	1.2	A				
Eastbound	Left	69	4	59	17.6	C	7.3	A		
	Right	290	0	2	4.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
442	440	-2
510	491	-19
290	274	-16
70	69	-1
290	290	0

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	152	37	136	54.2	D	28.6	C	45.2	D
	Thru	105	26	136	42.5	D				
	Right	216	0	15	3.8	A				
Southbound	Left	137	280	481	192.9	F	172.8	F		
	Thru	72	281	481	154.2	F				
	Right	35	272	484	132.1	F				
Eastbound	Left	70	16	69	59.2	E	29.1	C		
	Thru	313	38	153	38.1	D				
	Right	182	0	21	2.0	A				
Westbound	Left	284	25	142	25.4	C	19.2	B		
	Thru	254	10	81	12.8	B				
	Right	12	7	84	9.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
151	152	1
105	105	0
222	216	-6
149	137	-12
80	72	-8
38	35	-3
69	70	1
322	313	-9
177	182	5
346	284	-62
306	254	-52
15	12	-3

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	745	411	820	89.4	F	72.8	E	108.0	F
	Thru	111	12	136	32.6	C				
	Right	162	7	93	24.1	C				
Southbound	Left	81	1	15	50.5	D	99.8	F		
	Thru	141	48	206	104.0	F				
	Right	597	540	853	105.4	F				
Eastbound	Left	495	85	265	59.2	E	79.1	E		
	Thru	994	488	1,539	99.0	F				
	Right	493	525	1,573	59.0	E				
Westbound	Left	91	28	109	150.7	F	257.4	F		
	Thru	536	692	762	287.2	F				
	Right	41	3	74	104.8	F				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
760	745	-15
110	111	1
158	162	4
107	81	-26
187	141	-46
823	597	-226
514	495	-19
1,101	994	-107
549	493	-56
154	91	-63
917	536	-381
76	41	-35

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	95	29	190	70.1	E	44.1	D	23.4	C
	Right	696	206	708	40.6	D				
Eastbound	Left	564	86	283	41.1	D	21.9	C		
	Thru	696	85	282	6.3	A				
Westbound	Thru	1,097	37	278	13.5	B	12.0	B		
	Right	164	0	0	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	95	2
701	696	-5
577	564	-13
695	696	1
1,137	1,097	-40
171	164	-7

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	247	7	102	9.1	A	6.5	A	10.3	B
	Thru	255	2	48	3.9	A				
	Right	6	2	48	4.1	A				
Southbound	Left	2	0	5	8.0	A	9.2	A		
	Thru	486	13	148	10.1	B				
	Right	45	0	0	0.3	A				
Eastbound	Left	287	24	116	25.7	C	14.6	B		
	Thru	0	-	-	-	A				
	Right	276	0	11	3.1	A				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
253	247	-6
254	255	1
5	6	1
3	2	-1
524	486	-38
48	45	-3
292	287	-5
0	0	0
274	276	2
1	0	-1
1	0	-1
1	0	-1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	187	247	400	333.9	F	209.7	F	135.4	F
	Thru	44	18	127	95.5	F				
	Right	122	8	113	60.5	E				
Southbound	Left	119	36	240	112.7	F	264.6	F		
	Thru	24	9	56	148.8	F				
	Right	215	456	686	361.6	F				
Eastbound	Left	367	48	218	39.8	D	18.6	B		
	Thru	441	14	93	9.8	A				
	Right	438	16	191	9.7	A				
Westbound	Left	181	45	160	108.5	F	242.7	F		
	Thru	301	412	591	456.8	F				
	Right	198	99	261	40.0	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
236	187	-49
50	44	-6
143	122	-21
208	119	-89
43	24	-19
423	215	-208
392	367	-25
479	441	-38
495	438	-57
262	181	-81
487	301	-186
274	198	-76

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	124	41	194	61.4	E	41.5	D	31.3	C
	Thru	4	41	194	51.1	D				
	Right	82	0	14	10.9	B				
Southbound	Left	226	141	670	54.8	D	37.4	D		
	Thru	6	135	654	65.6	E				
	Right	610	43	450	30.7	C				
Eastbound	Left	275	51	174	54.2	D	26.7	C		
	Thru	376	19	130	16.1	B				
	Right	140	0	17	1.1	A				
Westbound	Left	49	14	82	54.7	D	25.7	C		
	Thru	538	37	190	26.4	C				
	Right	83	1	45	3.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
122	124	2
4	4	0
84	82	-2
229	226	-3
6	6	0
615	610	-5
274	275	1
377	376	-1
137	140	3
51	49	-2
571	538	-33
90	83	-7

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	516	44	244	27.7	C	14.5	B	59.6	E
	Thru	113	9	73	21.6	C				
	Right	1,082	0	3	7.5	A				
Southbound	Left	70	21	107	56.7	E	61.7	E		
	Thru	68	19	87	100.0	F				
	Right	37	0	0	0.8	A				
Eastbound	Left	17	1	28	42.0	D	97.1	F		
	Right	489	336	567	99.0	F				
Westbound	Left	1,064	557	1,131	114.4	F	111.4	F		
	Right	55	3	78	53.8	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
551	516	-35
120	113	-7
1,171	1,082	-89
74	70	-4
71	68	-3
38	37	-1
19	17	-2
609	489	-120
1,433	1,064	-369
75	55	-20

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	1	0	11	33.9	C	4.7	A	24.9	C
	Thru	1,583	17	272	4.7	A				
Southbound	Thru	1,299	223	504	40.2	D	40.8	D		
	Right	278	233	532	43.7	D				
Eastbound	Left	137	51	187	55.6	E	67.3	E		
	Right	23	67	217	137.0	F				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	1	0
1,707	1,583	-124
1,713	1,299	-414
393	278	-115
135	137	2
26	23	-3

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	178	31	135	48.8	D	25.4	C	62.0	E
	Thru	1,087	64	433	22.9	C				
	Right	69	0	12	3.8	A				
Southbound	Left	101	29	106	64.3	E	70.7	E		
	Thru	973	185	419	83.5	F				
	Right	212	0	25	14.8	B				
Eastbound	Left	413	384	814	141.2	F	128.3	F		
	Thru	89	11	75	38.2	D				
	Right	145	154	291	146.6	F				
Westbound	Left	76	21	83	62.1	E	41.3	D		
	Thru	82	18	79	43.5	D				
	Right	85	22	86	20.5	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
197	178	-19
1,188	1,087	-101
69	69	0
128	101	-27
1,306	973	-333
304	212	-92
431	413	-18
91	89	-2
170	145	-25
84	76	-8
84	82	-2
90	85	-5

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	255	71	241	116.9	F	40.6	D	52.9	D
	Thru	884	55	307	19.5	B				
	Right	20	0	2	1.4	A				
Southbound	Left	62	21	120	60.3	E	76.5	E		
	Thru	663	281	533	49.4	D				
	Right	418	251	465	121.9	F				
Eastbound	Left	386	60	234	39.3	D	27.4	C		
	Thru	121	18	120	27.3	C				
	Right	178	0	26	1.6	A				
Westbound	Left	14	6	57	74.6	E	79.2	E		
	Thru	88	42	150	138.5	F				
	Right	72	0	23	7.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
274	255	-19
924	884	-40
22	20	-2
77	62	-15
836	663	-173
648	418	-230
462	386	-76
151	121	-30
217	178	-39
14	14	0
103	88	-15
68	72	4

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	135	24	107	46.6	D	23.0	C	22.1	C
	Thru	567	26	180	18.4	B				
	Right	25	0	6	1.8	A				
Southbound	Left	158	30	138	48.9	D	15.1	B		
	Thru	329	11	123	9.1	A				
	Right	365	1	62	5.8	A				
Eastbound	Left	411	77	379	43.8	D	36.3	D		
	Thru	4	4	72	42.6	D				
	Right	140	5	79	14.1	B				
Westbound	Left	29	10	64	59.7	E	11.3	B		
	Thru	4	1	19	66.1	E				
	Right	201	0	31	3.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
137	135	-2
586	567	-19
26	25	-1
191	158	-33
408	329	-79
468	365	-103
418	411	-7
4	4	0
135	140	5
30	29	-1
5	4	-1
218	201	-17

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	513	3	100	3.6	A	3.5	A	5.7	A
	Right	85	3	100	3.0	A				
Southbound	Thru	480	2	84	2.5	A	2.5	A		
Eastbound	Left	11	3	57	45.3	D	30.5	C		
	Right	67	10	80	28.1	C				
Westbound	Right	206	10	106	10.0	A	10.0	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
530	513	-17
87	85	-2
556	480	-76
11	11	0
68	67	-1
207	206	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	95	25	103	61.7	E	32.6	C	32.0	C
	Thru	284	41	208	51.7	D				
	Right	285	0	11	3.9	A				
Southbound	Left	38	6	49	39.2	D	20.2	C		
	Thru	199	27	218	29.5	C				
	Right	310	21	277	11.9	B				
Eastbound	Left	285	71	263	71.9	E	42.7	D		
	Thru	293	26	117	28.9	C				
	Right	105	0	19	1.7	A				
Westbound	Left	338	36	164	32.9	C	30.3	C		
	Thru	303	24	118	29.2	C				
	Right	27	1	19	10.9	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	95	2
295	284	-11
289	285	-4
43	38	-5
226	199	-27
356	310	-46
295	285	-10
288	293	5
107	105	-2
361	338	-23
311	303	-8
27	27	0

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	28	5	87	9.3	A	4.6	A	6.3	A
	Thru	495	5	87	4.3	A				
	Right	3	9	114	3.6	A				
Southbound	Left	3	6	128	12.6	B	5.7	A		
	Thru	506	6	127	5.3	A				
	Right	157	10	158	6.8	A				
Eastbound	Left	111	9	102	17.9	B	15.0	B		
	Thru	0	-	-	-	A				
	Right	38	9	128	6.6	A				
Westbound	Left	3	0	17	16.7	B	9.6	A		
	Thru	4	0	18	12.7	B				
	Right	4	0	1	1.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
31	28	-3
499	495	-4
3	3	0
3	3	0
543	506	-37
173	157	-16
114	111	-3
0	0	0
41	38	-3
2	3	1
4	4	0
3	4	1

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	26	3	41	21.6	C	4.9	A	4.8	A
	Thru	0	-	-	-	A				
	Right	123	0	0	1.4	A				
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	3.9	A		
	Thru	144	2	51	4.9	A				
	Right	65	0	12	1.7	A				
Westbound	Left	105	6	55	13.2	B	5.3	A		
	Thru	192	0	30	1.0	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
28	26	-2
0	0	0
139	123	-16
0	0	0
0	0	0
0	0	0
160	144	-16
73	65	-8
110	105	-5
199	192	-7
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	0	1	2.8	A	2.1	A	2.9	A
	Thru	122	0	1	1.9	A				
	Right	4	0	1	1.0	A				
Southbound	Left	0	-	-	-	A	1.8	A		
	Thru	117	0	5	1.8	A				
	Right	43	0	5	1.8	A				
Eastbound	Left	31	0	10	4.8	A	5.0	A		
	Thru	14	0	10	10.2	B				
	Right	51	0	10	3.8	A				
Westbound	Left	0	-	-	-	A	7.9	A		
	Thru	13	0	5	8.9	A				
	Right	2	0	0	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	37	-1
133	122	-11
2	4	2
0	0	0
132	117	-15
42	43	1
38	31	-7
17	14	-3
62	51	-11
1	0	-1
16	13	-3
2	2	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	6	2	45	27.8	C	13.6	B	15.8	B
	Thru	87	4	47	13.7	B				
	Right	10	0	31	3.9	A				
Southbound	Left	4	0	13	26.2	C	10.9	B		
	Thru	80	6	75	14.3	B				
	Right	86	10	92	7.0	A				
Eastbound	Left	74	12	123	29.5	C	27.9	C		
	Thru	4	0	15	21.4	C				
	Right	4	0	1	4.7	A				
Westbound	Left	11	1	23	20.5	C	19.7	B		
	Thru	4	1	19	19.2	B				
	Right	3	0	20	17.5	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	6	-1
89	87	-2
10	10	0
4	4	0
95	80	-15
101	86	-15
87	74	-13
5	4	-1
3	4	1
13	11	-2
3	4	1
3	3	0

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 28th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	114	16	102	29.4	D	15.7	C	5.1	A
	Right	183	0	0	7.1	A				
Eastbound	Left	177	1	69	3.9	A	1.7	A		
	Thru	327	0	0	0.5	A				
Westbound	Thru	284	0	0	0.8	A	0.9	A		
	Right	39	0	0	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
122	114	-8
196	183	-13
179	177	-2
332	327	-5
298	284	-14
41	39	-2

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	3	1	43	9.8	A	6.8	A	0.5	A
	Right	17	1	62	6.3	A				
Eastbound	Left	21	0	18	2.4	A	0.3	A		
	Thru	245	0	0	0.2	A				
Westbound	Thru	277	0	0	0.2	A	0.2	A		
	Right	9	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	3	-1
20	17	-3
22	21	-1
277	245	-32
288	277	-11
7	9	2

American Blvd & 30th Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	22	1	49	11.1	B	8.8	A	1.2	A
	Right	23	0	42	6.6	A				
Eastbound	Thru	231	0	3	0.2	A	0.2	A		
	Right	18	0	0	0.4	A				
Westbound	Left	26	0	17	4.6	A	0.8	A		
	Thru	264	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	22	-3
25	23	-2
260	231	-29
21	18	-3
27	26	-1
271	264	-7

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	12	0	3	8.8	A	7.1	A	8.5	A
	Thru	42	2	48	6.6	A				
Southbound	Thru	37	1	30	7.3	A	6.9	A		
	Right	5	0	22	4.4	A				
Eastbound	Left	14	1	41	18.0	B	15.3	B		
	Right	7	0	21	10.0	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
13	12	-1
43	42	-1
41	37	-4
5	5	0
19	14	-5
11	7	-4

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	0	0	0.9	A	0.4	A	3.1	A
	Thru	17	0	1	0.3	A				
	Right	12	0	1	0.5	A				
Southbound	Left	27	0	1	0.5	A	0.5	A		
	Thru	11	0	2	0.4	A				
	Right	7	0	1	0.3	A				
Eastbound	Left	6	1	45	7.9	A	6.4	A		
	Thru	0	-	-	-	A				
	Right	13	0	44	5.7	A				
Westbound	Left	11	1	51	7.8	A	6.4	A		
	Thru	0	-	-	-	A				
	Right	33	1	43	5.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	4	0
16	17	1
13	12	-1
34	27	-7
12	11	-1
7	7	0
6	6	0
0	0	0
12	13	1
12	11	-1
0	0	0
34	33	-1

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.1	A	1.1	A
	Thru	24	0	0	0.1	A				
	Right	7	0	0	0.3	A				
Southbound	Left	9	0	1	0.6	A	0.2	A		
	Thru	25	0	0	0.1	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	4	0	45	7.2	A	6.0	A		
	Thru	0	-	-	-	A				
	Right	9	1	59	5.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
22	24	2
7	7	0
10	9	-1
28	25	-3
0	0	0
0	0	0
0	0	0
5	4	-1
0	0	0
11	9	-2

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	31	0	0	0.1	A	0.2	A	0.5	A
	Right	6	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	0.1	A		
	Thru	29	0	0	0.1	A				
Eastbound	Left	4	0	36	7.5	A	7.5	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
29	31	2
7	6	-1
0	0	0
33	29	-4
6	4	-2
0	0	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	5	1	38	16.8	C	8.4	A	1.2	A
	Right	27	2	72	6.9	A				
Eastbound	Left	32	0	18	2.5	A	1.0	A		
	Thru	409	0	2	0.9	A				
Westbound	Thru	299	0	0	0.8	A	0.8	A		
	Right	4	0	0	0.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	5	-2
32	27	-5
32	32	0
422	409	-13
309	299	-10
4	4	0

American Blvd & Metro Drive E

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	0.5	A
	Right	0	-	-	-	A				
Eastbound	Left	2	0	3	1.8	A	0.5	A		
	Thru	252	0	0	0.5	A				
Westbound	Thru	288	0	0	0.4	A	0.4	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
2	0	-2
3	2	-1
282	252	-30
294	288	-6
0	0	0

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	0.5	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	12	1	54	13.8	B	9.9	A		
	Thru	0	-	-	-	A				
	Right	12	1	55	6.1	A				
Eastbound	Left	16	0	12	2.5	A	0.2	A		
	Thru	399	0	0	0.2	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.2	A		
	Thru	292	0	0	0.2	A				
	Right	14	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
0	0	0
15	12	-3
0	0	0
13	12	-1
16	16	0
412	399	-13
1	0	-1
0	0	0
297	292	-5
13	14	1

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	45	3	56	14.7	B	9.3	A	3.8	A
	Thru	0	-	-	-	A				
	Right	150	6	87	7.6	A				
Southbound	Left	35	2	51	15.6	C	10.1	B		
	Thru	0	-	-	-	A				
	Right	20	0	1	0.4	A				
Eastbound	Left	2	0	1	1.0	A	1.0	A		
	Thru	208	0	0	1.1	A				
	Right	42	0	0	0.5	A				
Westbound	Left	94	1	39	5.7	A	1.9	A		
	Thru	225	0	0	0.4	A				
	Right	28	0	0	0.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
47	45	-2
0	0	0
148	150	2
34	35	1
0	0	0
21	20	-1
3	2	-1
233	208	-25
46	42	-4
92	94	2
226	225	-1
28	28	0

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	1.2	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	55	3	61	11.5	B	6.7	A		
	Thru	0	-	-	-	A				
	Right	44	0	12	0.7	A				
Eastbound	Left	43	0	20	1.8	A	0.2	A		
	Thru	369	0	0	0.1	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.6	A		
	Thru	260	0	0	0.6	A				
	Right	12	0	3	1.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
0	0	0
54	55	1
0	0	0
46	44	-2
47	43	-4
379	369	-10
0	0	0
0	0	0
265	260	-5
13	12	-1

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	230	25	117	37.3	D	15.0	B	20.5	C
	Thru	40	25	118	69.0	E				
	Right	599	0	0	2.8	A				
Southbound	Left	556	68	264	37.3	D	16.2	B		
	Thru	84	68	264	38.8	D				
	Right	1,206	0	0	4.9	A				
Eastbound	Left	976	32	233	30.3	C	28.6	C		
	Right	252	19	114	22.0	C				
Westbound	Left	500	17	140	25.9	C	23.1	C		
	Right	494	34	171	20.2	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
241	230	-11
38	40	2
628	599	-29
566	556	-10
86	84	-2
1,208	1,206	-2
988	976	-12
246	252	6
499	500	1
498	494	-4

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	2	1	13	35.2	D	22.4	C	24.6	C
	Thru	370	39	220	23.9	C				
	Right	42	0	13	8.6	A				
Southbound	Left	187	32	115	44.9	D	19.6	B		
	Thru	330	22	140	19.4	B				
	Right	316	1	56	4.7	A				
Eastbound	Left	364	73	300	40.8	D	40.4	D		
	Thru	23	4	36	36.8	D				
	Right	2	0	1	0.8	A				
Westbound	Left	31	9	61	50.3	D	18.5	B		
	Thru	29	7	46	52.9	D				
	Right	116	0	26	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
3	2	-1
386	370	-16
44	42	-2
188	187	-1
329	330	1
314	316	2
388	364	-24
24	23	-1
3	2	-1
34	31	-3
29	29	0
117	116	-1

2025 VISSIM Model: No Build
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	415	1	43	1.2	A	1.2	A	2.5	A
	Right	7	0	29	1.4	A				
Southbound	Left	7	0	24	14.2	B	4.3	A		
	Thru	272	3	72	4.1	A				
Westbound	Left	1	0	7	15.8	B	7.3	A		
	Right	5	0	35	5.6	A				

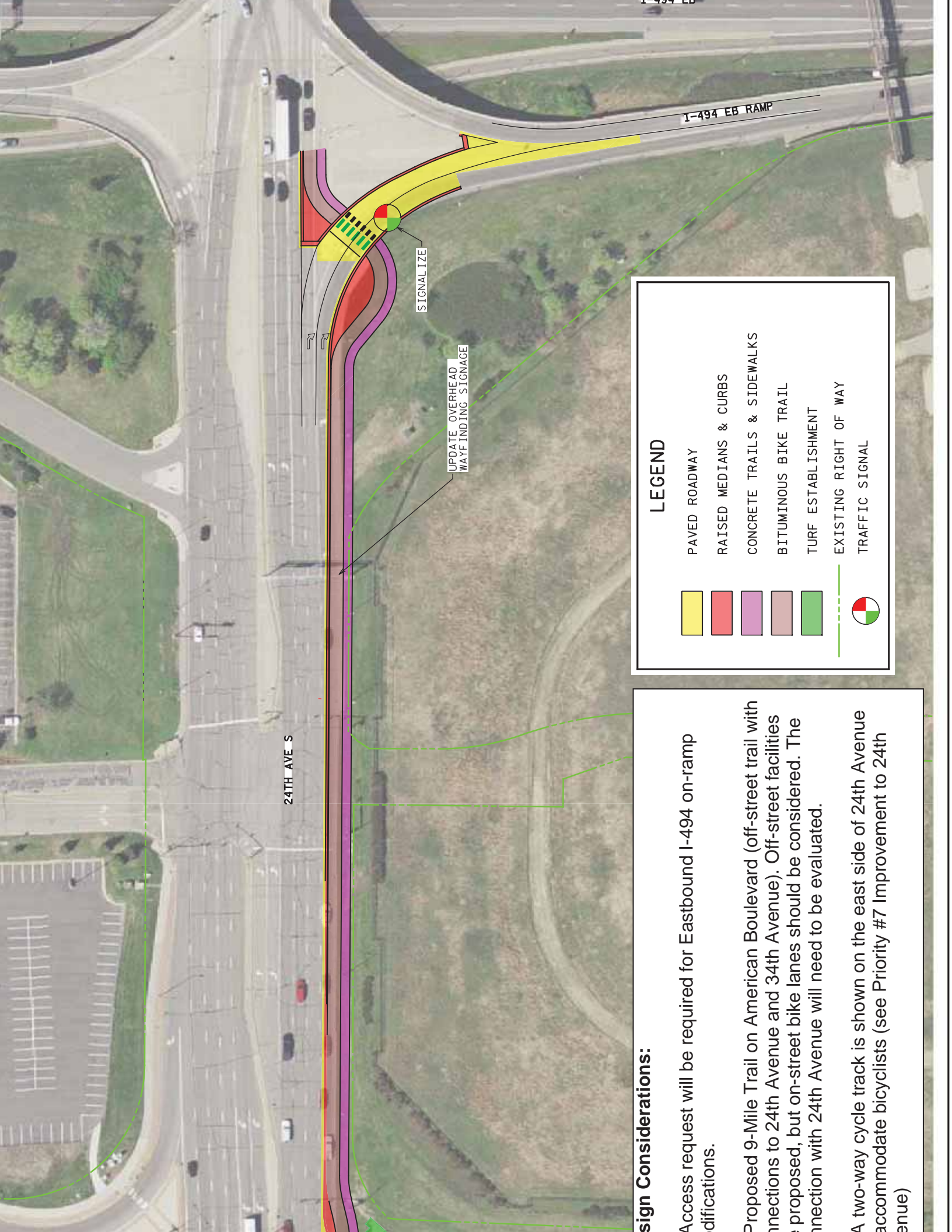
Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
428	415	-13
5	7	2
7	7	0
276	272	-4
2	1	-1
5	5	0

Note: Results are the average of ten (10) simulation runs

Appendix J
Year 2025 Concepts and Preliminary Cost Estimates

	1	Yes	Yes	Yes	into the easternmost northbound through lanes. Signal timing improvements and ramp signalization are also included.	
	2, 3	Yes	Yes	Yes	Construct dual northbound right turn lanes onto eastbound I-494 ramps. This improvement also consists of restriping at the eastbound left-turn lanes at the American Boulevard/34th Avenue intersection to "cat track" into the easternmost northbound through lanes. Eliminate the eastbound free right at American Boulevard/34th Avenue by either adding a Yield sign to this movement or bringing the turn lane into the intersection at 90 degrees. Signal timing improvements and ramp signalization are also included.	
	4	Yes	Yes	Yes	Reconstruct the southbound approach to repurpose lanes and provide dual southbound right-turn lanes	depends on TAZ 473A development plans/timeframe
	-	Yes	No	No	American Avenue/Thunderbird Road and 34th Avenue/Appletree Square	
	-	Yes	No	No	Modify "cat-tracking" southbound right at Lindau Lane/IKEA Way into the two south lanes. Add "cat-tracking" southbound right at Lindau Lane/22nd Avenue. This improvement also includes updated signal cycle lengths/splits and modification to wayfinding signage.	depends on MOA Phase 2B development plans/timeframe
	5	Yes	Yes	Yes	Modify the American Boulevard/International Drive intersection to three-quarter access and construct a roundabout at the American Boulevard/Metro Drive East intersection.	depends on TAZ 472D development plans/timeframe
	6, 7, 8	No	Yes	Yes	Develop a concept layout to better utilize the existing roadway width. Concept may include restriping/median work, removal of channelized right-turns, removal of add-in lanes, access control, pedestrian refuge islands, etc.	This project should be implemented when pavement rehab is needed. Should also be implemented prior to any major phases of MOA are constructed.
	9	Yes	Yes	Yes	Modify striping to single southbound and northbound left-turn lane and modify signal timing to eliminate split phasing.	
	10,11	Yes	Yes	Yes	Develop concepts for two traffic control options (signal and multi-lane roundabout). Assume no south approach under year 2025 conditions, but design intersection for future south approach. (Both traffic controls will be tested under year 2040 conditions to determine if both options provide sufficient capacity with year 2040 forecasts).	depends on TAZ 472F development plans/timeframe
	12	No	Yes	Yes	Restripe to remove the westbound trap right-turn, this turn lane could be developed. The three westbound through lanes east of the intersection would then align with the three westbound through lanes at the intersection.	
	13	No	Yes	Yes	Add a marked pedestrian crossing across East Old Shakopee Road between 33rd Avenue and 31st Avenue to better accommodate pedestrians.	
	14	Yes	No	No	Install a signal once warranted	
	15	No	Yes	Yes	Modify south approach	

overlay. The pavement costs included are for where new pavement would be located.



24TH AVE S

I-494 EB RAMP

SIGNAL IZE

UPDATE OVERHEAD WAYFINDING SIGNAGE

Design Considerations:

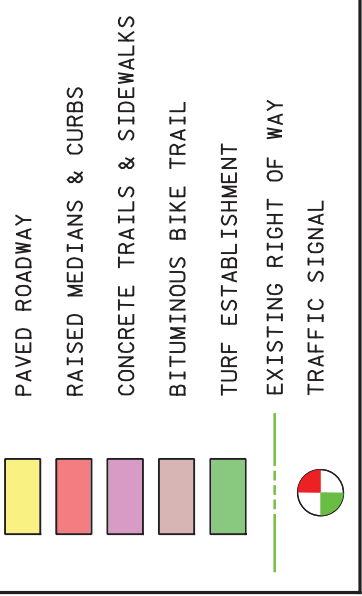
Access request will be required for Eastbound I-494 on-ramp modifications.

Proposed 9-Mile Trail on American Boulevard (off-street trail with connections to 24th Avenue and 34th Avenue). Off-street facilities proposed, but on-street bike lanes should be considered. The connection with 24th Avenue will need to be evaluated.

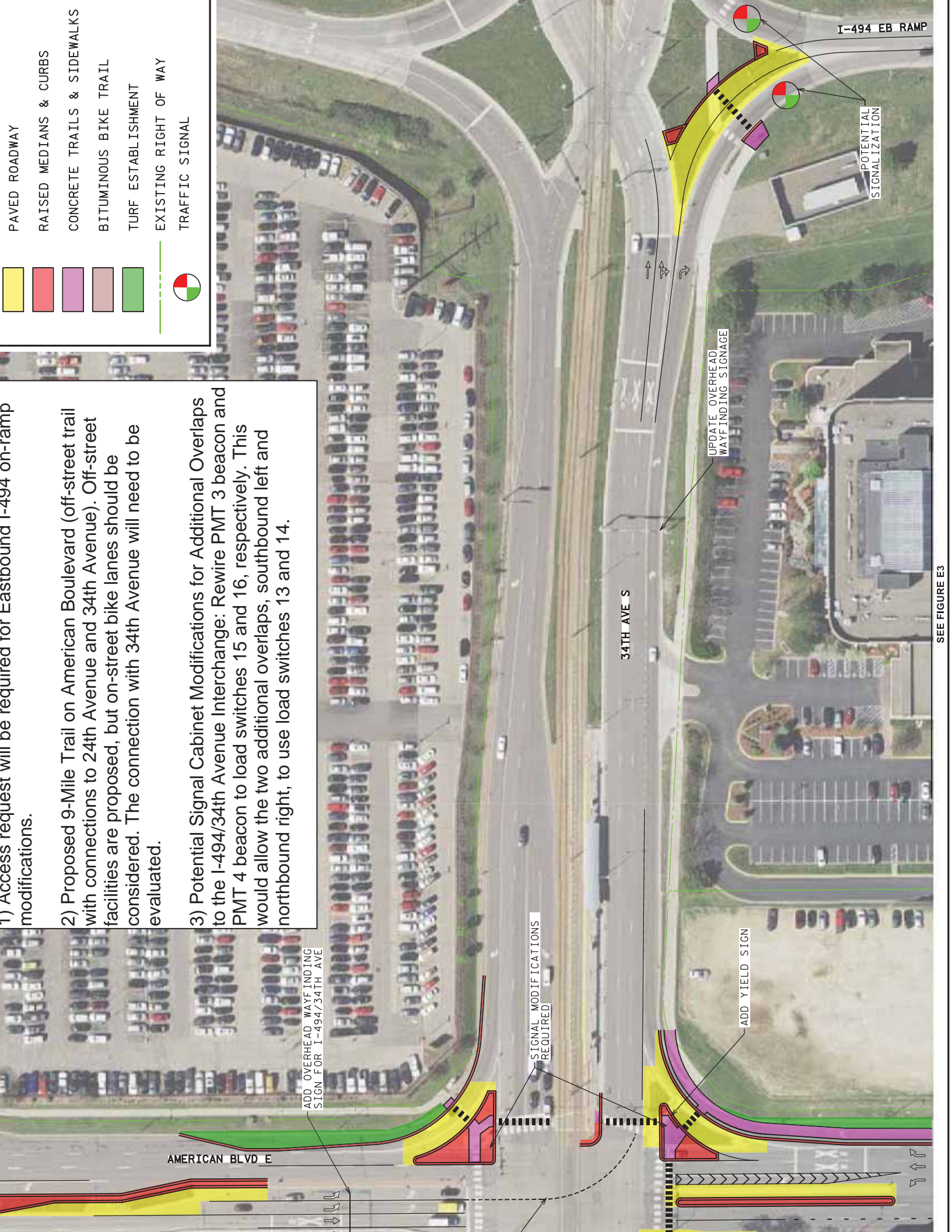
A two-way cycle track is shown on the east side of 24th Avenue to accommodate bicyclists (see Priority #7 Improvement to 24th Avenue)






LEGEND

-  PAVED ROADWAY
-  RAISED MEDIANS & CURBS
-  CONCRETE TRAILS & SIDEWALKS
-  BITUMINOUS BIKE TRAIL
-  TURF ESTABLISHMENT
-  EXISTING RIGHT OF WAY
-  TRAFFIC SIGNAL



- 1) Access request will be required for Eastbound I-494 on-ramp modifications.
- 2) Proposed 9-Mile Trail on American Boulevard (off-street trail with connections to 24th Avenue and 34th Avenue). Off-street facilities are proposed, but on-street bike lanes should be considered. The connection with 34th Avenue will need to be evaluated.
- 3) Potential Signal Cabinet Modifications for Additional Overlaps to the I-494/34th Avenue Interchange: Rewire PMT 3 beacon and PMT 4 beacon to load switches 15 and 16, respectively. This would allow the two additional overlaps, southbound left and northbound right, to use load switches 13 and 14.



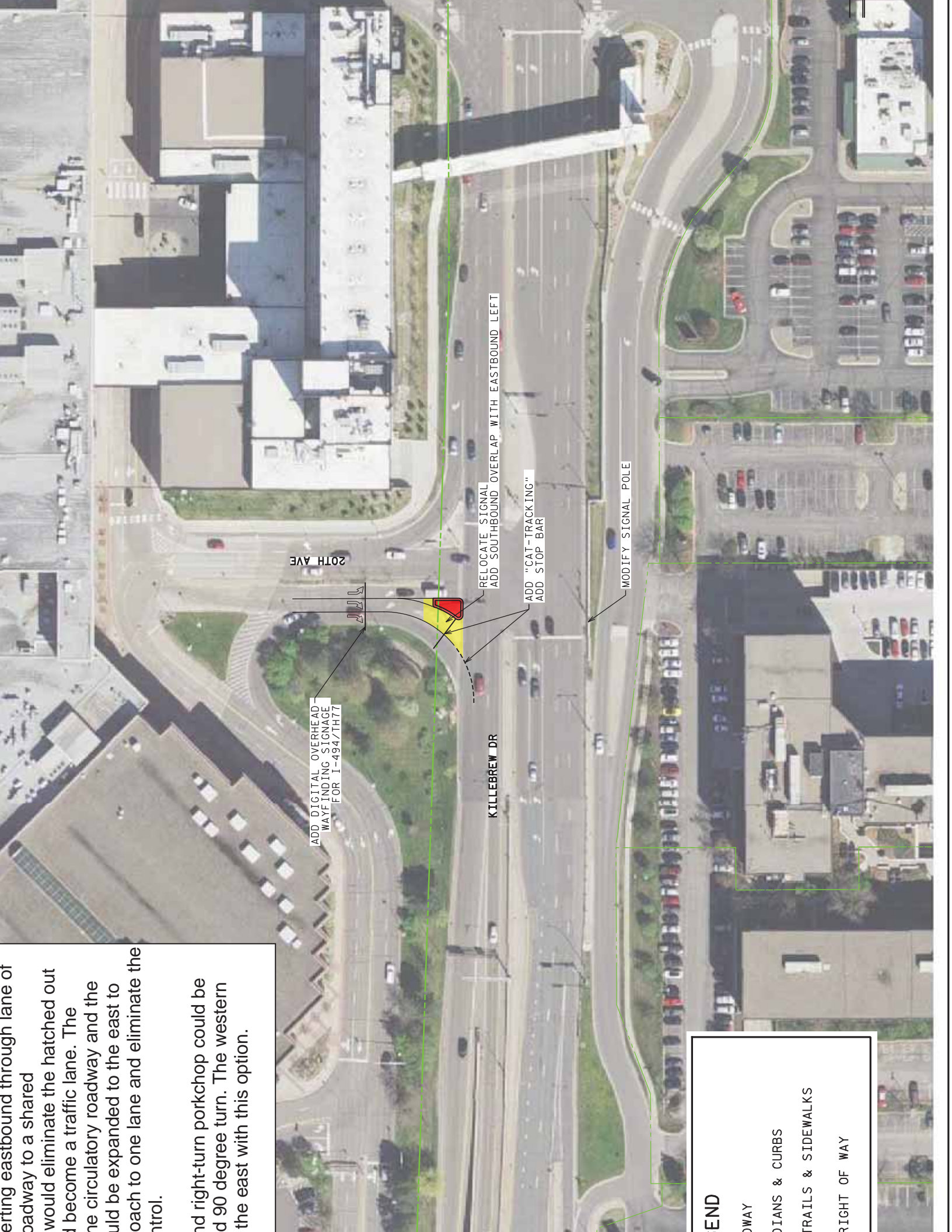
	PAVED
	RAISED
	CONCRETE
	TURF
	EXISTING

Design Considerations:

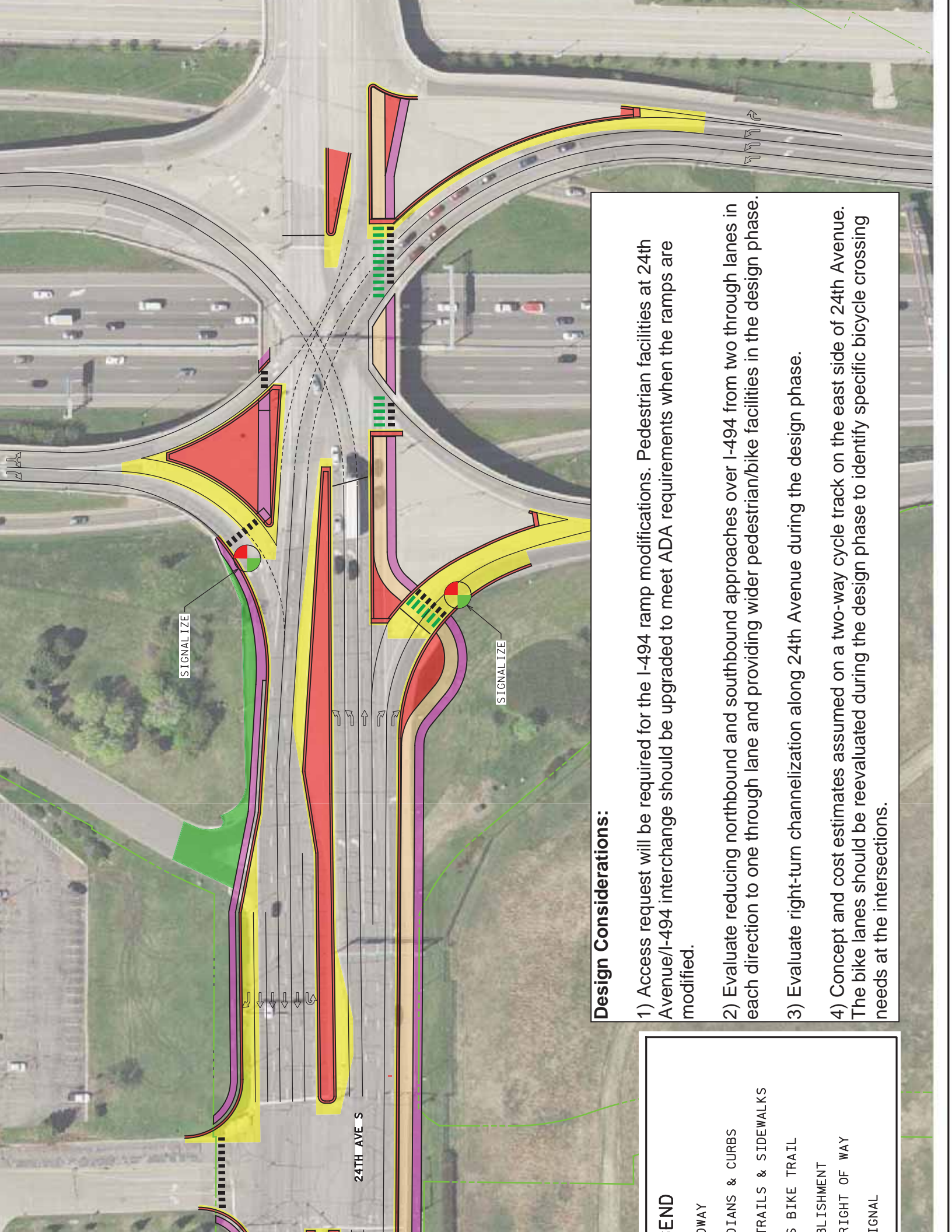
1) Sidewalk is shown close to the roadway to increase the amount of developable area; however, the sidewalk could remain closer to its existing location. This should be evaluated in the design phase.

erting eastbound through lane of roadway to a shared roadway would eliminate the hatched out lane and become a traffic lane. The one circulatory roadway and the roadway would be expanded to the east to approach to one lane and eliminate the control.

and right-turn porkchop could be added 90 degree turn. The western approach to the east with this option.



