

# **Endion Land Use & Transportation Study**

## **APPENDIX**

A: Modeling Information Tables

B: Cost Detail Assumptions

**Table 1: Trip Generation**

| Development            | Land Use/ITE Code                          | ITE Unit  | Size   | PM Peak Hour |      |               |
|------------------------|--|-----------|--------|--------------|------|---------------|
|                        |  |           |        | Entering     | Exit | Total         |
| Site "A"               | Commercial (814) <sup>(2)</sup>            | SF        | 17,000 | 18           | 23   | 41 *** (30)   |
| Site "A"               | Residential (230) <sup>(1)</sup>           | Units     | 65     | 23           | 11   | 34 *** (32)   |
| Site "B" (Plaza)       | Commercial (814) <sup>(2)</sup>            | SF        | 60,000 | 64           | 82   | 146 *** (122) |
| Site "B" (Plaza)       | Residential (230) <sup>(1)</sup>           | Units     | 84     | 29           | 14   | 44            |
| Site "C"<br>(Armory)   | Hotel (310) <sup>(1)</sup>                 | Rooms     | 100    | 34           | 36   | 70            |
| Site "C"<br>(Armory)   | Mixed Use Auditorium<br>(1)                | SF        | 16,000 | 0            | 20   | 20            |
| Site "C"<br>(Armory)   | Museum <sup>(1)</sup>                      | SF        | 3,000  | 2            | 5    | 6             |
| Site "C"<br>(Armory)   | Restaurant (832) <sup>(3)</sup>            | SF        | 3,000  | 18           | 11   | 29            |
| Site "C"<br>(Armory)   | Retail (814) <sup>(2)</sup>                | SF        | 3,000  | 3            | 4    | 7             |
| Site "D"               | Retail (814) <sup>(2)</sup>                | SF        | 22,400 | 24           | 31   | 55 *** (47)   |
| Site "D"               | Residential (230) <sup>(1)</sup>           | Units     | 40     | 14           | 7    | 21            |
| Site "E"               | Retail (814) <sup>(2)</sup>                | SF        | 8,000  | 9            | 11   | 20 *** (15)   |
| Site "E"               | Residential (230) <sup>(1)</sup>           | Units     | 12     | 4            | 2    | 6             |
| Site "F"               | Residential (230) <sup>(1)</sup>           | Units     | 3      | 1            | 1    | 2             |
| Site "G"               | Residential (230) <sup>(1)</sup>           | Units     | 8      | 3            | 1    | 4             |
| Site "H"               | Retail-Coffee shop<br>(933) <sup>(2)</sup> | SF        | 2,200  | 30           | 27   | 57            |
| Site "I"               | Office (710) <sup>(1)</sup>                | SF        | 14,000 | 3            | 16   | 19            |
| Site "J"               | Retail (814) <sup>(2)</sup>                | SF        | 8,000  | 9            | 11   | 20            |
| Site "J"               | Residential (230) <sup>(1)</sup>           | Units     | 35     | 12           | 6    | 18            |
| Site "K-N"<br>Option 1 | Retail (814) <sup>(2)</sup>                | SF        | 2,000  | 2            | 3    | 5 *** (2)     |
| Site "K-N"<br>Option 1 | Residential (230) <sup>(1)</sup>           | Units     | 8      | 3            | 1    | 4 *** (2)     |
| Site "K-N"<br>Option 2 | Residential (230) <sup>(1)</sup>           | Units     | 10     | 3            | 2    | 5             |
| Sheraton Hotel*        | Hotel (310) <sup>(1)</sup>                 | Rooms     | 147    | 50           | 52   | 103           |
| Sheraton<br>Condos*    | Residential (230) <sup>(1)</sup>           | Units     | 33     | 11           | 6    | 17            |
| Beacon<br>Condos*      | Residential (230) <sup>(1)</sup>           | Units     | 53     | 18           | 9    | 28            |
| The Ledges<br>Condos*  | Residential (230) <sup>(1)</sup>           | Units     | 46     | 16           | 8    | 24            |
| St Luke's**            | Office (720) <sup>(1)</sup>                | SF        | 96,000 | 87           | 235  | 321           |
| London Road**          | Commercial (814) <sup>(2)</sup>            | Employees | 200    | 108          | 138  | 246           |
| London Road**          | Office (710) <sup>(2)</sup>                | Employees | 384    | 27           | 132  | 159           |

