To: Sean Walther, Planning & Zoning Supervisor  
City of St. Louis Park

From: Matt Pacyna, PE, Principal  
Emily Gross, PE, Associate

Date: February 8, 2018

Subject: 4400 Excelsior Boulevard Traffic Study

Introduction

SRF has completed a traffic study for the proposed 4400 Excelsior Boulevard development in the City of St. Louis Park (see Figure 1: Project Location). The main objectives of this study are to review existing operations within the study area, evaluate traffic impacts to the adjacent roadway network, and recommend any necessary improvements to accommodate the proposed development. It should be noted that several land use and site configurations have been reviewed for the subject site over the past few years. However, the current proposed plan represents a change in land use type and scale from the previous efforts, which warrants reevaluation. Therefore, the following sections provide the assumptions, analysis, and study conclusions and recommendations offered for consideration.

Study Background

SRF has worked closely with City staff over the past few years to evaluate traffic operations within the general study area. These efforts have reviewed historical traffic volume/land use trends, identified safety concerns and potential improvements at area intersections, evaluated previous development proposals for the subject site, and developed multimodal improvements associated with the City’s Connect the Park vision. Based on the findings of these various efforts, transportation impacts related to the proposed development site have primarily been along the roadways immediately adjacent to the subject site. Although this study reviewed a broader area from a modeling perspective, the reported results focus on the most current evaluation along Monterey Drive, Excelsior Boulevard, Kipling Avenue, and 36-1/2 Street. By simplifying the reported study area, potential transportation impacts related to the proposed development can be more easily defined.

Existing Conditions

The existing conditions were reviewed to establish a baseline in order to identify any future impacts associated with the proposed development. The evaluation of existing conditions includes peak period intersection turning movement counts, field observations, and an intersection capacity analysis.
Intersection Counts

Various data collection efforts have been conducted within the study area since October 2014, which has allowed opportunities for comparison and a better understanding of differences between traffic volumes throughout the time of the year. Most recently, SRF collected 13-hour vehicular turning movement, pedestrian, and bicyclist counts in July 2017 at the following study intersections, which is the basis for this study:

1) Monterey Drive and 36th-1/2 Street
2) Monterey Drive and Park Commons Drive
3) Monterey Drive and Excelsior Boulevard
4) Excelsior Boulevard and Kipling Avenue

In addition, daily traffic volumes were collected on 36th-1/2 Street, east of Monterey Drive and west of Kipling Avenue, to supplement the year 2017 daily traffic volumes collected by the City.

Roadway Characteristics

In addition to the intersection counts, observations were completed to identify roadway characteristics within the study area (i.e. roadway geometry, posted speed limits, and traffic controls). Currently, Excelsior Boulevard is a four-lane divided roadway with a posted speed limit of 35 miles per hour (mph). Monterey Drive, north of Park Commons Drive, is a four-lane undivided roadway, while south of Park Commons Drive, Monterey Drive is a two-lane divided roadway with turn lanes. The posted speed limit along Monterey Drive is 30 mph. The remaining study roadways are relatively low-speed, two-lane undivided local streets.

The Monterey Drive/Excelsior Boulevard intersection is signalized, while the other study intersections are unsignalized with side-street stop control. Full access is currently provided at each of the study intersections. Existing geometrics, traffic controls, and volumes within the study area are shown in Figure 2.

Existing Intersection Capacity Analysis

An existing intersection capacity analysis was completed to establish baseline conditions to which future traffic operations can be compared. The capacity analysis was completed for the a.m. and p.m. peak hours at the study intersections and was analyzed using Synchro/SimTraffic software.