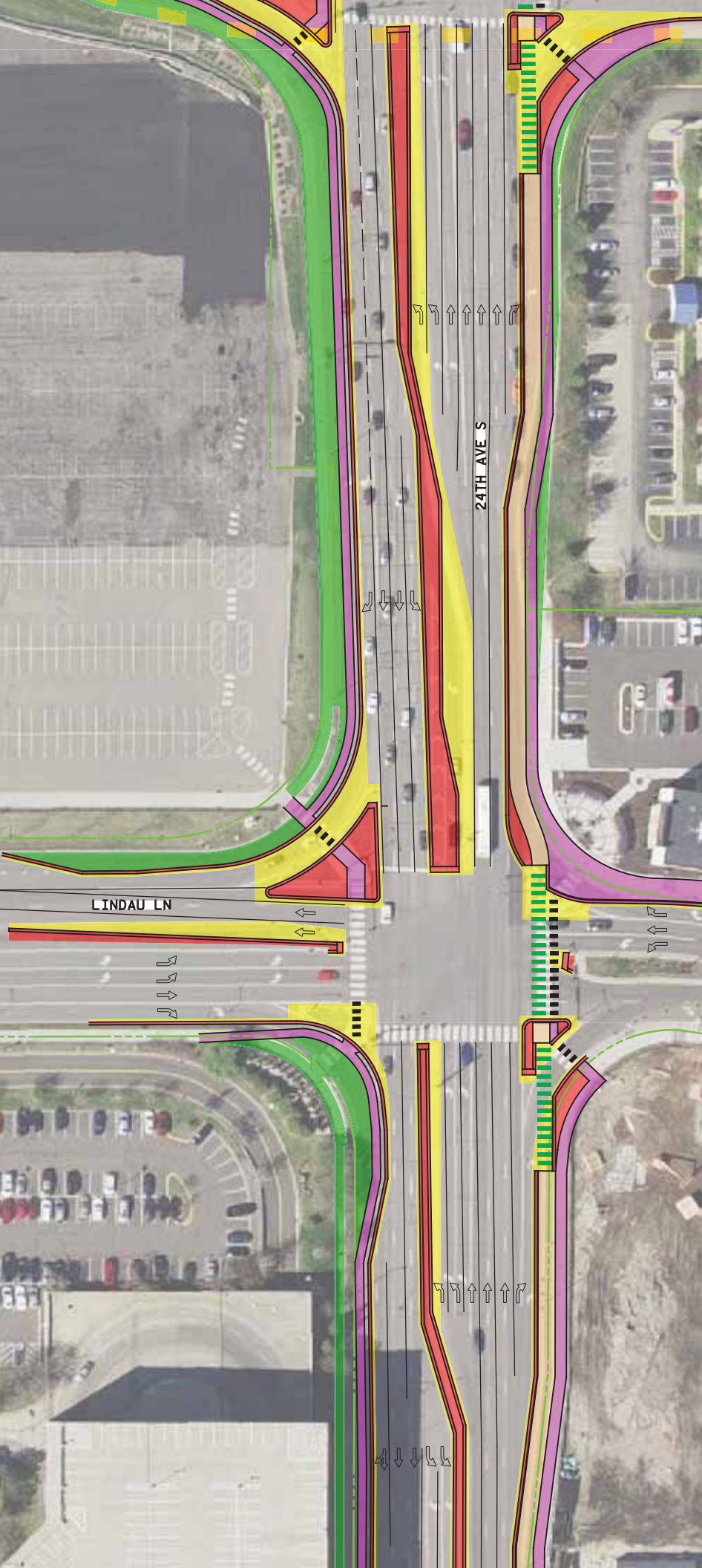
END
RDWAY
DIANS & CURBS
TRAILS & SIDEWALKS
RIGHT OF WAY



- END
- 2-WAY
- LANE
- TRAILS & CURBS
- TRAILS & SIDEWALKS
- BIKE TRAIL
- ESTABLISHMENT
- RIGHT OF WAY
- SIGNAL

Design Considerations:

- 1) Access request will be required for the I-494 ramp modifications. Pedestrian facilities at 24th Avenue/I-494 interchange should be upgraded to meet ADA requirements when the ramps are modified.
- 2) Evaluate reducing northbound and southbound approaches over I-494 from two through lanes in each direction to one through lane and providing wider pedestrian/bike facilities in the design phase.
- 3) Evaluate right-turn channelization along 24th Avenue during the design phase.
- 4) Concept and cost estimates assumed on a two-way cycle track on the east side of 24th Avenue. The bike lanes should be reevaluated during the design phase to identify specific bicycle crossing needs at the intersections.



END

WAY

LANES & CURBS

RAILS & SIDEWALKS

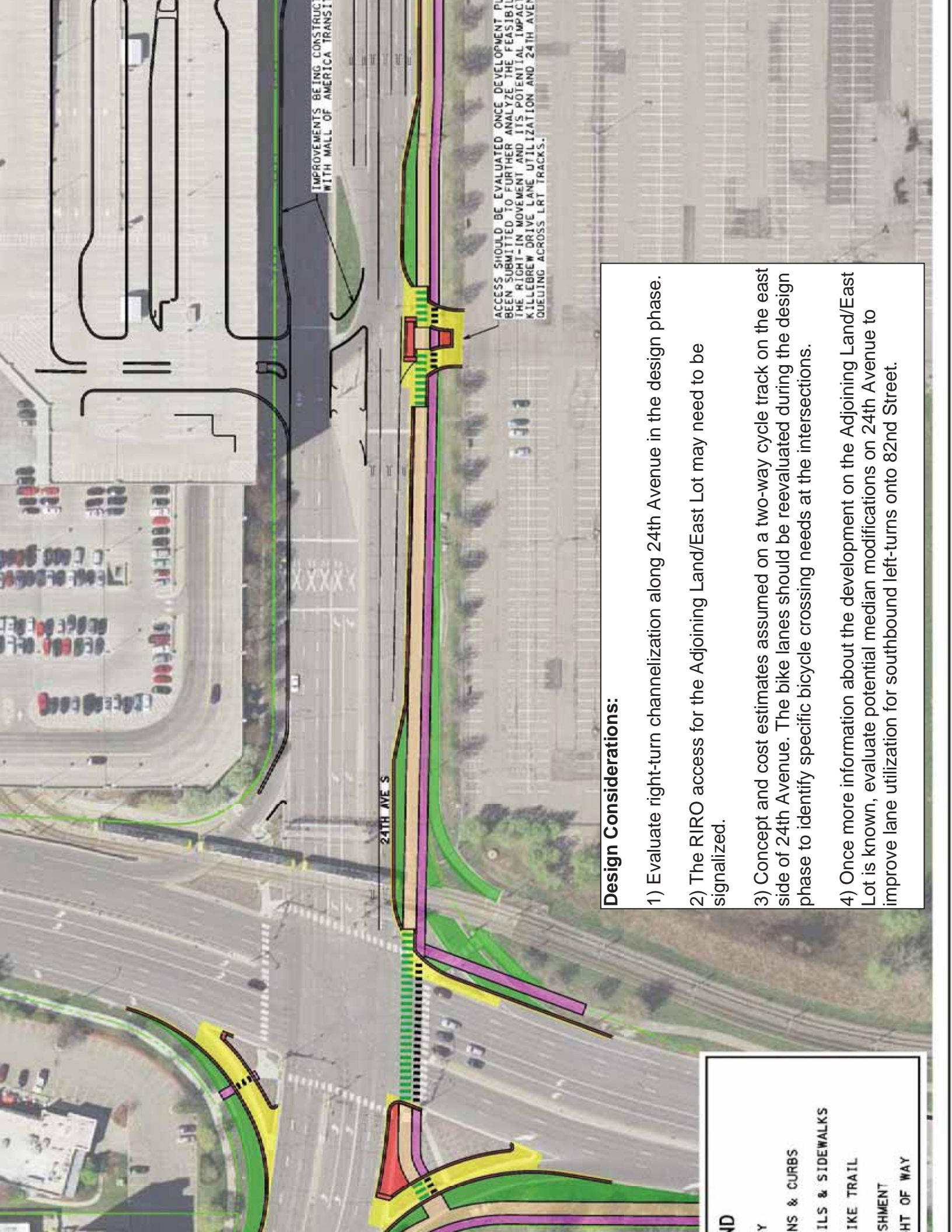
BIKE TRAIL

PLISHMENT

RIGHT OF WAY

Design Considerations:

- 1) Proposed 9-Mile Trail on American Boulevard (off-street trail with connections to 24th Avenue and 34th Avenue). Off-street facilities are proposed, but on-street bike lanes should be considered. The connection with 24th Avenue will need to be evaluated.
- 2) Evaluate right-turn channelization along 24th Avenue in the design phase.
- 3) Concept and cost estimates assumed on a two-way cycle track on the east side of 24th Avenue. The bike lanes should be reevaluated during the design phase to identify specific bicycle crossing needs at the intersections.
- 4) Evaluate a pedestrian bridge across 24th Avenue in the design phase. A potential location for a pedestrian bridge is directly to the north of Lindau Lane where high pedestrian activity is expected and there is additional space from bringing in the curb.
- 5) Bus stop proposed at 24th Avenue/Lindau Lane as part of the American Boulevard BRT. The location of this stop should be considered in the design phase.



IMPROVEMENTS BEING CONSTRUCTED WITH MALL OF AMERICA TRANSIT

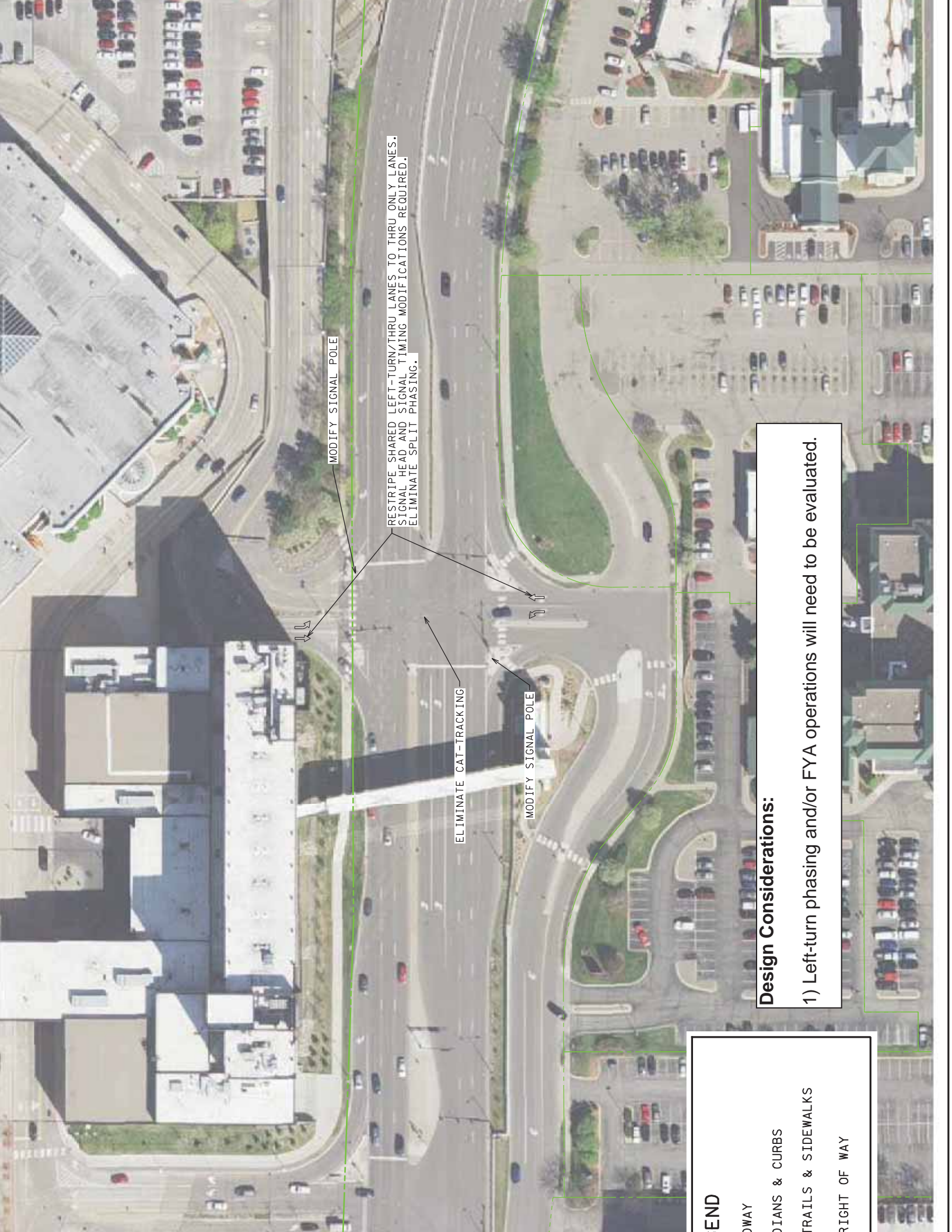
ACCESS SHOULD BE EVALUATED ONCE DEVELOPMENT PLANS HAVE BEEN SUBMITTED TO FURTHER ANALYZE THE FEASIBILITY OF THE RIGHT-IN MOVEMENT AND ITS POTENTIAL IMPACT ON KILLEBREW DRIVE LANE UTILIZATION AND 24TH AVENUE QUEUING ACROSS LRT TRACKS.

24TH AVE S

Design Considerations:

- 1) Evaluate right-turn channelization along 24th Avenue in the design phase.
- 2) The RIRO access for the Adjoining Land/East Lot may need to be signalized.
- 3) Concept and cost estimates assumed on a two-way cycle track on the east side of 24th Avenue. The bike lanes should be reevaluated during the design phase to identify specific bicycle crossing needs at the intersections.
- 4) Once more information about the development on the Adjoining Land/East Lot is known, evaluate potential median modifications on 24th Avenue to improve lane utilization for southbound left-turns onto 82nd Street.

ND
Y
NS & CURBS
LS & SIDEWALKS
KE TRAIL
SHMENT
HT OF WAY



MODIFY SIGNAL POLE

RESTRIPE SHARED LEFT-TURN/THRU LANES TO THRU ONLY LANES.
SIGNAL HEAD AND SIGNAL TIMING MODIFICATIONS REQUIRED.
ELIMINATE SPLIT PHASING.

ELIMINATE CAT-TRACKING

MODIFY SIGNAL POLE

END

BIWAY

DIANS & CURBS

TRAILS & SIDEWALKS

RIGHT OF WAY

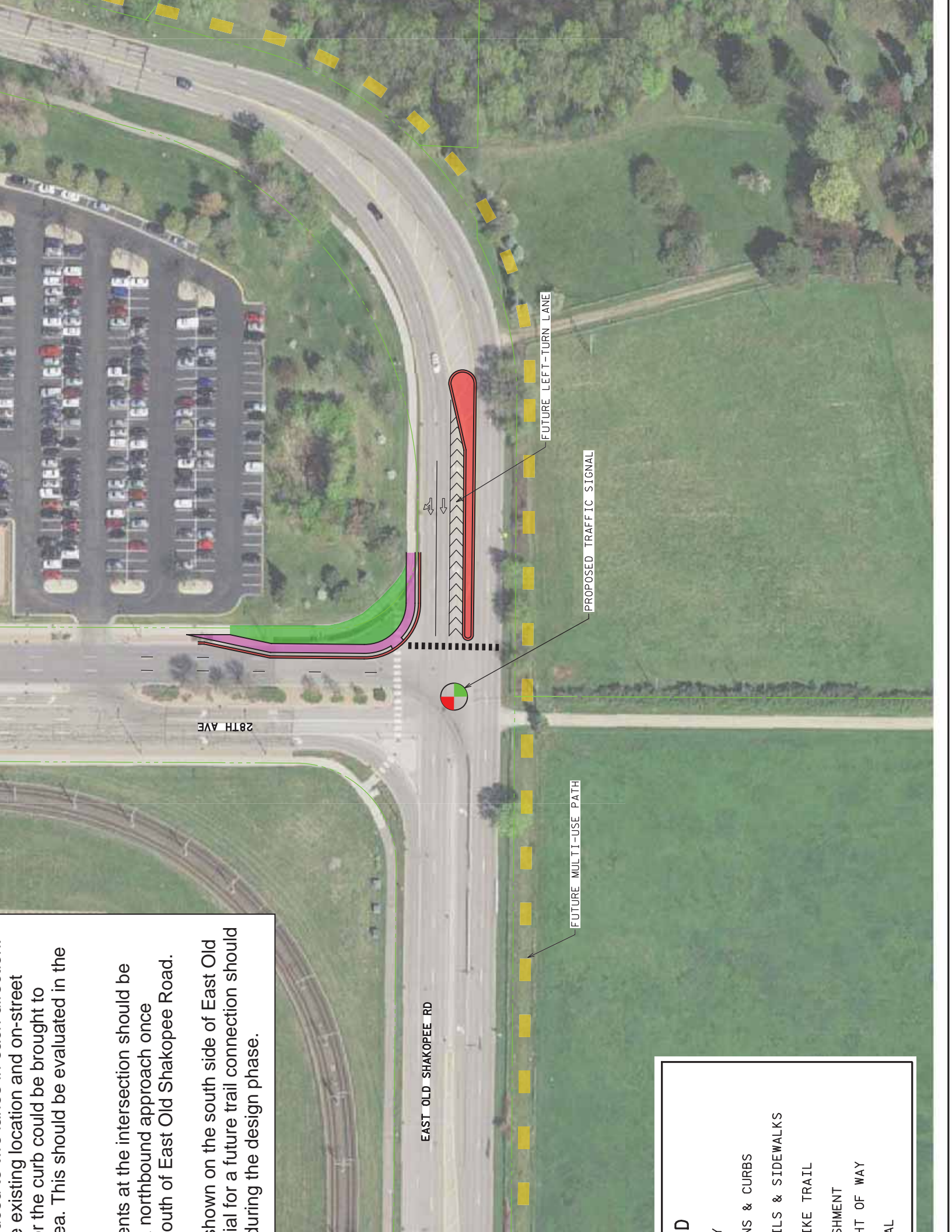
Design Considerations:

- 1) Left-turn phasing and/or FYA operations will need to be evaluated.

the existing location and on-street curb could be brought to the area. This should be evaluated in the

elements at the intersection should be northbound approach once south of East Old Shakopee Road.

shown on the south side of East Old Shakopee Road. A trail connection should be established during the design phase.



EAST OLD SHAKOPEE RD

28TH AVE

FUTURE LEFT-TURN LANE

PROPOSED TRAFFIC SIGNAL

FUTURE MULTI-USE PATH

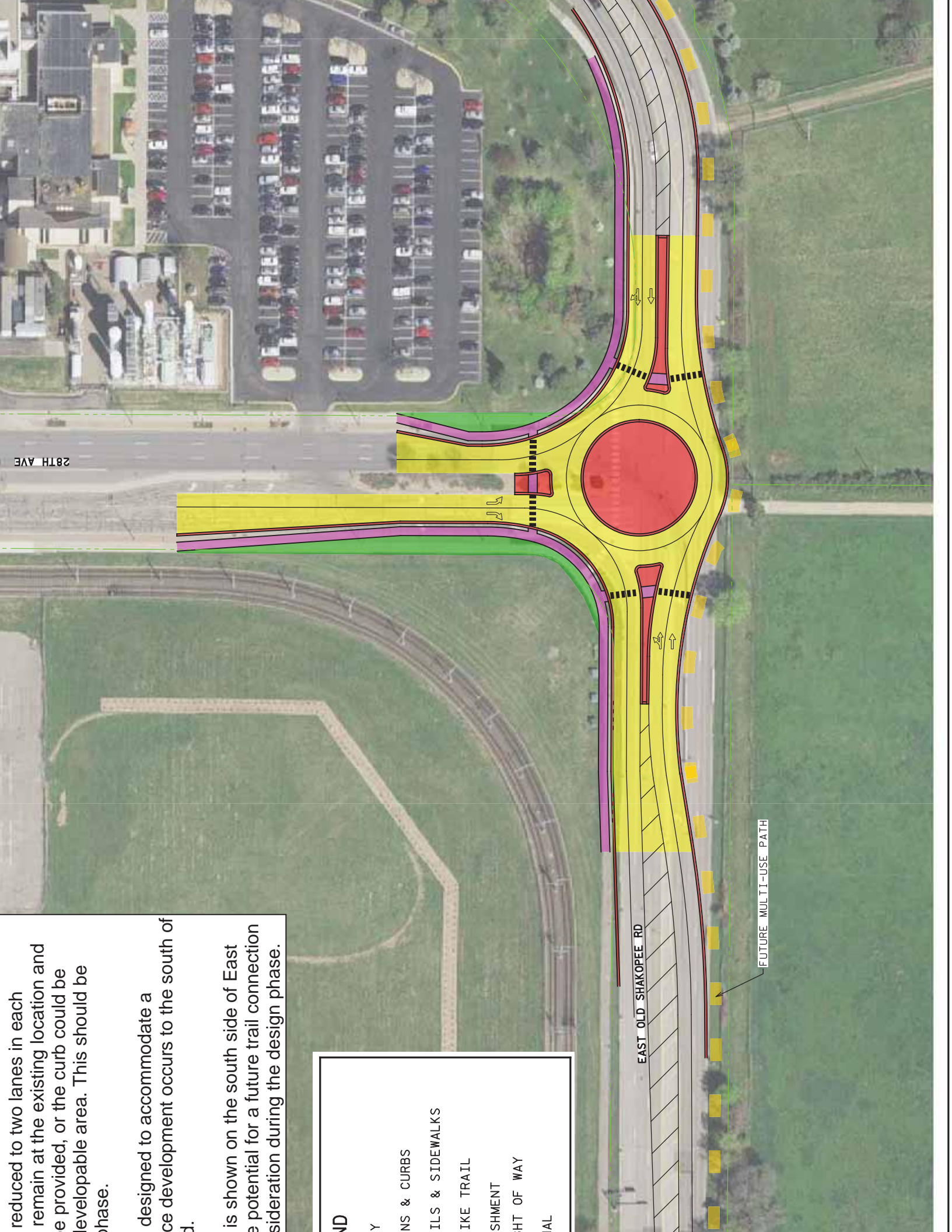
- D
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- KE TRAIL
- SHMENT
- HT OF WAY
- AL

reduced to two lanes in each
 remain at the existing location and
 e provided, or the curb could be
 developable area. This should be
 phase.

designed to accommodate a
 ce development occurs to the south of
 d.

is shown on the south side of East
 e potential for a future trail connection
 sideration during the design phase.

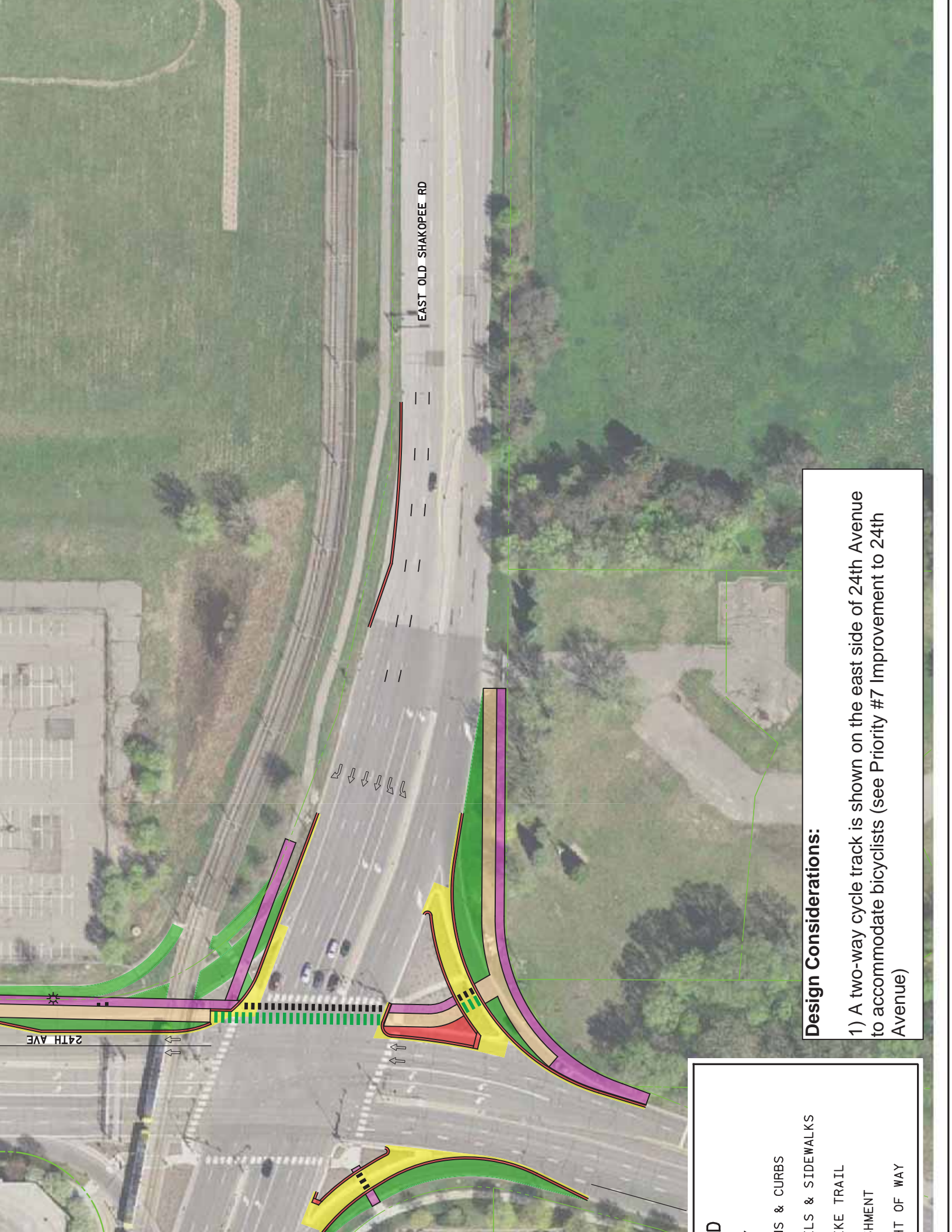
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- IAL



28TH AVE

EAST OLD SHAKOPEE RD

FUTURE MULTI-USE PATH



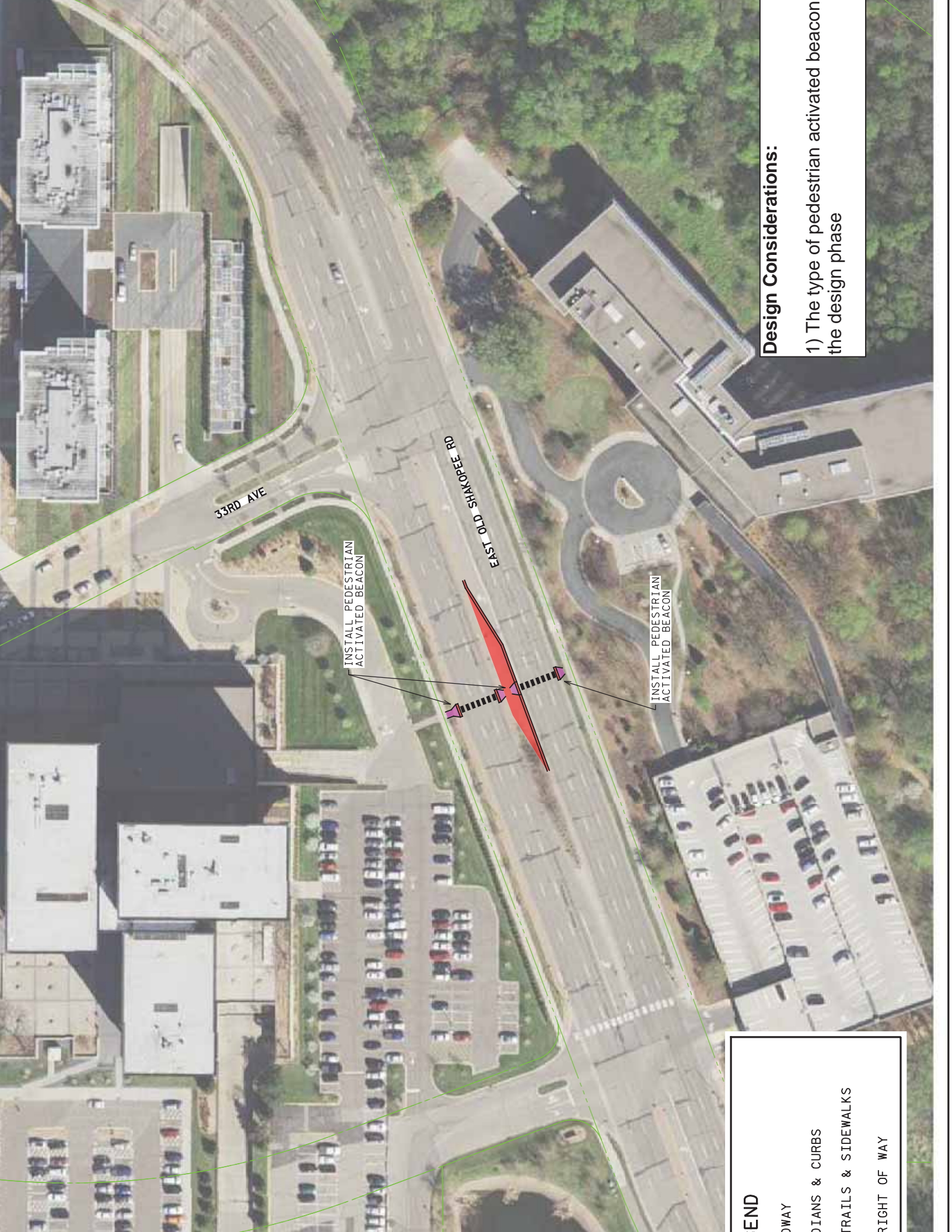
EAST OLD SHAKOPEE RD

24TH AVE

Design Considerations:

- 1) A two-way cycle track is shown on the east side of 24th Avenue to accommodate bicyclists (see Priority #7 Improvement to 24th Avenue)

D
 S & CURBS
 LS & SIDEWALKS
 KE TRAIL
 HMENT
 IT OF WAY



33RD AVE

EAST OLD SHAKOPEE RD

INSTALL PEDESTRIAN
ACTIVATED BEACON

INSTALL PEDESTRIAN
ACTIVATED BEACON

Design Considerations:

- 1) The type of pedestrian activated beacon the design phase

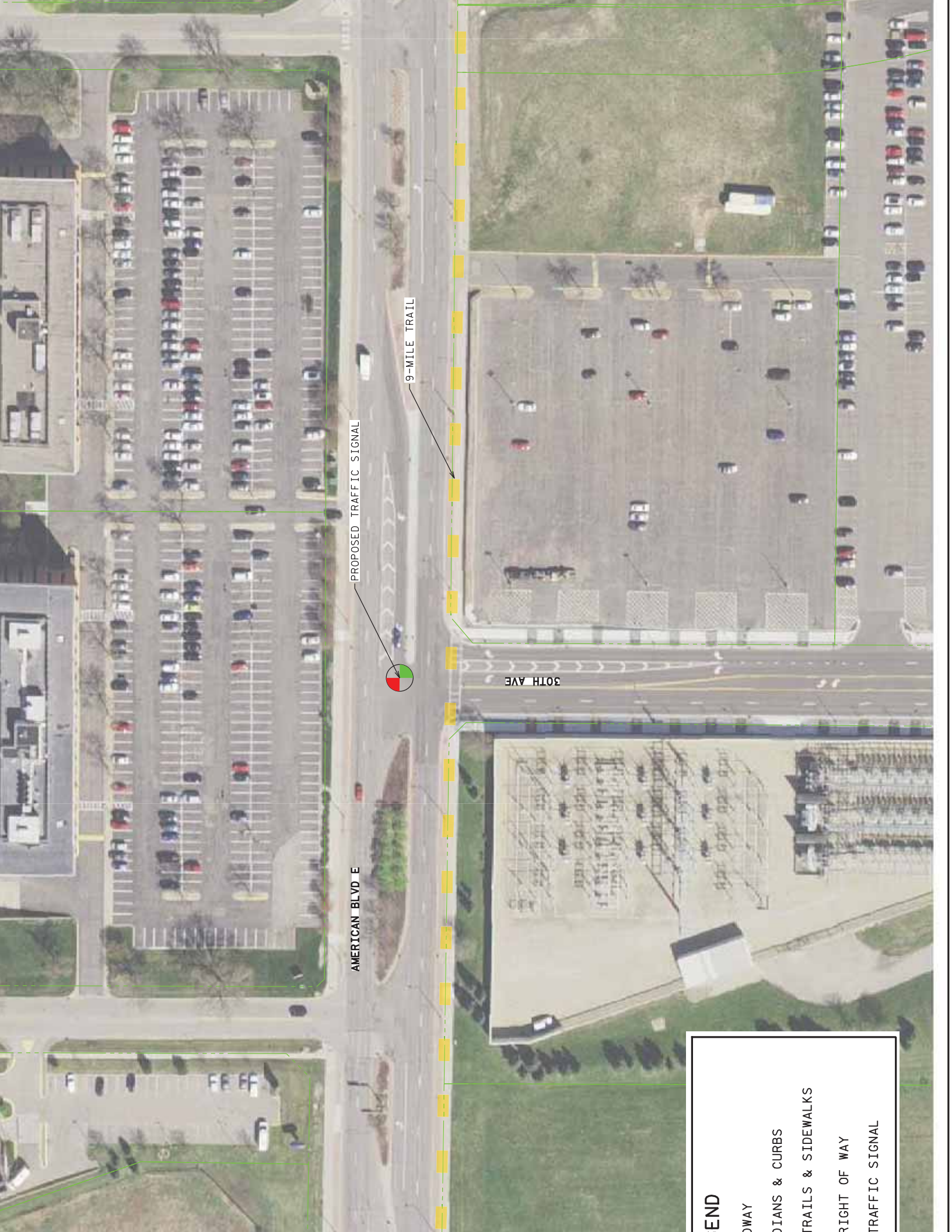
END

LOWWAY

DIANS & CURBS

TRAILS & SIDEWALKS

RIGHT OF WAY



PROPOSED TRAFFIC SIGNAL

9-MILE TRAIL

AMERICAN BLVD E

30TH AVE

- END
- DRIVEWAY
- LANE MARKINGS & CURBS
- TRAILS & SIDEWALKS
- RIGHT OF WAY
- TRAFFIC SIGNAL

9-MILE TRAIL

AMERICAN BLVD E

28TH AVE



Design Considerations:

- 1) Proposed 9-Mile Trail on American Boulevard (off-street trail with connections to 24th Avenue and 34th Avenue). Off-street facilities are proposed, but on-street bike lanes should be considered.
- 2) Evaluate right-turn channelization during the design phase.
- 3) Curb on east side of 28th Avenue could remain at the existing location and on-street parking could be provided. This should be evaluated in the design phase.