\* Recently, or soon to be, constructed developments added to base travel demand model and traffic models

\*\* Trip generation for alternate land use scenarios modeled with specific traffic scenarios (St Luke's with Traffic Scenario 2 and London Rd with Traffic Scenario 4)

\*\*\* Trip generation shown was subsequently adjusted to account for current activity that would be replaced by proposed developments, the adjusted net new trips are shown in brackets were applicable

Note: Trips were subsequently categorized by primary and pass-by traffic. Internal capture was assumed to be 10 percent.(1) denotes 100% primary traffic, (2) denotes 85% primary traffic, 15% pass-by traffic (3) denotes 65% primary traffic, 35% pass-by traffic.

Source: Trip Generation Manual, 6th Edition by the Institute of Transportation Engineers, 2003

**Table 2: Traffic Growth**

| <b>Roadway</b>                       | <b>Growth Rate (per annum)</b> |
|--------------------------------------|--------------------------------|
| 6 <sup>th</sup> Avenue               | 2.5 %                          |
| 10 <sup>th</sup> Avenue              | 0.6 %                          |
| 12 <sup>th</sup> Avenue              | 0.9 %                          |
| 14 <sup>th</sup> Avenue              | 0.2 %                          |
| 21 <sup>st</sup> Avenue <sup>1</sup> | 0.2 %                          |
| 26 <sup>th</sup> Avenue              | 1.8 %                          |
| 4 <sup>th</sup> Street               | 1.4 %                          |
| 3 <sup>rd</sup> Street               | 0.3 %                          |
| 2 <sup>nd</sup> Street               | 0.5 %                          |
| 1 <sup>st</sup> Street               | 0.3 %                          |
| Superior St                          | 1.4 %                          |
| London Rd                            | 1.0 %                          |

1 - Some sensitivity analysis was conducted for a higher growth rate, and 21<sup>st</sup> Ave E will continue to operate with higher levels of traffic but is close to capacity. In all scenarios the 21st Ave E/Superior St intersection was reported to operate at acceptable LOS in Year 2012. Volumes beyond those forecasts would cause the intersection operation to deteriorate. The potential mitigation measure is to expand 21st Ave E from 3 lane roadway to 4 lane roadway between London Rd and north of 3rd St. Due to the right of way constraints, no left turn lanes will be able to be provided for four-lane roadway at the intersection. Based on the historic crash experience on this four-lane roadway situation, reducing conflicts is a major consideration for this option.