Capacity 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 1. LOS A indicates the best traffic operation, while LOS F indicates an intersection where demand exceeds capacity. Overall intersection LOS A though LOS D is generally considered acceptable in the Twin Cities area.
Table 1. Level of Service Criteria for Signalized and Unsignalized Intersections

<table>
<thead>
<tr>
<th>LOS Designation</th>
<th>Signalized Intersection Average Delay/Vehicle (seconds)</th>
<th>Unsignalized Intersection Average Delay/Vehicle (seconds)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>≤ 10</td>
<td>≤ 10</td>
</tr>
<tr>
<td>B</td>
<td>&gt; 10 - 20</td>
<td>&gt; 10 - 15</td>
</tr>
<tr>
<td>C</td>
<td>&gt; 20 - 35</td>
<td>&gt; 15 - 25</td>
</tr>
<tr>
<td>D</td>
<td>&gt; 35 - 55</td>
<td>&gt; 25 - 35</td>
</tr>
<tr>
<td>E</td>
<td>&gt; 55 - 80</td>
<td>&gt; 35 - 50</td>
</tr>
<tr>
<td>F</td>
<td>&gt; 80</td>
<td>&gt; 50</td>
</tr>
</tbody>
</table>

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 does not have to stop, the majority of delay is attributed to the side-street approaches. It is typical of 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 intersection capacity analysis shown in Table 2 indicate that all study intersections currently operate at an acceptable overall LOS C or better during the a.m. and p.m. peak hours with the existing signal timing and geometric layout. However, access from Park Commons Drive to Monterey Drive is challenging during the p.m. peak period (generally between 4:30 p.m. and 6:00 p.m.), which results in average delays of approximately one-minute for all Park Commons Drive motorists to access Monterey Drive. Although the magnitude of these delays is relatively common, the resulting conflicts are of note.

Table 2. Existing Intersection Capacity Analysis

<table>
<thead>
<tr>
<th>Intersection</th>
<th>A.M. Peak Hour</th>
<th>P.M. Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>Delay</td>
</tr>
<tr>
<td>Monterey Drive and 36th-1/2 Street (1)</td>
<td>A/A</td>
<td>8 sec</td>
</tr>
<tr>
<td>Monterey Drive and Park Commons Drive (1)</td>
<td>A/A</td>
<td>8 sec</td>
</tr>
<tr>
<td>Monterey Drive and Excelsior Boulevard</td>
<td>C</td>
<td>20 sec</td>
</tr>
<tr>
<td>Excelsior Boulevard and Kipling Avenue (1)</td>
<td>A/A</td>
<td>8 sec</td>
</tr>
<tr>
<td>36th-1/2 Street and Kipling Avenue (1)</td>
<td>A/A</td>
<td>3 sec</td>
</tr>
</tbody>
</table>

(1) Indicates an unsignalized intersection with side-street stop control, where the overall LOS is shown followed by the worst approach LOS. The delay shown represents the worst side-street approach delay.
While the study intersections currently operate at acceptable overall levels of service, p.m. peak period queues on Monterey Drive (primarily between Excelsior Boulevard and Park Commons Drive) were observed and resulted in several conflicts between motorists and pedestrians/bicyclists. The following information provides a summary of the observed issues along Monterey Drive.

1) Southbound queues from the Excelsior Boulevard/Monterey Drive intersection were observed to extend beyond the Park Commons Drive intersection approximately 15 percent of the p.m. peak period, which resulted in the following operational and/or safety issues:
   a) Motorists turning into/out of Park Commons Drive were observed to only be able to make these turns when the intersection was blocked and motorists would allow these movements.
   b) The southbound queue from the Excelsior Boulevard/Monterey Drive intersection obstructs the view of oncoming traffic, creating a safety concern.
   c) The delays/congestion at the Monterey Drive/Park Commons Drive intersection led to motorists making aggressive movements and/or not obeying traffic laws.

2) Eastbound right-turn queues at the Monterey Drive/Park Commons Drive intersection extended approximately 300 feet during the p.m. peak hour, impacting the Trader Joe’s driveway 35 percent of the p.m. peak hour.

3) Westbound queues on Park Commons Drive were observed to extend to Monterey Drive, which were a result of eastbound queues blocking access to the Trader Joe’s driveway.
   a) When these queues extended to Monterey Drive, motorists making a southbound right- or northbound left-turn from Monterey Drive had to wait until the queues cleared. In addition, eastbound left-turning motorists along Park Commons Drive were observed turning in-front of northbound left-turning motorists, which is an illegal maneuver.

4) Several north/south pedestrian and/or bicyclist conflicts were observed during the p.m. peak period at the Monterey Drive/Park Commons Drive intersection along the west approach. Two pedestrians were observed crossing Monterey Drive (east/west) during the p.m. peak hour.