END

OWAY

DIANS & CURBS

TRAILS & SIDEWALKS

RIGHT OF WAY

9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

24th Ave /I-494 EB Northbound Dual Right-Turn Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$11,620.00	1	\$11,620.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	1330	\$5,320.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	2280	\$6,840.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	5670	\$17,010.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	210	\$1,050.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	460	\$2,760.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	460	\$7,820.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	270	\$6,750.00
2360.501/13200	Wearing Course	Ton	\$65.00	230	\$14,950.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	350	\$22,750.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	5650	\$28,250.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	1050	\$18,900.00
2531.503/00010	Concrete Median	SY	\$36.00	20	\$720.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	3	\$15,000.00
	Signal Modification	LS	\$60,000.00	1	\$60,000.00
2563.601/00010	Traffic Control	LS	\$7,360.00	1	\$7,360.00
2575.555/00010	Turf Establishment	LS	\$2,950.00	1	\$2,950.00
	Drainage	LS	\$16,000.00	1	\$16,000.00
	Lighting Modifications	LS	\$21,000.00	1	\$21,000.00
	Signing and Striping	LS	\$70,000.00	1	\$70,000.00
Subtotal					\$337,050.00
Contingency & Minor Items (20%)					\$67,410.00
Total Construction Cost					\$404,460.00
Project Delivery (26%)					\$105,160.00
Right of Way Cost		SQ.FT.	-	-	
Total Improvement Cost					\$509,620.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

34th Ave /I-494 EB Northbound Dual Right-Turn Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$30,320.00	1	\$30,320.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	3670	\$14,680.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	6150	\$18,450.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	8990	\$26,970.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	2420	\$12,100.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	1210	\$7,260.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	1210	\$20,570.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	670	\$16,750.00
2360.501/13200	Wearing Course	Ton	\$65.00	570	\$37,050.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	850	\$55,250.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	10160	\$50,800.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	3300	\$59,400.00
2531.503/00010	Concrete Median	SY	\$36.00	520	\$18,720.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	18	\$90,000.00
	Signal Modification	LS	\$115,000.00	1	\$115,000.00
2563.601/00010	Traffic Control	LS	\$19,190.00	1	\$19,190.00
2575.555/00010	Turf Establishment	LS	\$7,680.00	1	\$7,680.00
	Drainage	LS	\$72,000.00	1	\$72,000.00
	Lighting Modifications	LS	\$24,500.00	1	\$24,500.00
	Signing and Striping	LS	\$75,000.00	1	\$75,000.00
Subtotal					\$771,690.00
Contingency & Minor Items (30%)					\$231,507.00
Total Construction Cost					\$1,003,197.00
Project Delivery (26%)					\$260,832.00
Right of Way Cost		SQ.FT.	-	-	
Total Improvement Cost					\$1,264,029.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

Killebrew Dr/20th Ave Southbound Dual Right-Turn Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$4,830.00	1	\$4,830.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	130	\$520.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	0	\$0.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	580	\$1,740.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	80	\$400.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	50	\$300.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	50	\$850.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	30	\$750.00
2360.501/13200	Wearing Course	Ton	\$65.00	30	\$1,950.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	40	\$2,600.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	0	\$0.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	90	\$1,620.00
2531.503/00010	Concrete Median	SY	\$36.00	30	\$1,080.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	0	\$0.00
	Signal Modification	LS	\$90,000.00	1	\$90,000.00
2563.601/00010	Traffic Control	LS	\$1,000.00	1	\$1,000.00
2575.555/00010	Turf Establishment	LS	\$1,230.00	1	\$1,230.00
	Signing and Striping	LS	\$25,000.00	1	\$25,000.00
Subtotal					\$133,870.00
Contingency & Minor Items (20%)					\$26,774.00
Total Construction Cost					\$160,644.00
Project Delivery (26%)					\$41,768.00
Right of Way Cost		SQ.FT.	\$0.00	306	\$0.00
Total Improvement Cost					\$202,412.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

Killebrew Dr/20th Ave Southbound Dual Right-Turn Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$5,310.00	1	\$5,310.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	260	\$1,040.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	0	\$0.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	580	\$1,740.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	1480	\$7,400.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	80	\$480.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	80	\$1,360.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	30	\$750.00
2360.501/13200	Wearing Course	Ton	\$65.00	40	\$2,600.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	60	\$3,900.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	0	\$0.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	150	\$2,700.00
2531.503/00010	Concrete Median	SY	\$36.00	0	\$0.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	0	\$0.00
	Signal Modification	LS	\$90,000.00	1	\$90,000.00
2563.601/00010	Traffic Control	LS	\$1,000.00	1	\$1,000.00
2575.555/00010	Turf Establishment	LS	\$1,350.00	1	\$1,350.00
	Signing and Striping	LS	\$25,000.00	1	\$25,000.00
Subtotal					\$144,630.00
Contingency & Minor Items (20%)					\$28,926.00
Total Construction Cost					\$173,556.00
Project Delivery (26%)					\$45,125.00
Right of Way Cost		SQ.FT.	\$0.00	306	\$0.00
Total Improvement Cost					\$218,681.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

American Blvd E/ Metro Dr Roundabout Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$39,010.00	1	\$39,010.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	3870	\$15,480.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	15500	\$46,500.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	17840	\$53,520.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	6930	\$34,650.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	2410	\$14,460.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	2410	\$40,970.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	1500	\$37,500.00
2360.501/13200	Wearing Course	Ton	\$65.00	1320	\$85,800.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	1980	\$128,700.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	7400	\$37,000.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	4490	\$80,820.00
2531.503/00010	Concrete Median	SY	\$36.00	2720	\$97,920.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	6	\$30,000.00
	Signal Modification	LS	\$0.00	0	\$0.00
2563.601/00010	Traffic Control	LS	\$24,690.00	1	\$24,690.00
2575.555/00010	Turf Establishment	LS	\$9,880.00	1	\$9,880.00
	Drainage	LS	\$88,000.00	1	\$88,000.00
	Lighting Modifications	LS	\$31,500.00	1	\$31,500.00
	Signing and Striping	LS	\$15,000.00	1	\$15,000.00
Subtotal					\$911,400.00
Contingency & Minor Items (20%)					\$182,280.00
Total Construction Cost					\$1,093,680.00
Project Delivery (26%)					\$284,357.00
Right of Way Cost		SQ.FT.	-	6340	\$254,470.00
Total Improvement Cost					\$1,632,507.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

24th Ave Corridor Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$136,500.00	1	\$136,500.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	10620	\$42,480.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	31210	\$93,630.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	40070	\$120,210.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	10320	\$51,600.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	3240	\$19,440.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	3240	\$55,080.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	1740	\$43,500.00
2360.501/13200	Wearing Course	Ton	\$65.00	1440	\$93,600.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	2160	\$140,400.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	26630	\$133,150.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	9500	\$171,000.00
2531.503/00010	Concrete Median	SY	\$36.00	1530	\$55,080.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	35	\$175,000.00
	Signal Modification	LS	\$1,565,000.00	1	\$1,565,000.00
2563.601/00010	Traffic Control	LS	\$86,400.00	1	\$86,400.00
2575.555/00010	Turf Establishment	LS	\$34,560.00	1	\$34,560.00
	Drainage	LS	\$96,000.00	1	\$96,000.00
	Lighting Modifications	LS	\$24,500.00	1	\$24,500.00
	Signing and Striping	LS	\$15,000.00	1	\$15,000.00
Subtotal					\$3,152,130.00
Contingency & Minor Items (20%)					\$630,426.00
Total Construction Cost					\$3,782,556.00
Project Delivery (26%)					\$983,465.00
Right of Way Cost		SQ.FT.	-	2500	\$69,900.00
Total Improvement Cost					\$4,835,921.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

Killebrew Dr/22nd Ave Lane Use Assignment Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$2,850.00	1	\$2,850.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	0	\$0.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	0	\$0.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	0	\$0.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	0	\$0.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	0	\$0.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	0	\$0.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	0	\$0.00
2360.501/13200	Wearing Course	Ton	\$65.00	0	\$0.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	0	\$0.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	0	\$0.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	0	\$0.00
2531.503/00010	Concrete Median	SY	\$36.00	0	\$0.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	0	\$0.00
	Signal Modification	LS	\$35,000.00	1	\$35,000.00
2563.601/00010	Traffic Control	LS	\$500.00	1	\$500.00
2575.555/00010	Turf Establishment	LS	\$420.00	1	\$420.00
	Signing and Striping	LS	\$25,000.00	1	\$25,000.00
Subtotal					\$63,770.00
Contingency & Minor Items (20%)					\$12,754.00
Total Construction Cost					\$76,524.00
Project Delivery (26%)					\$19,897.00
Right of Way Cost		SQ.FT.	-	-	
Total Improvement Cost					\$96,421.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

East Old Shakopee Road/28th Avenue Traffic Signal Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$19,040.00	1	\$19,040.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	260	\$1,040.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	2470	\$7,410.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	0	\$0.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	470	\$2,350.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	170	\$1,020.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	170	\$2,890.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	120	\$3,000.00
2360.501/13200	Wearing Course	Ton	\$65.00	50	\$3,250.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	70	\$4,550.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	2150	\$10,750.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	820	\$14,760.00
2531.503/00010	Concrete Median	SY	\$36.00	240	\$8,640.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	1	\$5,000.00
	Signal Modification	LS	\$300,000.00	1	\$300,000.00
	Signal Interconnect	LS	\$100,000.00	1	\$100,000.00
2563.601/00010	Traffic Control	LS	\$14,620.00	1	\$14,620.00
2575.555/00010	Turf Establishment	LS	\$25,000.00	1	\$25,000.00
	Drainage	LS	\$12,000.00	1	\$12,000.00
	Lighting Modifications	LS	\$10,500.00	1	\$10,500.00
	Signing and Striping	LS	\$5,000.00	1	\$5,000.00
Subtotal					\$550,820.00
Contingency & Minor Items (20%)					\$110,164.00
Total Construction Cost					\$660,984.00
Project Delivery (26%)					\$171,856.00
Right of Way Cost		SQ.FT.	-	-	
Total Improvement Cost					\$832,840.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

East Old Shakopee Road/28th Roundabout Avenue Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$33,820.00	1	\$33,820.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	3190	\$12,760.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	13360	\$40,080.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	3650	\$10,950.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	8360	\$41,800.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	2360	\$14,160.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	2360	\$40,120.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	1310	\$32,750.00
2360.501/13200	Wearing Course	Ton	\$65.00	1370	\$89,050.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	2060	\$133,900.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	9630	\$48,150.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	3650	\$65,700.00
2531.503/00010	Concrete Median	SY	\$36.00	1210	\$43,560.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	4	\$20,000.00
	Signal Modification	LS	\$0.00	0	\$0.00
2563.601/00010	Traffic Control	LS	\$21,410.00	1	\$21,410.00
2575.555/00010	Turf Establishment	LS	\$8,570.00	1	\$8,570.00
	Drainage	LS	\$96,000.00	1	\$96,000.00
	Lighting Modifications	LS	\$24,500.00	1	\$24,500.00
	Signing and Striping	LS	\$10,000.00	1	\$10,000.00
Subtotal					\$787,280.00
Contingency & Minor Items (20%)					\$157,456.00
Total Construction Cost					\$944,736.00
Project Delivery (26%)					\$245,632.00
Right of Way Cost		SQ.FT.	-	6940	\$138,476.80
Total Improvement Cost					\$1,328,844.80



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

East Old Shakopee Road/24th Ave Westbound Approach Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$2,000.00	1	\$2,000.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	220	\$880.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	0	\$0.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	0	\$0.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	150	\$750.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	30	\$180.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	30	\$510.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	0	\$0.00
2360.501/13200	Wearing Course	Ton	\$65.00	0	\$0.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	0	\$0.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	0	\$0.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	220	\$3,960.00
2531.503/00010	Concrete Median	SY	\$36.00	0	\$0.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	0	\$0.00
	Signal Modification	LS	\$0.00	0	\$0.00
2563.601/00010	Traffic Control	LS	\$500.00	1	\$500.00
2575.555/00010	Turf Establishment	LS	\$80.00	1	\$80.00
	Signing and Striping	LS	\$25,000.00	1	\$25,000.00
Subtotal					\$33,860.00
Contingency & Minor Items (20%)					\$6,772.00
Total Construction Cost					\$40,632.00
Project Delivery (26%)					\$10,565.00
Right of Way Cost		SQ.FT.	-	-	
Total Improvement Cost					\$51,197.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

East Old Shakopee Road/33rd Avenue Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$6,590.00	1	\$6,590.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	240	\$960.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	120	\$360.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	120	\$360.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	260	\$1,300.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	50	\$300.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	50	\$850.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	50	\$1,250.00
2360.501/13200	Wearing Course	Ton	\$65.00	20	\$1,300.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	20	\$1,300.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	90	\$450.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	240	\$4,320.00
2531.503/00010	Concrete Median	SY	\$36.00	170	\$6,120.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	4	\$20,000.00
	Signal Modification	LS	\$100,000.00	1	\$100,000.00
2563.601/00010	Traffic Control	LS	\$4,170.00	1	\$4,170.00
2575.555/00010	Turf Establishment	LS	\$1,670.00	1	\$1,670.00
	Signing and Striping	LS	\$25,000.00	1	\$25,000.00
Subtotal					\$176,300.00
Contingency & Minor Items (20%)					\$35,260.00
Total Construction Cost					\$211,560.00
Project Delivery (26%)					\$55,006.00
Right of Way Cost		SQ.FT.	-	-	
Total Improvement Cost					\$266,566.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

American Blvd/30th Ave Install Traffic Signal Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$15,460.00	1	\$15,460.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	0	\$0.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	0	\$0.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	0	\$0.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	0	\$0.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	0	\$0.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	0	\$0.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	0	\$0.00
2360.501/13200	Wearing Course	Ton	\$65.00	0	\$0.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	0	\$0.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	0	\$0.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	0	\$0.00
2531.503/00010	Concrete Median	SY	\$36.00	0	\$0.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	0	\$0.00
	Signal Modification	LS	\$300,000.00	1	\$300,000.00
	Signal Interconnect	LS	\$50,000.00	1	\$50,000.00
2563.601/00010	Traffic Control	LS	\$9,000.00	1	\$9,000.00
2575.555/00010	Turf Establishment	LS	\$25,000.00	1	\$25,000.00
	Signing and Striping	LS	\$1,000.00	1	\$1,000.00
Subtotal					\$400,460.00
Contingency & Minor Items (20%)					\$80,092.00
Total Construction Cost					\$480,552.00
Project Delivery (26%)					\$124,944.00
Right of Way Cost		SQ.FT.	-	-	
Total Improvement Cost					\$605,496.00



9190: South Loop Roadway Infrastructure Improvements Study
Preliminary Cost Estimate

American Blvd/28th Ave Concept

MnDOT Item #	Item Description	Unit	Unit Cost	Total	
				Quantities	Amount
2021.501/00010	Mobilization	LS	\$13,320.00	1	\$13,320.00
2104.501/00022	Remove Curb and Gutter	LF	\$4.00	820	\$3,280.00
2104.503/00021	Remove Concrete Walk	SF	\$3.00	9510	\$28,530.00
2104.503/00115	Remove Concrete Median	SF	\$3.00	1050	\$3,150.00
2104.505/00120	Remove Bituminous Pavement	SY	\$5.00	1180	\$5,900.00
2106.507/00020	Subgrade Excavation	CY	\$6.00	160	\$960.00
2106.522/00080	Select Granular (CV)	CY	\$17.00	160	\$2,720.00
2211.503/00050	Aggregate Base, Class 5	CY	\$25.00	130	\$3,250.00
2360.501/13200	Wearing Course	Ton	\$65.00	50	\$3,250.00
2360.502/24200	Non Wearing Course	Ton	\$65.00	70	\$4,550.00
2521.501/00040	4" Concrete Walk	SF	\$5.00	4800	\$24,000.00
2531.501/02320	Concrete Curb & Gutter B624	LF	\$18.00	690	\$12,420.00
2531.503/00010	Concrete Median	SY	\$36.00	0	\$0.00
2531.602/00050	Pedestrian Ramp	Each	\$5,000.00	1	\$5,000.00
	Signal Modification	LS	\$150,000.00	1	\$150,000.00
2563.601/00010	Traffic Control	LS	\$8,440.00	1	\$8,440.00
2575.555/00010	Turf Establishment	LS	\$3,380.00	1	\$3,380.00
	Drainage	LS	\$20,000.00	1	\$20,000.00
	Lighting Modifications	LS	\$14,000.00	1	\$14,000.00
	Signing and Striping	LS	\$2,500.00	1	\$2,500.00
Subtotal					\$308,650.00
Contingency & Minor Items (20%)					\$61,730.00
Total Construction Cost					\$370,380.00
Project Delivery (26%)					\$96,299.00
Right of Way Cost		SQ.FT.	-	-	
Total Improvement Cost					\$466,679.00



Appendix K
Year 2025 with Improvements MOE

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	3	53	14.2	B	14.2	B	0.8	A
	Right	0	-	-	-	A				
Eastbound	Thru	357	0	0	0.2	A	0.2	A		
	Right	13	0	0	0.4	A				
Westbound	Left	7	0	9	2.2	A	0.5	A		
	Thru	786	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	37	-1
0	0	0
358	357	-1
12	13	1
8	7	-1
805	786	-19

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	664	0	0	0.1	A	0.4	A	0.4	A
	-	278	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
671	664	-7
274	278	4

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.2	A	3.5	A
	Right	13	1	69	7.2	A				
Eastbound	Left	24	0	23	3.8	A	1.2	A		
	Thru	180	0	0	0.9	A				
Westbound	Thru	238	0	0	5.2	A	5.2	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
15	13	-2
25	24	-1
181	180	-1
243	238	-5
1	0	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	614	0	0	0.2	A	0.2	A	1.4	A
	Thru	1,219	0	14	0.5	A				
Southbound	Right	124	0	13	0.8	A	0.6	A		
	Left	10	2	28	46.1	E				
Eastbound	Right	359	0	0	5.2	A	6.3	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
615	614	-1
1,247	1,219	-28
133	124	-9
10	10	0
361	359	-2

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	123	14	73	29.4	C	24.4	C	15.5	B
	Thru	16	2	36	26.2	C				
	Right	29	0	0	2.7	A				
Southbound	Left	39	7	58	30.9	C	21.7	C		
	Thru	8	7	58	26.7	C				
	Right	20	0	9	1.9	A				
Eastbound	Left	24	4	33	39.5	D	13.5	B		
	Thru	288	11	85	13.4	B				
	Right	45	0	6	0.9	A				
Westbound	Left	90	13	73	34.1	C	13.9	B		
	Thru	655	17	148	11.3	B				
	Right	26	14	150	8.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
124	123	-1
16	16	0
32	29	-3
40	39	-1
8	8	0
22	20	-2
22	24	2
290	288	-2
45	45	0
93	90	-3
667	655	-12
28	26	-2

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	77	13	80	33.5	C	28.1	C	16.0	B
	Thru	24	3	41	26.3	C				
	Right	19	1	48	8.1	A				
Southbound	Left	12	1	29	22.2	C	19.4	B		
	Thru	13	2	30	32.2	C				
	Right	71	6	58	16.5	B				
Eastbound	Left	227	23	105	27.9	C	14.5	B		
	Thru	1,079	28	177	12.5	B				
	Right	100	44	217	5.9	A				
Westbound	Left	37	6	46	35.5	D	16.9	B		
	Thru	286	15	115	14.9	B				
	Right	10	0	39	4.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
80	77	-3
25	24	-1
18	19	1
12	12	0
12	13	1
73	71	-2
217	227	10
1,096	1,079	-17
102	100	-2
35	37	2
294	286	-8
8	10	2

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	27	2	36	18.8	B	12.8	B	5.7	A
	Right	78	3	50	10.8	B				
Eastbound	Left	120	10	86	14.1	B	4.6	A		
	Thru	821	10	86	3.2	A				
Westbound	Thru	233	5	75	8.2	A	6.9	A		
	Right	47	0	0	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	27	2
81	78	-3
122	120	-2
823	821	-2
237	233	-4
49	47	-2

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	237	10	114	11.1	B	8.5	A	17.6	B
	Thru	381	7	86	6.9	A				
	Right	6	7	83	6.6	A				
Southbound	Left	0	-	-	-	A	13.6	B		
	Thru	413	17	132	15.1	B				
	Right	47	0	0	0.6	A				
Eastbound	Left	595	65	445	35.2	D	22.4	C		
	Thru	12	64	434	36.0	D				
	Right	932	17	324	14.1	B				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
240	237	-3
380	381	1
5	6	1
0	0	0
435	413	-22
50	47	-3
600	595	-5
11	12	1
945	932	-13
0	0	0
2	0	-2
0	0	0

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	66	8	57	25.5	C	18.5	B	14.8	B
	Thru	12	1	28	18.2	B				
	Right	34	1	59	5.1	A				
Southbound	Left	38	3	43	17.2	B	15.5	B		
	Thru	14	2	30	24.6	C				
	Right	90	5	50	13.4	B				
Eastbound	Left	172	15	87	22.9	C	13.8	B		
	Thru	531	19	157	13.0	B				
	Right	406	17	207	10.9	B				
Westbound	Left	89	9	68	29.6	C	16.6	B		
	Thru	175	8	69	15.8	B				
	Right	94	2	72	5.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
71	66	-5
11	12	1
33	34	1
40	38	-2
15	14	-1
86	90	4
168	172	4
536	531	-5
422	406	-16
93	89	-4
180	175	-5
99	94	-5

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	33	3	43	19.7	B	12.0	B	5.5	A
	Thru	0	-	-	-	A				
	Right	22	0	3	0.5	A				
Southbound	Left	3	1	22	20.1	C	8.7	A		
	Thru	5	1	22	17.9	B				
	Right	12	0	5	2.1	A				
Eastbound	Left	82	3	47	12.4	B	4.7	A		
	Thru	648	6	94	4.3	A				
	Right	118	0	17	1.2	A				
Westbound	Left	42	3	49	15.8	B	6.4	A		
	Thru	234	3	65	5.0	A				
	Right	14	0	7	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
34	33	-1
0	0	0
22	22	0
4	3	-1
4	5	1
13	12	-1
78	82	4
656	648	-8
114	118	4
44	42	-2
239	234	-5
16	14	-2

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	109	23	138	38.2	D	14.8	B	18.7	B
	Thru	44	6	67	27.2	C				
	Right	273	2	75	3.4	A				
Southbound	Left	68	18	98	48.6	D	30.6	C		
	Thru	98	11	74	29.9	C				
	Right	39	0	0	0.8	A				
Eastbound	Left	74	6	63	17.5	B	20.9	C		
	Right	569	46	223	21.3	C				
Westbound	Left	1,176	69	310	21.5	C	17.2	B		
	Right	366	0	0	3.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
111	109	-2
46	44	-2
283	273	-10
70	68	-2
99	98	-1
38	39	1
71	74	3
577	569	-8
1,180	1,176	-4
368	366	-2

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	1.1	A	1.9	A
	Thru	413	1	47	1.1	A				
Southbound	Thru	1,785	2	89	1.7	A	1.8	A		
	Right	51	0	0	2.1	A				
Eastbound	Left	13	3	43	46.4	D	46.4	D		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
426	413	-13
1,795	1,785	-10
54	51	-3
14	13	-1
1	0	-1

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	65	19	82	57.7	E	38.4	D	27.9	C
	Thru	247	30	119	42.9	D				
	Right	68	0	23	3.3	A				
Southbound	Left	456	65	307	38.2	D	23.1	C		
	Thru	751	64	317	29.4	C				
	Right	579	1	78	3.0	A				
Eastbound	Left	88	23	93	62.5	E	31.7	C		
	Thru	133	19	99	38.6	D				
	Right	133	0	33	4.4	A				
Westbound	Left	51	16	71	64.0	E	40.4	D		
	Thru	119	24	105	45.8	D				
	Right	79	25	106	17.1	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
67	65	-2
253	247	-6
68	68	0
449	456	7
754	751	-3
593	579	-14
92	88	-4
143	133	-10
128	133	5
49	51	2
118	119	1
81	79	-2

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	71	12	68	39.8	D	21.5	C	18.3	B
	Thru	183	11	95	17.8	B				
	Right	30	0	5	1.1	A				
Southbound	Left	113	22	135	36.0	D	15.6	B		
	Thru	574	30	244	16.9	B				
	Right	244	0	29	3.1	A				
Eastbound	Left	160	17	101	29.0	C	20.4	C		
	Thru	272	32	221	22.8	C				
	Right	171	6	122	8.6	A				
Westbound	Left	4	1	14	42.6	D	21.5	C		
	Thru	45	7	62	32.4	C				
	Right	38	1	37	6.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
77	71	-6
195	183	-12
32	30	-2
105	113	8
576	574	-2
249	244	-5
159	160	1
278	272	-6
173	171	-2
8	4	-4
47	45	-2
35	38	3

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	6	1	18	27.8	C	16.1	B	16.7	B
	Thru	197	11	103	17.1	B				
	Right	30	0	15	7.1	A				
Southbound	Left	296	33	167	31.4	C	17.5	B		
	Thru	382	10	140	9.4	A				
	Right	65	0	4	2.3	A				
Eastbound	Left	9	2	24	35.5	D	26.5	C		
	Thru	0	-	-	-	A				
	Right	4	0	19	6.3	A				
Westbound	Left	27	6	56	39.4	D	11.4	B		
	Thru	1	0	7	22.3	C				
	Right	78	0	12	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	6	-2
211	197	-14
30	30	0
296	296	0
395	382	-13
64	65	1
11	9	-2
1	0	-1
4	4	0
29	27	-2
1	1	0
81	78	-3

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	153	1	49	2.6	A	3.7	A	4.9	A
	Right	140	1	64	4.9	A				
Southbound	Thru	384	2	84	3.0	A	3.0	A		
Eastbound	Left	15	1	51	29.7	C	18.5	B		
	Right	56	3	58	15.5	B				
Westbound	Right	66	4	93	6.8	A	6.8	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
142	153	11
126	140	14
403	384	-19
16	15	-1
57	56	-1
67	66	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	35	15	60	102.5	F	22.6	C	28.0	C
	Thru	222	63	396	51.5	D				
	Right	768	1	102	10.7	B				
Southbound	Left	27	7	40	55.7	E	20.7	C		
	Thru	209	22	158	25.3	C				
	Right	203	14	178	11.4	B				
Eastbound	Left	61	24	89	74.5	E	36.6	D		
	Thru	554	64	248	35.7	D				
	Right	51	0	7	0.8	A				
Westbound	Left	206	35	137	44.9	D	36.2	D		
	Thru	158	12	79	24.2	C				
	Right	10	2	26	45.8	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
35	35	0
217	222	5
783	768	-15
30	27	-3
216	209	-7
214	203	-11
66	61	-5
565	554	-11
51	51	0
226	206	-20
160	158	-2
8	10	2

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	73	12	153	11.1	B	6.7	A	8.7	A
	Thru	843	12	153	6.4	A				
	Right	29	18	181	4.6	A				
Southbound	Left	37	6	102	16.1	B	7.6	A		
	Thru	292	6	103	6.4	A				
	Right	109	12	133	8.1	A				
Eastbound	Left	180	16	160	21.5	C	19.9	B		
	Thru	5	16	160	19.7	B				
	Right	26	18	182	8.7	A				
Westbound	Left	4	0	19	14.0	B	12.7	B		
	Thru	3	0	19	15.4	B				
	Right	2	0	6	5.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
75	73	-2
846	843	-3
28	29	1
37	37	0
313	292	-21
112	109	-3
182	180	-2
6	5	-1
28	26	-2
4	4	0
2	3	1
2	2	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	18	0	0	0.6	A	5.4	A	5.9	A
	Thru	0	-	-	-	A				
	Right	84	0	0	6.4	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	5.7	A		
	Thru	494	6	128	6.3	A				
	Right	110	0	28	3.2	A				
Westbound	Left	160	10	76	15.9	B	6.2	A		
	Thru	303	1	36	1.0	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
17	18	1
0	0	0
84	84	0
0	1	1
0	0	0
0	0	0
0	0	0
499	494	-5
106	110	4
161	160	-1
301	303	2
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	16	0	4	3.1	A	2.3	A	3.9	A
	Thru	94	0	4	2.3	A				
	Right	8	0	4	1.7	A				
Southbound	Left	3	0	8	3.5	A	2.0	A		
	Thru	195	0	11	2.0	A				
	Right	55	0	11	1.9	A				
Eastbound	Left	49	0	39	7.3	A	6.5	A		
	Thru	98	0	39	7.1	A				
	Right	99	0	39	5.5	A				
Westbound	Left	1	0	10	5.4	A	4.3	A		
	Thru	8	0	3	4.6	A				
	Right	4	0	0	3.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
16	16	0
90	94	4
6	8	2
2	3	1
202	195	-7
49	55	6
50	49	-1
98	98	0
98	99	1
1	1	0
15	8	-7
4	4	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	14	5	50	49.4	D	15.3	B	19.0	B
	Thru	81	7	53	20.4	C				
	Right	122	3	77	8.0	A				
Southbound	Left	16	4	41	41.6	D	17.8	B		
	Thru	135	17	147	19.5	B				
	Right	145	24	164	13.6	B				
Eastbound	Left	35	9	65	48.9	D	41.5	D		
	Thru	13	1	27	21.5	C				
	Right	0	-	-	-	A				
Westbound	Left	3	1	14	45.6	D	40.7	D		
	Thru	0	-	-	-	A				
	Right	1	0	14	26.0	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
15	14	-1
83	81	-2
123	122	-1
16	16	0
136	135	-1
149	145	-4
32	35	3
12	13	1
1	0	-1
4	3	-1
1	0	-1
2	1	-1

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	42	6	66	27.1	C	11.3	B	9.4	A
	Right	67	0	0	1.4	A				
Eastbound	Left	447	34	287	17.9	B	8.3	A		
	Thru	854	3	90	3.2	A				
Westbound	Thru	301	15	156	13.0	B	12.9	B		
	Right	73	15	155	12.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
42	42	0
71	67	-4
456	447	-9
868	854	-14
308	301	-7
77	73	-4

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	24	4	61	20.0	C	12.5	B	2.2	A
	Right	45	4	77	8.4	A				
Eastbound	Left	162	3	88	5.3	A	2.5	A		
	Thru	417	0	0	1.4	A				
Westbound	Thru	419	0	0	0.3	A	0.3	A		
	Right	22	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	24	-1
44	45	1
162	162	0
420	417	-3
418	419	1
22	22	0

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	89	13	91	32.1	C	26.0	C	12.3	B
	Right	27	0	38	6.1	A				
Eastbound	Thru	259	12	143	10.2	B	8.7	A		
	Right	182	3	98	6.5	A				
Westbound	Left	290	36	210	23.3	C	12.2	B		
	Thru	352	2	57	3.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	89	-4
26	27	1
263	259	-4
183	182	-1
298	290	-8
347	352	5

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	0	18	18.4	B	10.7	B	11.5	B
	Thru	63	4	55	9.7	A				
Southbound	Thru	440	16	151	11.6	B	11.6	B		
	Right	0	-	-	-	A				
Eastbound	Left	7	1	33	22.8	C	11.6	B		
	Right	94	3	69	10.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
9	8	-1
63	63	0
448	440	-8
6	0	-6
7	7	0
98	94	-4

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	28	0	8	2.0	A	1.0	A	4.3	A
	Thru	35	0	17	0.4	A				
	Right	129	0	17	0.9	A				
Southbound	Left	362	5	146	6.1	A	4.6	A		
	Thru	113	0	19	1.8	A				
	Right	59	0	19	1.1	A				
Eastbound	Left	4	0	38	31.2	D	31.2	D		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	10	2	42	33.6	D	12.7	B		
	Thru	0	-	-	-	A				
	Right	33	1	43	6.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
29	28	-1
34	35	1
131	129	-2
380	362	-18
111	113	2
56	59	3
3	4	1
0	0	0
2	0	-2
10	10	0
0	0	0
35	33	-2

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.6	A	1.5	A
	Thru	183	0	0	0.5	A				
	Right	110	0	0	0.7	A				
Southbound	Left	108	1	58	3.2	A	2.8	A		
	Thru	16	0	0	0.1	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	4	1	45	18.9	C	10.4	B		
	Thru	0	-	-	-	A				
	Right	9	1	59	6.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
185	183	-2
112	110	-2
108	108	0
14	16	2
0	0	0
0	0	0
0	0	0
6	4	-2
0	0	0
9	9	0

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	294	0	0	0.3	A	0.4	A	0.5	A
	Right	104	0	0	0.7	A				
Southbound	Left	0	-	-	-	A	0.1	A		
	Thru	19	0	0	0.1	A				
Eastbound	Left	4	0	36	11.7	B	11.7	B		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
298	294	-4
104	104	0
1	0	-1
19	19	0
6	4	-2
0	0	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	3	0	25	28.5	D	9.6	A	3.7	A
	Right	21	1	69	6.9	A				
Eastbound	Left	389	9	187	7.4	A	4.7	A		
	Thru	502	5	159	2.6	A				
Westbound	Thru	353	0	0	0.8	A	0.8	A		
	Right	10	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
3	3	0
22	21	-1
394	389	-5
516	502	-14
365	353	-12
9	10	1

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	6	0	19	8.7	A	5.7	A	3.3	A
	Right	8	0	20	3.4	A				
Eastbound	Left	65	1	48	4.8	A	3.4	A		
	Thru	218	1	48	3.1	A				
Westbound	U-turn	34	1	69	5.2	A	3.2	A		
	Thru	703	1	69	3.2	A				
	Right	87	1	69	2.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	6	-1
9	8	-1
65	65	0
223	218	-5
32	34	2
702	703	1
83	87	4

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	1.8	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	12	1	54	21.3	C	13.5	B		
	Thru	0	-	-	-	A				
	Right	13	1	57	6.3	A				
Eastbound	Left	110	4	71	7.6	A	1.9	A		
	Thru	313	0	0	0.2	A				
	Right	78	0	0	0.9	A				
Westbound	Left	45	1	35	4.5	A	1.2	A		
	Thru	350	0	7	0.3	A				
	Right	180	0	7	2.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
1	0	-1
12	12	0
0	0	0
14	13	-1
111	110	-1
326	313	-13
82	78	-4
47	45	-2
360	350	-10
181	180	-1

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	183	8	98	8.0	A	8.2	A	2.2	A
Southbound	Right	57	0	32	2.6	A	3.9	A		
Eastbound	Left	28	2	39	14.5	B	2.5	A		
	Thru	204	0	0	1.1	A				
	Right	24	0	0	0.7	A				
Westbound	Left	84	0	27	1.9	A	0.9	A		
	Thru	767	0	0	0.7	A				
	Right	166	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
184	183	-1
56	57	1
25	28	3
213	204	-9
24	24	0
84	84	0
761	767	6
168	166	-2

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	5.3	A	1.6	A
	Thru	0	-	-	-	A				
	Right	4	0	46	5.3	A				
Southbound	Left	57	4	66	13.6	B	7.0	A		
	Thru	0	-	-	-	A				
	Right	68	0	23	1.5	A				
Eastbound	Left	28	0	22	3.8	A	0.4	A		
	Thru	284	0	0	0.0	A				
	Right	14	0	0	0.3	A				
Westbound	Left	7	0	7	2.7	A	1.0	A		
	Thru	505	0	0	0.9	A				
	Right	37	0	3	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
4	4	0
54	57	3
1	0	-1
70	68	-2
31	28	-3
293	284	-9
15	14	-1
7	7	0
516	505	-11
36	37	1

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	190	67	247	64.1	E	34.2	C	46.6	D
	Thru	81	67	248	70.0	B				
	Right	442	20	164	14.8	B				
Southbound	Left	388	84	261	90.0	F	39.5	D		
	Thru	77	84	261	67.6	E				
	Right	576	0	0	1.7	A				
Eastbound	Left	683	15	163	22.9	C	29.2	C		
	Right	437	61	234	39.1	D				
Westbound	Left	1,407	245	754	68.3	E	62.3	E		
	Right	862	280	770	52.5	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
195	190	-5
79	81	2
459	442	-17
395	388	-7
75	77	2
578	576	-2
691	683	-8
437	437	0
1,419	1,407	-12
873	862	-11

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	7	1	21	24.7	C	20.2	C	22.7	C
	Thru	240	20	118	23.2	C				
	Right	48	0	12	4.3	A				
Southbound	Left	335	53	198	46.2	D	18.8	B		
	Thru	603	33	229	18.0	B				
	Right	986	2	135	10.1	B				
Eastbound	Left	348	54	191	46.2	D	44.7	D		
	Thru	29	53	190	40.9	D				
	Right	9	0	3	0.8	A				
Westbound	Left	26	7	58	53.1	D	20.1	C		
	Thru	25	7	52	54.9	D				
	Right	104	0	31	3.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	7	-1
249	240	-9
47	48	1
342	335	-7
606	603	-3
983	986	3
356	348	-8
32	29	-3
9	9	0
27	26	-1
22	25	3
106	104	-2

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	290	2	57	3.3	A	3.3	A	5.2	A
	Right	53	1	39	3.0	A				
Southbound	Left	62	4	66	15.3	B	6.1	A		
	Thru	545	6	123	5.0	A				
Westbound	Left	6	1	19	26.4	C	14.9	B		
	Right	7	0	41	5.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
296	290	-6
54	53	-1
62	62	0
551	545	-6
7	6	-1
8	7	-1

Note: Results are the average of ten (10) simulation runs

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American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	31	4	56	24.9	C	15.4	C	1.1	A
	Right	20	0	6	0.6	A				
Eastbound	Thru	819	0	1	0.5	A	0.6	A		
	Right	39	0	0	0.9	A				
Westbound	Left	12	0	20	9.1	A	0.7	A		
	Thru	680	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
32	31	-1
19	20	1
824	819	-5
40	39	-1
10	12	2
708	680	-28

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	590	0	0	0.4	A	0.6	A	0.6	A
	-	289	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
596	590	-6
286	289	3

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.6	A	3.4	A
	Right	21	1	71	7.6	A				
Eastbound	Left	40	1	33	6.4	A	1.6	A		
	Thru	278	0	0	0.9	A				
Westbound	Thru	300	0	0	5.1	A	5.1	A		
	Right	5	0	0	4.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
22	21	-1
42	40	-2
279	278	-1
308	300	-8
5	5	0

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	617	0	0	0.3	A	0.3	A	2.1	A
	Thru	923	0	37	0.8	A				
Southbound	Right	477	0	37	2.4	A	1.3	A		
	Left	44	4	47	25.5	D				
Eastbound	Left	44	4	47	25.5	D	7.5	A		
	Right	359	0	1	5.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
617	617	0
931	923	-8
496	477	-19
45	44	-1
361	359	-2

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	129	21	95	42.4	D	24.4	C	25.0	C
	Thru	59	9	81	30.9	C				
	Right	128	0	10	3.2	A				
Southbound	Left	109	42	186	51.5	D	40.4	D		
	Thru	46	42	186	33.0	C				
	Right	34	0	13	14.7	B				
Eastbound	Left	53	11	57	49.9	D	19.9	B		
	Thru	520	43	199	25.5	C				
	Right	259	0	25	2.3	A				
Westbound	Left	166	29	111	47.1	D	27.2	C		
	Thru	528	28	152	21.4	C				
	Right	24	25	156	16.2	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
127	129	2
58	59	1
133	128	-5
109	109	0
48	46	-2
35	34	-1
53	53	0
538	520	-18
253	259	6
175	166	-9
556	528	-28
27	24	-3

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	507	264	562	81.9	F	67.0	E	40.4	D
	Thru	52	7	65	29.2	C				
	Right	99	4	74	10.4	B				
Southbound	Left	36	4	48	20.9	C	41.5	D		
	Thru	89	29	121	55.4	E				
	Right	435	69	219	40.4	D				
Eastbound	Left	289	57	164	56.0	E	28.8	C		
	Thru	853	53	211	25.4	C				
	Right	247	77	251	9.1	A				
Westbound	Left	95	18	83	46.0	D	38.7	D		
	Thru	1,133	166	502	38.9	D				
	Right	29	1	51	5.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
518	507	-11
52	52	0
96	99	3
38	36	-2
87	89	2
439	435	-4
275	289	14
875	853	-22
255	247	-8
93	95	2
1,164	1,133	-31
26	29	3

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	72	8	78	24.2	C	15.9	B	15.6	B
	Right	578	29	244	14.9	B				
Eastbound	Left	378	30	138	22.7	C	12.8	B		
	Thru	501	30	138	5.3	A				
Westbound	Thru	1,097	60	310	19.0	B	17.5	B		
	Right	106	0	0	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
72	72	0
580	578	-2
384	378	-6
498	501	3
1,122	1,097	-25
108	106	-2

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	338	23	185	17.3	B	10.7	B	13.7	B
	Thru	315	3	58	3.8	A				
	Right	7	3	58	4.6	A				
Southbound	Left	0	-	-	-	A	13.9	B		
	Thru	996	39	305	14.7	B				
	Right	66	0	0	1.3	A				
Eastbound	Left	277	32	148	33.6	C	16.3	B		
	Thru	9	33	150	37.8	D				
	Right	405	1	34	3.9	A				
Westbound	Left	1	0	16	27.2	C	8.6	A		
	Thru	0	-	-	-	A				
	Right	4	0	36	4.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
344	338	-6
313	315	2
5	7	2
1	0	-1
1,026	996	-30
70	66	-4
286	277	-9
9	9	0
400	405	5
1	1	0
0	0	0
3	4	1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	321	52	204	44.8	D	35.4	D	27.0	C
	Thru	34	5	50	31.1	C				
	Right	100	3	81	6.6	A				
Southbound	Left	168	23	152	24.8	C	26.4	C		
	Thru	34	7	55	36.6	D				
	Right	343	31	152	26.2	C				
Eastbound	Left	236	56	149	66.0	E	21.0	C		
	Thru	365	9	86	7.0	A				
	Right	387	6	134	6.7	A				
Westbound	Left	158	27	104	49.0	D	29.7	C		
	Thru	602	41	174	29.8	C				
	Right	147	5	91	8.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
322	321	-1
33	34	1
103	100	-3
165	168	3
32	34	2
349	343	-6
235	236	1
373	365	-8
401	387	-14
163	158	-5
611	602	-9
158	147	-11

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Arterial MOEs (PM Peak Hour)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	127	13	79	20.3	C	15.3	B	11.6	B
	Thru	12	13	79	21.2	C				
	Right	49	0	8	0.8	A				
Southbound	Left	50	5	59	21.9	C	8.6	A		
	Thru	6	6	59	21.7	C				
	Right	231	2	67	5.4	A				
Eastbound	Left	128	12	72	23.0	C	10.9	B		
	Thru	338	9	87	9.3	A				
	Right	104	0	18	1.4	A				
Westbound	Left	71	9	84	26.9	C	12.2	B		
	Thru	841	22	203	11.7	B				
	Right	71	0	21	2.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
127	127	0
12	12	0
49	49	0
50	50	0
7	6	-1
233	231	-2
126	128	2
342	338	-4
102	104	2
67	71	4
870	841	-29
72	71	-1

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	603	99	501	43.3	D	21.7	C	22.4	C
	Thru	181	32	186	33.0	C				
	Right	1,123	24	291	8.2	A				
Southbound	Left	153	42	184	49.1	D	38.5	D		
	Thru	62	14	69	52.9	D				
	Right	67	0	0	0.9	A				
Eastbound	Left	23	2	31	15.5	B	31.2	C		
	Right	336	42	184	32.3	C				
Westbound	Left	1,171	66	292	21.2	C	18.0	B		
	Right	240	0	0	2.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
610	603	-7
181	181	0
1,148	1,123	-25
155	153	-2
61	62	1
67	67	0
21	23	2
341	336	-5
1,180	1,171	-9
245	240	-5

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	2.1	A	3.4	A
	Thru	1,837	4	97	2.1	A				
Southbound	Thru	1,360	2	62	2.4	A	2.5	A		
	Right	216	0	3	3.3	A				
Eastbound	Left	78	23	121	49.4	D	44.3	D		
	Right	11	24	142	8.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
1,857	1,837	-20
1,359	1,360	1
223	216	-7
81	78	-3
11	11	0