**Table 3 - Intersection Measures of Effectiveness Summary**

*6th Ave E/4th St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      |      | Intersection |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|------|--------------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |      |              |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  | SBR  |              |
| Existing Condition                           | LOS             | D         | C    | C    | C         | C    | C    | B          | B    | B    | C          | B    | B    | C            |
|  | Delay (sec/veh) | 41.0      | 24.6 | 24.6 | 21.4      | 21.8 | 21.8 | 18.4       | 18.4 | 18.4 | 26.3       | 10.3 | 10.3 | 21.2         |
|  | 95th queue(ft)  | #103      | 151  | 151  | 45        | 199  | 199  | 76         | 76   | 76   | #185       | 114  | 114  |              |
| 2012 Base Build (w/t Mitigation)             | LOS             | F         | C    | C    | C         | D    | D    | C          | C    | C    | D          | B    | B    | D            |
|  | Delay (sec/veh) | 138.6     | 33.8 | 33.8 | 30.3      | 36.2 | 36.2 | 29.5       | 29.5 | 29.5 | 45.7       | 10.6 | 10.6 | 37.3         |
|  | 95th queue(ft)  | #189      | 204  | 204  | 61        | #313 | #313 | 164        | 164  | 164  | #341       | 143  | 143  |              |
| 2012 Base Build (w/ Mitigation)              | LOS             | C         | D    | D    | C         | D    | A    | C          | C    | C    | D          | A    | A    | C            |
|  | Delay (sec/veh) | 32.4      | 35.1 | 35.1 | 34.5      | 35.9 | 7.9  | 27.2       | 27.2 | 27.2 | 42.1       | 10.0 | 10.0 | 27.2         |
|  | 95th queue(ft)  | 105       | 207  | 207  | 68        | 155  | 65   | 154        | 154  | 154  | #330       | 138  | 138  |              |
| 2012 Build Scenario 1                        | LOS             | C         | D    | D    | C         | C    | A    | C          | C    | C    | D          | A    | A    | C            |
|  | Delay (sec/veh) | 32.4      | 35.1 | 35.1 | 31.2      | 32.3 | 5.6  | 27.2       | 27.2 | 27.2 | 42.1       | 10.0 | 10.0 | 26.7         |
|  | 95th queue(ft)  | 105       | 207  | 207  | 50        | 110  | 23   | 146        | 146  | 146  | #330       | 138  | 138  |              |
| 2012 Build Scenario 2                        | LOS             | C         | C    | C    | D         | D    | A    | C          | C    | C    | C          | B    | B    | C            |
|  | Delay (sec/veh) | 26.2      | 29.1 | 29.1 | 35.6      | 41.6 | 7.7  | 30.9       | 30.9 | 30.9 | 30.9       | 21.8 | 16.3 | 25.7         |
|  | 95th queue(ft)  | 95        | 191  | 191  | 65        | 208  | 59   | 177        | 177  | 177  | 139        | 282  | 282  |              |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | C         | C    | C    | D         | D    | A    | C          | C    | C    | C          | B    | B    | C            |
|  | Delay (sec/veh) | 26.2      | 29.1 | 29.1 | 35.6      | 41.6 | 7.7  | 30.9       | 30.9 | 30.9 | 21.8       | 16.3 | 16.3 | 25.7         |