**Year 2020 No Build Conditions**

No build traffic forecasts were developed for year 2020 conditions, which accounts for planned roadway improvements, general area background growth, and approved adjacent developments. The following information provides a summary of the year 2020 no build conditions.

**Monterey Drive Three-Lane Roadway Configuration**

The City is currently considering modifications to Monterey Drive (between Beltline Boulevard and Park Commons Drive) to a three-lane facility (i.e. a two-lane roadway with turn lanes) to improve multimodal transportation within the area. Planned multimodal improvements include the addition of on-street bike lanes, sidewalk enhancements, and roadway/traffic control modifications to better accommodate all modes of transportation within the area. Construction is expected to occur in 2019.
Traffic operations on Monterey Drive were evaluated as part of the Draft Monterey Drive Multimodal Corridor Study, dated January 23, 2018, which determined that a three-lane roadway configuration along Monterey Drive is reasonable and not expected to significantly change overall corridor or intersection operations from a vehicular capacity perspective. Therefore, a preliminary layout shown in Figure 3 was developed to illustrate the corridor vision incorporating the various multimodal, traffic control, and access improvements. It should be noted that while both a traffic signal and hybrid roundabout are expected to operate acceptably at the Monterey Drive/Beltline Boulevard intersection, the City currently considers the hybrid roundabout as the preferred design.

City staff also indicated a desire to provide improved access to the Rec Center. The north Rec Center access across from Beltline Boulevard is currently enter only, but could be modified to allow traffic to exit the Rec Center via a reconfigured Beltline Boulevard intersection. Therefore, a new Rec Center access, located opposite of Beltline Boulevard was evaluated as part of the Monterey Drive Multimodal Corridor Study and is shown on the layout.

In addition, a three-lane facility would improve the pedestrian-crossing condition at 36-1/2 Street by reducing the crossing distance and the potential for multiple-threat-collisions (i.e. when a vehicle in one through lane is stopped for a pedestrian and obstructs the vision of a motorist in the adjacent through lane). The effectiveness (i.e. driver compliance) of the current RRFB at the Monterey Drive/36th-1/2 Street intersection would be improved under a three-lane condition. Furthermore, a three-lane configuration has the potential to lower average travel speeds compared to a multi-lane configuration, which improves the multimodal environment.

Therefore, given the City’s desire to improve multimodal operations along Monterey Drive, the three-lane facility along Monterey Drive was assumed to be implemented under year 2020 no build and build conditions for purposes of this study.

Traffic Forecasts

Year 2020 no build traffic forecasts include both general background growth as well as approved adjacent development expected to impact roadway network operations by the year 2020. To account for general background growth in the area, an annual growth rate of one-half percent was applied to the existing peak hour traffic volumes to develop year 2020 background traffic forecasts. This growth rate is generally consistent with historical growth in the study area (based on ADT volumes).

Known adjacent development includes the 4800 Excelsior development, which opened in November 2017. This development was under construction when the traffic data was collected in July 2017. Therefore, trip generation data from the traffic study for the 4800 Excelsior development, completed in November 25, 2014, was incorporated into the 2020 no build traffic forecasts for the study area to account for traffic impacts associated with the adjacent development.

The resultant year 2020 no build conditions which includes the expected roadway configuration and accounts for general background and adjacent development growth, are shown in Figure 4.
Figure 4

LEGEND

XX  - A.M. Peak Hour Volume (7:45 - 8:45 A.M.)
(XX)  - P.M. Peak Hour Volume (4:45 - 5:45 P.M.)
X,XXX  - Estimated Year 2020 Average Daily Traffic (ADT) Volumes
        - Side-Street Stop Control
        - Traffic Signal Control

Year 2020 No Build Conditions
4400 Excelsior Boulevard Traffic Study
City of St. Louis Park, MN

01710857
January 2018
No Build Intersection Capacity Analysis

To determine how the proposed roadway network will accommodate year 2020 no build traffic forecasts, an intersection capacity analysis was completed using Synchro/SimTraffic software. It should be noted that optimized signal timing was utilized for this analysis as a result of the assumed Park Commons Drive access modification, which has the potential to direct more motorists to the Monterey Drive/Excelsior Boulevard intersection. This optimization has a direct influence on traffic operations at the Park Commons Drive approach.