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	177	26	124	37.8	D	19.3	B	29.9	C
	Thru	990	38	263	17.1	B				
	Right	70	0	11	2.5	A				
Southbound	Left	119	29	101	56.9	E	25.7	C		
	Thru	979	77	364	28.3	C				
	Right	272	0	34	2.6	A				
Eastbound	Left	408	101	319	68.2	E	45.8	D		
	Thru	185	19	99	29.0	C				
	Right	155	1	62	6.9	A				
Westbound	Left	153	37	129	53.3	D	38.2	D		
	Thru	231	68	238	44.3	D				
	Right	439	69	239	29.8	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
183	177	-6
993	990	-3
68	70	2
117	119	2
975	979	4
279	272	-7
430	408	-22
191	185	-6
160	155	-5
150	153	3
247	231	-16
437	439	2

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	239	42	156	49.3	D	26.3	C	25.0	C
	Thru	732	36	200	19.1	B				
	Right	9	0	0	1.4	A				
Southbound	Left	56	9	84	32.9	C	14.0	B		
	Thru	760	45	251	17.7	B				
	Right	468	1	71	5.8	A				
Eastbound	Left	362	55	186	44.2	D	34.0	C		
	Thru	135	26	148	32.7	C				
	Right	129	3	85	6.5	A				
Westbound	Left	32	11	74	64.7	E	44.6	D		
	Thru	204	76	257	62.7	E				
	Right	137	3	64	13.0	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
239	239	0
739	732	-7
11	9	-2
61	56	-5
750	760	10
475	468	-7
371	362	-9
138	135	-3
132	129	-3
38	32	-6
219	204	-15
133	137	4

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	12	4	32	72.1	E	22.4	C	17.3	B
	Thru	441	30	173	21.9	C				
	Right	21	0	5	5.7	A				
Southbound	Left	208	30	135	36.3	D	11.2	B		
	Thru	481	6	65	4.6	A				
	Right	234	0	16	2.5	A				
Eastbound	Left	286	38	191	34.1	C	31.0	C		
	Thru	4	1	33	27.3	C				
	Right	38	2	41	8.4	A				
Westbound	Left	50	16	86	54.5	D	12.7	B		
	Thru	5	2	21	73.8	E				
	Right	245	0	26	2.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
19	12	-7
447	441	-6
23	21	-2
205	208	3
482	481	-1
234	234	0
291	286	-5
5	4	-1
36	38	2
50	50	0
6	5	-1
251	245	-6

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	258	2	77	3.3	A	3.8	A	5.9	A
	Right	92	1	59	5.1	A				
Southbound	Thru	541	2	66	2.2	A	2.2	A		
Eastbound	Left	17	4	55	44.2	D	32.9	C		
	Right	54	8	77	29.3	C				
Westbound	Right	207	16	128	9.7	A	9.7	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
264	258	-6
91	92	1
543	541	-2
17	17	0
55	54	-1
208	207	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	70	36	113	118.2	F	37.3	D	41.8	D
	Thru	218	56	276	60.5	E				
	Right	353	0	27	7.0	A				
Southbound	Left	29	8	42	64.2	E	27.4	C		
	Thru	259	40	235	39.8	D				
	Right	300	24	247	13.1	B				
Eastbound	Left	104	47	135	111.7	F	50.0	D		
	Thru	236	32	136	42.3	D				
	Right	94	0	15	1.1	A				
Westbound	Left	798	215	802	64.4	E	47.0	D		
	Thru	646	39	201	25.6	C				
	Right	29	7	46	46.4	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
70	70	0
223	218	-5
360	353	-7
31	29	-2
263	259	-4
303	300	-3
106	104	-2
242	236	-6
92	94	2
822	798	-24
660	646	-14
26	29	3

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	36	8	104	20.2	C	6.7	A	9.5	A
	Thru	520	8	104	5.8	A				
	Right	5	15	134	5.5	A				
Southbound	Left	9	14	258	12.6	B	8.8	A		
	Thru	936	14	256	8.1	A				
	Right	265	21	286	11.3	B				
Eastbound	Left	156	16	151	23.7	C	20.6	C		
	Thru	7	16	148	20.3	C				
	Right	46	20	175	10.1	B				
Westbound	Left	27	3	43	17.7	B	12.0	B		
	Thru	9	3	43	17.3	B				
	Right	19	0	13	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	36	-2
525	520	-5
5	5	0
11	9	-2
966	936	-30
270	265	-5
159	156	-3
7	7	0
48	46	-2
28	27	-1
10	9	-1
19	19	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	51	0	3	0.8	A	6.6	A	4.7	A
	Thru	0	-	-	-	A				
	Right	172	0	3	8.4	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	5.6	A		
	Thru	311	4	87	6.5	A				
	Right	75	0	19	2.1	A				
Westbound	Left	137	8	63	14.8	B	3.8	A		
	Thru	761	3	86	1.8	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
54	51	-3
0	0	0
173	172	-1
0	1	1
0	0	0
1	0	-1
0	0	0
311	311	0
77	75	-2
135	137	2
766	761	-5
1	0	-1

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	48	0	5	3.3	A	2.4	A	3.6	A
	Thru	160	0	5	2.1	A				
	Right	1	0	4	0.6	A				
Southbound	Left	0	-	-	-	A	3.0	A		
	Thru	176	0	13	3.0	A				
	Right	63	0	13	3.0	A				
Eastbound	Left	46	0	26	5.8	A	5.5	A		
	Thru	22	0	26	9.1	A				
	Right	71	0	27	4.3	A				
Westbound	Left	17	0	20	5.3	A	4.4	A		
	Thru	82	0	19	4.5	A				
	Right	14	0	1	2.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
46	48	2
159	160	1
1	1	0
0	0	0
182	176	-6
56	63	7
49	46	-3
22	22	0
75	71	-4
15	17	2
95	82	-13
13	14	1

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	22	4	58	28.9	C	18.0	B	20.9	C
	Thru	97	6	65	17.7	B				
	Right	16	0	44	5.0	A				
Southbound	Left	5	1	18	36.9	D	18.9	B		
	Thru	154	17	118	22.2	C				
	Right	104	24	135	13.1	B				
Eastbound	Left	89	14	128	29.6	C	28.6	C		
	Thru	0	-	-	-	A				
	Right	4	0	2	6.5	A				
Westbound	Left	100	9	72	22.7	C	22.2	C		
	Thru	25	4	51	22.6	C				
	Right	21	5	52	19.5	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
21	22	1
100	97	-3
16	16	0
5	5	0
159	154	-5
108	104	-4
91	89	-2
1	0	-1
4	4	0
101	100	-1
23	25	2
21	21	0

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	136	17	119	29.1	C	13.1	B	13.1	B
	Right	330	0	0	6.4	A				
Eastbound	Left	209	22	163	21.9	C	10.9	B		
	Thru	347	3	71	4.3	A				
Westbound	Thru	948	45	297	14.5	B	14.4	B		
	Right	46	45	299	12.8	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
135	136	1
339	330	-9
209	209	0
356	347	-9
964	948	-16
49	46	-3

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	18	9	102	22.4	C	12.5	B	2.2	A
	Right	145	12	118	11.3	B				
Eastbound	Left	55	1	43	6.0	A	1.5	A		
	Thru	428	0	0	1.0	A				
Westbound	Thru	755	0	0	0.4	A	0.4	A		
	Right	10	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
18	18	0
146	145	-1
55	55	0
429	428	-1
757	755	-2
10	10	0

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	284	29	214	23.3	C	18.0	B	13.4	B
	Right	268	4	92	12.4	B				
Eastbound	Thru	420	15	141	11.7	B	11.5	B		
	Right	22	4	98	8.5	A				
Westbound	Left	37	5	48	26.5	C	10.1	B		
	Thru	480	11	106	8.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
290	284	-6
272	268	-4
422	420	-2
24	22	-2
42	37	-5
476	480	4

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	79	0	37	10.0	A	8.7	A	9.3	A
	Thru	393	16	133	8.5	A				
Southbound	Thru	75	3	43	11.5	B	10.6	B		
	Right	11	0	20	4.3	A				
Eastbound	Left	13	1	41	22.7	C	16.3	B		
	Right	10	0	23	7.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
82	79	-3
398	393	-5
77	75	-2
16	11	-5
14	13	-1
13	10	-3

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.7	A	8.4	A
	Thru	111	0	10	0.7	A				
	Right	14	0	10	0.9	A				
Southbound	Left	37	0	3	1.2	A	0.9	A		
	Thru	38	0	8	0.6	A				
	Right	10	0	8	0.8	A				
Eastbound	Left	48	7	90	12.5	B	9.6	A		
	Thru	1	6	85	16.0	C				
	Right	136	7	89	8.6	A				
Westbound	Left	110	6	82	11.2	B	11.6	B		
	Thru	0	-	-	-	A				
	Right	314	14	123	11.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
109	111	2
12	14	2
41	37	-4
40	38	-2
9	10	1
51	48	-3
1	1	0
135	136	1
108	110	2
0	0	0
319	314	-5

2025 VISSIM Model: Improvements
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30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.2	A	3.6	A
	Thru	24	0	0	0.2	A				
	Right	8	0	0	0.4	A				
Southbound	Left	14	0	2	0.8	A	0.3	A		
	Thru	271	0	0	0.3	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	77	8	93	11.1	B	9.6	A		
	Thru	0	-	-	-	A				
	Right	101	10	106	8.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
24	24	0
7	8	1
13	14	1
270	271	1
0	0	0
1	0	-1
0	0	0
1	0	-1
81	77	-4
0	0	0
99	101	2

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	28	0	0	0.1	A	0.2	A	2.5	A
	Right	6	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	1.1	A		
	Thru	347	0	1	1.1	A				
Eastbound	Left	66	3	62	10.3	B	10.2	B		
	Right	3	3	69	6.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
28	28	0
7	6	-1
0	0	0
352	347	-5
69	66	-3
3	3	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	47	10	71	34.4	D	18.4	C	5.9	A
	Right	366	49	219	16.3	C				
Eastbound	Left	26	0	34	4.8	A	1.2	A		
	Thru	452	0	8	1.0	A				
Westbound	Thru	634	0	4	1.4	A	1.3	A		
	Right	8	0	4	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
48	47	-1
372	366	-6
28	26	-2
461	452	-9
643	634	-9
7	8	1

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	90	3	66	7.6	A	6.1	A	4.1	A
	Right	76	2	66	4.3	A				
Eastbound	Left	11	2	79	5.7	A	4.3	A		
	Thru	676	2	79	4.3	A				
Westbound	U-turn	100	0	26	4.7	A	3.1	A		
	Thru	361	0	26	2.7	A				
	Right	15	0	28	1.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
90	90	0
77	76	-1
12	11	-1
682	676	-6
102	100	-2
359	361	2
16	15	-1

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	88	11	87	23.9	C	17.3	C	4.9	A
	Thru	0	-	-	-	A				
	Right	56	2	58	6.9	A				
Southbound	Left	134	17	117	21.6	C	15.3	C		
	Thru	0	-	-	-	A				
	Right	118	6	88	8.0	A				
Eastbound	Left	22	0	17	3.3	A	0.3	A		
	Thru	474	0	0	0.2	A				
	Right	4	0	0	0.9	A				
Westbound	Left	0	-	-	-	A	0.3	A		
	Thru	435	0	0	0.3	A				
	Right	23	0	0	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
89	88	-1
1	0	-1
55	56	1
135	134	-1
0	0	0
120	118	-2
22	22	0
484	474	-10
3	4	1
0	0	0
441	435	-6
25	23	-2

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	167	7	93	8.0	A	8.0	A	5.1	A
Southbound	Right	183	1	41	1.9	A	1.9	A		
Eastbound	Left	11	0	11	5.8	A	5.3	A		
	Thru	790	11	147	5.5	A				
Westbound	Right	62	11	143	1.8	A	4.9	A		
	Left	128	11	105	16.2	C				
	Thru	295	0	0	0.8	A				
	Right	62	0	0	0.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
166	167	1
183	183	0
11	11	0
801	790	-11
62	62	0
127	128	1
294	295	1
65	62	-3

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	1	41	18.4	C	11.9	B	1.5	A
	Thru	0	-	-	-	A				
	Right	4	0	47	5.4	A				
Southbound	Left	64	7	79	17.6	C	10.0	B		
	Thru	0	-	-	-	A				
	Right	53	0	12	0.9	A				
Eastbound	Left	58	0	31	2.7	A	0.3	A		
	Thru	591	0	0	0.1	A				
	Right	13	0	0	0.4	A				
Westbound	Left	6	0	13	6.7	A	0.9	A		
	Thru	404	0	0	0.7	A				
	Right	22	0	8	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	4	-1
0	0	0
5	4	-1
63	64	1
0	0	0
55	53	-2
61	58	-3
601	591	-10
13	13	0
5	6	1
406	404	-2
23	22	-1

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	345	196	633	58.7	E	44.7	D	39.5	D
	Thru	160	198	636	70.2	E				
	Right	1,425	272	738	38.5	D				
Southbound	Left	1,037	478	1,560	63.1	E	37.6	D		
	Thru	59	474	1,567	46.3	D				
	Right	1,588	357	1,682	20.6	C				
Eastbound	Left	1,156	77	529	44.5	D	43.3	D		
	Right	249	33	166	37.6	D				
Westbound	Left	741	37	240	34.2	C	31.7	C		
	Right	554	54	238	28.4	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
351	345	-6
168	160	-8
1,467	1,425	-42
1,050	1,037	-13
58	59	1
1,650	1,588	-62
1,177	1,156	-21
245	249	4
739	741	2
561	554	-7

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	1	15	39.6	D	43.3	D	39.6	D
	Thru	653	117	389	43.9	D				
	Right	39	0	9	32.8	C				
Southbound	Left	191	49	155	68.3	E	30.1	C		
	Thru	426	54	252	38.0	D				
	Right	429	0	54	5.1	A				
Eastbound	Left	885	159	479	49.2	D	48.2	D		
	Thru	46	160	481	40.3	D				
	Right	11	0	4	0.9	A				
Westbound	Left	59	23	113	69.5	E	37.9	D		
	Thru	54	41	286	68.6	E				
	Right	372	54	316	28.4	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	4	-1
673	653	-20
37	39	2
192	191	-1
423	426	3
426	429	3
910	885	-25
47	46	-1
10	11	1
59	59	0
55	54	-1
375	372	-3

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	674	7	95	5.4	A	5.4	A	7.5	A
	Right	10	3	80	4.5	A				
Southbound	Left	15	2	32	20.8	C	8.7	A		
	Thru	369	8	124	8.2	A				
Westbound	Left	65	8	72	23.9	C	18.5	B		
	Right	27	1	54	5.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
689	674	-15
10	10	0
15	15	0
369	369	0
65	65	0
26	27	1

Note: Results are the average of ten (10) simulation runs

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American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	59	6	72	19.9	C	10.7	B	1.4	A
	Right	54	0	10	0.7	A				
Eastbound	Thru	510	0	0	0.3	A	0.4	A		
	Right	55	0	0	0.7	A				
Westbound	Left	18	0	21	4.7	A	0.5	A		
	Thru	466	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
61	59	-2
52	54	2
516	510	-6
55	55	0
17	18	1
478	466	-12

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	718	0	0	1.1	A	1.3	A	1.3	A
	-	548	0	0	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
724	718	-6
548	548	0

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	6.7	A	1.9	A
	Right	20	1	71	6.7	A				
Eastbound	Left	30	0	21	3.3	A	1.1	A		
	Thru	174	0	0	0.7	A				
Westbound	Thru	177	0	0	2.2	A	2.2	A		
	Right	12	0	0	2.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
21	20	-1
31	30	-1
175	174	-1
185	177	-8
13	12	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	440	0	0	0.2	A	0.2	A	2.1	A
Southbound	Thru	502	0	12	0.4	A	0.7	A		
	Right	281	0	12	1.3	A				
Eastbound	Left	69	4	58	17.6	C	7.3	A		
	Right	290	0	3	4.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
442	440	-2
510	502	-8
290	281	-9
70	69	-1
290	290	0

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	154	36	138	54.3	D	28.2	C	48.7	D
	Thru	105	25	139	40.4	D				
	Right	216	0	10	3.8	A				
Southbound	Left	141	288	485	181.0	F	160.5	F		
	Thru	75	288	485	137.5	F				
	Right	36	0	10	127.9	F				
Eastbound	Left	70	17	73	60.4	E	31.1	C		
	Thru	314	42	159	41.2	D				
	Right	181	0	16	2.2	A				
Westbound	Left	333	49	188	44.1	D	35.4	D		
	Thru	298	22	121	26.3	C				
	Right	14	18	123	21.6	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
151	154	3
105	105	0
222	216	-6
149	141	-8
80	75	-5
38	36	-2
69	70	1
322	314	-8
177	181	4
346	333	-13
306	298	-8
15	14	-1

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South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	546	289	618	85.3	F	66.6	E	53.0	D
	Thru	107	29	179	48.3	D				
	Right	163	8	100	16.0	B				
Southbound	Left	107	17	110	48.8	D	68.0	E		
	Thru	184	73	364	74.8	E				
	Right	792	246	713	69.0	E				
Eastbound	Left	530	91	268	53.5	D	39.4	D		
	Thru	1,076	120	429	42.0	D				
	Right	534	152	470	20.0	B				
Westbound	Left	156	38	120	68.7	E	54.8	D		
	Thru	886	211	544	56.4	E				
	Right	73	2	63	6.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
560	546	-14
110	107	-3
158	163	5
107	107	0
187	184	-3
823	792	-31
514	530	16
1,101	1,076	-25
549	534	-15
154	156	2
917	886	-31
76	73	-3

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	94	26	256	38.0	D	38.0	D	35.7	D
	Right	888	197	804	38.0	D				
Eastbound	Left	556	111	301	51.4	D	33.9	C		
	Thru	693	111	301	20.0	B				
Westbound	Thru	1,117	130	442	40.3	D	35.7	D		
	Right	167	0	0	5.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	94	1
901	888	-13
577	556	-21
695	693	-2
1,137	1,117	-20
171	167	-4

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	247	6	87	8.6	A	6.2	A	10.4	B
	Thru	255	2	50	3.9	A				
	Right	6	2	48	5.2	A				
Southbound	Left	2	0	6	10.0	A	10.1	B		
	Thru	505	15	162	11.0	B				
	Right	47	0	0	0.5	A				
Eastbound	Left	288	23	114	25.5	C	14.6	B		
	Thru	0	-	-	-	A				
	Right	275	0	10	3.1	A				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
253	247	-6
254	255	1
5	6	1
3	2	-1
524	505	-19
48	47	-1
292	288	-4
0	0	0
274	275	1
1	0	-1
1	0	-1
1	0	-1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	233	50	181	56.8	E	39.4	D	23.2	C
	Thru	51	14	82	49.0	D				
	Right	142	5	85	7.4	A				
Southbound	Left	213	48	235	38.3	D	28.9	C		
	Thru	44	12	74	47.6	D				
	Right	415	30	156	22.0	C				
Eastbound	Left	390	29	137	22.4	C	12.9	B		
	Thru	477	15	90	9.1	A				
	Right	475	14	178	8.9	A				
Westbound	Left	256	42	157	51.5	D	26.3	C		
	Thru	477	23	141	22.0	C				
	Right	259	7	97	9.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
236	233	-3
50	51	1
143	142	-1
208	213	5
43	44	1
423	415	-8
392	390	-2
479	477	-2
495	475	-20
262	256	-6
487	477	-10
274	259	-15

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	120	24	108	39.6	D	24.2	C	21.5	C
	Thru	4	24	107	26.8	C				
	Right	82	0	8	1.6	A				
Southbound	Left	230	80	333	50.9	D	24.3	C		
	Thru	6	77	330	40.0	D				
	Right	609	55	353	14.1	B				
Eastbound	Left	273	25	141	27.7	C	12.9	B		
	Thru	372	8	94	6.3	A				
	Right	139	0	23	1.6	A				
Westbound	Left	51	16	94	56.0	E	26.7	C		
	Thru	569	38	204	27.7	C				
	Right	88	0	36	3.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
122	120	-2
4	4	0
84	82	-2
229	230	1
6	6	0
615	609	-6
274	273	-1
377	372	-5
137	139	2
51	51	0
571	569	-2
90	88	-2

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	482	577	732	87.2	F	31.7	C	28.3	C
	Thru	117	24	144	36.5	D				
	Right	1,120	71	524	7.4	A				
Southbound	Left	70	20	101	55.1	E	39.2	D		
	Thru	72	13	78	43.5	D				
	Right	37	0	0	0.8	A				
Eastbound	Left	21	2	33	18.5	B	27.0	C		
	Right	605	59	264	27.3	C				
Westbound	Left	1,424	94	397	24.7	C	23.7	C		
	Right	71	0	0	1.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
551	482	-69
120	117	-3
1,171	1,120	-51
74	70	-4
71	72	1
38	37	-1
19	21	2
609	605	-4
1,433	1,424	-9
75	71	-4

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	1	1	13	111.1	F	28.7	C	18.4	B
	Thru	1,613	267	442	28.7	C				
Southbound	Thru	1,717	21	228	8.0	A	7.7	A		
	Right	379	1	57	6.4	A				
Eastbound	Left	135	44	182	63.2	E	55.3	E		
	Right	25	52	205	12.2	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	1	0
1,707	1,613	-94
1,713	1,717	4
393	379	-14
135	135	0
26	25	-1

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	185	43	147	60.4	E	33.4	C	39.3	D
	Thru	1,159	74	392	31.0	C				
	Right	73	0	15	3.5	A				
Southbound	Left	132	29	134	53.3	D	27.9	C		
	Thru	1,309	121	476	30.6	C				
	Right	302	0	38	5.1	A				
Eastbound	Left	403	147	351	100.9	F	67.3	E		
	Thru	89	9	65	24.3	C				
	Right	164	3	75	8.1	A				
Westbound	Left	82	22	94	56.7	E	81.8	F		
	Thru	80	79	180	43.0	D				
	Right	72	74	171	153.5	F				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
197	185	-12
1,188	1,159	-29
69	73	4
128	132	4
1,306	1,309	3
304	302	-2
431	403	-28
91	89	-2
170	164	-6
84	82	-2
84	80	-4
90	72	-18

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	267	45	183	47.4	D	23.7	C	32.3	C
	Thru	890	39	240	17.0	B				
	Right	20	0	1	1.1	A				
Southbound	Left	76	33	134	72.7	E	33.7	C		
	Thru	830	143	511	45.1	D				
	Right	630	18	361	13.9	B				
Eastbound	Left	472	85	287	54.8	D	40.5	D		
	Thru	148	35	194	41.1	D				
	Right	218	8	99	9.0	A				
Westbound	Left	10	4	28	74.4	E	38.8	D		
	Thru	97	29	142	56.6	E				
	Right	73	1	49	10.3	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
274	267	-7
924	890	-34
22	20	-2
77	76	-1
836	830	-6
648	630	-18
462	472	10
151	148	-3
217	218	1
14	10	-4
103	97	-6
68	73	5

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	108	19	93	46.4	D	24.5	C	22.1	C
	Thru	566	33	221	21.2	C				
	Right	25	0	12	6.1	A				
Southbound	Left	191	35	138	49.2	D	15.6	B		
	Thru	404	13	143	10.7	B				
	Right	459	1	102	6.0	A				
Eastbound	Left	412	77	365	43.5	D	36.1	D		
	Thru	4	3	71	42.9	D				
	Right	140	6	79	13.8	B				
Westbound	Left	31	10	63	58.7	E	10.9	B		
	Thru	4	1	19	52.3	D				
	Right	208	0	23	3.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
137	108	-29
586	566	-20
26	25	-1
191	191	0
408	404	-4
468	459	-9
418	412	-6
4	4	0
135	140	5
30	31	1
5	4	-1
218	208	-10

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	513	3	132	3.6	A	3.7	A	5.9	A
	Right	85	1	37	3.9	A				
Southbound	Thru	558	3	93	3.1	A	3.1	A		
Eastbound	Left	11	3	53	46.7	D	30.8	C		
	Right	66	10	79	28.1	C				
Westbound	Right	206	17	131	10.7	B	10.7	B		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
530	513	-17
87	85	-2
556	558	2
11	11	0
68	66	-2
207	206	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	95	32	130	78.9	E	42.9	D	39.6	D
	Thru	285	72	368	63.1	E				
	Right	284	0	35	10.5	B				
Southbound	Left	42	10	49	54.0	D	23.5	C		
	Thru	227	37	262	36.7	D				
	Right	355	24	314	11.5	B				
Eastbound	Left	285	93	328	91.6	F	52.0	D		
	Thru	291	28	137	31.4	C				
	Right	105	0	16	1.1	A				
Westbound	Left	339	52	203	46.4	D	38.7	D		
	Thru	303	24	119	29.3	C				
	Right	28	7	46	46.3	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	95	2
295	285	-10
289	284	-5
43	42	-1
226	227	1
356	355	-1
295	285	-10
288	291	3
107	105	-2
361	339	-22
311	303	-8
27	28	1

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	28	5	90	9.7	A	4.8	A	6.3	A
	Thru	497	5	90	4.5	A				
	Right	3	10	121	3.6	A				
Southbound	Left	3	5	117	8.2	A	5.5	A		
	Thru	525	5	112	5.0	A				
	Right	165	9	142	6.8	A				
Eastbound	Left	111	9	105	18.2	B	15.3	B		
	Thru	0	-	-	-	A				
	Right	38	9	130	6.8	A				
Westbound	Left	3	0	20	16.8	B	10.9	B		
	Thru	4	0	21	16.1	B				
	Right	4	0	1	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
31	28	-3
499	497	-2
3	3	0
3	3	0
543	525	-18
173	165	-8
114	111	-3
0	0	0
41	38	-3
2	3	1
4	4	0
3	4	1

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	27	0	3	0.6	A	6.2	A	5.7	A
	Thru	0	-	-	-	A				
	Right	137	0	3	7.3	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	4.4	A		
	Thru	163	2	58	5.6	A				
	Right	73	0	16	1.8	A				
Westbound	Left	105	6	62	14.7	B	6.4	A		
	Thru	195	1	38	1.9	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
28	27	-1
0	0	0
139	137	-2
0	1	1
0	0	0
0	0	0
0	0	0
160	163	3
73	73	0
110	105	-5
199	195	-4
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	39	0	2	3.0	A	2.3	A	3.2	A
	Thru	134	0	2	2.1	A				
	Right	3	0	2	1.0	A				
Southbound	Left	0	-	-	-	A	1.8	A		
	Thru	123	0	6	1.9	A				
	Right	45	0	6	1.6	A				
Eastbound	Left	37	0	12	6.6	A	6.5	A		
	Thru	18	0	11	11.0	B				
	Right	61	0	12	5.2	A				
Westbound	Left	0	-	-	-	A	2.1	A		
	Thru	9	0	0	2.4	A				
	Right	2	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	39	1
133	134	1
2	3	1
0	0	0
132	123	-9
42	45	3
38	37	-1
17	18	1
62	61	-1
1	0	-1
16	9	-7
2	2	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	6	1	46	23.2	C	14.3	B	15.6	B
	Thru	86	5	56	14.9	B				
	Right	10	0	32	3.7	A				
Southbound	Left	4	0	14	24.9	C	11.1	B		
	Thru	88	7	80	13.9	B				
	Right	92	10	97	7.9	A				
Eastbound	Left	86	11	108	25.8	C	24.8	C		
	Thru	5	1	17	22.1	C				
	Right	4	0	4	8.1	A				
Westbound	Left	11	1	23	22.1	C	19.9	B		
	Thru	4	1	21	15.7	B				
	Right	3	0	22	17.4	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	6	-1
89	86	-3
10	10	0
4	4	0
95	88	-7
101	92	-9
87	86	-1
5	5	0
3	4	1
13	11	-2
3	4	1
3	3	0

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	118	11	98	25.3	C	14.3	B	10.9	B
	Right	186	0	0	7.2	A				
Eastbound	Left	180	16	143	19.0	B	9.3	A		
	Thru	331	3	68	4.0	A				
Westbound	Thru	284	10	122	10.5	B	10.4	B		
	Right	37	10	122	9.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
122	118	-4
196	186	-10
179	180	1
332	331	-1
298	284	-14
41	37	-4

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	3	1	41	9.3	A	6.5	A	0.6	A
	Right	17	1	58	5.9	A				
Eastbound	Left	23	0	17	2.1	A	0.5	A		
	Thru	274	0	0	0.4	A				
Westbound	Thru	282	0	0	0.2	A	0.2	A		
	Right	9	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	3	-1
20	17	-3
22	23	1
277	274	-3
288	282	-6
7	9	2

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	68	5	53	19.4	B	16.0	B	5.1	A
	Right	23	0	42	6.1	A				
Eastbound	Thru	259	2	50	3.0	A	3.0	A		
	Right	21	0	7	2.1	A				
Westbound	Left	21	1	32	13.5	B	3.5	A		
	Thru	223	1	43	2.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
72	68	-4
25	23	-2
260	259	-1
21	21	0
27	21	-6
224	223	-1

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	12	0	3	5.2	A	6.1	A	8.9	A
	Thru	43	2	50	6.4	A				
Southbound	Thru	40	2	33	9.6	A	9.6	A		
	Right	0	-	-	-	A				
Eastbound	Left	14	1	40	17.0	B	14.5	B		
	Right	8	0	27	10.1	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
13	12	-1
43	43	0
41	40	-1
5	0	-5
19	14	-5
11	8	-3

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	0	0	0.4	A	0.4	A	3.0	A
	Thru	17	0	0	0.1	A				
	Right	13	0	1	0.6	A				
Southbound	Left	30	0	3	0.8	A	0.6	A		
	Thru	12	0	1	0.2	A				
	Right	7	0	2	0.4	A				
Eastbound	Left	6	1	45	7.6	A	6.3	A		
	Thru	0	-	-	-	A				
	Right	13	0	44	5.7	A				
Westbound	Left	12	1	44	8.1	A	6.4	A		
	Thru	0	-	-	-	A				
	Right	33	1	39	5.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	4	0
16	17	1
13	13	0
34	30	-4
12	12	0
7	7	0
6	6	0
0	0	0
12	13	1
12	12	0
0	0	0
34	33	-1

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.1	A	1.2	A
	Thru	24	0	0	0.1	A				
	Right	7	0	0	0.3	A				
Southbound	Left	9	0	3	0.7	A	0.3	A		
	Thru	27	0	0	0.1	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	4	0	45	7.4	A	6.1	A		
	Thru	0	-	-	-	A				
	Right	9	1	59	5.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
22	24	2
7	7	0
10	9	-1
28	27	-1
0	0	0
0	0	0
0	0	0
5	4	-1
0	0	0
11	9	-2

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	32	0	0	0.1	A	0.2	A	0.5	A
	Right	6	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	0.0	A		
	Thru	30	0	0	0.0	A				
Eastbound	Left	4	0	36	7.1	A	7.1	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
29	32	3
7	6	-1
0	0	0
33	30	-3
6	4	-2
0	0	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	5	1	39	19.0	C	8.6	A	1.3	A
	Right	28	2	71	6.7	A				
Eastbound	Left	33	0	22	2.7	A	1.1	A		
	Thru	417	0	4	1.0	A				
Westbound	Thru	298	0	2	0.7	A	0.7	A		
	Right	4	0	2	0.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	5	-2
32	28	-4
32	33	1
422	417	-5
309	298	-11
4	4	0

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	2.4	A
	Right	0	-	-	-	A				
Eastbound	Left	3	0	14	3.5	A	2.4	A		
	Thru	279	0	13	2.4	A				
Westbound	U-turn	34	0	3	3.7	A	2.3	A		
	Thru	245	0	4	2.1	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
2	0	-2
3	3	0
282	279	-3
34	34	0
247	245	-2
0	0	0

E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	0.5	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	12	1	54	14.2	B	10.1	B		
	Thru	0	-	-	-	A				
	Right	12	1	55	6.1	A				
Eastbound	Left	16	0	10	1.9	A	0.2	A		
	Thru	405	0	0	0.2	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.2	A		
	Thru	294	0	0	0.2	A				
	Right	14	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
0	0	0
15	12	-3
0	0	0
13	12	-1
16	16	0
412	405	-7
1	0	-1
0	0	0
297	294	-3
13	14	1

2025 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	150	6	89	7.2	A	7.2	A	2.1	A
Southbound	Right	54	0	17	0.9	A	0.9	A		
Eastbound	Left	1	0	2	1.0	A	1.0	A		
	Thru	264	0	0	1.0	A				
	Right	48	0	0	0.9	A				
Westbound	Left	93	1	40	3.0	A	1.1	A		
	Thru	225	0	0	0.4	A				
	Right	28	0	0	0.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
148	150	2
55	54	-1
3	1	-2
267	264	-3
46	48	2
92	93	1
226	225	-1
28	28	0

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	1.2	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	55	3	60	11.6	B	6.8	A		
	Thru	0	-	-	-	A				
	Right	44	0	12	0.8	A				
Eastbound	Left	45	0	17	1.4	A	0.2	A		
	Thru	373	0	0	0.1	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.6	A		
	Thru	264	0	0	0.5	A				
	Right	12	0	0	0.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
0	0	0
54	55	1
0	0	0
46	44	-2
47	45	-2
379	373	-6
0	0	0
0	0	0
265	264	-1
13	12	-1

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	236	64	255	49.9	D	28.8	C	24.8	C
	Thru	41	64	255	59.5	E				
	Right	612	43	258	18.7	B				
Southbound	Left	559	93	308	50.5	D	20.2	C		
	Thru	85	94	310	42.6	D				
	Right	1,205	0	2	4.6	A				
Eastbound	Left	973	27	220	27.8	C	27.8	C		
	Right	251	25	122	27.6	C				
Westbound	Left	498	14	142	26.6	C	26.1	C		
	Right	495	43	200	25.6	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
241	236	-5
38	41	3
628	612	-16
566	559	-7
86	85	-1
1,208	1,205	-3
988	973	-15
246	251	5
499	498	-1
498	495	-3

34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	2	0	12	34.9	C	20.7	C	25.0	C
	Thru	379	30	179	22.0	C				
	Right	43	0	7	8.2	A				
Southbound	Left	187	33	134	45.6	D	19.3	B		
	Thru	331	20	132	19.0	B				
	Right	316	0	47	4.0	A				
Eastbound	Left	385	56	221	43.3	D	42.6	D		
	Thru	24	55	219	35.1	D				
	Right	2	0	2	0.9	A				
Westbound	Left	32	9	62	51.5	D	21.3	C		
	Thru	29	8	56	53.7	D				
	Right	117	1	44	5.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
3	2	-1
386	379	-7
44	43	-1
188	187	-1
329	331	2
314	316	2
388	385	-3
24	24	0
3	2	-1
34	32	-2
29	29	0
117	117	0

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	423	1	39	1.0	A	1.1	A	2.7	A
	Right	7	0	20	1.7	A				
Southbound	Left	7	1	25	15.0	B	5.2	A		
	Thru	273	4	85	5.0	A				
Westbound	Left	1	0	7	20.3	C	7.5	A		
	Right	5	0	35	4.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
428	423	-5
5	7	2
7	7	0
276	273	-3
2	1	-1
5	5	0

Note: Results are the average of ten (10) simulation runs

Appendix L
Year 2040 MOE

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	3	55	18.9	C	18.9	C	0.9	A
	Right	0	-	-	-	A				
Eastbound	Thru	521	0	0	0.3	A	0.3	A		
	Right	14	0	0	0.5	A				
Westbound	Left	7	0	13	4.6	A	0.5	A		
	Thru	869	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	37	-1
0	0	0
523	521	-2
12	14	2
8	7	-1
918	869	-49

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	1,032	0	0	0.3	A	0.4	A	0.4	A
	-	277	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1,041	1,032	-9
274	277	3

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.0	A	3.2	A
	Right	13	1	69	7.0	A				
Eastbound	Left	24	0	18	4.3	A	1.2	A		
	Thru	251	0	0	0.9	A				
Westbound	Thru	236	0	0	5.3	A	5.3	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
15	13	-2
25	24	-1
255	251	-4
266	236	-30
1	0	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	733	0	0	0.2	A	0.2	A	1.4	A
	Thru	1,100	0	13	0.6	A				
Southbound	Right	199	0	13	1.0	A	0.7	A		
	Left	10	2	27	39.3	E				
Eastbound	Left	10	2	27	39.3	E	6.1	A		
	Right	358	0	0	5.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
736	733	-3
1,286	1,100	-186
251	199	-52
10	10	0
361	358	-3

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	132	16	83	31.5	C	17.8	B	19.3	B
	Thru	16	2	32	28.0	C				
	Right	134	0	10	3.1	A				
Southbound	Left	41	9	64	35.9	D	25.4	C		
	Thru	8	9	64	35.3	D				
	Right	21	0	6	1.3	A				
Eastbound	Left	23	4	32	43.4	D	19.1	B		
	Thru	433	25	147	20.1	C				
	Right	59	0	6	1.8	A				
Westbound	Left	365	43	182	35.0	C	19.4	B		
	Thru	728	19	164	12.0	B				
	Right	26	17	167	10.2	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
130	132	2
16	16	0
139	134	-5
40	41	1
8	8	0
22	21	-1
22	23	1
440	433	-7
60	59	-1
374	365	-9
774	728	-46
28	26	-2

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	78	14	86	37.1	D	31.1	C	17.6	B
	Thru	25	3	43	28.5	C				
	Right	18	1	54	8.6	A				
Southbound	Left	15	2	27	22.9	C	21.5	C		
	Thru	12	3	31	45.6	D				
	Right	93	8	66	18.1	B				
Eastbound	Left	278	31	133	32.8	C	16.4	B		
	Thru	1,455	39	228	13.9	B				
	Right	99	56	267	6.7	A				
Westbound	Left	33	7	46	40.3	D	18.1	B		
	Thru	381	21	143	16.7	B				
	Right	15	0	41	3.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
80	78	-2
25	25	0
18	18	0
14	15	1
12	12	0
93	93	0
268	278	10
1,471	1,455	-16
102	99	-3
35	33	-2
400	381	-19
13	15	2

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	26	3	40	20.2	C	13.9	B	5.6	A
	Right	79	4	51	11.9	B				
Eastbound	Left	121	11	93	14.9	B	4.5	A		
	Thru	1,187	11	93	3.4	A				
Westbound	Thru	255	6	80	8.5	A	7.4	A		
	Right	41	0	0	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	26	1
81	79	-2
122	121	-1
1,193	1,187	-6
290	255	-35
49	41	-8

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	240	14	142	14.2	B	10.4	B	25.1	C
	Thru	496	11	103	8.6	A				
	Right	7	11	101	8.1	A				
Southbound	Left	0	-	-	-	A	17.3	B		
	Thru	517	29	173	18.9	B				
	Right	49	0	0	0.6	A				
Eastbound	Left	745	251	1,727	46.2	D	35.1	D		
	Thru	10	252	1,739	48.9	D				
	Right	785	183	1,615	24.3	C				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
240	240	0
501	496	-5
5	7	2
0	0	0
592	517	-75
55	49	-6
898	745	-153
11	10	-1
945	785	-160
0	0	0
2	0	-2
0	0	0