|  | 95th queue(ft)  | 95        | 191  | 191  | 65        | 208  | 59   | 177        | 177  | 177  | 139        | 282  | 282  |              |
| 2012 Build Scenario 3                        | LOS             | C         | C    | C    | D         | D    | A    | D          | D    | D    | C          | B    | B    | C            |
|  | Delay (sec/veh) | 28.9      | 33.3 | 33.3 | 39.4      | 40.5 | 8.8  | 35.3       | 35.3 | 35.3 | 34.3       | 11.2 | 11.2 | 28.9         |
|  | 95th queue(ft)  | 102       | 201  | 201  | 68        | 148  | 61   | 248        | 248  | 248  | #278       | 165  | 165  |              |
| 2012 Build Scenario 4 with LU                | LOS             | C         | D    | D    | C         | D    | A    | C          | C    | C    | D          | A    | A    | C            |
|  | Delay (sec/veh) | 32.4      | 35.1 | 35.1 | 34.1      | 35.8 | 8.0  | 28.5       | 28.5 | 28.5 | 47.8       | 10.0 | 10.0 | 28.6         |
|  | 95th queue(ft)  | 105       | 207  | 207  | 68        | 154  | 71   | 158        | 158  | 158  | #351       | 138  | 138  |              |
| 2012 Build Scenario A                        | LOS             | C         | C    | C    | D         | D    | A    | C          | C    | C    | C          | B    | B    | C            |
|  | Delay (sec/veh) | 27.9      | 29.1 | 29.1 | 35.6      | 41.6 | 7.7  | 31.2       | 31.2 | 31.2 | 21.8       | 16.3 | 16.3 | 25.9         |
|  | 95th queue(ft)  | 97        | 191  | 191  | 65        | 208  | 59   | 223        | 223  | 223  | 139        | 282  | 282  |              |
| 2012 Build Scenario A with 1st St conversion | LOS             | C         | C    | C    | D         | D    | A    | C          | C    | C    | C          | B    | B    | C            |
|  | Delay (sec/veh) | 27.9      | 29.1 | 29.1 | 35.6      | 41.6 | 7.7  | 31.2       | 31.2 | 31.2 | 21.8       | 16.3 | 16.3 | 25.9         |
|  | 95th queue(ft)  | 97        | 191  | 191  | 65        | 208  | 59   | 223        | 223  | 223  | 139        | 282  | 282  |              |
| 2012 Build Scenario B                        | LOS             | C         | C    | C    | D         | D    | A    | D          | D    | D    | C          | B    | B    | C            |
|  | Delay (sec/veh) | 28.9      | 33.3 | 33.3 | 39.4      | 40.5 | 8.8  | 35.3       | 35.3 | 35.3 | 34.3       | 11.2 | 11.2 | 28.9         |
|  | 95th queue(ft)  | 102       | 201  | 201  | 68        | 148  | 61   | 248        | 248  | 248  | #278       | 165  | 165  |              |
| 2012 Build Scenario C                        | LOS             | C         | C    | C    | D         | D    | A    | C          | C    | C    | B          | B    | B    | C            |
|  | Delay (sec/veh) | 33.3      | 32.2 | 32.2 | 38.7      | 46.3 | 8.4  | 28.3       | 28.3 | 28.3 | 13.4       | 13.6 | 13.6 | 24.9         |
|  | 95th queue(ft)  | 103       | 199  | 199  | 68        | 215  | 61   | 268        | 268  | 268  | 87         | 272  | 272  |              |