Results of the year 2020 no build intersection capacity analysis shown in Table 3 indicate that all study intersections are expected to operate at an acceptable overall LOS C or better during the a.m. and p.m. peak hours. With the three-lane roadway configuration on Monterey Drive and three-quarter access at the Monterey Drive/Park Commons Drive intersection, the eastbound approach delay during the p.m. peak hour along Park Commons Drive is expected to decrease from approximately one-minute to 30 seconds under year 2020 no build conditions. Delays for motorists along Kipling Avenue to access Excelsior Boulevard are expected to increase as volumes along Excelsior Boulevard increase.

Table 3. Year 2020 No Build Intersection Capacity Analysis

<table>
<thead>
<tr>
<th>Intersection</th>
<th>A.M. Peak Hour</th>
<th>P.M. Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LOS</td>
<td>Delay</td>
</tr>
<tr>
<td>Monterey Drive and 36th-1/2 Street (1)</td>
<td>A/A</td>
<td>9 sec.</td>
</tr>
<tr>
<td>Monterey Drive and Park Commons Drive (1)</td>
<td>A/A</td>
<td>4 sec.</td>
</tr>
<tr>
<td>Monterey Drive and Excelsior Boulevard</td>
<td>C</td>
<td>22 sec.</td>
</tr>
<tr>
<td>Excelsior Boulevard and Kipling Avenue (1)</td>
<td>A/A</td>
<td>9 sec.</td>
</tr>
<tr>
<td>36th-1/2 Street and Kipling Avenue (1)</td>
<td>A/A</td>
<td>4 sec.</td>
</tr>
</tbody>
</table>

(1) Indicates an unsignalized intersection with side-street stop control, where the overall LOS is shown followed by the worst approach LOS. The delay shown represents the worst side-street approach delay.

Eastbound 95th percentile queues at the Monterey Drive/Park Commons Drive intersection are expected to extend approximately 150 feet during the p.m. peak hour (currently extend 315 feet). Southbound 95th percentile queues on Monterey Drive are expected to extend approximately 315 feet from the Park Commons Drive intersection during the p.m. peak hour (currently extend 215 feet). This equates to approximately four to five additional southbound vehicles queued during the peak of the peak hour. The average southbound queues on Monterey Drive are expected to extend approximately 100 feet from the Park Commons Drive intersection during the p.m. peak hour.
Proposed Development

The proposed development is located at 4400 Excelsior Boulevard. The site is currently occupied by commercial buildings, which are vacant except for the existing Bridgewater Bank. The proposed development (shown in Figure 5) consists of 63,129 square feet of office, 7,530 square feet of retail, and 7,152 square-feet of bank. For purposes of this study, 3,500 square feet of the retail space was assumed to be a restaurant use. Construction of the proposed development was assumed to be complete by the end of 2019.

On-site parking is currently proposed on three levels. Based on current discussions, vehicles are not expected to be able to circulate between parking levels P1 and P2. Vehicles are expected to be able to circulate down from the surface parking to parking level P1, but not expected to be able to circulate from P1 to the surface parking. Note that these circulation assumptions are not depicted in the current development proposal.

Several access configurations and internal circulation options are continuing to be reviewed with the project team to determine the access and internal parking configuration that meets tenant needs, as well as minimizes or eliminates impacts to the public roadway system. During the development of the Monterey Drive preliminary layout (Figure 3), further detail was identified with respect to Monterey Drive access for the proposed development. In particular, the preliminary layout identified that to physically design the three-quarter access to the proposed development across from Park Commons Drive (i.e. at Access B), a median would be necessary along Monterey Drive, which would restrict the proposed development Access C to a right-in/right-out configuration. Thus, for purposes of this study, the following access and internal circulation was assumed to evaluate potential impacts of the proposed development.

1) Excelsior Boulevard
   a) Access A: right-in/right-out access serving surface level parking, located approximately 300 feet east of Monterey Drive. This location replaces an existing driveway.