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	68	10	63	31.9	C	23.2	C	16.8	B
	Thru	12	1	24	23.9	C				
	Right	34	1	62	5.4	A				
Southbound	Left	52	5	60	20.0	B	16.2	B		
	Thru	14	2	30	29.8	C				
	Right	135	7	63	13.3	B				
Eastbound	Left	301	26	143	26.1	C	15.9	B		
	Thru	771	32	244	14.7	B				
	Right	409	17	213	10.7	B				
Westbound	Left	93	13	70	34.0	C	18.4	B		
	Thru	228	12	82	18.2	B				
	Right	125	4	93	7.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
71	68	-3
11	12	1
33	34	1
52	52	0
15	14	-1
135	135	0
296	301	5
785	771	-14
422	409	-13
93	93	0
242	228	-14
130	125	-5

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	32	4	48	22.6	C	14.1	B	5.6	A
	Thru	0	-	-	-	A				
	Right	20	0	2	0.6	A				
Southbound	Left	4	1	22	24.8	C	11.5	B		
	Thru	5	1	22	20.8	C				
	Right	11	0	6	2.4	A				
Eastbound	Left	81	4	51	12.7	B	4.9	A		
	Thru	1,018	9	137	4.7	A				
	Right	114	0	18	1.2	A				
Westbound	Left	39	3	47	18.5	B	6.6	A		
	Thru	250	3	65	4.9	A				
	Right	12	0	8	1.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
34	32	-2
0	0	0
22	20	-2
4	4	0
4	5	1
13	11	-2
78	81	3
1,026	1,018	-8
114	114	0
44	39	-5
292	250	-42
16	12	-4

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	194	31	133	52.8	D	21.4	C	22.5	C
	Thru	58	8	65	28.1	C				
	Right	349	2	56	2.8	A				
Southbound	Left	73	18	96	47.4	D	33.1	C		
	Thru	134	17	92	35.4	D				
	Right	42	0	0	0.8	A				
Eastbound	Left	80	7	78	20.0	C	28.3	C		
	Right	884	93	362	29.1	C				
Westbound	Left	1,410	90	421	22.1	C	18.3	B		
	Right	376	0	0	3.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
205	194	-11
58	58	0
366	349	-17
74	73	-1
134	134	0
41	42	1
76	80	4
898	884	-14
1,414	1,410	-4
377	376	-1

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	33	9	62	47.9	D	4.9	A	10.2	B
	Thru	550	2	87	2.3	A				
Southbound	Thru	2,294	53	434	10.9	B	10.7	B		
	Right	123	0	14	6.8	A				
Eastbound	Left	51	13	83	46.4	D	36.0	D		
	Right	28	14	108	17.2	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
34	33	-1
578	550	-28
2,312	2,294	-18
126	123	-3
52	51	-1
28	28	0

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	81	19	89	48.6	D	31.2	C	29.0	C
	Thru	287	28	125	38.4	D				
	Right	133	1	56	5.1	A				
Southbound	Left	586	110	426	44.1	D	25.3	C		
	Thru	858	92	431	31.2	C				
	Right	870	3	165	6.9	A				
Eastbound	Left	212	52	166	66.2	E	37.1	D		
	Thru	231	27	129	33.9	C				
	Right	171	1	61	5.3	A				
Westbound	Left	64	16	73	55.5	E	37.3	D		
	Thru	157	27	121	39.9	D				
	Right	85	31	126	18.9	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
87	81	-6
296	287	-9
136	133	-3
586	586	0
863	858	-5
892	870	-22
213	212	-1
237	231	-6
171	171	0
78	64	-14
182	157	-25
101	85	-16

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	82	14	76	41.8	D	24.1	C	21.2	C
	Thru	234	16	111	22.8	C				
	Right	50	0	10	1.2	A				
Southbound	Left	149	36	184	42.5	D	18.3	B		
	Thru	648	41	280	19.4	B				
	Right	296	0	42	3.5	A				
Eastbound	Left	218	27	133	33.9	C	23.4	C		
	Thru	460	59	374	23.4	C				
	Right	176	7	130	10.5	B				
Westbound	Left	7	2	24	47.3	D	23.3	C		
	Thru	68	12	79	33.3	C				
	Right	48	1	33	5.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
88	82	-6
258	234	-24
54	50	-4
150	149	-1
658	648	-10
305	296	-9
220	218	-2
468	460	-8
182	176	-6
11	7	-4
73	68	-5
42	48	6

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	7	1	21	25.2	C	16.7	B	16.9	B
	Thru	282	15	128	17.7	B				
	Right	29	0	10	5.9	A				
Southbound	Left	299	36	154	33.4	C	17.5	B		
	Thru	465	12	160	9.1	A				
	Right	65	0	2	3.6	A				
Eastbound	Left	12	2	25	31.8	C	25.8	C		
	Thru	1	0	17	31.4	C				
	Right	4	0	21	6.3	A				
Westbound	Left	25	6	54	41.1	D	11.3	B		
	Thru	0	-	-	-	A				
	Right	76	0	8	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	7	-1
307	282	-25
30	29	-1
303	299	-4
482	465	-17
64	65	1
11	12	1
1	1	0
4	4	0
29	25	-4
1	0	-1
82	76	-6

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	240	1	58	2.4	A	3.2	A	3.9	A
	Right	123	1	65	4.5	A				
Southbound	Thru	468	2	91	3.1	A	3.1	A		
Eastbound	Left	15	1	47	30.6	C	24.0	C		
	Right	9	3	61	12.9	B				
Westbound	Right	65	4	93	7.0	A	7.0	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
262	240	-22
126	123	-3
490	468	-22
16	15	-1
57	9	-48
67	65	-2

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	35	14	60	110.1	F	43.1	D	41.2	D
	Thru	285	180	891	74.8	E				
	Right	1,043	41	518	32.2	C				
Southbound	Left	73	14	69	50.6	D	25.2	C		
	Thru	251	28	190	26.8	C				
	Right	201	19	221	13.9	B				
Eastbound	Left	61	21	81	73.1	E	44.6	D		
	Thru	911	142	472	45.5	D				
	Right	59	0	4	0.8	A				
Westbound	Left	285	61	210	59.6	E	46.0	D		
	Thru	171	13	83	24.4	C				
	Right	17	4	38	36.0	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
36	35	-1
303	285	-18
1,176	1,043	-133
75	73	-2
258	251	-7
214	201	-13
66	61	-5
929	911	-18
57	59	2
378	285	-93
212	171	-41
18	17	-1

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	64	26	245	18.2	B	11.0	B	12.9	B
	Thru	1,111	26	244	10.7	B				
	Right	37	37	273	7.9	A				
Southbound	Left	49	15	160	27.6	C	11.5	B		
	Thru	397	15	160	9.7	A				
	Right	118	24	192	10.9	B				
Eastbound	Left	249	27	206	25.5	C	24.0	C		
	Thru	7	27	206	23.2	C				
	Right	26	32	232	10.1	B				
Westbound	Left	7	1	21	16.5	B	12.6	B		
	Thru	4	1	20	15.5	B				
	Right	6	0	11	6.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
75	64	-11
1,252	1,111	-141
42	37	-5
54	49	-5
473	397	-76
134	118	-16
254	249	-5
9	7	-2
28	26	-2
7	7	0
3	4	1
6	6	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	25	0	0	0.6	A	5.4	A	6.0	A
	Thru	0	-	-	-	A				
	Right	91	0	0	6.8	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	6.3	A		
	Thru	697	8	148	6.8	A				
	Right	136	0	28	4.0	A				
Westbound	Left	157	10	73	16.3	B	5.7	A		
	Thru	346	1	39	0.9	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
22	25	3
0	0	0
88	91	3
0	1	1
0	0	0
0	0	0
0	0	0
706	697	-9
132	136	4
186	157	-29
417	346	-71
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	21	0	23	4.7	A	4.0	A	6.1	A
	Thru	131	0	23	3.9	A				
	Right	6	0	22	4.0	A				
Southbound	Left	3	0	9	3.3	A	2.0	A		
	Thru	195	0	10	2.1	A				
	Right	71	0	10	1.9	A				
Eastbound	Left	70	1	67	10.8	B	9.9	A		
	Thru	224	1	68	10.2	B				
	Right	108	1	69	8.6	A				
Westbound	Left	0	-	-	-	A	3.2	A		
	Thru	23	0	1	3.4	A				
	Right	4	0	0	2.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
18	21	3
115	131	16
6	6	0
2	3	1
222	195	-27
69	71	2
75	70	-5
226	224	-2
108	108	0
1	0	-1
32	23	-9
4	4	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	13	6	55	53.6	D	15.5	B	19.7	B
	Thru	121	9	71	19.7	B				
	Right	156	4	78	9.2	A				
Southbound	Left	22	6	46	47.5	D	18.1	B		
	Thru	145	16	134	18.8	B				
	Right	136	23	151	12.7	B				
Eastbound	Left	33	10	66	58.2	E	47.0	D		
	Thru	19	2	38	27.7	C				
	Right	0	-	-	-	A				
Westbound	Left	11	2	25	40.4	D	36.9	D		
	Thru	2	1	16	24.9	C				
	Right	4	1	17	33.4	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
15	13	-2
131	121	-10
168	156	-12
23	22	-1
155	145	-10
149	136	-13
32	33	1
19	19	0
1	0	-1
11	11	0
2	2	0
3	4	1

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	46	7	62	29.8	C	25.1	C	14.9	B
	Thru	2	0	32	23.9	C				
	Right	16	1	49	11.9	B				
Southbound	Left	41	6	61	29.0	C	12.8	B		
	Thru	14	2	31	26.5	C				
	Right	75	0	0	1.4	A				
Eastbound	Left	516	69	409	26.4	C	14.4	B		
	Thru	1,367	24	309	10.2	B				
	Right	88	8	227	10.1	B				
Westbound	Left	46	6	75	29.0	C	17.4	B		
	Thru	339	21	193	16.2	B				
	Right	59	21	193	15.2	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
45	46	1
3	2	-1
18	16	-2
42	41	-1
15	14	-1
82	75	-7
545	516	-29
1,476	1,367	-109
98	88	-10
67	46	-21
458	339	-119
77	59	-18

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	23	5	64	24.2	C	14.3	B	2.2	A
	Right	45	5	80	9.3	A				
Eastbound	Left	163	3	75	5.6	A	2.3	A		
	Thru	624	0	0	1.4	A				
Westbound	Thru	458	0	0	0.2	A	0.2	A		
	Right	18	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	23	-2
44	45	1
162	163	1
630	624	-6
559	458	-101
22	18	-4

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	28	4	48	28.6	C	15.0	B	5.2	A
	Right	44	0	44	6.4	A				
Eastbound	Thru	399	7	131	4.7	A	4.5	A		
	Right	251	2	88	4.1	A				
Westbound	Left	97	10	89	19.5	B	4.7	A		
	Thru	447	1	48	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
32	28	-4
46	44	-2
401	399	-2
255	251	-4
149	97	-52
549	447	-102

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	7	0	12	21.5	C	12.8	B	11.7	B
	Thru	121	10	80	12.3	B				
Southbound	Thru	161	9	88	13.3	B	12.4	B		
	Right	17	0	36	4.3	A				
Eastbound	Left	132	7	99	11.8	B	10.4	B		
	Right	101	3	58	8.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
9	7	-2
137	121	-16
187	161	-26
23	17	-6
135	132	-3
98	101	3

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	126	0	15	1.0	A	0.8	A	2.6	A
	Thru	86	0	24	0.5	A				
	Right	113	0	23	0.7	A				
Southbound	Left	191	1	54	3.9	A	3.0	A		
	Thru	70	0	4	0.6	A				
	Right	0	-	-	-	A				
Eastbound	Left	7	1	43	19.8	C	13.5	B		
	Thru	0	-	-	-	A				
	Right	9	1	42	8.6	A				
Westbound	Left	10	1	42	20.9	C	9.7	A		
	Thru	0	-	-	-	A				
	Right	34	1	40	6.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
141	126	-15
105	86	-19
131	113	-18
215	191	-24
71	70	-1
0	0	0
7	7	0
0	0	0
10	9	-1
10	10	0
0	0	0
35	34	-1

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.6	A	1.4	A
	Thru	317	0	0	0.4	A				
	Right	188	0	0	1.0	A				
Southbound	Left	61	1	45	5.8	A	4.0	A		
	Thru	29	0	0	0.1	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	4	1	45	22.1	C	12.0	B		
	Thru	0	-	-	-	A				
	Right	9	1	59	7.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	0	-1
368	317	-51
212	188	-24
58	61	3
31	29	-2
0	0	0
0	0	0
0	0	0
0	0	0
6	4	-2
0	0	0
9	9	0

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	504	0	1	0.3	A	0.4	A	0.5	A
	Right	96	0	1	0.7	A				
Southbound	Left	1	0	6	4.8	A	0.2	A		
	Thru	33	0	0	0.1	A				
Eastbound	Left	4	0	36	14.3	B	14.3	B		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
581	504	-77
104	96	-8
1	1	0
36	33	-3
6	4	-2
0	0	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	4	2	33	45.1	E	11.5	B	6.5	A
	Right	33	2	75	7.5	A				
Eastbound	Left	448	29	338	13.7	B	8.9	A		
	Thru	772	22	310	6.2	A				
Westbound	Thru	467	0	12	1.2	A	1.3	A		
	Right	154	0	12	1.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
6	4	-2
36	33	-3
477	448	-29
848	772	-76
638	467	-171
209	154	-55

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	83	1	48	6.5	A	5.3	A	7.6	A
	Thru	0	-	-	-	A				
	Right	35	1	48	2.5	A				
Southbound	Left	7	1	26	16.6	C	9.5	A		
	Thru	0	-	-	-	A				
	Right	9	0	27	3.9	A				
Eastbound	Left	65	13	129	14.4	B	9.9	A		
	Thru	293	12	129	9.8	A				
	Right	82	12	129	6.8	A				
Westbound	U-turn	232	10	162	9.0	A	6.6	A		
	Left	230	10	163	7.5	A				
	Thru	492	10	163	5.3	A				
	Right	64	10	163	4.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
84	83	-1
0	0	0
37	35	-2
7	7	0
0	0	0
9	9	0
65	65	0
295	293	-2
86	82	-4
235	232	-3
307	230	-77
742	492	-250
83	64	-19

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	3.2	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	16	4	58	49.0	E	23.9	C		
	Thru	0	-	-	-	A				
	Right	24	1	63	7.2	A				
Eastbound	Left	176	13	120	14.3	B	3.6	A		
	Thru	523	0	0	0.4	A				
	Right	75	0	0	0.9	A				
Westbound	Left	31	1	34	7.6	A	2.0	A		
	Thru	595	0	39	1.0	A				
	Right	237	0	39	3.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
0	0	0
1	0	-1
16	16	0
0	0	0
25	24	-1
189	176	-13
583	523	-60
82	75	-7
47	31	-16
822	595	-227
325	237	-88

American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	192	9	99	8.1	A	8.3	A	2.9	A
Southbound	Right	279	3	87	4.3	A	4.6	A		
Eastbound	Left	48	3	51	13.1	B	2.4	A		
	Thru	492	0	13	1.5	A				
	Right	26	0	13	0.7	A				
Westbound	Left	61	1	34	4.5	A	1.5	A		
	Thru	739	0	0	1.3	A				
	Right	143	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
194	192	-2
281	279	-2
46	48	2
504	492	-12
24	26	2
84	61	-23
1,015	739	-276
197	143	-54

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	5.4	A	2.6	A
	Thru	0	-	-	-	A				
	Right	4	0	46	5.4	A				
Southbound	Left	58	9	79	25.9	D	12.6	B		
	Thru	2	6	79	26.8	D				
	Right	84	1	43	3.2	A				
Eastbound	Left	127	4	76	7.3	A	1.8	A		
	Thru	398	0	0	0.1	A				
	Right	14	0	0	0.4	A				
Westbound	Left	5	0	5	3.4	A	1.4	A		
	Thru	782	0	0	1.3	A				
	Right	48	0	13	2.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
4	4	0
58	58	0
1	2	1
86	84	-2
141	127	-14
444	398	-46
15	14	-1
7	5	-2
1,107	782	-325
66	48	-18

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	378	146	405	76.4	E	40.8	D	86.3	F
	Thru	92	146	405	74.2	E				
	Right	652	54	344	15.5	B				
Southbound	Left	532	188	406	164.5	F	85.7	F		
	Thru	128	188	406	80.7	F				
	Right	492	0	0	1.7	A				
Eastbound	Left	858	36	321	28.5	C	38.0	D		
	Right	785	130	401	48.4	D				
Westbound	Left	1,213	2,003	2,706	201.4	F	160.5	F		
	Right	554	2,035	2,744	71.1	E				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
397	378	-19
96	92	-4
680	652	-28
547	532	-15
132	128	-4
492	492	0
870	858	-12
790	785	-5
2,096	1,213	-883
955	554	-401

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	49	21	112	65.7	E	32.1	C	33.3	C
	Thru	267	37	194	35.2	D				
	Right	112	0	22	9.9	A				
Southbound	Left	379	80	291	63.5	E	29.4	C		
	Thru	820	120	579	38.1	D				
	Right	860	1	84	6.1	A				
Eastbound	Left	624	108	345	50.7	D	49.4	D		
	Thru	48	109	346	43.4	D				
	Right	10	0	1	0.7	A				
Westbound	Left	67	25	120	63.2	E	25.7	C		
	Thru	34	13	78	65.6	E				
	Right	213	4	97	7.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
53	49	-4
295	267	-28
124	112	-12
544	379	-165
1,182	820	-362
1,212	860	-352
640	624	-16
48	48	0
10	10	0
69	67	-2
31	34	3
217	213	-4

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	416	3	68	3.4	A	3.4	A	5.4	A
	Right	47	1	53	3.2	A				
Southbound	Left	48	4	53	19.3	B	6.2	A		
	Thru	826	11	157	5.5	A				
Westbound	Left	12	1	30	24.5	C	14.1	B		
	Right	14	1	49	5.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
457	416	-41
55	47	-8
66	48	-18
1,166	826	-340
12	12	0
15	14	-1

Note: Results are the average of ten (10) simulation runs

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	20	26	85	52.0	F	36.2	E	38.2	E
	Right	13	14	40	11.9	B				
Eastbound	Thru	846	141	348	75.8	F	74.2	F		
	Right	39	0	0	40.4	E				
Westbound	Left	7	7	27	14.8	B	0.6	A		
	Thru	840	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
32	20	-12
19	13	-6
950	846	-104
40	39	-1
10	7	-3
911	840	-71

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	667	0	0	0.4	A	0.6	A	0.6	A
	-	289	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
674	667	-7
286	289	3

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.4	A	3.1	A
	Right	20	1	71	7.4	A				
Eastbound	Left	41	1	29	6.0	A	1.6	A		
	Thru	296	43	71	1.0	A				
Westbound	Thru	319	0	0	4.4	A	4.3	A		
	Right	4	0	0	2.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
22	20	-2
42	41	-1
309	296	-13
383	319	-64
5	4	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	668	0	0	0.3	A	0.3	A	2.6	A
	Thru	914	1	63	1.1	A				
Southbound	Right	662	1	63	3.8	A	2.2	A		
	Left	45	5	53	27.4	D				
Eastbound	Left	45	5	53	27.4	D	7.7	A		
	Right	358	0	2	5.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
671	668	-3
1,056	914	-142
782	662	-120
45	45	0
361	358	-3

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	149	166	410	67.1	E	61.8	E	80.3	F
	Thru	59	132	343	81.7	F				
	Right	474	155	392	57.7	E				
Southbound	Left	98	166	344	222.5	F	172.5	F		
	Thru	43	165	344	116.9	F				
	Right	33	0	7	96.6	F				
Eastbound	Left	44	108	247	109.5	F	143.3	F		
	Thru	503	349	540	209.8	F				
	Right	253	52	173	16.9	B				
Westbound	Left	403	67	219	50.6	D	31.2	C		
	Thru	667	31	190	20.0	C				
	Right	25	30	193	16.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
147	149	2
58	59	1
506	474	-32
109	98	-11
48	43	-5
35	33	-2
53	44	-9
650	503	-147
267	253	-14
431	403	-28
739	667	-72
27	25	-2

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	505	286	582	88.0	F	71.8	E	56.6	E
	Thru	51	7	63	29.7	C				
	Right	99	4	75	11.0	B				
Southbound	Left	43	5	55	21.7	C	47.0	D		
	Thru	90	32	121	59.7	E				
	Right	505	91	269	46.9	D				
Eastbound	Left	336	90	212	77.2	E	34.2	C		
	Thru	935	57	234	25.4	C				
	Right	247	81	274	9.3	A				
Westbound	Left	84	15	77	65.6	E	76.8	E		
	Thru	1,385	473	713	78.8	E				
	Right	29	1	51	14.2	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
518	505	-13
52	51	-1
96	99	3
45	43	-2
87	90	3
507	505	-2
322	336	14
961	935	-26
255	247	-8
93	84	-9
1,627	1,385	-242
31	29	-2

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	72	9	83	24.8	C	16.6	B	15.8	B
	Right	579	31	252	15.6	B				
Eastbound	Left	374	33	137	24.4	C	12.9	B		
	Thru	578	33	136	5.5	A				
Westbound	Thru	1,247	70	418	18.5	B	17.3	B		
	Right	94	0	0	1.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
72	72	0
580	579	-1
384	374	-10
576	578	2
1,471	1,247	-224
108	94	-14

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	338	38	247	24.1	C	14.1	B	19.3	B
	Thru	365	5	74	5.0	A				
	Right	7	5	73	4.5	A				
Southbound	Left	0	-	-	-	A	18.8	B		
	Thru	1,173	72	429	20.0	C				
	Right	88	0	0	2.3	A				
Eastbound	Left	450	64	322	39.3	D	24.5	C		
	Thru	9	63	314	37.4	D				
	Right	403	11	203	7.7	A				
Westbound	Left	1	0	18	38.0	D	11.5	B		
	Thru	0	-	-	-	A				
	Right	4	0	38	4.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
344	338	-6
367	365	-2
5	7	2
1	0	-1
1,437	1,173	-264
110	88	-22
459	450	-9
9	9	0
400	403	3
1	1	0
0	0	0
3	4	1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	317	55	210	65.5	E	50.0	D	56.8	E
	Thru	35	5	51	30.4	C				
	Right	98	3	80	6.8	A				
Southbound	Left	172	94	391	63.0	E	124.2	F		
	Thru	28	6	57	71.7	E				
	Right	403	338	596	154.0	F				
Eastbound	Left	318	71	184	65.6	E	24.7	C		
	Thru	413	10	117	8.4	A				
	Right	349	4	118	6.6	A				
Westbound	Left	142	25	99	48.4	D	54.3	D		
	Thru	802	107	279	64.1	E				
	Right	156	6	96	9.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
322	317	-5
33	35	2
103	98	-5
206	172	-34
32	28	-4
519	403	-116
351	318	-33
461	413	-48
401	349	-52
163	142	-21
909	802	-107
186	156	-30

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	126	14	84	21.7	C	16.6	B	12.0	B
	Thru	12	14	84	27.8	C				
	Right	49	0	4	1.0	A				
Southbound	Left	50	6	62	24.8	C	9.5	A		
	Thru	6	6	62	23.2	C				
	Right	231	2	75	5.8	A				
Eastbound	Left	126	13	69	24.9	C	10.5	B		
	Thru	420	9	86	8.4	A				
	Right	105	0	20	1.3	A				
Westbound	Left	57	7	70	29.7	C	12.7	B		
	Thru	982	27	278	12.3	B				
	Right	56	0	16	2.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
127	126	-1
12	12	0
49	49	0
50	50	0
7	6	-1
233	231	-2
126	126	0
420	420	0
102	105	3
67	57	-10
1,219	982	-237
72	56	-16

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	938	125	516	44.9	D	24.2	C	25.6	C
	Thru	192	35	196	32.7	C				
	Right	1,258	23	295	7.4	A				
Southbound	Left	156	43	182	48.9	D	38.6	D		
	Thru	85	19	79	52.0	D				
	Right	73	0	0	0.9	A				
Eastbound	Left	23	2	39	19.1	B	35.5	D		
	Right	575	80	298	36.2	D				
Westbound	Left	1,371	100	421	24.8	C	21.4	C		
	Right	254	0	0	3.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1,115	938	-177
222	192	-30
1,483	1,258	-225
160	156	-4
82	85	3
72	73	1
23	23	0
577	575	-2
1,381	1,371	-10
257	254	-3

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	54	13	85	45.4	D	4.4	A	10.0	B
	Thru	2,213	10	160	3.4	A				
Southbound	Thru	1,691	53	459	12.7	B	12.0	B		
	Right	343	0	50	8.6	A				
Eastbound	Left	187	63	229	53.7	D	41.9	D		
	Right	87	75	253	16.5	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
61	54	-7
2,582	2,213	-369
1,684	1,691	7
356	343	-13
192	187	-5
88	87	-1

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	210	33	133	40.0	D	20.0	B	66.2	E
	Thru	1,040	37	243	17.6	B				
	Right	103	0	23	2.8	A				
Southbound	Left	151	29	105	48.1	D	22.8	C		
	Thru	1,084	90	442	27.9	C				
	Right	540	1	106	5.6	A				
Eastbound	Left	627	1,062	1,317	272.2	F	214.6	F		
	Thru	204	23	152	150.8	F				
	Right	157	10	121	67.6	E				
Westbound	Left	211	50	169	59.3	E	59.7	E		
	Thru	294	189	511	62.4	E				
	Right	594	195	519	58.4	E				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
232	210	-22
1,130	1,040	-90
107	103	-4
148	151	3
1,078	1,084	6
547	540	-7
824	627	-197
255	204	-51
188	157	-31
241	211	-30
355	294	-61
691	594	-97

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	252	42	165	47.5	D	26.0	C	46.8	D
	Thru	818	43	230	19.8	B				
	Right	13	0	2	1.5	A				
Southbound	Left	64	12	97	34.6	C	15.4	B		
	Thru	814	54	281	20.5	C				
	Right	576	1	68	6.0	A				
Eastbound	Left	398	63	216	46.3	D	36.2	D		
	Thru	151	28	158	32.2	C				
	Right	128	4	87	9.4	A				
Westbound	Left	38	19	78	237.0	F	212.5	F		
	Thru	281	778	959	255.3	F				
	Right	136	154	280	117.4	F				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
255	252	-3
845	818	-27
15	13	-2
70	64	-6
827	814	-13
611	576	-35
449	398	-51
173	151	-22
147	128	-19
58	38	-20
392	281	-111
175	136	-39

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	16	5	35	64.0	E	23.5	C	17.5	B
	Thru	545	36	220	23.0	C				
	Right	21	0	7	5.2	A				
Southbound	Left	201	28	137	36.7	D	10.8	B		
	Thru	559	7	75	4.9	A				
	Right	222	0	23	2.2	A				
Eastbound	Left	284	37	174	33.5	C	30.5	C		
	Thru	4	1	34	32.2	C				
	Right	39	2	41	8.3	A				
Westbound	Left	49	16	83	57.4	E	13.3	B		
	Thru	7	2	24	57.9	E				
	Right	244	0	26	3.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
19	16	-3
564	545	-19
23	21	-2
207	201	-6
592	559	-33
234	222	-12
291	284	-7
5	4	-1
36	39	3
50	49	-1
6	7	1
260	244	-16

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	364	2	103	3.4	A	3.5	A	4.6	A
	Right	87	1	41	4.0	A				
Southbound	Thru	620	2	70	2.3	A	2.3	A		
Eastbound	Left	17	5	54	47.2	D	43.4	D		
	Right	4	8	75	27.0	C				
Westbound	Right	207	16	128	9.9	A	9.9	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
381	364	-17
91	87	-4
653	620	-33
17	17	0
55	4	-51
208	207	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	73	36	113	116.6	F	38.0	D	63.3	E
	Thru	282	89	436	65.6	E				
	Right	531	1	76	12.6	B				
Southbound	Left	36	10	52	66.3	E	30.9	C		
	Thru	348	50	232	42.3	D				
	Right	283	27	235	12.3	B				
Eastbound	Left	107	44	133	102.2	F	46.7	D		
	Thru	314	41	166	41.7	D				
	Right	96	0	9	1.0	A				
Westbound	Left	912	815	1,338	127.9	F	93.6	F		
	Thru	761	115	316	54.6	D				
	Right	62	16	96	67.5	E				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
76	73	-3
289	282	-7
557	531	-26
40	36	-4
365	348	-17
303	283	-20
106	107	1
318	314	-4
94	96	2
1,233	912	-321
1,002	761	-241
76	62	-14

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	34	16	172	29.0	C	9.6	A	12.4	B
	Thru	737	16	172	8.7	A				
	Right	11	25	200	5.8	A				
Southbound	Left	11	33	374	14.1	B	12.4	B		
	Thru	1,129	33	374	11.8	B				
	Right	284	43	404	14.6	B				
Eastbound	Left	172	105	271	25.5	C	22.4	C		
	Thru	9	118	283	23.1	C				
	Right	44	116	296	10.1	B				
Westbound	Left	38	32	93	17.5	B	11.8	B		
	Thru	13	34	95	19.7	B				
	Right	36	0	28	2.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	34	-4
749	737	-12
9	11	2
16	11	-5
1,403	1,129	-274
342	284	-58
188	172	-16
8	9	1
48	44	-4
42	38	-4
13	13	0
36	36	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	74	0	0	1.1	A	3.8	A	2.9	A
	Thru	0	-	-	-	A				
	Right	70	0	0	6.7	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	4.0	A		
	Thru	400	3	77	4.4	A				
	Right	75	0	13	2.2	A				
Westbound	Left	87	5	53	13.3	B	2.2	A		
	Thru	965	2	90	1.2	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
81	74	-7
0	0	0
78	70	-8
0	1	1
0	0	0
1	0	-1
0	0	0
442	400	-42
83	75	-8
103	87	-16
1,134	965	-169
1	0	-1

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	58	0	2	3.3	A	2.6	A	4.1	A
	Thru	65	0	2	2.0	A				
	Right	1	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	4.6	A		
	Thru	147	0	12	4.6	A				
	Right	76	0	12	4.5	A				
Eastbound	Left	59	0	29	5.5	A	4.7	A		
	Thru	41	0	29	5.2	A				
	Right	69	0	29	3.8	A				
Westbound	Left	12	0	17	4.1	A	3.9	A		
	Thru	140	0	18	4.0	A				
	Right	8	0	1	1.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
58	58	0
63	65	2
1	1	0
0	0	0
169	147	-22
80	76	-4
68	59	-9
46	41	-5
78	69	-9
15	12	-3
210	140	-70
13	8	-5

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	22	4	56	31.4	C	19.6	B	22.4	C
	Thru	68	6	59	21.0	C				
	Right	26	1	58	6.2	A				
Southbound	Left	6	1	19	34.2	C	26.0	C		
	Thru	150	21	120	29.3	C				
	Right	73	29	136	18.7	B				
Eastbound	Left	27	4	54	29.4	C	18.0	B		
	Thru	3	0	12	24.8	C				
	Right	59	3	48	12.4	B				
Westbound	Left	161	14	96	23.5	C	21.7	C		
	Thru	31	5	56	16.1	B				
	Right	28	5	55	17.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
21	22	1
70	68	-2
29	26	-3
7	6	-1
177	150	-27
86	73	-13
28	27	-1
3	3	0
64	59	-5
161	161	0
32	31	-1
30	28	-2

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	156	36	168	56.4	E	41.5	D	67.5	E
	Thru	13	4	64	24.7	C				
	Right	64	6	80	8.5	A				
Southbound	Left	235	44	229	36.5	D	19.0	B		
	Thru	4	1	16	29.7	C				
	Right	406	0	10	8.7	A				
Eastbound	Left	227	50	248	38.3	D	20.8	C		
	Thru	525	31	208	13.8	B				
	Right	29	11	125	11.2	B				
Westbound	Left	46	10	75	141.7	F	127.3	F		
	Thru	1,044	668	984	127.3	F				
	Right	45	672	986	111.7	F				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
159	156	-3
15	13	-2
63	64	1
252	235	-17
4	4	0
428	406	-22
232	227	-5
560	525	-35
32	29	-3
67	46	-21
1,552	1,044	-508
66	45	-21

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	18	11	104	30.2	D	15.2	C	2.3	A
	Right	145	15	119	13.3	B				
Eastbound	Left	49	2	43	7.4	A	1.5	A		
	Thru	421	0	0	0.8	A				
Westbound	Thru	907	0	0	0.3	A	0.3	A		
	Right	9	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
18	18	0
146	145	-1
55	49	-6
464	421	-43
1,091	907	-184
10	9	-1

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	180	26	160	29.8	C	24.7	C	10.5	B
	Right	73	0	50	12.0	B				
Eastbound	Thru	406	10	127	9.2	A	9.1	A		
	Right	31	3	81	7.0	A				
Westbound	Left	47	6	58	25.8	C	6.7	A		
	Thru	737	8	107	5.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
310	180	-130
122	73	-49
445	406	-39
37	31	-6
59	47	-12
791	737	-54

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	22	1	24	24.1	C	12.6	B	38.0	D
	Thru	67	6	65	8.8	A				
Southbound	Thru	140	24	100	75.0	E	50.5	D		
	Right	116	1	57	21.0	C				
Eastbound	Left	31	2	52	12.2	B	15.5	B		
	Right	11	1	24	25.1	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
82	22	-60
239	67	-172
162	140	-22
131	116	-15
38	31	-7
13	11	-2

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	4	10	296.6	F	28.6	D	281.2	F
	Thru	33	2	9	0.4	A				
	Right	5	2	9	0.3	A				
Southbound	Left	26	0	0	71.0	F	245.2	F		
	Thru	95	85	169	308.1	F				
	Right	10	69	152	101.5	F				
Eastbound	Left	7	222	320	291.5	F	466.8	F		
	Thru	0	-	-	-	A				
	Right	53	225	319	489.9	F				
Westbound	Left	44	343	554	552.7	F	326.7	F		
	Thru	0	-	-	-	A				
	Right	48	4	70	119.4	F				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
14	4	-10
93	33	-60
12	5	-7
34	26	-8
130	95	-35
12	10	-2
33	7	-26
1	0	-1
249	53	-196
227	44	-183
0	0	0
195	48	-147

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.1	A	313.9	F
	Thru	40	0	0	0.1	A				
	Right	7	0	0	0.3	A				
Southbound	Left	4	0	0	1.5	A	405.4	F		
	Thru	172	169	224	414.8	F				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	4	262	401	120.0	F	85.1	F		
	Thru	0	-	-	-	A				
	Right	2	272	414	15.4	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
50	40	-10
7	7	0
12	4	-8
594	172	-422
0	0	0
1	0	-1
0	0	0
1	0	-1
110	4	-106
0	0	0
70	2	-68

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	46	0	0	0.2	A	0.2	A	218.8	F
	Right	6	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	280.4	F		
	Thru	174	294	331	280.4	F				
Eastbound	Left	1	262	367	864.0	F	864.0	F		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
54	46	-8
7	6	-1
0	0	0
705	174	-531
69	1	-68
3	0	-3

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	57	296	323	535.6	F	221.6	F	31.2	D
	Right	109	312	344	57.4	F				
Eastbound	Left	36	54	181	62.0	F	7.1	A		
	Thru	829	42	146	4.8	A				
Westbound	Thru	956	51	177	20.4	C	20.2	C		
	Right	16	52	179	5.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
302	57	-245
472	109	-363
44	36	-8
880	829	-51
1,028	956	-72
15	16	1

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	187	357	574	144.8	F	128.8	F	32.1	D
	Thru	0	-	-	-	A				
	Right	137	366	584	106.9	F				
Southbound	Left	85	69	247	85.7	F	70.3	F		
	Thru	0	-	-	-	A				
	Right	74	68	248	52.7	F				
Eastbound	Left	10	91	279	60.1	F	53.7	F		
	Thru	494	89	282	54.3	F				
	Right	20	85	275	36.6	E				
Westbound	U-turn	241	17	197	31.5	D	15.6	C		
	Left	77	17	199	15.9	C				
	Thru	443	17	198	7.2	A				
	Right	15	18	201	6.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
226	187	-39
0	0	0
161	137	-24
90	85	-5
0	0	0
77	74	-3
12	10	-2
591	494	-97
23	20	-3
251	241	-10
83	77	-6
532	443	-89
16	15	-1

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	86	47	172	77.8	F	54.4	F	14.5	B
	Thru	0	-	-	-	A				
	Right	55	9	107	17.8	C				
Southbound	Left	157	138	324	101.6	F	62.1	F		
	Thru	0	-	-	-	A				
	Right	185	14	144	28.6	D				
Eastbound	Left	27	1	30	7.4	A	0.5	A		
	Thru	857	0	0	0.3	A				
	Right	1	0	0	1.2	A				
Westbound	Left	0	-	-	-	A	1.7	A		
	Thru	708	0	11	1.8	A				
	Right	36	0	12	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
89	86	-3
1	0	-1
55	55	0
165	157	-8
0	0	0
191	185	-6
37	27	-10
1,140	857	-283
3	1	-2
0	0	0
763	708	-55
38	36	-2

American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	184	23	165	29.0	D	29.0	D	30.5	D
Southbound	Right	397	2	86	3.7	A	3.7	A		
Eastbound	Left	53	1	42	13.1	B	42.1	E		
	Thru	839	244	691	45.5	E				
	Right	52	232	675	17.7	C				
Westbound	Left	113	114	315	143.0	F	30.3	D		
	Thru	384	0	0	6.2	A				
	Right	128	0	0	3.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
203	184	-19
402	397	-5
58	53	-5
973	839	-134
62	52	-10
127	113	-14
414	384	-30
137	128	-9

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	1	41	35.2	E	20.9	C	2.2	A
	Thru	0	-	-	-	A				
	Right	4	0	47	6.7	A				
Southbound	Left	92	15	96	28.0	D	11.8	B		
	Thru	0	-	-	-	A				
	Right	158	1	48	2.4	A				
Eastbound	Left	69	1	33	4.1	A	0.4	A		
	Thru	990	0	0	0.2	A				
	Right	11	0	0	0.5	A				
Westbound	Left	5	0	17	15.6	C	1.1	A		
	Thru	582	0	0	0.9	A				
	Right	29	0	7	1.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	4	-1
0	0	0
5	4	-1
95	92	-3
0	0	0
157	158	1
85	69	-16
1,263	990	-273
13	11	-2
5	5	0
638	582	-56
30	29	-1

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	447	587	994	137.2	F	84.1	F	68.2	E
	Thru	159	584	994	104.6	F				
	Right	1,647	678	1,089	67.7	E				
Southbound	Left	1,037	1,224	2,212	100.3	F	65.2	E		
	Thru	75	1,226	2,210	77.4	E				
	Right	1,440	1,041	2,102	39.3	D				
Eastbound	Left	1,262	226	1,254	71.1	E	66.9	E		
	Right	497	107	492	56.0	E				
Westbound	Left	1,020	189	506	68.7	E	52.7	D		
	Right	677	173	455	28.7	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
598	447	-151
215	159	-56
2,158	1,647	-511
1,244	1,037	-207
88	75	-13
1,732	1,440	-292
1,347	1,262	-85
513	497	-16
1,034	1,020	-14
699	677	-22

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	65	42	168	106.7	F	77.6	E	103.9	F
	Thru	993	268	552	76.3	E				
	Right	72	2	17	68.9	E				
Southbound	Left	307	103	295	95.8	F	55.0	E		
	Thru	577	145	587	68.7	E				
	Right	521	64	320	15.8	B				
Eastbound	Left	927	334	565	93.5	F	91.4	F		
	Thru	50	334	565	70.5	E				
	Right	11	0	2	4.9	A				
Westbound	Left	89	200	437	188.0	F	340.8	F		
	Thru	46	1,173	1,556	248.6	F				
	Right	332	1,297	1,609	394.5	F				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
82	65	-17
1,241	993	-248
88	72	-16
327	307	-20
589	577	-12
524	521	-3
1,107	927	-180
57	50	-7
11	11	0
142	89	-53
72	46	-26
594	332	-262