*6th Ave E/3rd St*

| Scenario                                     | MOE             | Movements |     |     |           |      |      |            |      |      |            |      |      | Intersection |      |
|--|-----------------|-----------|-----|-----|-----------|------|------|------------|------|------|------------|------|------|--------------|------|
|  |                 | Eastbound |     |     | Westbound |      |      | Northbound |      |      | Southbound |      |      |              |      |
|  |                 | EBL       | EBT | EBR | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  | SBR  |              |      |
| Existing Condition                           | LOS             |           |     |     |           |      |      | B          | B    | B    | B          |      |      | A            | B    |
|  | Delay (sec/veh) |           |     |     |           |      |      | 14.8       | 14.8 | 16.2 | 16.2       |      |      | 0.5          | 12.4 |
|  | 95th queue(ft)  |           |     |     |           |      |      | 107        | 107  | 133  | 133        |      |      | 10           |      |
| 2012 Base Build                              | LOS             |           |     |     |           |      |      | B          | B    | B    | B          |      |      | A            | B    |
|  | Delay (sec/veh) |           |     |     |           |      |      | 16.0       | 16.0 | 17.9 | 17.9       |      |      | 3.7          | 14.3 |
|  | 95th queue(ft)  |           |     |     |           |      |      | 124        | 124  | 176  | 176        |      |      | 21           |      |
| 2012 Build Scenario 1                        | LOS             |           |     |     |           |      |      | B          | B    | B    | B          |      |      | A            | B    |
|  | Delay (sec/veh) |           |     |     |           |      |      | 12.6       | 12.6 | 18.0 | 18.0       |      |      | 3.1          | 12.9 |
|  | 95th queue(ft)  |           |     |     |           |      |      | 84         | 84   | 176  | 176        |      |      | 28           |      |
| 2012 Build Scenario 2                        | LOS             |           |     |     |           | B    | B    | B          | A    | A    |            |      | A    | A            | B    |
|  | Delay (sec/veh) |           |     |     |           | 16.2 | 16.2 | 16.2       | 9.9  | 9.9  |            |      | 7.1  | 3.4          | 10.5 |
|  | 95th queue(ft)  |           |     |     |           | 136  | 136  | 136        | 95   | 95   |            |      | 46   | 10           |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           |     |     |           | B    | B    | B          | A    | A    |            |      | A    | A            | B    |
|  | Delay (sec/veh) |           |     |     |           | 16.2 | 16.2 | 16.2       | 9.9  | 9.9  |            |      | 7.1  | 3.4          | 10.5 |
|  | 95th queue(ft)  |           |     |     |           | 136  | 136  | 136        | 95   | 95   |            |      | 46   | 10           |      |
| 2012 Build Scenario 3                        | LOS             |           |     |     |           | D    | D    | C          | C    | C    | C          |      |      | A            | C    |
|  | Delay (sec/veh) |           |     |     |           | 36.3 | 36.3 | 21.5       | 21.5 | 21.5 | 22.8       |      |      | 2.0          | 21.4 |
|  | 95th queue(ft)  |           |     |     |           | 268  | 268  | 298        | 298  | 298  | 87         |      |      | 17           |      |
| 2012 Build Scenario 4 with LU                | LOS             |           |     |     |           | B    | B    | B          | B    |      |            |      |      | A            | B    |
|  | Delay (sec/veh) |           |     |     |           | 16.3 | 16.3 | 18.0       | 18.0 |      |            |      |      | 3.7          | 14.4 |
|  | 95th queue(ft)  |           |     |     |           | 126  | 126  | 176        | 176  |      |            |      |      | 28           |      |
| 2012 Build Scenario A                        | LOS             |           |     |     | C         | C    | C    | A          | A    |      |            |      | A    | A            | B    |
|  | Delay (sec/veh) |           |     |     | 23.0      | 23.0 | 23.0 | 8.6        | 8.6  |      |            |      | 6.3  | 2.9          | 12.2 |
|  | 95th queue(ft)  |           |     |     | 179       | 179  | 179  | 76         | 76   |      |            |      | 37   | 10           |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             |           |     |     | C         | C    | C    | A          | A    |      |            |      | A    | A            | B    |
|  | Delay (sec/veh) |           |     |     | 23.0      | 23.0 | 23.0 | 8.6        | 8.6  |      |            |      | 6.3  | 2.9          | 12.2 |
|  | 95th queue(ft)  |           |     |     | 179       | 179  | 179  | 76         | 76   |      |            |      | 37   | 10           |      |
| 2012 Build Scenario B                        | LOS             |           |     |     |           | D    | D    | C          | C    | C    | C          |      |      | A            | C    |
|  | Delay (sec/veh) |           |     |     |           | 36.3 | 36.3 | 21.5       | 21.5 | 21.5 | 22.8       |      |      | 2.0          | 21.4 |
|  | 95th queue(ft)  |           |     |     |           | 268  | 268  | 298        | 298  | 298  | 87         |      |      | 17           |      |
| 2012 Build Scenario C                        | LOS             |           |     |     | D         | D    | D    | B          | B    | B    | B          | B    | B    | B            | B    |
|  | Delay (sec/veh) |           |     |     | 39.1      | 39.1 | 39.1 | 13.3       | 13.3 | 13.3 | 15.4       | 15.4 | 15.4 | 16.7         |      |
|  | 95th queue(ft)  |           |     |     | 312       | 312  | 312  | 96         | 96   | 96   | 82         | 82   | 82   |              |      |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*6th Ave E/2nd St*