2) Monterey Drive
   a) Access B: three-quarter access (ingress/egress) serving surface-level parking and as an alternative entrance to parking level P1. Access B is located across from Park Commons Drive, approximately 270 feet north of Excelsior Boulevard.
   b) Access C: right-in/right-out-access to parking level P1, located 410 feet north of Excelsior Boulevard.
   c) Access B and Access C are expected to replace an existing site access located along Monterey Drive that is approximately 185 feet north of Excelsior Boulevard.

3) 36th-1/2 Street
   a) Access D: A full-access serving parking level P2, located approximately 190 feet west of Kipling Avenue.
   b) Access D is expected to utilize an existing cross access easement through the property immediately north of the proposed development.
Year 2020 Build Conditions

To help determine impacts associated with the proposed development, traffic forecasts were developed for year 2020 build conditions, which accounts for the no build condition and traffic generated by the proposed development. The following information provides a summary of the year 2020 build conditions.

Trip Generation Estimate – Proposed Development

To account for traffic impacts associated with the proposed development, trip generation estimates for both the former and proposed land uses were developed for the a.m. and p.m. peak hours and a daily basis. These estimates, shown in Table 4, were developed using a combination of the ITE Trip Generation Manual, Ninth Edition and peak period field observations. The trip generation estimates were developed to provide a comparison between the former and proposed land uses.

Table 4. Trip Generation Estimate – Proposed Development

<table>
<thead>
<tr>
<th>Land Use Type</th>
<th>ITE Code</th>
<th>Size</th>
<th>A.M. Peak Hour Trips</th>
<th>P.M. Peak Hour Trips</th>
<th>Daily Trips</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>In</td>
<td>Out</td>
<td>In</td>
</tr>
<tr>
<td>Former Land Uses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail (1)</td>
<td>820 – Shopping Center</td>
<td>9,000 Square Feet</td>
<td>5</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>890 – Furniture Store</td>
<td>9,000 Square Feet</td>
<td>1</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Total Former Site Trips</td>
<td></td>
<td>(6)</td>
<td>(3)</td>
<td>(18)</td>
</tr>
<tr>
<td>Proposed Land Uses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>710 – General Office</td>
<td>63,129 Square Feet</td>
<td>87</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Retail</td>
<td>820 – Shopping Center</td>
<td>4,030 Square Feet</td>
<td>2</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>932 – Restaurant</td>
<td>3,500 Square Feet</td>
<td>21</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Bank</td>
<td>911 – Walk-In Bank</td>
<td>7,152 Square Feet</td>
<td>22</td>
<td>21</td>
<td>38</td>
</tr>
<tr>
<td></td>
<td>Subtotal</td>
<td></td>
<td>132</td>
<td>51</td>
<td>82</td>
</tr>
<tr>
<td></td>
<td>Modal Reduction (10%)</td>
<td>(13)</td>
<td>(5)</td>
<td>(8)</td>
<td>(15)</td>
</tr>
<tr>
<td></td>
<td>Multi-Use Reduction (15%)</td>
<td>(20)</td>
<td>(8)</td>
<td>(12)</td>
<td>(22)</td>
</tr>
<tr>
<td></td>
<td>Total Site Trips</td>
<td></td>
<td>99</td>
<td>38</td>
<td>62</td>
</tr>
<tr>
<td></td>
<td>Pass-By Trip Reduction (Retail and Bank Only)</td>
<td>(11)</td>
<td>(11)</td>
<td>(17)</td>
<td>(17)</td>
</tr>
<tr>
<td></td>
<td>Net New System Trips</td>
<td></td>
<td>88</td>
<td>27</td>
<td>45</td>
</tr>
</tbody>
</table>

(1) Trip generation estimates supported by a.m. and p.m. peak period field observations.

It should be noted that a 10 percent modal reduction, based on the methodology described in the ITE Trip Generation Manual, Ninth Edition, was applied to account for available transit options near the proposed development (i.e. Metro Transit Routes 12, 114, 612, and 615). To account for trips made within the mixed-use development that are captured on-site between two or more land uses, an internal multi-use trip reduction of 15 percent was applied in accordance with the methodology described in the ITE Trip Generation Manual, Ninth Edition.
Accounting for the modal and multi-use reductions, the proposed development is expected to generate approximately 137 a.m. peak hour, 174 p.m. peak hour and 1,380 daily trips. No reductions for the future Southwest Light Rail Transit (SWLRT) Green Line Extension were included since it is not expected to be in operation until the year 2023, at the earliest.