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	1,106	30	199	15.1	B	15.1	B	13.7	B
	Right	12	22	181	12.6	B				
Southbound	Left	27	3	55	26.2	C	8.7	A		
	Thru	548	11	204	7.8	A				
Westbound	Left	66	11	82	30.5	C	27.9	C		
	Right	31	4	66	22.3	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1,382	1,106	-276
15	12	-3
29	27	-2
606	548	-58
68	66	-2
30	31	1

Note: Results are the average of ten (10) simulation runs

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	57	7	72	23.7	C	12.7	B	1.5	A
	Right	53	0	8	0.7	A				
Eastbound	Thru	629	0	0	0.4	A	0.5	A		
	Right	56	0	0	0.8	A				
Westbound	Left	18	0	27	7.0	A	0.6	A		
	Thru	549	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
61	57	-4
52	53	1
634	629	-5
55	56	1
17	18	1
582	549	-33

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	783	0	0	1.1	A	1.3	A	1.3	A
	-	548	0	0	1.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
791	783	-8
548	548	0

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	6.7	A	1.6	A
	Right	20	1	71	6.7	A				
Eastbound	Left	30	0	27	3.5	A	1.0	A		
	Thru	203	0	0	0.7	A				
Westbound	Thru	203	0	0	1.8	A	1.8	A		
	Right	12	0	0	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
21	20	-1
31	30	-1
204	203	-1
211	203	-8
13	12	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	493	0	0	0.2	A	0.2	A	2.2	A
	Thru	554	0	27	0.5	A				
Southbound	Right	419	0	27	2.1	A	1.2	A		
	Left	68	5	55	19.4	C				
Eastbound	Left	68	5	55	19.4	C	7.6	A		
	Right	288	0	0	4.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
495	493	-2
559	554	-5
438	419	-19
70	68	-2
290	288	-2

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	172	50	224	55.5	E	23.3	C	47.0	D
	Thru	108	33	209	43.4	D				
	Right	541	14	127	9.1	A				
Southbound	Left	137	309	507	212.8	F	185.5	F		
	Thru	74	307	506	153.1	F				
	Right	35	5	38	146.9	F				
Eastbound	Left	68	17	68	64.2	E	44.4	D		
	Thru	407	73	235	60.9	E				
	Right	203	1	46	4.7	A				
Westbound	Left	663	87	366	43.4	D	34.7	C		
	Thru	364	19	127	19.4	B				
	Right	14	16	131	15.6	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
169	172	3
105	108	3
550	541	-9
149	137	-12
80	74	-6
38	35	-3
69	68	-1
420	407	-13
197	203	6
716	663	-53
392	364	-28
15	14	-1

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	547	279	603	82.8	F	64.9	E	69.2	E
	Thru	108	32	224	48.1	D				
	Right	163	9	104	15.9	B				
Southbound	Left	106	15	110	51.6	D	78.3	E		
	Thru	174	62	327	76.8	E				
	Right	795	313	801	82.2	F				
Eastbound	Left	563	99	288	55.9	E	45.2	D		
	Thru	1,264	168	579	48.9	D				
	Right	505	201	620	24.3	C				
Westbound	Left	134	39	117	108.3	F	110.9	F		
	Thru	992	558	730	117.4	F				
	Right	70	4	77	23.4	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
560	547	-13
110	108	-2
158	163	5
113	106	-7
187	174	-13
883	795	-88
581	563	-18
1,367	1,264	-103
549	505	-44
154	134	-20
1,193	992	-201
83	70	-13

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	93	20	207	37.0	D	37.7	D	36.1	D
	Right	887	197	793	37.8	D				
Eastbound	Left	553	109	307	49.9	D	32.7	C		
	Thru	758	109	307	20.2	C				
Westbound	Thru	1,162	148	469	42.9	D	38.2	D		
	Right	167	0	0	6.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	93	0
901	887	-14
577	553	-24
762	758	-4
1,199	1,162	-37
171	167	-4

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	249	11	123	12.3	B	8.2	A	13.9	B
	Thru	305	4	61	5.0	A				
	Right	6	4	61	4.5	A				
Southbound	Left	3	0	6	6.6	A	12.2	B		
	Thru	695	25	225	13.2	B				
	Right	56	0	0	0.7	A				
Eastbound	Left	459	41	199	29.1	C	19.9	B		
	Thru	0	-	-	-	A				
	Right	276	2	77	4.5	A				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
253	249	-4
307	305	-2
5	6	1
3	3	0
722	695	-27
58	56	-2
467	459	-8
0	0	0
274	276	2
1	0	-1
1	0	-1
1	0	-1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	224	67	235	127.5	F	76.3	E	57.6	E
	Thru	51	10	78	38.8	D				
	Right	141	5	88	8.5	A				
Southbound	Left	206	58	345	57.7	E	105.2	F		
	Thru	38	11	86	63.6	E				
	Right	441	287	533	130.9	F				
Eastbound	Left	527	56	224	31.9	C	17.4	B		
	Thru	552	22	110	11.3	B				
	Right	453	11	146	8.1	A				
Westbound	Left	249	42	156	53.3	D	77.1	E		
	Thru	554	147	321	120.0	F				
	Right	284	33	181	14.4	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
236	224	-12
50	51	1
143	141	-2
244	206	-38
43	38	-5
572	441	-131
560	527	-33
583	552	-31
495	453	-42
262	249	-13
621	554	-67
314	284	-30

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	119	24	108	39.4	D	24.2	C	21.7	C
	Thru	4	24	107	28.7	C				
	Right	82	0	5	1.9	A				
Southbound	Left	231	90	401	49.9	D	28.0	C		
	Thru	6	89	401	45.5	D				
	Right	609	78	425	19.5	B				
Eastbound	Left	275	25	147	27.8	C	12.2	B		
	Thru	436	8	105	5.8	A				
	Right	141	0	17	1.7	A				
Westbound	Left	49	16	90	60.6	E	24.8	C		
	Thru	615	36	214	25.0	C				
	Right	86	0	31	3.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
122	119	-3
4	4	0
84	82	-2
229	231	2
6	6	0
615	609	-6
274	275	1
444	436	-8
137	141	4
51	49	-2
633	615	-18
90	86	-4

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	787	91	442	43.0	D	18.8	B	73.0	E
	Thru	140	15	126	20.7	C				
	Right	1,343	9	180	4.3	A				
Southbound	Left	74	22	119	54.0	D	55.2	E		
	Thru	98	24	97	78.9	E				
	Right	41	0	0	0.8	A				
Eastbound	Left	22	2	38	83.1	F	139.2	F		
	Right	831	943	1,579	140.6	F				
Westbound	Left	1,609	628	1,260	117.4	F	115.1	F		
	Right	69	0	0	62.1	E				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
823	787	-36
145	140	-5
1,417	1,343	-74
78	74	-4
98	98	0
41	41	0
20	22	2
947	831	-116
1,705	1,609	-96
78	69	-9

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	93	30	136	55.1	E	4.6	A	19.4	B
	Thru	1,994	5	95	2.3	A				
Southbound	Thru	1,989	335	843	26.3	C	25.7	C		
	Right	534	54	547	23.3	C				
Eastbound	Left	279	115	328	64.1	E	55.7	E		
	Right	129	133	354	37.4	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
94	93	-1
2,101	1,994	-107
2,143	1,989	-154
599	534	-65
283	279	-4
129	129	0

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	211	34	141	44.6	D	19.5	B	49.7	D
	Thru	1,250	44	288	16.7	B				
	Right	108	0	18	3.0	A				
Southbound	Left	155	37	145	57.2	E	29.7	C		
	Thru	1,343	164	488	36.3	D				
	Right	608	1	103	8.2	A				
Eastbound	Left	724	675	1,119	172.7	F	137.7	F		
	Thru	134	18	109	88.9	F				
	Right	185	12	142	36.2	D				
Westbound	Left	122	33	125	58.6	E	43.3	D		
	Thru	133	29	116	44.4	D				
	Right	114	33	121	25.6	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
224	211	-13
1,300	1,250	-50
109	108	-1
166	155	-11
1,435	1,343	-92
670	608	-62
783	724	-59
141	134	-7
195	185	-10
122	122	0
129	133	4
113	114	1

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	287	61	233	61.7	E	26.2	C	28.8	C
	Thru	961	39	246	16.2	B				
	Right	24	0	1	1.2	A				
Southbound	Left	83	20	133	43.0	D	19.5	B		
	Thru	848	62	450	20.8	C				
	Right	718	25	211	15.1	B				
Eastbound	Left	511	103	287	60.8	E	47.1	D		
	Thru	171	43	198	43.6	D				
	Right	214	16	136	17.4	B				
Westbound	Left	13	5	35	64.2	E	39.5	D		
	Thru	123	38	164	59.0	E				
	Right	92	2	55	10.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
289	287	-2
992	961	-31
26	24	-2
87	83	-4
886	848	-38
779	718	-61
556	511	-45
184	171	-13
231	214	-17
17	13	-4
131	123	-8
85	92	7

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	133	31	121	58.9	E	33.7	C	22.3	C
	Thru	655	53	278	29.7	C				
	Right	25	0	6	5.3	A				
Southbound	Left	185	17	115	24.1	C	8.9	A		
	Thru	450	9	113	6.6	A				
	Right	440	1	108	4.9	A				
Eastbound	Left	408	75	368	44.1	D	36.2	D		
	Thru	4	3	71	43.0	D				
	Right	139	5	78	13.1	B				
Westbound	Left	30	10	63	60.6	E	11.8	B		
	Thru	5	2	28	74.9	E				
	Right	209	0	25	3.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
137	133	-4
672	655	-17
26	25	-1
193	185	-8
473	450	-23
468	440	-28
418	408	-10
4	4	0
135	139	4
30	30	0
5	5	0
220	209	-11

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	605	5	185	4.2	A	4.2	A	5.8	A
	Right	86	1	65	4.3	A				
Southbound	Thru	602	2	73	2.4	A	2.4	A		
Eastbound	Left	11	3	56	44.4	D	33.4	C		
	Right	62	11	81	31.4	C				
Westbound	Right	205	17	130	11.2	B	11.2	B		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
616	605	-11
87	86	-1
621	602	-19
11	11	0
68	62	-6
207	205	-2

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	92	36	123	90.8	F	48.0	D	43.1	D
	Thru	370	131	657	71.1	E				
	Right	458	0	38	20.7	C				
Southbound	Left	40	10	51	54.4	D	27.9	C		
	Thru	281	52	269	41.0	D				
	Right	344	28	276	14.0	B				
Eastbound	Left	287	94	332	94.6	F	54.1	D		
	Thru	348	43	176	37.1	D				
	Right	107	0	9	1.0	A				
Westbound	Left	503	78	341	47.2	D	40.1	D		
	Thru	353	28	145	29.4	C				
	Right	38	10	66	46.7	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
95	92	-3
371	370	-1
471	458	-13
42	40	-2
292	281	-11
356	344	-12
295	287	-8
354	348	-6
108	107	-1
526	503	-23
370	353	-17
37	38	1

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	28	8	120	13.7	B	6.0	A	7.6	A
	Thru	712	8	120	5.7	A				
	Right	5	14	149	4.4	A				
Southbound	Left	5	9	178	9.8	A	7.0	A		
	Thru	717	8	175	6.5	A				
	Right	192	14	204	8.8	A				
Eastbound	Left	140	12	114	19.7	B	16.9	B		
	Thru	0	-	-	-	A				
	Right	40	14	140	7.0	A				
Westbound	Left	7	1	26	16.8	B	10.0	A		
	Thru	4	1	26	16.3	B				
	Right	9	0	9	1.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
31	28	-3
724	712	-12
5	5	0
6	5	-1
746	717	-29
199	192	-7
142	140	-2
0	0	0
41	40	-1
7	7	0
5	4	-1
9	9	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	0	4	0.6	A	6.4	A	5.4	A
	Thru	0	-	-	-	A				
	Right	147	0	4	7.8	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	4.9	A		
	Thru	252	3	78	5.7	A				
	Right	83	0	25	2.2	A				
Westbound	Left	115	7	61	14.4	B	5.4	A		
	Thru	301	1	49	1.9	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
35	37	2
0	0	0
143	147	4
0	1	1
0	0	0
0	0	0
0	0	0
265	252	-13
87	83	-4
114	115	1
291	301	10
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	56	0	6	3.3	A	2.5	A	3.1	A
	Thru	153	0	6	2.3	A				
	Right	4	0	6	0.9	A				
Southbound	Left	0	-	-	-	A	2.1	A		
	Thru	140	0	3	2.1	A				
	Right	51	0	3	2.1	A				
Eastbound	Left	40	0	21	6.5	A	5.6	A		
	Thru	37	0	20	6.0	A				
	Right	60	0	21	4.7	A				
Westbound	Left	0	-	-	-	A	2.6	A		
	Thru	24	0	0	2.7	A				
	Right	2	0	0	1.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
51	56	5
142	153	11
2	4	2
0	0	0
148	140	-8
48	51	3
44	40	-4
39	37	-2
67	60	-7
1	0	-1
34	24	-10
2	2	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	2	47	28.9	C	12.4	B	14.9	B
	Thru	123	6	67	13.0	B				
	Right	25	0	50	4.5	A				
Southbound	Left	6	1	19	26.2	C	10.6	B		
	Thru	104	6	81	13.0	B				
	Right	89	10	98	6.7	A				
Eastbound	Left	83	10	101	26.1	C	25.1	C		
	Thru	7	1	21	23.0	C				
	Right	4	0	4	7.0	A				
Westbound	Left	27	3	35	23.3	C	22.6	C		
	Thru	6	1	22	24.3	C				
	Right	5	1	22	16.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	8	1
115	123	8
25	25	0
6	6	0
114	104	-10
101	89	-12
87	83	-4
7	7	0
3	4	1
27	27	0
5	6	1
5	5	0

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	175	19	140	21.0	C	16.8	B	14.9	B
	Thru	14	2	57	19.9	B				
	Right	83	4	72	7.3	A				
Southbound	Left	117	13	96	27.1	C	14.7	B		
	Thru	15	1	28	25.0	C				
	Right	203	0	0	6.8	A				
Eastbound	Left	205	27	177	26.1	C	13.7	B		
	Thru	460	16	177	10.0	B				
	Right	179	2	95	9.0	A				
Westbound	Left	80	12	106	32.3	C	17.0	B		
	Thru	399	19	206	14.3	B				
	Right	41	19	206	13.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
177	175	-2
15	14	-1
81	83	2
122	117	-5
14	15	1
215	203	-12
205	205	0
477	460	-17
184	179	-5
86	80	-6
415	399	-16
41	41	0

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	4	1	43	13.3	B	7.6	A	0.6	A
	Right	20	1	59	6.5	A				
Eastbound	Left	23	0	23	2.8	A	0.7	A		
	Thru	376	0	0	0.5	A				
Westbound	Thru	395	0	0	0.2	A	0.2	A		
	Right	7	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	4	0
20	20	0
22	23	1
385	376	-9
384	395	11
7	7	0

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	33	3	43	20.5	C	12.0	B	4.2	A
	Right	47	0	49	6.1	A				
Eastbound	Thru	351	3	78	3.8	A	3.7	A		
	Right	30	0	32	2.7	A				
Westbound	Left	51	3	48	13.9	B	3.1	A		
	Thru	370	1	41	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
35	33	-2
49	47	-2
356	351	-5
33	30	-3
62	51	-11
357	370	13

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	12	0	5	9.7	A	7.9	A	8.1	A
	Thru	64	4	54	7.6	A				
Southbound	Thru	60	2	38	8.3	A	7.1	A		
	Right	16	0	34	2.9	A				
Eastbound	Left	34	2	50	11.0	B	10.1	B		
	Right	9	0	23	6.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
13	12	-1
62	64	2
66	60	-6
23	16	-7
41	34	-7
11	9	-2

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	7	0	3	1.3	A	0.5	A	3.1	A
	Thru	29	0	2	0.3	A				
	Right	13	0	2	0.5	A				
Southbound	Left	28	0	0	0.6	A	0.6	A		
	Thru	19	0	5	0.3	A				
	Right	21	0	6	0.8	A				
Eastbound	Left	12	1	51	8.3	A	6.9	A		
	Thru	0	-	-	-	A				
	Right	27	1	51	6.3	A				
Westbound	Left	11	1	45	8.6	A	6.5	A		
	Thru	0	-	-	-	A				
	Right	33	1	39	5.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	7	-1
28	29	1
13	13	0
34	28	-6
22	19	-3
22	21	-1
13	12	-1
0	0	0
27	27	0
12	11	-1
0	0	0
34	33	-1

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.1	A	1.0	A
	Thru	39	0	0	0.1	A				
	Right	9	0	0	0.3	A				
Southbound	Left	9	0	4	0.7	A	0.2	A		
	Thru	48	0	0	0.1	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	5	1	45	8.1	A	6.6	A		
	Thru	0	-	-	-	A				
	Right	11	1	59	5.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
38	39	1
7	9	2
10	9	-1
53	48	-5
0	0	0
0	0	0
0	0	0
5	5	0
0	0	0
11	11	0

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	47	0	0	0.1	A	0.2	A	0.4	A
	Right	7	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	0.1	A		
	Thru	53	0	0	0.1	A				
Eastbound	Left	4	0	36	7.4	A	7.4	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
45	47	2
7	7	0
0	0	0
58	53	-5
6	4	-2
0	0	0

30th Ave & E Old Shakopee Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	12	1	46	23.8	C	11.3	B	2.0	A
	Right	45	3	79	7.9	A				
Eastbound	Left	49	1	44	4.7	A	1.6	A		
	Thru	589	0	19	1.3	A				
Westbound	Thru	467	0	1	1.4	A	1.4	A		
	Right	5	0	1	0.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
14	12	-2
51	45	-6
48	49	1
609	589	-20
476	467	-9
4	5	1

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	69	2	57	7.7	A	5.8	A	5.2	A
	Thru	0	-	-	-	A				
	Right	62	2	56	3.6	A				
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	4	5	91	6.5	A	6.3	A		
	Thru	368	5	91	6.5	A				
	Right	23	5	91	3.4	A				
Westbound	U-turn	261	2	90	6.2	A	4.6	A		
	Left	91	2	90	4.8	A				
	Thru	351	2	90	3.4	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
69	69	0
0	0	0
63	62	-1
0	0	0
0	0	0
2	0	-2
3	4	1
377	368	-9
25	23	-2
264	261	-3
90	91	1
393	351	-42
0	0	0

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 31st Ave

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	0.9	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	19	2	56	17.1	C	11.2	B		
	Thru	0	-	-	-	A				
	Right	24	1	65	6.5	A				
Eastbound	Left	31	0	21	4.3	A	0.5	A		
	Thru	567	0	0	0.3	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.4	A		
	Thru	449	0	0	0.4	A				
	Right	19	0	0	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
0	0	0
19	19	0
0	0	0
26	24	-2
31	31	0
591	567	-24
1	0	-1
0	0	0
451	449	-2
18	19	1

American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	163	7	92	7.8	A	7.8	A	2.9	A
Southbound	Right	309	1	65	2.5	A	2.5	A		
Eastbound	Left	51	1	33	5.5	A	2.6	A		
	Thru	595	4	50	2.5	A				
	Right	45	4	51	1.4	A				
Westbound	Left	90	4	64	8.5	A	2.1	A		
	Thru	394	0	0	0.9	A				
	Right	100	0	0	0.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
164	163	-1
310	309	-1
49	51	2
608	595	-13
46	45	-1
92	90	-2
389	394	5
98	100	2

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	1.4	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	58	5	66	16.0	C	8.3	A		
	Thru	0	-	-	-	A				
	Right	64	0	26	1.4	A				
Eastbound	Left	67	1	31	2.7	A	0.4	A		
	Thru	520	0	0	0.1	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.8	A		
	Thru	403	0	0	0.7	A				
	Right	16	0	2	1.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
0	0	0
58	58	0
0	0	0
67	64	-3
71	67	-4
538	520	-18
0	0	0
0	0	0
402	403	1
18	16	-2

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	448	138	431	60.4	E	36.0	D	32.5	C
	Thru	54	139	433	52.2	D				
	Right	858	118	484	22.3	C				
Southbound	Left	693	128	426	58.1	E	26.7	C		
	Thru	101	128	425	51.2	D				
	Right	1,204	3	109	6.7	A				
Eastbound	Left	1,148	61	350	39.1	D	37.4	D		
	Right	507	58	268	33.5	C				
Westbound	Left	777	27	214	34.1	C	31.2	C		
	Right	481	44	210	26.5	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
468	448	-20
56	54	-2
882	858	-24
702	693	-9
103	101	-2
1,206	1,204	-2
1,172	1,148	-24
500	507	7
778	777	-1
486	481	-5

2040 VISSIM Model: No Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	79	27	145	54.1	D	36.4	D	39.0	D
	Thru	415	59	265	37.0	D				
	Right	83	1	27	16.5	B				
Southbound	Left	291	60	201	59.6	E	38.5	D		
	Thru	439	89	323	59.3	E				
	Right	466	0	53	5.8	A				
Eastbound	Left	714	119	379	47.9	D	47.1	D		
	Thru	33	120	379	36.3	D				
	Right	4	0	0	0.5	A				
Westbound	Left	70	24	114	58.1	E	26.7	C		
	Thru	38	13	93	59.1	E				
	Right	215	6	115	10.8	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
81	79	-2
436	415	-21
85	83	-2
296	291	-5
438	439	1
461	466	5
737	714	-23
33	33	0
4	4	0
72	70	-2
37	38	1
217	215	-2

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	573	2	57	1.9	A	1.9	A	3.3	A
	Right	8	1	42	2.0	A				
Southbound	Left	16	1	33	15.9	B	4.9	A		
	Thru	413	5	93	4.4	A				
Westbound	Left	5	1	16	23.7	C	12.2	B		
	Right	8	0	43	5.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
593	573	-20
8	8	0
16	16	0
415	413	-2
5	5	0
9	8	-1

Note: Results are the average of ten (10) simulation runs

Appendix M
Year 2040 with Improvements MOE

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	3	51	18.8	C	18.8	C	0.9	A
	Right	0	-	-	-	A				
Eastbound	Thru	519	0	0	0.3	A	0.3	A		
	Right	15	0	0	0.5	A				
Westbound	Left	9	0	12	3.9	A	0.6	A		
	Thru	874	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	37	-1
0	0	0
523	519	-4
12	15	3
8	9	1
918	874	-44

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	1,033	0	0	0.3	A	0.5	A	0.5	A
	-	278	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1,041	1,033	-8
274	278	4

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.0	A	3.0	A
	Right	14	1	70	7.0	A				
Eastbound	Left	23	0	18	3.9	A	1.1	A		
	Thru	255	0	0	0.9	A				
Westbound	Thru	256	0	0	4.8	A	4.8	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
15	14	-1
25	23	-2
255	255	0
266	256	-10
1	0	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	733	0	0	0.2	A	0.2	A	1.5	A
	Thru	1,254	0	27	0.7	A				
Southbound	Right	241	0	27	1.2	A	0.8	A		
	Left	13	3	31	46.0	E				
Eastbound	Right	357	0	0	5.2	A	6.6	A		
	Left	13	3	31	46.0	E				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
736	733	-3
1,286	1,254	-32
251	241	-10
10	13	3
361	357	-4

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	137	25	100	38.9	D	25.9	C	24.9	C
	Thru	81	12	96	27.2	C				
	Right	76	0	3	1.1	A				
Southbound	Left	23	5	37	43.9	D	31.5	C		
	Thru	123	17	80	33.0	C				
	Right	20	21	88	7.3	A				
Eastbound	Left	52	11	52	46.1	D	24.0	C		
	Thru	409	30	150	24.3	C				
	Right	58	0	8	2.6	A				
Westbound	Left	368	49	171	39.3	D	24.0	C		
	Thru	725	28	157	16.6	B				
	Right	28	27	161	13.8	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
130	137	7
83	81	-2
81	76	-5
20	23	3
122	123	1
22	20	-2
52	52	0
410	409	-1
60	58	-2
374	368	-6
774	725	-49
28	28	0

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	78	14	77	36.2	D	30.2	C	17.4	B
	Thru	26	3	41	25.3	C				
	Right	18	1	59	11.4	B				
Southbound	Left	15	2	27	27.3	C	22.7	C		
	Thru	14	3	31	38.9	D				
	Right	78	7	58	18.8	B				
Eastbound	Left	265	30	124	32.4	C	16.0	B		
	Thru	1,332	35	223	13.5	B				
	Right	102	52	263	6.8	A				
Westbound	Left	40	9	50	42.6	D	18.1	B		
	Thru	380	19	136	16.0	B				
	Right	13	0	37	3.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
80	78	-2
25	26	1
18	18	0
14	15	1
12	14	2
80	78	-2
253	265	12
1,357	1,332	-25
102	102	0
35	40	5
400	380	-20
13	13	0

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	29	3	36	20.2	C	14.4	B	5.6	A
	Right	78	4	54	12.2	B				
Eastbound	Left	115	11	97	15.6	B	4.5	A		
	Thru	1,196	11	97	3.4	A				
Westbound	Thru	280	6	99	8.1	A	7.0	A		
	Right	46	0	0	0.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	29	4
81	78	-3
122	115	-7
1,193	1,196	3
290	280	-10
49	46	-3

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	240	21	166	18.7	B	14.4	B	22.0	C
	Thru	498	18	143	12.4	B				
	Right	6	18	140	9.8	A				
Southbound	Left	0	-	-	-	A	22.1	C		
	Thru	573	42	244	24.2	C				
	Right	56	0	0	0.8	A				
Eastbound	Left	891	144	747	35.0	C	25.0	C		
	Thru	11	143	737	33.5	C				
	Right	929	79	630	15.3	B				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
240	240	0
501	498	-3
5	6	1
0	0	0
592	573	-19
55	56	1
898	891	-7
11	11	0
945	929	-16
0	0	0
2	0	-2
0	0	0

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	68	9	59	30.4	C	21.8	C	15.6	B
	Thru	12	1	24	24.0	C				
	Right	37	1	53	5.1	A				
Southbound	Left	53	5	49	18.4	B	16.3	B		
	Thru	16	2	30	27.1	C				
	Right	131	8	55	14.1	B				
Eastbound	Left	179	17	95	25.4	C	14.2	B		
	Thru	799	32	250	13.8	B				
	Right	378	14	209	9.8	A				
Westbound	Left	96	12	71	35.3	D	17.6	B		
	Thru	231	10	69	16.2	B				
	Right	120	3	77	6.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
71	68	-3
11	12	1
33	37	4
52	53	1
15	16	1
135	131	-4
182	179	-3
785	799	14
422	378	-44
93	96	3
242	231	-11
130	120	-10

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	35	4	48	23.8	C	15.6	B	5.8	A
	Thru	0	-	-	-	A				
	Right	19	0	3	0.5	A				
Southbound	Left	4	1	21	27.8	C	11.9	B		
	Thru	5	1	22	23.0	C				
	Right	12	0	2	1.9	A				
Eastbound	Left	83	4	54	14.3	B	5.1	A		
	Thru	1,025	9	131	4.8	A				
	Right	112	0	17	1.2	A				
Westbound	Left	44	3	51	16.5	B	6.4	A		
	Thru	280	3	77	5.0	A				
	Right	14	0	5	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
34	35	1
0	0	0
22	19	-3
4	4	0
4	5	1
13	12	-1
78	83	5
1,026	1,025	-1
114	112	-2
44	44	0
292	280	-12
16	14	-2

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	211	18	117	17.5	B	10.3	B	27.1	C
	Thru	64	7	73	22.8	C				
	Right	315	2	64	3.0	A				
Southbound	Left	73	19	95	48.9	D	40.3	D		
	Thru	136	27	120	46.7	D				
	Right	38	0	0	0.9	A				
Eastbound	Left	82	10	91	27.5	C	28.0	C		
	Right	886	89	358	28.0	C				
Westbound	Left	1,400	174	577	37.3	D	30.4	C		
	Right	387	0	0	5.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
205	211	6
58	64	6
283	315	32
74	73	-1
134	136	2
41	38	-3
76	82	6
898	886	-12
1,414	1,400	-14
377	387	10

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	38	11	64	53.5	D	5.0	A	7.5	A
	Thru	543	1	57	1.6	A				
Southbound	Thru	2,283	30	256	7.2	A	7.1	A		
	Right	126	0	5	5.6	A				
Eastbound	Left	47	11	63	50.7	D	38.2	D		
	Right	27	3	54	16.5	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
34	38	4
500	543	43
2,312	2,283	-29
126	126	0
47	47	0
28	27	-1

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	84	19	94	49.4	D	31.9	C	28.4	C
	Thru	307	29	132	39.0	D				
	Right	136	1	55	5.1	A				
Southbound	Left	571	104	435	44.3	D	24.3	C		
	Thru	879	84	432	29.4	C				
	Right	855	2	153	5.9	A				
Eastbound	Left	173	45	155	65.7	E	36.3	D		
	Thru	187	22	117	34.2	C				
	Right	145	0	13	3.9	A				
Westbound	Left	82	18	77	54.5	D	38.4	D		
	Thru	176	32	149	41.6	D				
	Right	104	39	159	20.1	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
87	84	-3
296	307	11
136	136	0
586	571	-15
863	879	16
892	855	-37
213	173	-40
237	187	-50
171	145	-26
78	82	4
182	176	-6
101	104	3

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	85	13	75	39.8	D	24.6	C	21.8	C
	Thru	237	17	110	24.2	C				
	Right	52	0	8	1.4	A				
Southbound	Left	143	32	166	41.7	D	19.7	B		
	Thru	661	46	288	22.1	C				
	Right	292	0	36	3.4	A				
Eastbound	Left	233	28	131	32.5	C	23.4	C		
	Thru	472	63	398	24.2	C				
	Right	187	8	137	9.9	A				
Westbound	Left	8	3	29	54.7	D	21.3	C		
	Thru	72	11	79	29.6	C				
	Right	53	2	74	5.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
88	85	-3
258	237	-21
54	52	-2
150	143	-7
658	661	3
305	292	-13
220	233	13
468	472	4
182	187	5
11	8	-3
73	72	-1
42	53	11

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	9	1	24	30.0	C	16.8	B	17.2	B
	Thru	289	15	123	17.4	B				
	Right	29	0	14	6.8	A				
Southbound	Left	306	34	153	31.9	C	17.5	B		
	Thru	479	13	145	10.3	B				
	Right	69	0	3	3.0	A				
Eastbound	Left	12	2	25	39.0	D	32.2	C		
	Thru	1	1	12	54.5	D				
	Right	4	0	20	6.0	A				
Westbound	Left	31	7	65	42.6	D	13.6	B		
	Thru	1	0	5	24.1	C				
	Right	76	0	7	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	9	1
307	289	-18
30	29	-1
303	306	3
482	479	-3
64	69	5
11	12	1
1	1	0
4	4	0
29	31	2
1	1	0
82	76	-6

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	250	1	53	2.4	A	3.1	A	5.1	A
	Right	139	1	65	4.5	A				
Southbound	Thru	489	3	101	4.1	A	4.1	A		
Eastbound	Left	13	1	46	33.9	C	21.7	C		
	Right	57	4	58	18.9	B				
Westbound	Right	66	4	93	6.8	A	6.8	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
262	250	-12
126	139	13
490	489	-1
16	13	-3
57	57	0
67	66	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	40	18	81	120.0	F	46.9	D	44.4	D
	Thru	314	208	1,001	75.8	E				
	Right	1,138	62	735	36.3	D				
Southbound	Left	82	16	70	52.1	D	24.7	C		
	Thru	260	27	211	27.2	C				
	Right	204	14	213	10.5	B				
Eastbound	Left	56	18	77	67.2	E	50.1	D		
	Thru	917	164	516	52.5	D				
	Right	64	0	4	0.8	A				
Westbound	Left	344	70	230	58.7	E	46.7	D		
	Thru	201	14	84	25.6	C				
	Right	21	6	48	53.7	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
36	40	4
303	314	11
1,176	1,138	-38
75	82	7
258	260	2
214	204	-10
66	56	-10
929	917	-12
57	64	7
378	344	-34
212	201	-11
18	21	3

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	78	39	315	21.9	C	12.7	B	14.5	B
	Thru	1,238	37	316	12.2	B				
	Right	40	50	344	8.4	A				
Southbound	Left	53	21	183	36.6	D	13.1	B		
	Thru	460	21	181	10.9	B				
	Right	128	32	212	11.1	B				
Eastbound	Left	250	31	208	28.3	C	26.2	C		
	Thru	9	32	207	22.9	C				
	Right	27	38	233	8.2	A				
Westbound	Left	7	0	18	15.6	B	11.2	B		
	Thru	3	0	17	12.5	B				
	Right	9	0	16	7.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
75	78	3
1,252	1,238	-14
42	40	-2
54	53	-1
473	460	-13
134	128	-6
254	250	-4
9	9	0
28	27	-1
7	7	0
3	3	0
6	9	3

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	23	0	2	0.6	A	5.7	A	5.8	A
	Thru	0	-	-	-	A				
	Right	94	0	1	6.9	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	5.9	A		
	Thru	655	7	155	6.3	A				
	Right	129	0	35	3.6	A				
Westbound	Left	199	13	85	16.3	B	5.8	A		
	Thru	422	1	42	0.9	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
22	23	1
0	0	0
88	94	6
0	1	1
0	0	0
0	0	0
0	0	0
706	655	-51
132	129	-3
186	199	13
417	422	5
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	23	0	30	5.3	A	4.4	A	6.4	A
	Thru	132	0	30	4.3	A				
	Right	7	0	24	3.5	A				
Southbound	Left	4	0	6	3.0	A	2.2	A		
	Thru	217	0	6	2.1	A				
	Right	79	0	6	2.2	A				
Eastbound	Left	74	2	91	11.9	B	10.4	B		
	Thru	234	2	92	10.5	B				
	Right	105	2	92	9.0	A				
Westbound	Left	1	0	10	4.4	A	3.5	A		
	Thru	25	0	9	3.7	A				
	Right	4	0	0	2.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
18	23	5
115	132	17
6	7	1
2	4	2
222	217	-5
69	79	10
75	74	-1
226	234	8
108	105	-3
1	1	0
32	25	-7
4	4	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	13	6	49	55.1	E	15.4	B	20.2	C
	Thru	128	8	79	19.3	B				
	Right	168	5	98	9.4	A				
Southbound	Left	22	5	49	51.8	D	19.7	B		
	Thru	151	19	128	21.0	C				
	Right	148	26	146	13.7	B				
Eastbound	Left	30	9	63	55.6	E	45.5	D		
	Thru	21	3	36	31.0	C				
	Right	0	-	-	-	A				
Westbound	Left	11	3	29	43.4	D	38.7	D		
	Thru	3	1	20	20.7	C				
	Right	4	1	15	39.3	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
15	13	-2
131	128	-3
168	168	0
23	22	-1
155	151	-4
149	148	-1
32	30	-2
19	21	2
1	0	-1
11	11	0
2	3	1
3	4	1

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	48	17	85	55.5	E	44.2	D	24.3	C
	Thru	3	1	30	35.7	D				
	Right	16	1	42	12.1	B				
Southbound	Left	37	8	53	50.2	D	18.7	B		
	Thru	13	2	33	29.7	C				
	Right	79	0	23	2.1	A				
Eastbound	Left	552	64	272	34.8	C	25.1	C		
	Thru	1,432	94	621	21.5	C				
	Right	87	104	654	21.8	C				
Westbound	Left	61	12	89	40.8	D	22.6	C		
	Thru	428	35	221	22.0	C				
	Right	72	13	155	10.5	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
45	48	3
3	3	0
18	16	-2
42	37	-5
15	13	-2
82	79	-3
545	552	7
1,476	1,432	-44
98	87	-11
67	61	-6
458	428	-30
77	72	-5

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	23	10	77	48.2	E	25.3	D	2.8	A
	Right	47	10	91	14.1	B				
Eastbound	Left	157	6	101	8.3	A	2.8	A		
	Thru	591	0	0	1.3	A				
Westbound	Thru	576	0	0	0.3	A	0.3	A		
	Right	19	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
25	23	-2
44	47	3
162	157	-5
630	591	-39
559	576	17
22	19	-3

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	32	5	48	31.2	C	16.2	B	5.5	A
	Right	50	0	49	6.5	A				
Eastbound	Thru	375	7	123	4.8	A	4.6	A		
	Right	239	2	78	4.2	A				
Westbound	Left	128	13	115	20.4	C	5.0	A		
	Thru	562	2	55	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
32	32	0
46	50	4
401	375	-26
255	239	-16
149	128	-21
549	562	13

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	0	12	10.2	B	11.0	B	11.5	B
	Thru	135	10	78	11.0	B				
Southbound	Thru	172	9	75	13.0	B	12.2	B		
	Right	17	0	41	4.6	A				
Eastbound	Left	142	8	86	12.5	B	11.1	B		
	Right	100	3	63	9.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
9	8	-1
137	135	-2
187	172	-15
23	17	-6
135	142	7
98	100	2

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	137	0	22	1.2	A	0.8	A	2.7	A
	Thru	101	0	17	0.5	A				
	Right	126	0	17	0.7	A				
Southbound	Left	196	1	48	4.2	A	3.2	A		
	Thru	77	0	8	0.7	A				
	Right	0	-	-	-	A				
Eastbound	Left	8	1	44	21.4	C	13.9	B		
	Thru	0	-	-	-	A				
	Right	10	0	43	7.9	A				
Westbound	Left	10	1	46	20.3	C	9.6	A		
	Thru	0	-	-	-	A				
	Right	35	1	42	6.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
141	137	-4
105	101	-4
131	126	-5
215	196	-19
71	77	6
0	0	0
7	8	1
0	0	0
10	10	0
10	10	0
0	0	0
35	35	0

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	1	0	0	0.3	A	0.8	A	1.5	A
	Thru	354	0	0	0.6	A				
	Right	217	0	0	1.2	A				
Southbound	Left	61	2	49	6.9	A	4.3	A		
	Thru	36	0	0	0.1	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	6	1	44	13.3	B	9.7	A		
	Thru	0	-	-	-	A				
	Right	10	1	62	7.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1	1	0
368	354	-14
212	217	5
58	61	3
31	36	5
0	0	0
0	0	0
0	0	0
0	0	0
6	6	0
0	0	0
9	10	1

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	572	0	5	0.5	A	0.5	A	0.6	A
	Right	108	0	5	0.8	A				
Southbound	Left	2	0	5	6.6	A	0.4	A		
	Thru	38	0	0	0.1	A				
Eastbound	Left	4	0	36	19.1	C	19.1	C		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
581	572	-9
104	108	4
1	2	1
36	38	2
6	4	-2
0	0	0

30th Ave & E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	7	2	24	45.6	D	12.9	B	6.9	A
	Right	34	1	70	6.2	A				
Eastbound	Left	478	12	185	11.9	B	7.5	A		
	Thru	800	1	69	4.9	A				
Westbound	Thru	600	7	158	6.0	A	5.6	A		
	Right	202	7	159	4.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
6	7	1
36	34	-2
477	478	1
848	800	-48
638	600	-38
209	202	-7