| Scenario                                     | MOE             | Movements |      |      |           |     |      |            |      |      |            |      | Intersection |      |
|--|-----------------|-----------|------|------|-----------|-----|------|------------|------|------|------------|------|--------------|------|
|  |                 | Eastbound |      |      | Westbound |     |      | Northbound |      |      | Southbound |      |              |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             |           | A    | A    |           |     |      |            | B    | B    | B          | B    |              | A    |
|  | Delay (sec/veh) |           | 0.0  | 0.0  |           |     |      |            | 14.2 | 14.2 | 13.6       | 13.6 |              | 2.5  |
|  | 95th queue(ft)  |           |      |      |           |     |      |            | 19   | 19   | 10         | 10   |              |      |
| 2012 Base Build                              | LOS             |           | A    | A    |           |     |      |            | B    | B    | B          | B    |              | A    |
|  | Delay (sec/veh) |           | 0.0  | 0.0  |           |     |      |            | 15.0 | 15.0 | 12.7       | 12.7 |              | 2.5  |
|  | 95th queue(ft)  |           |      |      |           |     |      |            | 23   | 23   | 10         | 10   |              |      |
| 2012 Build Scenario 1                        | LOS             |           | A    | A    |           |     |      |            | B    | B    | B          | B    |              | A    |
|  | Delay (sec/veh) |           | 0.0  | 0.0  |           |     |      |            | 15.0 | 15.0 | 12.4       | 12.4 |              | 2.4  |
|  | 95th queue(ft)  |           |      |      |           |     |      |            | 23   | 23   | 10         | 10   |              |      |
| 2012 Build Scenario 2                        | LOS             | B         | B    | B    |           |     |      |            | B    | B    | D          | D    |              | B    |
|  | Delay (sec/veh) | 16.0      | 14.4 | 14.4 |           |     |      |            | 17.6 | 17.6 | 41.2       | 41.2 |              | 19.3 |
|  | 95th queue(ft)  | 235       | 203  | 203  |           |     |      |            | 56   | 56   | 180        | 180  |              |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | B         | B    | B    |           |     |      |            | B    | B    | D          | D    |              | B    |
|  | Delay (sec/veh) | 16.0      | 14.4 | 14.4 |           |     |      |            | 17.6 | 17.6 | 41.2       | 41.2 |              | 19.3 |
|  | 95th queue(ft)  | 235       | 203  | 203  |           |     |      |            | 56   | 56   | 180        | 180  |              |      |
| 2012 Build Scenario 3                        | LOS             |           | A    | A    | A         |     | A    |            | C    | C    |            |      |              | A    |
|  | Delay (sec/veh) |           | 0.0  | 0.0  | 0.2       |     | 1.0  |            | 16.1 | 16.1 |            |      |              | 2.5  |
|  | 95th queue(ft)  |           |      |      | 10        |     | 10   |            | 26   | 26   |            |      |              |      |
| 2012 Build Scenario 4 with LU                | LOS             |           | A    | A    |           |     |      |            | B    | B    | B          | B    |              | A    |
|  | Delay (sec/veh) |           | 0.0  | 0.0  |           |     |      |            | 15.0 | 15.0 | 12.7       | 12.7 |              | 2.5  |
|  | 95th queue(ft)  |           |      |      |           |     |      |            | 23   | 23   | 10         | 10   |              |      |
| 2012 Build Scenario A                        | LOS             | B         | B    | B    |           |     |      |            | B    | B    | D          | D    |              | C    |
|  | Delay (sec/veh) | 17.5      | 15.8 | 15.8 |           |     |      |            | 18.8 | 18.8 | 42.0       | 42.0 |              | 20.6 |
|  | 95th queue(ft)  | 247       | 214  | 214  |           |     |      |            | 58   | 58   | 182        | 182  |              |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | B         | B    | B    |           |     |      |            | B    | B    | D          | D    |              | C    |
|  | Delay (sec/veh) | 17.5      | 15.8 | 15.8 |           |     |      |            | 18.8 | 18.8 | 42.0       | 42.0 |              | 20.6 |
|  | 95th queue(ft)  | 247       | 214  | 214  |           |     |      |            | 58   | 58   | 182        | 182  |              |      |
| 2012 Build Scenario B                        | LOS             |           | A    | A    | A         |     | A    |            | C    | C    |            |      |              | A    |
|  | Delay (sec/veh) |           | 0.0  | 0.0  | 0.2       |     | 1.0  |            | 16.1 | 16.1 |            |      |              | 2.5  |
|  | 95th queue(ft)  |           |      |      | 10        |     | 10   |            | 26   | 26   |            |      |              |      |
| 2012 Build Scenario C                        | LOS             | C         | C    | C    | C         |     | C    |            | C    | C    | E          | E    |              | C    |
|  | Delay (sec/veh) | 30.9      | 27.2 | 27.2 | 20.1      |     | 20.1 |            | 24.7 | 24.7 | 66.4       | 66.4 |              | 32.6 |
|  | 95th queue(ft)  | 331       | 283  | 283  | 108       |     | 108  |            | 67   | 67   | 190        | 190  |              |      |