A portion of the proposed development trips are expected to be from vehicles already traveling along Excelsior Boulevard and/or Monterey Drive that will now divert their trip to the proposed development before continuing to their destination (i.e. pass-by trips). To account for these trips, pass-by percentages for each land use from the *ITE Trip Generation Manual, Ninth Edition* were utilized. Considering these pass-by trips, the resultant net new traffic volume impact to the adjacent roadway system is approximately 115 a.m. peak hour, 134 p.m. peak hour, and 1,210 daily trips.

The trips estimated were distributed throughout the area based on the directional distribution shown in Figure 6, which was developed based on existing travel patterns and engineering judgment. The estimated development trips at each proposed site access for the a.m. and p.m. peak hours are shown in Figure 7. The resultant year 2020 build peak hour traffic forecasts, which include general area background growth and traffic generated by the proposed development, are shown in Figure 8.

**Year 2020 Build Intersection Capacity Analysis**

To determine how the proposed roadway network will accommodate year 2020 traffic forecasts, an intersection capacity analysis was completed using Synchro/SimTraffic software. Results of the year 2020 build intersection capacity analysis shown in Table 5 indicate that all study intersections are expected to operate at an acceptable overall LOS C or better during the a.m. and p.m. peak hours. This assumes optimized signal timing. The year 2020 no build capacity analysis results are shown for comparison purposes. Therefore, the proposed development is expected to have a relatively minimal impact on study area traffic operations.

**Table 5. Year 2020 Build Intersection Capacity Analysis**

<table>
<thead>
<tr>
<th>Intersection</th>
<th>Level of Service (Delay)</th>
<th>A.M. Peak Hour</th>
<th>P.M. Peak Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No Build</td>
<td>Build</td>
</tr>
<tr>
<td>Monterey Drive and 36th-1/2 Street (1)</td>
<td>A/A (9 sec)</td>
<td>A/A (9 sec)</td>
<td>A/C (18 sec)</td>
</tr>
<tr>
<td>Monterey Drive and Access C (1)</td>
<td>--</td>
<td>A/A (5 sec)</td>
<td>--</td>
</tr>
<tr>
<td>Monterey Drive and Park Commons Drive/Access B (1)</td>
<td>A/A (4 sec)</td>
<td>A/A (4 sec)</td>
<td>A/D (30 sec)</td>
</tr>
<tr>
<td>Monterey Drive and Excelsior Boulevard</td>
<td>C (22 sec)</td>
<td>C (23 sec)</td>
<td>C (26 sec)</td>
</tr>
<tr>
<td>Excelsior Boulevard and Access A (1)</td>
<td>--</td>
<td>A/A (5 sec)</td>
<td>--</td>
</tr>
<tr>
<td>Excelsior Boulevard and Kipling Avenue (1)</td>
<td>A/A (9 sec)</td>
<td>A/B (11 sec)</td>
<td>A/E (38 sec)</td>
</tr>
<tr>
<td>36th-1/2 Street and Kipling Avenue (1)</td>
<td>A/A (4 sec)</td>
<td>A/A (5 sec)</td>
<td>A/A (5 sec)</td>
</tr>
<tr>
<td>36th-1/2 Street and Access D (1)</td>
<td>--</td>
<td>A/A (5 sec)</td>
<td>--</td>
</tr>
</tbody>
</table>

(1) Indicates an unsignalized intersection with side-street stop control, where the overall LOS is shown followed by the worst approach LOS. The delay shown represents the worst side-street approach delay.
Development Trips
4400 Excelsior Boulevard Traffic Study
Saint Louis Park, MN

Figure 7

LEGEND

XX - A.M. Peak Hour Volume
(XX) - P.M. Peak Hour Volume
- Site Access
Figure 8

LEGEND

XX - A.M. Peak Hour Volume (7:45 - 8:45 A.M.)
(XX) - P.M. Peak Hour Volume (4:45 - 5:45 P.M.)
X,XXX - Estimated Year 2020 Average Daily Traffic
(ADT) Volumes
- Side-Street Stop Control
- Traffic Signal Control

Year 2020 Build Conditions
4400 Excelsior Boulevard Traffic Study
City of St. Louis Park, MN

01710857
January 2018
The following information summarizes the key capacity analysis findings under 2020 build conditions:

1) Eastbound approach delays at the Monterey Drive and Park Commons Drive/Access B intersection are expected to increase from 30 seconds to 39 seconds under p.m. peak hour build conditions. This is a result of increased volumes at the Monterey Drive/Excelsior Boulevard intersection, which influences the traffic signal operation. Westbound approach delays (at Access B) are expected to be approximately five (5) seconds.