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	78	1	38	6.1	A	4.8	A	9.1	A
	Thru	0	-	-	-	A				
	Right	35	0	38	2.0	A				
Southbound	Left	8	2	31	39.9	E	22.3	C		
	Thru	0	-	-	-	A				
	Right	9	1	32	6.7	A				
Eastbound	Left	62	21	152	21.1	C	14.3	B		
	Thru	280	21	151	13.9	B				
	Right	76	21	151	10.1	B				
Westbound	U-turn	233	17	225	10.5	B	6.0	A		
	Left	316	17	225	9.1	A				
	Thru	655	17	226	6.2	A				
	Right	87	17	228	4.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
84	78	-6
0	0	0
37	35	-2
7	8	1
0	0	0
9	9	0
65	62	-3
295	280	-15
86	76	-10
235	233	-2
307	316	9
671	655	-16
83	87	4

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)



E Old Shakopee Rd & 31st Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	6.2	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	18	2	39	29.9	C	17.2	B		
	Thru	0	-	-	-	A				
	Right	23	1	40	7.2	A				
Eastbound	Left	181	7	111	14.7	B	4.4	A		
	Thru	548	1	56	1.4	A				
	Right	76	0	32	1.4	A				
Westbound	Left	44	1	38	5.9	A	7.1	A		
	Thru	786	14	219	6.3	A				
	Right	319	17	252	9.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
0	0	0
1	0	-1
16	18	2
0	0	0
25	23	-2
189	181	-8
583	548	-35
82	76	-6
47	44	-3
822	786	-36
325	319	-6

American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	199	9	99	8.1	A	8.7	A	3.6	A
Southbound	Right	281	7	134	6.6	A	6.6	A		
Eastbound	Left	51	11	76	36.9	E	4.4	A		
	Thru	476	0	2	1.2	A				
	Right	30	0	2	0.7	A				
Westbound	Left	83	2	48	5.3	A	1.8	A		
	Thru	1,016	0	0	1.7	A				
	Right	197	0	1	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
194	199	5
281	281	0
46	51	5
504	476	-28
24	30	6
84	83	-1
1,015	1,016	1
197	197	0

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	1	0	39	6.9	A	5.8	A	3.1	A
	Thru	0	-	-	-	A				
	Right	4	0	46	5.6	A				
Southbound	Left	57	10	79	30.5	D	15.0	B		
	Thru	2	6	78	20.6	C				
	Right	85	1	41	4.4	A				
Eastbound	Left	130	8	103	12.2	B	2.9	A		
	Thru	423	0	0	0.1	A				
	Right	14	0	0	0.4	A				
Westbound	Left	9	0	11	3.4	A	1.7	A		
	Thru	1,065	0	0	1.6	A				
	Right	64	0	15	2.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	1	-1
0	0	0
4	4	0
58	57	-1
1	2	1
86	85	-1
141	130	-11
444	423	-21
15	14	-1
7	9	2
1,107	1,065	-42
66	64	-2

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	379	179	484	81.1	F	45.5	D	47.0	D
	Thru	88	176	479	91.5	F				
	Right	651	69	397	18.6	B				
Southbound	Left	541	120	354	80.4	F	45.4	D		
	Thru	124	120	352	71.2	E				
	Right	499	0	0	1.0	A				
Eastbound	Left	856	22	188	26.6	C	36.2	D		
	Right	788	87	290	46.6	D				
Westbound	Left	2,053	191	587	59.8	E	54.1	D		
	Right	948	215	601	41.9	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
397	379	-18
96	88	-8
680	651	-29
547	541	-6
132	124	-8
492	499	7
870	856	-14
790	788	-2
2,096	2,053	-43
955	948	-7

**2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (AM Peak Hour)**



34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	59	32	121	94.6	F	32.7	C	36.5	D
	Thru	269	25	124	32.2	C				
	Right	120	2	57	3.4	A				
Southbound	Left	533	119	436	68.6	E	33.0	C		
	Thru	1,148	162	833	37.5	D				
	Right	1,206	4	221	13.0	B				
Eastbound	Left	617	85	276	56.9	E	55.1	E		
	Thru	42	85	277	43.7	D				
	Right	11	0	0	0.5	A				
Westbound	Left	66	18	76	56.8	E	33.6	C		
	Thru	31	13	109	65.8	E				
	Right	217	19	114	22.0	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
53	59	6
295	269	-26
124	120	-4
544	533	-11
1,182	1,148	-34
1,212	1,206	-6
640	617	-23
48	42	-6
10	11	1
69	66	-3
31	31	0
217	217	0

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	435	4	73	3.8	A	3.7	A	5.4	A
	Right	51	1	59	2.7	A				
Southbound	Left	64	5	71	16.5	B	5.8	A		
	Thru	1,134	15	216	5.2	A				
Westbound	Left	13	2	30	30.9	C	18.1	B		
	Right	13	1	47	5.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
457	435	-22
55	51	-4
66	64	-2
1,166	1,134	-32
12	13	1
15	13	-2

Note: Results are the average of ten (10) simulation runs

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	31	5	57	32.5	D	20.4	C	1.2	A
	Right	19	0	6	0.7	A				
Eastbound	Thru	943	0	3	0.7	A	0.7	A		
	Right	41	0	0	0.8	A				
Westbound	Left	10	0	19	7.6	A	0.7	A		
	Thru	873	0	0	0.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
32	31	-1
19	19	0
950	943	-7
40	41	1
10	10	0
911	873	-38

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	667	0	0	0.4	A	0.6	A	0.6	A
	-	289	0	0	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
674	667	-7
286	289	3

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.7	A	3.4	A
	Right	20	1	70	7.7	A				
Eastbound	Left	42	1	37	7.9	A	1.8	A		
	Thru	308	0	0	1.0	A				
Westbound	Thru	365	0	0	4.8	A	4.7	A		
	Right	4	0	0	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
22	20	-2
42	42	0
309	308	-1
383	365	-18
5	4	-1

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	668	0	0	0.3	A	0.3	A	2.9	A
	Thru	996	1	75	1.3	A				
Southbound	Right	720	1	76	4.4	A	2.6	A		
	Left	45	5	56	30.7	D				
Eastbound	Right	358	0	2	5.3	A	8.1	A		
	Left	45	5	56	30.7	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
671	668	-3
1,016	996	-20
753	720	-33
45	45	0
361	358	-3

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	149	57	295	45.9	D	24.6	C	29.0	C
	Thru	270	59	295	35.5	D				
	Right	288	2	62	3.5	A				
Southbound	Left	46	11	57	53.2	D	34.3	C		
	Thru	165	23	108	33.6	C				
	Right	34	27	115	11.8	B				
Eastbound	Left	304	48	173	44.8	D	26.2	C		
	Thru	378	32	169	27.3	C				
	Right	276	1	67	4.2	A				
Westbound	Left	428	62	223	44.8	D	32.8	C		
	Thru	700	44	219	25.9	C				
	Right	26	42	223	21.8	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
147	149	2
265	270	5
298	288	-10
49	46	-3
163	165	2
35	34	-1
309	304	-5
394	378	-16
267	276	9
431	428	-3
739	700	-39
27	26	-1

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	384	253	515	102.9	F	79.5	E	42.8	D
	Thru	50	9	68	35.9	D				
	Right	99	4	69	10.5	B				
Southbound	Left	44	7	68	30.3	C	48.4	D		
	Thru	88	32	144	61.4	E				
	Right	431	84	228	47.6	D				
Eastbound	Left	276	58	172	59.9	E	27.7	C		
	Thru	939	52	234	23.3	C				
	Right	248	73	274	8.7	A				
Westbound	Left	95	27	86	76.2	E	42.3	D		
	Thru	1,589	266	686	41.0	D				
	Right	32	1	49	8.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
393	384	-9
52	50	-2
96	99	3
45	44	-1
87	88	1
435	431	-4
260	276	16
961	939	-22
255	248	-7
93	95	2
1,627	1,589	-38
31	32	1

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	73	16	108	42.6	D	27.7	C	23.4	C
	Right	700	73	349	26.1	C				
Eastbound	Left	374	53	169	40.0	D	19.1	B		
	Thru	579	53	168	5.6	A				
Westbound	Thru	1,514	150	531	25.4	C	23.8	C		
	Right	108	0	0	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
72	73	1
705	700	-5
384	374	-10
576	579	3
1,563	1,514	-49
108	108	0

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	339	45	258	27.5	C	15.7	B	20.3	C
	Thru	365	5	74	5.0	A				
	Right	7	5	75	3.7	A				
Southbound	Left	1	0	4	10.6	B	20.6	C		
	Thru	1,316	96	556	21.9	C				
	Right	100	0	0	3.9	A				
Eastbound	Left	449	64	283	39.1	D	23.6	C		
	Thru	10	62	277	44.6	D				
	Right	402	9	165	5.7	A				
Westbound	Left	1	0	16	39.8	D	11.9	B		
	Thru	0	-	-	-	A				
	Right	4	0	36	5.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
344	339	-5
367	365	-2
5	7	2
1	1	0
1,368	1,316	-52
105	100	-5
459	449	-10
9	10	1
400	402	2
1	1	0
0	0	0
3	4	1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	316	59	234	52.0	D	41.2	D	34.3	C
	Thru	34	7	62	37.5	D				
	Right	98	4	86	7.9	A				
Southbound	Left	210	31	204	28.1	C	36.5	D		
	Thru	35	7	57	40.0	D				
	Right	509	71	368	39.7	D				
Eastbound	Left	244	40	143	46.4	D	26.6	C		
	Thru	452	40	223	26.1	C				
	Right	383	26	256	14.5	B				
Westbound	Left	158	31	116	54.1	D	37.2	D		
	Thru	906	75	281	39.9	D				
	Right	174	6	98	8.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
322	316	-6
33	34	1
103	98	-5
206	210	4
32	35	3
519	509	-10
240	244	4
461	452	-9
401	383	-18
163	158	-5
909	906	-3
186	174	-12

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	125	27	99	43.7	D	32.4	C	16.4	B
	Thru	12	27	98	40.2	D				
	Right	49	0	4	1.5	A				
Southbound	Left	50	13	89	44.4	D	14.5	B		
	Thru	7	13	89	48.6	D				
	Right	231	4	88	7.0	A				
Eastbound	Left	126	21	89	40.7	D	12.6	B		
	Thru	420	8	82	7.0	A				
	Right	105	0	18	1.3	A				
Westbound	Left	71	20	106	53.7	D	16.5	B		
	Thru	1,267	49	432	15.1	B				
	Right	68	0	28	2.6	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
127	125	-2
12	12	0
49	49	0
50	50	0
7	7	0
233	231	-2
126	126	0
420	420	0
102	105	3
67	71	4
1,311	1,267	-44
72	68	-4

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	1,044	114	483	30.4	C	20.5	C	31.2	C
	Thru	208	35	219	31.2	C				
	Right	927	16	245	7.0	A				
Southbound	Left	150	57	209	62.8	E	51.2	D		
	Thru	83	30	101	74.7	E				
	Right	73	0	0	0.9	A				
Eastbound	Left	24	4	43	33.7	C	24.6	C		
	Right	567	52	244	24.2	C				
Westbound	Left	1,380	237	648	50.5	D	44.0	D		
	Right	253	0	0	8.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1,115	1,044	-71
222	208	-14
973	927	-46
160	150	-10
82	83	1
72	73	1
23	24	1
577	567	-10
1,381	1,380	-1
257	253	-4

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	62	26	108	72.5	E	5.0	A	7.5	A
	Thru	1,989	7	118	2.9	A				
Southbound	Thru	1,685	10	130	4.9	A	5.3	A		
	Right	338	0	18	7.3	A				
Eastbound	Left	171	43	159	60.7	E	44.8	D		
	Right	88	7	78	14.0	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
61	62	1
2,139	1,989	-150
1,684	1,685	1
356	338	-18
170	171	1
88	88	0

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	223	41	174	51.5	D	16.6	B	31.2	C
	Thru	1,080	25	175	10.8	B				
	Right	107	0	16	2.5	A				
Southbound	Left	151	44	111	75.3	E	24.2	C		
	Thru	1,075	76	335	27.0	C				
	Right	533	1	78	4.0	A				
Eastbound	Left	284	102	269	80.5	F	50.2	D		
	Thru	245	42	152	49.1	D				
	Right	180	0	17	3.8	A				
Westbound	Left	240	47	172	50.2	D	46.4	D		
	Thru	343	149	515	46.6	D				
	Right	688	158	526	45.0	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
232	223	-9
1,130	1,080	-50
107	107	0
148	151	3
1,078	1,075	-3
547	533	-14
300	284	-16
255	245	-10
188	180	-8
241	240	-1
355	343	-12
691	688	-3

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	256	53	201	61.0	E	40.6	D	33.3	C
	Thru	806	85	387	34.8	C				
	Right	14	0	1	1.4	A				
Southbound	Left	68	16	125	45.2	D	15.7	B		
	Thru	814	52	351	19.5	B				
	Right	592	1	66	7.2	A				
Eastbound	Left	449	93	313	59.8	E	43.8	D		
	Thru	173	30	188	30.8	C				
	Right	142	5	87	9.0	A				
Westbound	Left	53	24	92	95.5	F	49.6	D		
	Thru	386	136	545	58.8	E				
	Right	178	8	98	16.3	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
255	256	1
845	806	-39
15	14	-1
70	68	-2
827	814	-13
611	592	-19
449	449	0
173	173	0
147	142	-5
58	53	-5
392	386	-6
175	178	3

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	17	6	38	70.9	E	23.6	C	19.5	B
	Thru	560	35	225	22.8	C				
	Right	22	0	6	6.1	A				
Southbound	Left	212	29	162	37.0	D	11.0	B		
	Thru	572	7	65	4.9	A				
	Right	228	0	9	2.0	A				
Eastbound	Left	289	52	237	46.4	D	42.2	D		
	Thru	4	2	38	46.6	D				
	Right	39	3	45	10.3	B				
Westbound	Left	52	19	92	66.3	E	15.4	B		
	Thru	7	2	24	70.2	E				
	Right	251	0	20	3.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
19	17	-2
564	560	-4
23	22	-1
207	212	5
592	572	-20
234	228	-6
291	289	-2
5	4	-1
36	39	3
50	52	2
6	7	1
260	251	-9

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	381	3	109	3.6	A	3.7	A	6.5	A
	Right	92	1	53	4.4	A				
Southbound	Thru	643	6	113	3.8	A	3.8	A		
Eastbound	Left	14	4	52	46.3	D	40.8	D		
	Right	55	12	90	39.4	D				
Westbound	Right	207	16	127	9.9	A	9.9	A		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
381	381	0
91	92	1
653	643	-10
17	14	-3
55	55	0
208	207	-1

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	73	54	149	187.9	F	73.3	E	51.8	D
	Thru	284	222	844	114.0	F				
	Right	541	11	171	36.5	D				
Southbound	Left	38	12	52	67.1	E	38.2	D		
	Thru	365	70	269	54.7	D				
	Right	298	37	266	14.3	B				
Eastbound	Left	108	54	148	125.8	F	55.8	E		
	Thru	313	49	195	48.4	D				
	Right	96	0	8	0.9	A				
Westbound	Left	1,112	347	1,083	65.3	E	46.5	D		
	Thru	1,064	64	340	27.5	C				
	Right	80	16	101	39.6	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
76	73	-3
289	284	-5
557	541	-16
40	38	-2
365	365	0
303	298	-5
106	108	2
318	313	-5
94	96	2
1,141	1,112	-29
1,094	1,064	-30
76	80	4

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	35	16	169	38.1	D	9.6	A	13.6	B
	Thru	737	16	168	8.3	A				
	Right	11	25	197	6.1	A				
Southbound	Left	14	45	455	15.2	B	13.7	B		
	Thru	1,282	45	456	13.0	B				
	Right	329	57	487	16.2	B				
Eastbound	Left	184	25	174	29.3	C	25.4	C		
	Thru	10	25	178	24.7	C				
	Right	47	31	197	10.4	B				
Westbound	Left	42	5	59	20.2	C	13.9	B		
	Thru	13	5	59	22.8	C				
	Right	36	0	24	3.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
38	35	-3
749	737	-12
9	11	2
15	14	-1
1,329	1,282	-47
325	329	4
188	184	-4
8	10	2
48	47	-1
42	42	0
13	13	0
36	36	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	80	0	2	1.1	A	4.1	A	3.0	A
	Thru	0	-	-	-	A				
	Right	77	0	2	7.1	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	4.3	A		
	Thru	429	3	88	4.6	A				
	Right	82	0	23	2.6	A				
Westbound	Left	102	6	59	14.2	B	2.3	A		
	Thru	1,120	2	94	1.2	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
81	80	-1
0	0	0
78	77	-1
0	1	1
0	0	0
1	0	-1
0	0	0
442	429	-13
83	82	-1
103	102	-1
1,134	1,120	-14
1	0	-1

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	61	0	5	3.4	A	2.8	A	4.4	A
	Thru	67	0	5	2.3	A				
	Right	1	0	0	0.6	A				
Southbound	Left	0	-	-	-	A	5.0	A		
	Thru	161	0	18	5.0	A				
	Right	84	0	18	4.9	A				
Eastbound	Left	65	0	40	6.3	A	5.5	A		
	Thru	44	0	41	5.8	A				
	Right	78	0	39	4.8	A				
Westbound	Left	15	0	24	4.7	A	3.8	A		
	Thru	195	0	25	3.8	A				
	Right	13	0	1	2.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
58	61	3
63	67	4
1	1	0
0	0	0
169	161	-8
80	84	4
68	65	-3
46	44	-2
78	78	0
15	15	0
210	195	-15
13	13	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	23	5	68	34.2	C	19.0	B	22.5	C
	Thru	72	6	67	19.3	B				
	Right	29	1	51	6.2	A				
Southbound	Left	8	1	21	31.1	C	24.3	C		
	Thru	167	21	129	28.1	C				
	Right	79	29	146	15.7	B				
Eastbound	Left	30	4	52	29.7	C	18.0	B		
	Thru	4	0	11	33.4	C				
	Right	64	3	51	11.5	B				
Westbound	Left	161	16	101	26.5	C	24.5	C		
	Thru	31	6	66	21.2	C				
	Right	28	6	65	16.8	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
21	23	2
70	72	2
29	29	0
7	8	1
177	167	-10
86	79	-7
28	30	2
3	4	1
64	64	0
161	161	0
32	31	-1
30	28	-2

**2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)**



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	159	63	227	67.3	E	52.1	D	29.5	C
	Thru	14	7	78	54.3	D				
	Right	64	9	91	13.7	B				
Southbound	Left	248	58	188	71.3	E	37.4	D		
	Thru	4	1	14	62.6	E				
	Right	418	23	224	17.1	B				
Eastbound	Left	233	79	282	74.8	E	28.4	C		
	Thru	541	16	180	9.6	A				
	Right	30	20	198	8.6	A				
Westbound	Left	65	29	128	86.1	F	26.8	C		
	Thru	1,503	119	588	24.7	C				
	Right	62	90	525	14.5	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
159	159	0
15	14	-1
63	64	1
252	248	-4
4	4	0
428	418	-10
232	233	1
560	541	-19
32	30	-2
67	65	-2
1,552	1,503	-49
66	62	-4

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	18	10	96	27.0	D	14.5	B	2.1	A
	Right	146	14	112	13.0	B				
Eastbound	Left	53	2	51	9.8	A	1.8	A		
	Thru	452	0	0	0.9	A				
Westbound	Thru	1,076	0	0	0.4	A	0.4	A		
	Right	11	0	0	0.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
18	18	0
146	146	0
55	53	-2
464	452	-12
1,091	1,076	-15
10	11	1

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	299	39	231	27.2	C	22.1	C	12.3	B
	Right	121	0	59	9.6	A				
Eastbound	Thru	435	13	131	9.6	A	9.4	A		
	Right	34	4	87	6.8	A				
Westbound	Left	50	8	64	29.9	C	9.1	A		
	Thru	787	14	133	7.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
310	299	-11
122	121	-1
445	435	-10
37	34	-3
59	50	-9
791	787	-4

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	76	1	67	12.6	B	9.9	A	11.9	B
	Thru	235	12	99	9.0	A				
Southbound	Thru	156	7	71	17.6	B	14.1	B		
	Right	124	2	52	9.6	A				
Eastbound	Left	33	2	57	14.0	B	12.7	B		
	Right	10	0	22	8.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
82	76	-6
239	235	-4
162	156	-6
131	124	-7
38	33	-5
13	10	-3

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	13	0	1	1.4	A	0.7	A	9.2	A
	Thru	89	0	12	0.6	A				
	Right	14	0	12	0.8	A				
Southbound	Left	30	0	2	1.2	A	0.6	A		
	Thru	124	0	11	0.5	A				
	Right	12	0	10	0.7	A				
Eastbound	Left	33	13	119	15.5	C	12.0	B		
	Thru	1	13	131	15.6	C				
	Right	248	13	115	11.5	B				
Westbound	Left	230	20	136	17.1	C	13.1	B		
	Thru	0	-	-	-	A				
	Right	190	6	81	8.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
14	13	-1
93	89	-4
12	14	2
34	30	-4
130	124	-6
12	12	0
33	33	0
1	1	0
249	248	-1
227	230	3
0	0	0
195	190	-5

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.2	A	2.7	A
	Thru	46	0	0	0.2	A				
	Right	8	0	0	0.4	A				
Southbound	Left	12	0	2	1.0	A	0.3	A		
	Thru	588	0	0	0.3	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	108	10	97	13.0	B	11.6	B		
	Thru	0	-	-	-	A				
	Right	70	12	110	9.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
50	46	-4
7	8	1
12	12	0
594	588	-6
0	0	0
1	0	-1
0	0	0
1	0	-1
110	108	-2
0	0	0
70	70	0

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	49	0	0	0.2	A	0.2	A	2.3	A
	Right	6	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	0.9	A		
	Thru	696	0	1	0.9	A				
Eastbound	Left	66	5	66	18.2	C	17.7	C		
	Right	3	4	73	7.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
54	49	-5
7	6	-1
0	0	0
705	696	-9
69	66	-3
3	3	0

30th Ave & E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	294	25	110	21.2	C	12.7	B	9.2	A
	Right	467	16	104	7.3	A				
Eastbound	Left	38	1	34	12.2	B	8.2	A		
	Thru	864	18	211	8.1	A				
Westbound	Thru	1,011	16	197	7.5	A	7.4	A		
	Right	17	15	192	2.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
302	294	-8
472	467	-5
44	38	-6
880	864	-16
1,028	1,011	-17
15	17	2

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	220	163	385	78.1	F	66.2	F	27.8	D
	Thru	0	-	-	-	A				
	Right	153	165	388	49.1	E				
Southbound	Left	88	42	202	52.5	F	42.1	E		
	Thru	0	-	-	-	A				
	Right	75	41	203	30.0	D				
Eastbound	Left	11	38	219	31.4	D	23.3	C		
	Thru	572	39	222	23.5	C				
	Right	23	40	223	14.9	B				
Westbound	U-turn	245	14	181	17.4	C	6.8	A		
	Left	83	14	181	11.3	B				
	Thru	464	14	181	6.9	A				
	Right	16	14	180	5.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
226	220	-6
0	0	0
161	153	-8
90	88	-2
0	0	0
77	75	-2
12	11	-1
591	572	-19
23	23	0
251	245	-6
83	83	0
466	464	-2
16	16	0

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



E Old Shakopee Rd & 31st Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	87	14	99	24.0	C	17.3	B	7.7	A
	Thru	0	-	-	-	A				
	Right	54	2	58	6.5	A				
Southbound	Left	163	23	152	27.0	C	16.6	B		
	Thru	0	-	-	-	A				
	Right	190	5	77	7.8	A				
Eastbound	Left	37	1	23	10.7	B	4.3	A		
	Thru	1,119	9	112	4.1	A				
	Right	2	3	86	2.7	A				
Westbound	Left	0	-	-	-	A	7.1	A		
	Thru	756	13	215	7.2	A				
	Right	38	13	247	4.2	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
89	87	-2
1	0	-1
55	54	-1
165	163	-2
0	0	0
191	190	-1
37	37	0
1,140	1,119	-21
3	2	-1
0	0	0
763	756	-7
38	38	0

American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	203	13	116	14.2	B	14.2	B	15.4	C
Southbound	Right	399	3	85	3.6	A	3.6	A		
Eastbound	Left	58	1	36	8.4	A	18.7	C		
	Thru	940	96	447	19.9	C				
	Right	59	92	436	8.6	A				
Westbound	Left	125	76	245	82.2	F	17.6	C		
	Thru	411	0	0	3.4	A				
	Right	139	0	0	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
203	203	0
402	399	-3
58	58	0
973	940	-33
62	59	-3
127	125	-2
414	411	-3
137	139	2

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	4	1	41	27.4	D	16.6	C	2.1	A
	Thru	0	-	-	-	A				
	Right	4	0	47	5.7	A				
Southbound	Left	92	15	98	28.1	D	11.9	B		
	Thru	0	-	-	-	A				
	Right	159	1	48	2.6	A				
Eastbound	Left	82	1	46	4.2	A	0.6	A		
	Thru	1,239	0	0	0.4	A				
	Right	12	0	0	0.6	A				
Westbound	Left	5	0	14	12.3	B	1.1	A		
	Thru	631	0	0	1.0	A				
	Right	32	0	9	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
5	4	-1
0	0	0
5	4	-1
95	92	-3
0	0	0
157	159	2
85	82	-3
1,263	1,239	-24
13	12	-1
5	5	0
638	631	-7
30	32	2

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	572	320	852	72.2	E	49.0	D	56.4	E
	Thru	202	319	851	75.3	E				
	Right	2,074	393	941	40.1	D				
Southbound	Left	1,142	1,132	1,726	140.8	F	67.7	E		
	Thru	84	1,115	1,714	99.7	F				
	Right	1,640	0	0	15.3	B				
Eastbound	Left	1,312	86	387	61.4	E	54.1	D		
	Right	520	42	202	35.7	D				
Westbound	Left	1,026	64	287	64.7	E	52.0	D		
	Right	686	84	334	33.0	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
598	572	-26
215	202	-13
2,158	2,074	-84
1,244	1,142	-102
88	84	-4
1,732	1,640	-92
1,347	1,312	-35
513	520	7
1,034	1,026	-8
699	686	-13

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (PM Peak Hour)



34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	81	40	173	84.7	F	54.4	D	55.4	E
	Thru	1,204	140	473	54.3	D				
	Right	88	0	10	27.2	C				
Southbound	Left	320	91	289	83.9	F	47.1	D		
	Thru	591	128	484	62.8	E				
	Right	525	2	80	7.0	A				
Eastbound	Left	1,059	224	498	76.3	E	74.8	E		
	Thru	55	225	498	61.5	E				
	Right	12	3	31	1.8	A				
Westbound	Left	139	45	141	80.9	F	44.7	D		
	Thru	71	46	315	70.8	E				
	Right	586	74	367	33.0	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
82	81	-1
1,241	1,204	-37
88	88	0
327	320	-7
589	591	2
524	525	1
1,107	1,059	-48
57	55	-2
11	12	1
142	139	-3
72	71	-1
594	586	-8

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	1,347	16	169	7.5	A	7.5	A	9.0	A
	Right	14	11	155	5.9	A				
Southbound	Left	28	4	59	25.8	C	9.8	A		
	Thru	602	13	192	9.1	A				
Westbound	Left	68	11	86	32.5	C	24.3	C		
	Right	31	1	59	6.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
1,382	1,347	-35
15	14	-1
29	28	-1
606	602	-4
68	68	0
30	31	1

Note: Results are the average of ten (10) simulation runs

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



American Blvd & IKEA Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	57	8	72	24.4	C	13.0	B	1.5	A
	Right	53	0	8	0.7	A				
Eastbound	Thru	629	0	0	0.5	A	0.5	A		
	Right	56	0	0	0.8	A				
Westbound	Left	19	0	24	6.1	A	0.6	A		
	Thru	568	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
61	57	-4
52	53	1
634	629	-5
55	56	1
17	19	2
582	568	-14

SB 77 & NB 77 Merge at Killebrew Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Eastbound	Thru	783	0	0	0.7	A	1.1	A	1.1	A
	-	548	0	0	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
791	783	-8
548	548	0

E 86th St & E Service Rd

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	0	-	-	-	A	7.0	A	1.9	A
	Right	20	1	71	7.0	A				
Eastbound	Left	30	0	22	4.2	A	1.1	A		
	Thru	203	0	0	0.7	A				
Westbound	Thru	205	0	0	2.4	A	2.3	A		
	Right	11	0	0	2.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
21	20	-1
31	30	-1
204	203	-1
211	205	-6
13	11	-2

E Old Shakopee Rd & TH 77 S Ramps

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	493	0	0	0.2	A	0.2	A	2.1	A
	Thru	554	0	18	0.5	A				
Southbound	Right	420	0	19	2.1	A	1.2	A		
	Left	69	4	58	18.3	C				
Eastbound	Right	288	0	4	4.8	A	7.4	A		
	Left	69	4	58	18.3	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
495	493	-2
559	554	-5
438	420	-18
70	69	-1
290	288	-2

American Blvd & Thunderbird Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	170	89	420	55.7	E	29.5	C	35.2	D
	Thru	289	84	418	43.1	D				
	Right	349	2	58	5.6	A				
Southbound	Left	64	15	69	55.9	E	42.3	D		
	Thru	254	42	188	42.0	D				
	Right	38	47	196	21.8	C				
Eastbound	Left	243	51	166	57.0	E	35.0	D		
	Thru	237	28	127	37.6	D				
	Right	203	1	59	5.7	A				
Westbound	Left	693	98	351	44.5	D	37.3	D		
	Thru	380	25	117	24.9	C				
	Right	14	23	119	18.7	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
169	170	1
285	289	4
359	349	-10
65	64	-1
254	254	0
38	38	0
244	243	-1
245	237	-8
197	203	6
716	693	-23
392	380	-12
15	14	-1

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



Lindau Ln & IKEA Way

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	355	140	385	67.6	E	48.0	D	40.4	D
	Thru	106	20	126	36.7	D				
	Right	162	8	90	12.6	B				
Southbound	Left	115	18	103	40.0	D	51.9	D		
	Thru	186	51	237	54.5	D				
	Right	763	166	540	53.0	D				
Eastbound	Left	484	83	237	53.4	D	32.4	C		
	Thru	1,180	89	332	31.3	C				
	Right	537	118	372	15.9	B				
Westbound	Left	154	27	106	47.9	D	40.8	D		
	Thru	1,156	204	531	42.2	D				
	Right	79	2	62	6.3	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
360	355	-5
110	106	-4
158	162	4
113	115	2
187	186	-1
776	763	-13
471	484	13
1,202	1,180	-22
549	537	-12
154	154	0
1,193	1,156	-37
83	79	-4

Killebrew Dr & 20th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	94	19	149	39.4	D	25.1	C	20.2	C
	Right	1,093	128	604	23.9	C				
Eastbound	Left	565	59	219	27.1	C	15.9	B		
	Thru	760	59	219	7.5	A				
Westbound	Thru	1,169	69	299	22.8	C	20.1	C		
	Right	168	0	0	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
93	94	1
1,101	1,093	-8
577	565	-12
762	760	-2
1,199	1,169	-30
171	168	-3

E Old Shakopee Rd & TH 77 N Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	250	10	112	12.2	B	8.3	A	12.9	B
	Thru	305	4	64	5.1	A				
	Right	6	4	63	5.1	A				
Southbound	Left	3	0	5	9.0	A	12.7	B		
	Thru	702	27	243	13.6	B				
	Right	56	0	0	0.9	A				
Eastbound	Left	458	36	173	25.0	C	16.8	B		
	Thru	0	-	-	-	A				
	Right	277	1	56	3.1	A				
Westbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
253	250	-3
307	305	-2
5	6	1
3	3	0
722	702	-20
58	56	-2
467	458	-9
0	0	0
274	277	3
1	0	-1
1	0	-1
1	0	-1

Lindau Ln & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	233	45	169	53.2	D	36.2	D	25.8	C
	Thru	50	10	74	38.7	D				
	Right	141	5	89	7.2	A				
Southbound	Left	248	40	235	30.6	C	33.9	C		
	Thru	46	9	69	38.1	D				
	Right	559	71	314	35.0	C				
Eastbound	Left	398	36	184	27.0	C	13.2	B		
	Thru	578	13	116	7.9	A				
	Right	479	9	142	8.2	A				
Westbound	Left	255	42	148	50.9	D	31.9	C		
	Thru	607	43	167	34.0	C				
	Right	296	14	154	11.3	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
236	233	-3
50	50	0
143	141	-2
244	248	4
43	46	3
572	559	-13
395	398	3
583	578	-5
495	479	-16
262	255	-7
621	607	-14
314	296	-18

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



Killebrew Dr & 22nd Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	123	21	96	34.4	C	21.3	C	19.0	B
	Thru	4	21	96	31.7	C				
	Right	82	0	6	1.2	A				
Southbound	Left	230	61	275	43.9	D	20.0	B		
	Thru	6	60	274	35.6	D				
	Right	609	36	298	10.8	B				
Eastbound	Left	275	32	132	33.7	C	15.0	B		
	Thru	436	10	115	7.5	A				
	Right	141	0	18	1.4	A				
Westbound	Left	49	14	82	54.2	D	21.8	C		
	Thru	619	35	210	21.8	C				
	Right	89	1	40	3.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
122	123	1
4	4	0
84	82	-2
229	230	1
6	6	0
615	609	-6
274	275	1
444	436	-8
137	141	4
51	49	-2
633	619	-14
90	89	-1

24th Ave & I-494 Ramps

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	802	160	497	32.3	C	19.9	B	48.1	D
	Thru	146	34	209	40.4	D				
	Right	909	12	189	5.6	A				
Southbound	Left	76	27	123	62.9	E	58.5	E		
	Thru	98	35	114	79.1	E				
	Right	41	0	0	0.9	A				
Eastbound	Left	23	4	43	71.5	E	93.8	F		
	Right	916	531	1,131	94.4	F				
Westbound	Left	1,695	293	728	53.8	D	52.2	D		
	Right	74	0	0	13.8	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
823	802	-21
145	146	1
930	909	-21
78	76	-2
98	98	0
41	41	0
20	23	3
947	916	-31
1,705	1,695	-10
78	74	-4

24th Ave & 79th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	93	53	162	93.5	F	8.3	A	16.5	B
	Thru	1,609	10	183	3.4	A				
Southbound	Thru	2,121	96	530	17.0	B	16.2	B		
	Right	576	2	89	13.1	B				
Eastbound	Left	244	66	215	64.8	E	55.6	E		
	Right	129	30	159	38.4	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
94	93	-1
1,651	1,609	-42
2,143	2,121	-22
599	576	-23
246	244	-2
129	129	0

American Blvd & 24th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	212	70	187	90.2	F	22.8	C	29.5	C
	Thru	1,269	33	273	13.4	B				
	Right	110	0	14	2.1	A				
Southbound	Left	166	44	164	67.1	E	25.4	C		
	Thru	1,418	126	485	28.8	C				
	Right	654	2	125	7.4	A				
Eastbound	Left	319	89	255	70.9	E	48.1	D		
	Thru	136	30	113	58.0	E				
	Right	191	0	23	2.9	A				
Westbound	Left	121	38	139	68.3	E	50.6	D		
	Thru	136	36	139	51.7	D				
	Right	115	43	148	30.6	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
224	212	-12
1,300	1,269	-31
109	110	1
166	166	0
1,435	1,418	-17
670	654	-16
333	319	-14
141	136	-5
195	191	-4
122	121	-1
129	136	7
113	115	2

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



24th Ave & Lindau Ln

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	281	80	286	76.0	E	30.9	C	30.3	C
	Thru	949	48	297	18.3	B				
	Right	25	0	2	1.3	A				
Southbound	Left	90	24	146	47.6	D	18.9	B		
	Thru	887	72	450	22.6	C				
	Right	760	1	103	11.1	B				
Eastbound	Left	556	114	412	60.0	E	45.9	D		
	Thru	183	47	242	43.8	D				
	Right	230	14	134	13.5	B				
Westbound	Left	13	5	34	75.1	E	47.2	D		
	Thru	124	50	187	72.3	E				
	Right	94	5	87	10.2	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
289	281	-8
992	949	-43
26	25	-1
87	90	3
886	887	1
779	760	-19
556	556	0
184	183	-1
231	230	-1
17	13	-4
131	124	-7
85	94	9

24th Ave & 82nd St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	130	38	124	72.2	E	34.0	C	26.6	C
	Thru	642	48	289	27.4	C				
	Right	26	0	5	6.4	A				
Southbound	Left	196	31	151	40.3	D	11.4	B		
	Thru	469	9	70	6.7	A				
	Right	463	1	78	3.9	A				
Eastbound	Left	409	121	422	62.6	E	52.1	D		
	Thru	4	5	78	65.1	E				
	Right	139	8	86	20.9	C				
Westbound	Left	29	14	76	82.3	F	14.4	B		
	Thru	5	2	23	83.3	F				
	Right	212	0	30	3.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
137	130	-7
672	642	-30
26	26	0
193	196	3
473	469	-4
468	463	-5
418	409	-9
4	4	0
135	139	4
30	29	-1
5	5	0
220	212	-8

24th Ave & Transit Station

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	603	4	160	3.9	A	3.9	A	7.0	A
	Right	86	1	43	3.7	A				
Southbound	Thru	626	6	152	5.0	A	5.0	A		
Eastbound	Left	8	2	47	47.9	D	40.5	D		
	Right	67	15	90	39.6	D				
Westbound	Right	204	17	131	11.1	B	11.1	B		

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
616	603	-13
87	86	-1
621	626	5
11	8	-3
68	67	-1
207	204	-3

24th Ave & Killebrew Dr/E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	93	37	139	90.3	F	46.6	D	42.6	D
	Thru	367	129	641	71.5	E				
	Right	458	0	40	17.8	B				
Southbound	Left	42	10	53	52.5	D	25.7	C		
	Thru	288	50	288	35.8	D				
	Right	359	31	299	14.4	B				
Eastbound	Left	285	99	337	102.0	F	56.5	E		
	Thru	351	43	178	36.5	D				
	Right	107	0	8	1.0	A				
Westbound	Left	504	77	302	46.9	D	39.9	D		
	Thru	355	29	139	29.5	C				
	Right	38	8	56	43.0	D				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
95	93	-2
371	367	-4
471	458	-13
42	42	0
292	288	-4
356	359	3
295	285	-10
354	351	-3
108	107	-1
526	504	-22
370	355	-15
37	38	1

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 86th St

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	28	8	122	15.2	B	6.0	A	7.7	A
	Thru	714	8	122	5.6	A				
	Right	5	14	146	4.6	A				
Southbound	Left	5	10	196	9.3	A	7.1	A		
	Thru	724	10	190	6.5	A				
	Right	194	16	220	9.4	A				
Eastbound	Left	139	12	119	20.2	C	17.4	B		
	Thru	0	-	-	-	A				
	Right	40	14	144	7.6	A				
Westbound	Left	7	1	25	15.4	B	9.3	A		
	Thru	4	1	24	14.0	B				
	Right	9	0	12	2.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
31	28	-3
724	714	-10
5	5	0
6	5	-1
746	724	-22
199	194	-5
142	139	-3
0	0	0
41	40	-1
7	7	0
5	4	-1
9	9	0

American Blvd & 28th Ave/Airport Access

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	37	0	4	0.7	A	6.5	A	5.5	A
	Thru	0	-	-	-	A				
	Right	152	0	4	7.9	A				
Southbound	Left	1	1	1	1.0	A	1.0	A		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	5.1	A		
	Thru	262	3	78	5.8	A				
	Right	85	0	20	2.9	A				
Westbound	Left	114	7	59	14.8	B	5.4	A		
	Thru	295	1	43	1.8	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
35	37	2
0	0	0
143	152	9
0	1	1
0	0	0
0	0	0
0	0	0
265	262	-3
87	85	-2
114	114	0
291	295	4
0	0	0