*10th Ave E/4th St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             | E         | E    | E    | C         | C    | C    | C          | C    | C    | B          | B    | B            | D    |
|  | Delay (sec/veh) | 40.8      | 40.8 | 40.8 | 16.6      | 16.6 | 16.6 | 16.3       | 16.3 | 16.3 | 12.6       | 12.6 | 12.6         | 27.0 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Base Build (w/t Mitigation)             | LOS             | F         | F    | F    | C         | C    | C    | C          | C    | C    | B          | B    | B            | F    |
|  | Delay (sec/veh) | 97.8      | 97.8 | 97.8 | 20.7      | 20.7 | 20.7 | 20.3       | 20.3 | 20.3 | 14.2       | 14.2 | 14.2         | 54.7 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Base Build (w/ Mitigation)              | LOS             | B         | B    | B    | A         | A    | A    | B          | B    | B    | C          | C    | C            | B    |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 9.9       | 9.9  | 9.9  | 16.7       | 16.7 | 16.7 | 25.1       | 25.1 | 25.1         | 13.5 |
|  | 95th queue(ft)  | 98        | 98   | 98   | 138       | 138  | 138  | 157        | 157  | 157  | 92         | 92   | 92           |      |
| 2012 Build Scenario 1                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | C          | C    | C            | B    |
|  | Delay (sec/veh) | 12.7      | 12.7 | 12.7 | 10.5      | 10.5 | 10.5 | 25.4       | 25.4 | 25.4 | 25.8       | 25.8 | 25.8         | 16.2 |
|  | 95th queue(ft)  | 87        | 87   | 87   | 144       | 144  | 144  | 200        | 200  | 200  | 94         | 94   | 94           |      |
| 2012 Build Scenario 2                        | LOS             | D         | D    | D    | C         | C    | C    | C          | C    | C    | B          | B    | B            | D    |
|  | Delay (sec/veh) | 34.8      | 34.8 | 34.8 | 23.7      | 23.7 | 23.7 | 19.0       | 19.0 | 19.0 | 14.0       | 14.0 | 14.0         | 25.6 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | D         | D    | D    | C         | C    | C    | C          | C    | C    | B          | B    | B            | D    |
|  | Delay (sec/veh) | 34.8      | 34.8 | 34.8 | 23.7      | 23.7 | 23.7 | 19.0       | 19.0 | 19.0 | 14.0       | 14.0 | 14.0         | 25.6 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario 3                        | LOS             | E         | E    | E    | C         | C    | C    | C          | C    | C    | B          | B    | B            | D    |
|  | Delay (sec/veh) | 49.5      | 49.5 | 49.5 | 20.1      | 20.1 | 20.1 | 18.6       | 18.6 | 18.6 | 14.0       | 14.0 | 14.0         | 31.6 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario 4 with LU                | LOS             | B         | B    | B    | A         | A    | A    | B          | B    | B    | C          | C    | C            | B    |
|  | Delay (sec/veh) | 11.4      | 11.4 | 11.4 | 9.9       | 9.9  | 9.9  | 18.6       | 18.6 | 18.6 | 25.2       | 25.2 | 25.2         | 14.0 |
|  | 95th queue(ft)  | 212       | 212  | 212  | 138       | 138  | 138  | 178        | 178  | 178  | 94         | 94   | 94           |      |
| 2012 Build Scenario A                        | LOS             | D         | D    | D    | C         | C    | C    | C          | C    | C    | B          | B    | B            | D    |
|  | Delay (sec/veh) | 34.8      | 34.8 | 34.8 | 23.7      | 23.7 | 23.7 | 19.0       | 19.0 | 19.0 | 14.0       | 14.0 | 14.0         | 25.6 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | D         | D    | D    | C         | C    | C    | C          | C    | C    | B          | B    | B            | D    |