2) Southbound 95th percentile queues on Monterey Drive are expected to extend approximately 350 feet from the Park Commons Drive intersection during the p.m. peak hour (existing conditions extend 215 feet; 2020 no build conditions extend 315 feet). The average southbound queues on Monterey Drive are expected to continue to extend approximately 100 feet from the Park Commons Drive intersection during the p.m. peak hour.

3) The southbound approach delay at the Excelsior Boulevard/Kipling Avenue intersection is expected to operate near the LOS E/F border (approximately 50 seconds of delay) during the p.m. peak hour. Since this is a relatively low volume approach and the queues are expected to be less than 100 feet, no mitigation is recommended. However, this intersection should be monitored and if safety issues arise, restricting northbound/southbound left-turns during peak hours should be considered.

**Alternative Access and Internal Circulation Configurations**

As previously mentioned, additional access configurations and internal circulation options could be considered and reviewed with the project team to determine the access and internal parking configuration that meets tenant needs, as well as minimizes or eliminates impacts to the public roadway system. From a capacity perspective, potential changes in internal circulation are not expected to result in any significant changes to the operations already identified. However, the following information should be considered with respect to any further changes to access/internal circulation:

1) The right-in/right-out (Access A and C) and three-quarter (Access B) locations offer reduced conflicts and efficient operations and could accommodate additional traffic without impacting area operations.

2) Increased utilization of Access D (e.g. accommodating circulation between parking levels P1 and P2) has the potential to increase vehicle delays to Excelsior Boulevard from Kipling Avenue.

3) The three-quarter and right-in/right-out configurations at Access B and Access C, respectively, have the potential to increase northbound U-Turns along Monterey Drive. These U-Turn maneuvers would be expected to occur at Beltline Boulevard given the future Monterey Drive vision may not physically accommodate U-Turns at 36-1/2 Street. Further discussion should occur to determine if U-Turns should be accommodated at other locations along Monterey Drive, particularly 36-1/2 Street.

4) Any further changes to access and/or internal circulation should maintain, minimize, or eliminate internal site maneuvers from occurring on the public roadway system relative to the assumed access/circulation configuration discussed within this study to protect the public roadway system.
Summary and Recommendations

The following study summary and recommendations are offered for consideration:

1) The proposed development is expected to have a relatively minimal impact on study area traffic operations given the assumed access and circulation configuration within this study.

2) Signal timing at the Monterey Drive/Excelsior Boulevard intersection should be optimized upon completion of the multimodal improvements along Monterey Drive, as well as once the proposed development is fully operational.

3) The following information should be considered with respect to any further changes to access and internal circulation:
   a) The right-in/right-out (Access A and C) and three-quarter (Access B) locations offer reduced conflicts and efficient operations and could accommodate additional traffic without impacting area operations.
   b) Increased utilization of Access D (e.g. accommodating circulation between parking levels P1 and P2) has the potential to impact access to Excelsior Boulevard at Kipling Avenue.
   c) The three-quarter and right-in/right-out configurations at Access B and Access C, respectively, have the potential to increase northbound U-Turns along Monterey Drive. These U-Turn maneuvers would be expected to occur at Beltline Boulevard given the future Monterey Drive vision may not physically accommodate U-Turns at 36-1/2 Street. Further discussion should occur to determine if U-Turns should be accommodated at other locations along Monterey Drive, particularly 36-1/2 Street.
   d) Any further changes to access and/or internal circulation should maintain, minimize, or eliminate internal site maneuvers from occurring on the public roadway system relative to the assumed access/circulation configuration discussed within this study to protect the public roadway system.