Lindau Ln & 28th Ave

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	55	0	10	3.4	A	2.6	A	3.4	A
	Thru	154	0	10	2.3	A				
	Right	4	0	11	1.8	A				
Southbound	Left	0	-	-	-	A	2.1	A		
	Thru	142	0	5	2.2	A				
	Right	51	0	5	2.0	A				
Eastbound	Left	44	0	30	7.4	A	6.5	A		
	Thru	40	0	30	6.9	A				
	Right	67	0	30	5.6	A				
Westbound	Left	0	-	-	-	A	2.5	A		
	Thru	24	0	0	2.6	A				
	Right	2	0	0	1.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
51	55	4
142	154	12
2	4	2
0	0	0
148	142	-6
48	51	3
44	44	0
39	40	1
67	67	0
1	0	-1
34	24	-10
2	2	0

82nd St & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	8	2	46	28.7	C	13.5	B	15.4	B
	Thru	123	6	67	14.4	B				
	Right	26	0	49	4.4	A				
Southbound	Left	6	1	18	23.5	C	12.5	B		
	Thru	109	9	90	15.3	B				
	Right	93	13	107	8.6	A				
Eastbound	Left	87	9	121	22.5	C	21.3	C		
	Thru	7	0	22	16.4	B				
	Right	4	0	1	3.3	A				
Westbound	Left	25	3	41	26.3	C	25.2	C		
	Thru	5	1	22	26.6	C				
	Right	5	1	23	18.2	B				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
7	8	1
115	123	8
25	26	1
6	6	0
114	109	-5
101	93	-8
87	87	0
7	7	0
3	4	1
27	25	-2
5	5	0
5	5	0

**2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)**



E Old Shakopee Rd & 28th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	176	28	180	28.7	C	21.4	C	16.7	B
	Thru	13	2	55	17.0	B				
	Right	83	4	68	6.7	A				
Southbound	Left	119	9	73	24.6	C	14.0	B		
	Thru	15	1	25	20.9	C				
	Right	205	0	27	7.4	A				
Eastbound	Left	204	22	122	26.8	C	16.6	B		
	Thru	460	24	215	13.7	B				
	Right	179	31	233	12.2	B				
Westbound	Left	79	13	106	34.2	C	18.7	B		
	Thru	399	21	183	16.6	B				
	Right	42	5	122	8.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
177	176	-1
15	13	-2
81	83	2
122	119	-3
14	15	1
215	205	-10
205	204	-1
477	460	-17
184	179	-5
86	79	-7
415	399	-16
41	42	1

American Blvd & Metro Drive W

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	4	1	42	12.8	B	7.3	A	0.6	A
	Right	20	1	58	6.2	A				
Eastbound	Left	23	0	25	2.9	A	0.7	A		
	Thru	390	0	0	0.5	A				
Westbound	Thru	391	0	0	0.2	A	0.2	A		
	Right	7	0	0	0.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
4	4	0
20	20	0
22	23	1
385	390	5
384	391	7
7	7	0

American Blvd & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	33	3	50	20.1	C	11.6	B	4.0	A
	Right	48	0	45	5.8	A				
Eastbound	Thru	362	3	70	3.4	A	3.2	A		
	Right	32	0	24	2.0	A				
Westbound	Left	51	3	51	13.5	B	3.2	A		
	Thru	366	1	47	1.7	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
35	33	-2
49	48	-1
356	362	6
33	32	-1
62	51	-11
357	366	9

Lindau Ln & 30th Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	12	0	5	7.7	A	7.9	A	8.4	A
	Thru	64	4	56	8.0	A				
Southbound	Thru	61	2	41	8.7	A	7.5	A		
	Right	16	0	28	2.8	A				
Eastbound	Left	36	2	52	11.1	B	10.5	B		
	Right	10	0	22	8.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
13	12	-1
62	64	2
66	61	-5
23	16	-7
41	36	-5
11	10	-1

30th Ave & North HP Driveway/METRO Park-n-Ride

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	7	0	0	1.0	A	0.4	A	3.1	A
	Thru	30	0	4	0.3	A				
	Right	14	0	4	0.6	A				
Southbound	Left	30	0	1	0.9	A	0.7	A		
	Thru	19	0	6	0.5	A				
	Right	21	0	6	0.7	A				
Eastbound	Left	11	1	51	8.0	A	6.9	A		
	Thru	0	-	-	-	A				
	Right	27	1	50	6.4	A				
Westbound	Left	11	1	44	8.3	A	6.5	A		
	Thru	0	-	-	-	A				
	Right	33	1	40	5.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
8	7	-1
28	30	2
13	14	1
34	30	-4
22	19	-3
22	21	-1
13	11	-2
0	0	0
27	27	0
12	11	-1
0	0	0
34	33	-1

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



30th Ave & Central HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	0.1	A	1.0	A
	Thru	38	0	0	0.1	A				
	Right	9	0	0	0.4	A				
Southbound	Left	8	0	1	0.8	A	0.2	A		
	Thru	49	0	0	0.1	A				
	Right	0	-	-	-	A				
Eastbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Westbound	Left	5	1	44	7.8	A	6.5	A		
	Thru	0	-	-	-	A				
	Right	11	1	58	5.8	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
38	38	0
7	9	2
10	8	-2
53	49	-4
0	0	0
0	0	0
0	0	0
0	0	0
5	5	0
0	0	0
11	11	0

30th Ave & South HP Driveway

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	47	0	0	0.1	A	0.2	A	0.5	A
	Right	6	0	0	0.4	A				
Southbound	Left	0	-	-	-	A	0.1	A		
	Thru	54	0	0	0.1	A				
Eastbound	Left	4	0	35	9.7	A	9.7	A		
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
45	47	2
7	6	-1
0	0	0
58	54	-4
6	4	-2
0	0	0

30th Ave & E Old Shakopee Rd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Southbound	Left	12	2	26	28.3	C	10.8	B	2.9	A
	Right	45	2	61	6.1	A				
Eastbound	Left	49	0	18	4.2	A	2.2	A		
	Thru	589	2	88	2.1	A				
Westbound	Thru	467	2	82	2.8	A	2.7	A		
	Right	5	2	80	1.1	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
14	12	-2
51	45	-6
48	49	1
609	589	-20
476	467	-9
4	5	1

American Blvd & Metro Drive E

(Roundabout)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	69	1	54	7.4	A	5.3	A	5.2	A
	Thru	0	-	-	-	A				
	Right	62	1	53	2.9	A				
Southbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!		
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Eastbound	Left	4	5	90	9.8	A	6.5	A		
	Thru	378	5	91	6.7	A				
	Right	26	5	91	4.3	A				
Westbound	U-turn	261	2	89	6.0	A	3.1	A		
	Left	90	2	89	4.7	A				
	Thru	346	2	89	3.1	A				
	Right	0	-	-	-	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
69	69	0
0	0	0
63	62	-1
0	0	0
0	0	0
2	0	-2
3	4	1
377	378	1
25	26	1
264	261	-3
90	90	0
346	346	0
0	0	0

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



E Old Shakopee Rd & 31st Ave

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	2.2	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	19	3	36	29.5	C	16.3	B		
	Thru	0	-	-	-	A				
	Right	25	1	45	6.3	A				
Eastbound	Left	31	0	12	4.5	A	1.5	A		
	Thru	570	1	59	1.3	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	1.9	A		
	Thru	448	2	79	1.9	A				
	Right	18	2	97	1.4	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
2	0	-2
0	0	0
0	0	0
19	19	0
0	0	0
26	25	-1
31	31	0
591	570	-21
1	0	-1
0	0	0
451	448	-3
18	18	0

American Blvd & International Dr

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Right	162	7	93	7.6	A	7.6	A	2.4	A
Southbound	Right	309	1	51	2.3	A	2.3	A		
Eastbound	Left	51	1	35	4.3	A	1.6	A		
	Thru	604	0	1	1.4	A				
	Right	45	0	1	0.8	A				
Westbound	Left	90	3	65	7.8	A	1.8	A		
	Thru	390	0	0	0.7	A				
	Right	98	0	0	0.9	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
164	162	-2
310	309	-1
49	51	2
608	604	-4
46	45	-1
92	90	-2
389	390	1
98	98	0

E Old Shakopee Rd & 33rd Ave/Ceridian Access

(Unsignalized)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	0	-	-	-	A	#DIV/0!	#DIV/0!	1.4	A
	Thru	0	-	-	-	A				
	Right	0	-	-	-	A				
Southbound	Left	59	5	63	15.2	C	7.9	A		
	Thru	0	-	-	-	A				
	Right	64	0	21	1.2	A				
Eastbound	Left	67	1	30	2.8	A	0.4	A		
	Thru	521	0	0	0.1	A				
	Right	0	-	-	-	A				
Westbound	Left	0	-	-	-	A	0.8	A		
	Thru	400	0	0	0.7	A				
	Right	17	0	4	1.5	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
0	0	0
0	0	0
0	0	0
58	59	1
0	0	0
67	64	-3
71	67	-4
538	521	-17
0	0	0
0	0	0
402	400	-2
18	17	-1

34th Ave & I-494

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	448	160	510	61.7	E	34.8	C	28.2	C
	Thru	54	162	511	54.9	D				
	Right	864	109	517	19.5	B				
Southbound	Left	694	122	391	55.2	E	22.7	C		
	Thru	101	122	390	47.9	D				
	Right	1,204	0	0	1.9	A				
Eastbound	Left	1,153	31	208	28.7	C	28.0	C		
	Right	506	35	154	26.5	C				
Westbound	Left	774	21	169	31.9	C	30.1	C		
	Right	480	45	209	27.1	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
468	448	-20
56	54	-2
882	864	-18
702	694	-8
103	101	-2
1,206	1,204	-2
1,172	1,153	-19
500	506	6
778	774	-4
486	480	-6

2040 VISSIM Model: Improvements
South Loop Traffic Study
Arterial MOEs (SAT Peak Hour-After Event)



34th Ave & American Blvd

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Left	79	22	130	47.9	D	29.6	C	38.2	D
	Thru	413	37	157	31.6	C				
	Right	82	0	35	2.1	A				
Southbound	Left	291	58	199	57.0	E	37.1	D		
	Thru	438	88	334	58.1	E				
	Right	460	0	54	4.5	A				
Eastbound	Left	729	88	292	49.9	D	49.2	D		
	Thru	35	88	293	39.6	D				
	Right	4	0	1	0.7	A				
Westbound	Left	71	15	72	46.9	D	31.8	C		
	Thru	39	11	83	53.9	D				
	Right	216	20	119	22.8	C				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
81	79	-2
436	413	-23
85	82	-3
296	291	-5
438	438	0
461	460	-1
737	729	-8
33	35	2
4	4	0
72	71	-1
37	39	2
217	216	-1

34th Ave & Appletree Square

(Signal)

Approach	Movement	Volume (vph)	Average Queue (ft)	Maximum Queue (ft)	Movement Delay (sec/veh)	Movement LOS	Approach Delay (sec/veh)	Approach LOS	Overall Delay (sec/veh)	Overall LOS
Northbound	Thru	575	2	70	2.0	A	2.0	A	3.7	A
	Right	8	1	57	3.0	A				
Southbound	Left	16	1	35	15.0	B	5.6	A		
	Thru	413	6	83	5.3	A				
Westbound	Left	5	1	16	23.5	C	12.1	B		
	Right	8	0	43	5.0	A				

Target Volume (vph)	Simulated Volume (vph)	Difference (vph)
593	575	-18
8	8	0
16	16	0
415	413	-2
5	5	0
9	8	-1

Note: Results are the average of ten (10) simulation runs

Appendix N
Wayfinding Signage

Freeway Sign Change Protocol

1. BPD and MOA work together to determine message request
2. BPD requests sign message change
 - BPD Patrol Supervisor places phone call to Bloomington Police Dispatch
 - BPD Dispatch makes call to MnDOT TMC requesting sign change
3. MnDOT TMC determines if sign change is appropriate
 - If appropriate, MnDOT TMC makes sign change

Additional Notes:

- Signs will reset to Plan 1 at 5:00 P.M. and 10:00 P.M. every day
- Sign changes will not occur more than one change per hour
- For information flow from MnDOT to BPD/MOA, MnDOT should call BPD Dispatch
 - Only for significant events that may impact signage plans



Local Wayfinding Sign Change Protocol

Monday – Friday, Sunday

1. BPD and MOA work together to determine plan request
2. MOA requests sign plan change
 - MOA Traffic Supervisor places phone call to Bloomington Traffic Engineering
3. Bloomington Traffic Engineering determines if sign plan change is appropriate
 - If appropriate, Bloomington Traffic Engineering makes sign change

Saturday, Special Events

1. BPD and MOA work together to determine plan request
2. MOA requests sign plan change
 - MOA Traffic Supervisor places phone call to Bloomington Patrol Supervisor
3. Bloomington Patrol Supervisor determines if sign plan change is appropriate
 - If appropriate, Bloomington Patrol Supervisor makes sign change

Additional Notes:

- Signs will not automatically reset
- Sign changes will not occur more than one change per 15 minutes
- For information flow from MnDOT or Hennepin County to BPD/MOA, MnDOT or Hennepin County should call BPD Dispatch
 - Only for significant events that may impact signage plans



Appendix O
Trip Proportional Share Analysis

Trip Proportional Share

The purpose of the trip allocation/cost share analysis is to allocate future public improvement costs related to full build conditions (year 2025) in the South Loop District (District) to the appropriate existing and future redevelopments/developments. The *South Loop Roadway Infrastructure Improvement Study*, dated January 2018, recommended improvements that are likely to be needed by year 2025 based on the project redevelopment opportunities in the District as well as non-District related traffic increases. The following processes and assumptions were used to conduct the analysis:

Existing Traffic Volumes

Existing traffic volumes within the District were reviewed to estimate the existing trips generated by the parcels within the District as well as traffic generated by areas that are not in the District.

- Existing traffic volumes include turning movement counts collected in March/April 2016.
- Existing properties that are projected to be redeveloped by year 2025 were subtracted from the base traffic volumes so that they were not included as an existing trip.
- Subareas were developed based on access locations, and generally included one or two TAZ's. A comparison between actual trips generated by the parcels within the District and trips generated by the *ITE Trip Generation Manual* was performed for each Subarea. In general, the existing developments generated trips at a lower rate than the ITE average trip rate. Therefore, a reduction factor was applied to the ITE trips for each subarea during the weekday p.m. and Saturday peak hours for both entering and exiting trips. Detailed subarea assignment and trip reduction table assumptions are included in Appendix E.

Year 2025 Volumes

Year 2025 traffic volumes were developed for the key intersections within the District. Year 2025 traffic forecasts include trips generated by development growth to the District, general background growth, travel pattern shifts due to transportation improvements (e.g. the 77th Street connection), and new trips expected to be generated by the Minneapolis-St. Paul (MSP) airport.

- A trip routing/distribution software package (Traffix for Windows) was used to determine the trip allocation percentages by intersection. The Traffix model results provide a detailed breakdown of percent trips at a given intersection based on the trip source (existing trips at an intersection or a particular developments trips passing through the same intersection).
- The base volumes developed were entered into the Traffix model as existing volumes (e.g. existing parcels within the District that are not expected to redevelop or trips that are generated outside of the District, but use the roadways/intersections within the District).

- Traffix was used to distribute the trips generated by future developments/redevelopments within the District. The software provides an output summary of the number of trips from each parcel/subarea to each individual intersection by movement. This information is then used to estimate the percent of trips generated at each intersection on parcel by parcel level.

Year 2025 Recommended Improvements

Based on the year 2025 traffic forecasts, 13 improvements were identified to likely to be needed by year 2025 conditions. With these improvements all study intersections are expected to operate at LOS D or better under year 2025 conditions. Concept and cost estimates were developed for the improvements are summarized in Table 1 below by priority. It should be noted that the cost estimates include construction costs, an assumed engineering/administration cost of 26 percent, a 20 percent contingency, and right-of-way costs. The costs are in year 2017 dollars.

Table 1. Year 2025 Recommended Improvements and Cost Estimates

Priority Number	Intersection	Improvement Cost	Analysis Period Operational Need
1	I-494/24th Avenue	\$509,620	PM/SAT
2	I-494/34th Avenue	\$1,264,029	PM
3	Killebrew Drive/20th Avenue	\$202,412	SAT
4	Signal Timing	\$45,000	N/A
5	Lindau Lane/IKEA Way and Lindau Lane/22nd Avenue	<\$100,000	N/A
6	American Boulevard/International Drive	\$1,632,507	PM
7	24th Avenue (I-494 to East Old Shakopee Road/Killebrew Drive)	\$4,835,921	PM/SAT
8	Killebrew Drive/22nd Avenue	\$96,421	SAT
9	East Old Shakopee Road/28th Avenue	\$1,328,844	PM
10	Killebrew Drive/East Old Shakopee/24th Avenue	\$51,197	PM
11	East Old Shakopee Road/33rd Avenue	\$266,566	N/A
12	American Boulevard/30th Avenue	\$605,496	PM
13	American Boulevard/28th Avenue	\$466,679	PM/SAT
Total Cost		\$10,993,126	

The total improvement costs were allocated for two scenarios, the weekday p.m. (PM) and Saturday (SAT) peak hours. Based on the traffic analysis, the need for the improvement was identified for either the weekday p.m. and/or Saturday peak hours. It should be noted that two concepts were developed for the East Old Shakopee Rd/28th Avenue intersection (traffic signal and roundabout) and the roundabout improvement scenario was assumed since it has the higher cost.

Trip Allocation

The improvement costs were allocated to the parcels based on the percent of trips that entered the intersection or corridor. Costs were identified for the individual parcels within the District or identified to be a non-South Loop related trip. It should be noted that trips were not allocated for three improvements: Priority #4: Signal Timing (standard maintenance; the City typically updates the signal timing every three to five years); Priority #5: Lindau Lane/IKEA Way and Lindau Lane/22nd Avenue (standard maintenance, restriping project that does not require major modifications to the intersections), and East Old Shakopee Road/28th Avenue (pedestrian related; the City of Bloomington will determine the cost share for this improvement prior to construction).

Improvement costs were allocated based on the percent vehicles from each development/redevelopment using the intersection on a parcel by parcel level. Existing volumes were associated with specific developments where applicable and were identified as a City cost when existing volumes could not be associated with an existing development within the District. A summary of the cost share for the TAZs within the South Loop District is provided in Table 2.

Table 2. Year 2025 Recommended Improvements and Cost Estimates

TAZ	Total Cost
471B	\$31,629
471C	\$333,704
471D	\$80,635
471E	\$492,037
471F	\$258,092
472B	\$562,624
472C	\$405,242
472D	\$2,024,403
472E	\$694,578
472F	\$1,740,870
472G	\$524,130
473A	\$414,489
473B	\$2,589,444
473C	\$88,655
City of Bloomington (Non South Loop Trips)	\$752,594
Total	\$10,993,126

Table 3 and Table 4 represent detailed matrices displaying the improvement costs for each parcel based on the improvement needs for the weekday p.m. and Saturday peak hours, respectively. The table notes which parcels are existing developments or future anticipated developments/redevelopments. Table 5 represents a total cost breakdown summary by parcel.

Building	Existing/Development	Proportional Share	Cost	Proportional Share	Cost	Proportional Share	Cost	Proportional Share	Cost	Proportional Share	Cost	Proportional Share	Cost	Proportional Share	Cost	Proportional Share	Cost
	Existing	0.00090	\$ 228.50	0.00000	\$ -	0.00311	\$ 7,526.27	0.00000	\$ -	0.00545	\$ 1,271.22	0.00000	\$ -	0.00545	\$ 1,271.22	0.00000	\$ -
	Development	0.00053	\$ 134.76	0.00000	\$ -	0.00184	\$ 4,438.57	0.00000	\$ -	0.00321	\$ 749.69	0.00000	\$ -	0.00321	\$ 749.69	0.00000	\$ -
	Development	0.00051	\$ 128.90	0.00000	\$ -	0.00176	\$ 4,245.59	0.00000	\$ -	0.00307	\$ 717.10	0.00000	\$ -	0.00307	\$ 717.10	0.00000	\$ -
	Existing	0.00048	\$ 123.04	0.00000	\$ -	0.00131	\$ 3,178.52	0.00000	\$ -	0.00261	\$ 608.45	0.00000	\$ -	0.00261	\$ 608.45	0.00000	\$ -
	Existing	0.00097	\$ 246.07	0.00000	\$ -	0.00263	\$ 6,357.03	0.00000	\$ -	0.00522	\$ 1,218.89	0.00000	\$ -	0.00522	\$ 1,218.89	0.00000	\$ -
	Existing	0.00141	\$ 359.22	0.00000	\$ -	0.00452	\$ 10,929.93	0.00000	\$ -	0.00761	\$ 1,776.45	0.00000	\$ -	0.00761	\$ 1,776.45	0.00000	\$ -
	Existing	0.00023	\$ 59.32	0.00000	\$ -	0.00075	\$ 1,804.94	0.00000	\$ -	0.00126	\$ 293.36	0.00000	\$ -	0.00126	\$ 293.36	0.00000	\$ -
	Existing	0.00053	\$ 135.12	0.00000	\$ -	0.00170	\$ 4,111.26	0.00000	\$ -	0.00286	\$ 668.21	0.00000	\$ -	0.00286	\$ 668.21	0.00000	\$ -
	Existing	0.00000	\$ -	0.00000	\$ -	0.00035	\$ 847.60	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00000	\$ -	0.00000	\$ -	0.00018	\$ 423.80	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00076	\$ 1,722.52	0.00000	\$ -	0.00368	\$ 8,899.84	0.00000	\$ -	0.00651	\$ 1,518.26	0.00000	\$ -	0.00651	\$ 1,518.26	0.00000	\$ -
	Existing	0.00038	\$ 95.70	0.00000	\$ -	0.00020	\$ 494.44	0.00000	\$ -	0.00023	\$ 473.24	0.00000	\$ -	0.00023	\$ 473.24	0.00000	\$ -
	Existing	0.00075	\$ 191.39	0.00000	\$ -	0.00041	\$ 988.87	0.00000	\$ -	0.00046	\$ 946.47	0.00000	\$ -	0.00046	\$ 946.47	0.00000	\$ -
	Existing	0.00113	\$ 287.09	0.00000	\$ -	0.00061	\$ 1,483.31	0.00000	\$ -	0.00068	\$ 1,419.71	0.00000	\$ -	0.00068	\$ 1,419.71	0.00000	\$ -
	Existing	0.00113	\$ 287.09	0.00000	\$ -	0.00061	\$ 1,483.31	0.00000	\$ -	0.00068	\$ 1,419.71	0.00000	\$ -	0.00068	\$ 1,419.71	0.00000	\$ -
	Existing	0.00072	\$ 184.56	0.00000	\$ -	0.00039	\$ 963.55	0.00000	\$ -	0.00478	\$ 1,115.49	0.00000	\$ -	0.00478	\$ 1,115.49	0.00000	\$ -
	Existing	0.00072	\$ 184.56	0.00000	\$ -	0.00039	\$ 963.55	0.00000	\$ -	0.00478	\$ 1,115.49	0.00000	\$ -	0.00478	\$ 1,115.49	0.00000	\$ -
	Existing	0.00072	\$ 184.56	0.00000	\$ -	0.00039	\$ 963.55	0.00000	\$ -	0.00478	\$ 1,115.49	0.00000	\$ -	0.00478	\$ 1,115.49	0.00000	\$ -
	Existing	0.00193	\$ 492.15	0.00000	\$ -	0.00105	\$ 2,542.81	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -
	Existing	0.00193	\$ 492.15	0.00000	\$ -	0.00105	\$ 2,542.81	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -
	Existing	0.00241	\$ 615.19	0.00000	\$ -	0.00131	\$ 3,178.52	0.00000	\$ -	0.01173	\$ 2,738.01	0.00000	\$ -	0.01173	\$ 2,738.01	0.00000	\$ -
	Existing	0.00193	\$ 492.15	0.00000	\$ -	0.00105	\$ 2,542.81	0.00000	\$ -	0.00782	\$ 1,825.34	0.00000	\$ -	0.00782	\$ 1,825.34	0.00000	\$ -
	Existing	0.00145	\$ 369.11	0.00000	\$ -	0.00079	\$ 1,907.11	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -
	Existing	0.00145	\$ 369.11	0.00056	\$ 113.27	0.00158	\$ 3,814.22	0.00078	\$ 75.33	0.00913	\$ 2,129.57	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -
	Development	0.00676	\$ 1,722.52	0.00224	\$ 453.08	0.00684	\$ 16,528.28	0.00313	\$ 301.32	0.03390	\$ 7,909.81	0.00000	\$ -	0.03390	\$ 7,909.81	0.00000	\$ -
	Development	0.01231	\$ 3,137.45	0.00000	\$ -	0.00657	\$ 15,892.58	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Development	0.04080	\$ 10,396.64	0.00000	\$ -	0.09018	\$ 218,046.18	0.00000	\$ -	0.01434	\$ 3,346.46	0.00000	\$ -	0.01434	\$ 3,346.46	0.00000	\$ -
	Development	0.13085	\$ 33,343.08	0.00000	\$ -	0.08061	\$ 194,906.59	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.39112	\$ 99,660.12	0.76021	\$ 153,876.16	0.31076	\$ 751,401.12	0.61250	\$ 59,057.86	0.17210	\$ 40,157.51	0.00000	\$ -	0.17210	\$ 40,157.51	0.00000	\$ -
	Existing	0.02632	\$ 6,705.53	0.00000	\$ -	0.01525	\$ 36,870.78	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.08040	\$ 20,485.69	0.00000	\$ -	0.04706	\$ 113,790.86	0.00000	\$ -	0.04684	\$ 10,952.05	0.00000	\$ -	0.04684	\$ 10,952.05	0.00000	\$ -
	Existing	0.00072	\$ 184.56	0.00084	\$ 169.90	0.00118	\$ 2,860.66	0.00117	\$ 112.99	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00776	\$ 704.08	0.00306	\$ 620.00	0.00468	\$ 11,308.82	0.00428	\$ 412.33	0.01427	\$ 3,330.45	0.00000	\$ -	0.01427	\$ 3,330.45	0.00000	\$ -
	Development	0.00776	\$ 704.08	0.00860	\$ 1,740.77	0.01313	\$ 31,751.70	0.01201	\$ 1,157.69	0.04007	\$ 9,350.87	0.00000	\$ -	0.04007	\$ 9,350.87	0.00000	\$ -
	Development	0.00058	\$ 148.94	0.00065	\$ 131.15	0.00099	\$ 2,392.25	0.00090	\$ 87.22	0.00302	\$ 704.52	0.00000	\$ -	0.00302	\$ 704.52	0.00000	\$ -
	Existing	0.00002	\$ 4.10	0.00004	\$ 7.95	0.00005	\$ 127.14	0.00005	\$ 5.02	0.00009	\$ 20.28	0.00000	\$ -	0.00009	\$ 20.28	0.00000	\$ -
	Existing	0.00023	\$ 57.42	0.00052	\$ 105.72	0.00074	\$ 1,779.97	0.00073	\$ 70.31	0.00122	\$ 283.94	0.00000	\$ -	0.00122	\$ 283.94	0.00000	\$ -
	Existing	0.00097	\$ 246.07	0.00252	\$ 509.71	0.00631	\$ 15,256.88	0.00352	\$ 301.32	0.00261	\$ 608.45	0.00000	\$ -	0.00261	\$ 608.45	0.00000	\$ -
	Existing	0.00048	\$ 123.04	0.00224	\$ 453.08	0.00184	\$ 4,449.92	0.00313	\$ 301.32	0.00261	\$ 608.45	0.00000	\$ -	0.00261	\$ 608.45	0.00000	\$ -
	Existing	0.00072	\$ 184.56	0.00644	\$ 1,302.60	0.00473	\$ 11,442.66	0.00898	\$ 866.28	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.01811	\$ 4,613.89	0.00000	\$ -	0.01091	\$ 26,381.68	0.00000	\$ -	0.01173	\$ 2,738.01	0.00000	\$ -	0.01173	\$ 2,738.01	0.00000	\$ -
	Development	0.00579	\$ 1,476.45	0.00000	\$ -	0.00480	\$ 11,124.81	0.00000	\$ -	0.01173	\$ 2,738.01	0.00000	\$ -	0.01173	\$ 2,738.01	0.00000	\$ -
	Development	0.00869	\$ 2,214.67	0.00000	\$ -	0.00960	\$ 23,203.16	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -
	Development	0.00314	\$ 799.74	0.00000	\$ -	0.00473	\$ 11,442.66	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -	0.00913	\$ 2,129.57	0.00000	\$ -
	Development	0.00993	\$ 2,529.16	0.00000	\$ -	0.01131	\$ 27,335.24	0.00000	\$ -	0.00109	\$ 255.25	0.00000	\$ -	0.00109	\$ 255.25	0.00000	\$ -
	Development	0.01373	\$ 3,499.66	0.00000	\$ -	0.01564	\$ 37,824.34	0.00000	\$ -	0.00151	\$ 353.20	0.00000	\$ -	0.00151	\$ 353.20	0.00000	\$ -
	Existing	0.00447	\$ 1,138.09	0.00083	\$ 167.64	0.00457	\$ 11,054.88	0.00116	\$ 111.49	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00133	\$ 338.35	0.00025	\$ 49.84	0.00136	\$ 3,286.59	0.00034	\$ 33.14	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00024	\$ 61.52	0.00004	\$ 9.06	0.00025	\$ 597.56	0.00006	\$ 6.03	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00000	\$ -	0.01651	\$ 3,341.44	0.00113	\$ 3,178.52	0.02383	\$ 2,297.53	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00665	\$ 165.01	0.00936	\$ 1,894.93	0.00158	\$ 3,814.22	0.01765	\$ 1,701.55	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00107	\$ 271.59	0.01541	\$ 3,118.73	0.00260	\$ 6,277.57	0.02904	\$ 2,800.46	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00084	\$ 213.14	0.01209	\$ 2,447.61	0.00204	\$ 4,926.70	0.02279	\$ 2,197.83	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00061	\$ 154.70	0.00878	\$ 1,776.49	0.00148	\$ 3,575.83	0.01654	\$ 1,595.20	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00051	\$ 130.64	0.00741	\$ 1,500.15	0.00125	\$ 3,049.59	0.01397	\$ 1,347.06	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Existing	0.00092	\$ 233.77	0.01326	\$ 2,684.48	0.00223	\$ 5,403.48	0.02500	\$ 2,410.53	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -	0.00000	\$ -
	Development	0.03215	\$ 8,191.75	0.02383	\$ 4,823.62	0.05356	\$ 129,499.64	0.03327	\$ 3,207.91	0.09986	\$ 23,300.55	0.00000	\$ -	0.09986	\$ 23,300.55	0.00000	\$ -
	Development	0.03855	\$ 9,823.94	0.02858	\$ 5,784.71	0.06423	\$										

Table 5. All Improvements: Cost Share

Parcel ID	TAZ	Building	Existing/Development	PM Costs	SAT Costs	Cost
602723210003	471F	Embassy Suites	Existing	\$ 67,312.04	\$ 9,025.99	\$ 76,338.03
602723210008	471F	Apartment Development	Development	\$ 33,959.23	\$ 5,323.02	\$ 39,282.25
602723210008	471F	Shopping Center Development	Development	\$ 20,011.69	\$ 5,091.58	\$ 25,103.27
602723210011	471F	Park-and-Fly	Existing	\$ 30,469.04	\$ 3,910.00	\$ 34,379.04
602723210013	471F	Hilton Hotels	Existing	\$ 75,169.34	\$ 7,820.00	\$ 82,989.34
602723240006	471E	Crowne Plaza Hotel	Existing	\$ 101,041.86	\$ 13,065.60	\$ 114,107.46
602723240011	471E	Two Appletree	Existing	\$ 77,421.68	\$ 2,157.62	\$ 79,579.31
602723240010	471E	Riverview Office Tower	Existing	\$ 173,870.73	\$ 4,914.59	\$ 178,785.32
602723240012	471E	Wings Financial	Existing	\$ 31,790.26	\$ 847.60	\$ 32,637.86
602723240091 - 602723240147	471E	Appletree Square Condo's	Existing	\$ 8,609.86	\$ 423.80	\$ 9,033.66
602723320003	471D	Office - Ceridian	Existing	\$ 80,635.01	\$ -	\$ 80,635.01
102724110019	472B	Spring Hill & Hampton Hotels	Existing	\$ 65,941.46	\$ 19,140.63	\$ 85,082.09
102724110003	472B	North American Systems - Office	Existing	\$ 7,716.55	\$ 1,063.37	\$ 8,779.92
102724110004	472B	Metro Office	Existing	\$ 16,620.27	\$ 2,126.74	\$ 18,747.01
102724110005	472B	Metro Office	Existing	\$ 23,149.66	\$ 3,190.10	\$ 26,339.77
102724110006	472B	Metro Office	Existing	\$ 23,149.66	\$ 3,190.10	\$ 26,339.77
102724110008	472B	Metro Office	Existing	\$ 37,874.74	\$ 2,253.60	\$ 40,128.34
102724110009	472B	Metro Office	Existing	\$ 37,874.74	\$ 2,253.60	\$ 40,128.34
102724110010	472B	Metro Office	Existing	\$ 37,874.74	\$ 2,253.60	\$ 40,128.34
102724110013	472B	Metro Office	Existing	\$ 133,310.66	\$ 5,164.53	\$ 138,475.18
102724110014	472B	Metro Office	Existing	\$ 133,310.66	\$ 5,164.53	\$ 138,475.18
602723220004	472C	International Plaza	Existing	\$ 306,957.14	\$ 6,531.71	\$ 313,488.86
602723220003	472C	Hyatt Place Hotel	Existing	\$ 53,924.42	\$ 4,860.30	\$ 58,784.72
602723220006	472C	Park-N-Go	Existing	\$ 28,562.80	\$ 4,405.79	\$ 32,968.58
602723230645	472D	Hotel - Hyatt Regency	Existing	\$ 116,303.77	\$ 6,501.49	\$ 122,805.26
602723230638	472D	Apartment Development	Development	\$ 228,911.96	\$ 26,915.01	\$ 255,826.97
102724220002	473A	Marriot Hotel	Existing	\$ 28,169.65	\$ 19,030.03	\$ 47,199.68
102724210005	473A	Bass Pro Study	Development	\$ 135,500.17	\$ 231,789.28	\$ 367,289.45
102724240007	473B	Phase 2B	Development	\$ 156,197.93	\$ 228,249.66	\$ 384,447.59
	473B	Mall Of America	Existing	\$ 791,871.35	\$ 1,104,152.78	\$ 1,896,024.13
102724210002	473B	Phase 1C	Existing	\$ 58,146.66	\$ 43,576.31	\$ 101,722.97
	473B	Ikea	Existing	\$ 62,020.29	\$ 145,228.60	\$ 207,248.89
602723320003	471B	Office	Existing	\$ 5,455.64	\$ 3,328.12	\$ 8,783.76
1202724120031	471B	Industrial	Existing	\$ 22,845.50	\$ -	\$ 22,845.50
602723230630	472D	HP Office	Existing	\$ 614,570.59	\$ 16,375.68	\$ 630,946.26
602723230630	472D	HP Office Development	Development	\$ 513,670.94	\$ 45,977.86	\$ 559,648.80
602723230630	472D	Shopping Center Development	Development	\$ 8,153.51	\$ 3,464.09	\$ 11,617.59
602723230638	472D	Office Building	Existing	\$ 10,028.30	\$ 164.10	\$ 10,192.39
602723230081 - 602723230570	472D	Reflections Residential	Existing	\$ 34,764.76	\$ 2,297.35	\$ 37,062.11
102724140014	472E	28th Station Park-n-Ride	Existing	\$ 337,440.43	\$ 17,568.54	\$ 355,008.97
102724410024	472E	Office - Polar Semiconductors	Existing	\$ 65,249.80	\$ 5,935.80	\$ 71,185.60
102724410024	472E	Warehouse- Polar Semiconductors	Existing	\$ 124,076.68	\$ 13,796.09	\$ 137,872.77
102724130014	472G	Fairfield Inn	Existing	\$ 32,765.17	\$ 33,733.59	\$ 66,498.75
102724130007	472G	Office Development	Development	\$ 92,327.96	\$ 15,339.26	\$ 107,667.22
102724130015	472G	Hotel - TownePlace Suites	Existing	\$ 22,308.69	\$ 25,417.83	\$ 47,726.53
102724130009	472G	Office Development	Development	\$ 88,596.18	\$ 14,371.96	\$ 102,968.14
102724130018 - 102724130021	472G	Hotel Development	Development	\$ 24,348.41	\$ 30,119.65	\$ 54,468.06
102724130018 - 102724130021	472G	Shopping Center Development	Development	\$ 31,550.06	\$ 41,677.19	\$ 73,227.25
102724130011	472G	The Atrium	Existing	\$ 42,118.06	\$ 12,472.10	\$ 54,590.16
102724130012	472G	Alpha Tech - Office	Existing	\$ 12,602.26	\$ 3,707.92	\$ 16,310.18
102724130012	472G	Alpha Tech - Industrial	Existing	\$ -	\$ 674.17	\$ 674.17
102724330002	473C	Best Western	Existing	\$ 16.01	\$ 5,956.82	\$ 5,972.83
102724340067	473C	Homewood Suites	Existing	\$ 2,875.95	\$ 7,575.71	\$ 10,451.65
102724340065	473C	Country Inn and Suites	Existing	\$ 4,618.94	\$ 12,468.35	\$ 17,087.30
102724340064	473C	TGI Fridays	Existing	\$ 3,137.40	\$ 9,785.29	\$ 12,922.68
102724310010	473C	Chevy's	Existing	\$ 2,265.90	\$ 7,102.23	\$ 9,368.12
102724340066	473C	IHOP	Existing	\$ 1,917.30	\$ 5,997.43	\$ 7,914.73
102724330008	473C	BLN Office and Parking	Existing	\$ 14,205.43	\$ 10,732.25	\$ 24,937.69
102724420006	472F	Waterpark Hotel Development	Development	\$ 362,987.77	\$ 169,023.47	\$ 532,011.24
102724420006	472F	Entertainment Theater Development	Development	\$ 202,679.94	\$ 202,701.08	\$ 405,381.02
102724420006	472F	Banquet Space Development	Development	\$ 643,349.92	\$ 160,127.50	\$ 803,477.42
102724430009	471C	Hotel Development	Development	\$ 73,118.43	\$ 41,556.13	\$ 114,674.55
102724430009	471C	Shopping Center Development	Development	\$ 135,404.49	\$ 83,625.29	\$ 219,029.78
602723240014	471E	Shopping Center Development	Development	\$ 25,044.36	\$ 5,059.60	\$ 30,103.96
602723240014	471E	Apartment Development	Development	\$ 42,499.52	\$ 5,289.58	\$ 47,789.10
102724140015	472E	Shopping Center Development	Development	\$ 17,903.95	\$ 14,445.32	\$ 32,349.27
102724140015	472E	Hotel Development	Development	\$ 56,576.49	\$ 41,585.01	\$ 98,161.50
602723230638	472D	Apartment Development	Development	\$ 236,381.04	\$ 30,790.83	\$ 267,171.87
602723230638	472D	Shopping Center Development	Development	\$ 107,445.93	\$ 21,686.01	\$ 129,131.94
		City of Bloomington (Non South Loop Trips)	Existing	\$ 589,201.29	\$ 163,392.25	\$ 752,593.54
Total						\$ 10,993,126.00