|  | Delay (sec/veh) | 34.8      | 34.8 | 34.8 | 23.7      | 23.7 | 23.7 | 19.0       | 19.0 | 19.0 | 14.0       | 14.0 | 14.0         | 25.6 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario B                        | LOS             | E         | E    | E    | C         | C    | C    | C          | C    | C    | B          | B    | B            | D    |
|  | Delay (sec/veh) | 49.5      | 49.5 | 49.5 | 20.1      | 20.1 | 20.1 | 18.6       | 18.6 | 18.6 | 14.0       | 14.0 | 14.0         | 31.6 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario C                        | LOS             | C         | C    | C    | C         | C    | C    | C          | C    | C    | B          | B    | B            | C    |
|  | Delay (sec/veh) | 20.0      | 20.0 | 20.0 | 19.7      | 19.7 | 19.7 | 15.6       | 15.6 | 15.6 | 12.7       | 12.7 | 12.7         | 18.0 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*10th Ave E/3rd St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |      |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |      |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |      |      |
| Existing Condition                           | LOS             |           |      |      | A         | A    | A    | A          | A    | A    |            |      |              | B    | B    | A    |
|  | Delay (sec/veh) |           |      |      | 3.6       | 3.6  | 3.6  | 9.7        | 9.7  |      |            |      |              | 17.3 | 17.3 | 9.8  |
|  | 95th queue(ft)  |           |      |      | 12        | 12   | 12   | 49         | 49   |      |            |      |              | 130  | 130  |      |
| 2012 Base Build                              | LOS             |           |      |      | B         | B    | B    | A          | A    |      |            |      |              | B    | B    | B    |
|  | Delay (sec/veh) |           |      |      | 17.2      | 17.2 | 17.2 | 6.5        | 6.5  |      |            |      |              | 17.5 | 17.5 | 12.7 |
|  | 95th queue(ft)  |           |      |      | 48        | 48   | 48   | 45         | 45   |      |            |      |              | 193  | 193  |      |
| 2012 Build Scenario 1                        | LOS             |           |      |      | C         | C    | C    | A          | A    |      |            |      |              | B    | B    | B    |
|  | Delay (sec/veh) |           |      |      | 27.7      | 27.7 | 27.7 | 6.7        | 6.7  |      |            |      |              | 15.6 | 15.6 | 15.7 |
|  | 95th queue(ft)  |           |      |      | 114       | 114  | 114  | 65         | 65   |      |            |      |              | 189  | 189  |      |
| 2012 Build Scenario 2                        | LOS             |           |      |      | A         | A    | A    | C          | C    |      |            |      |              | C    | C    | A    |
|  | Delay (sec/veh) |           |      |      | 0.0       | 0.0  | 0.0  | 15.2       | 15.2 |      |            |      |              | 16.1 | 16.1 | 2.9  |
|  | 95th queue(ft)  |           |      |      |           |      |      | 10         | 10   |      |            |      |              | 29   | 29   |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           |      |      | A         | A    | A    | C          | C    |      |            |      |              | C    | C    | A    |
|  | Delay (sec/veh) |           |      |      | 0.0       | 0.0  | 0.0  | 15.2       | 15.2 |      |            |      |              | 16.1 | 16.1 | 2.9  |
|  | 95th queue(ft)  |           |      |      |           |      |      | 10         | 10   |      |            |      |              | 29   | 29   |      |
| 2012 Build Scenario 3                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B            | C    | C    | C    |
|  | Delay (sec/veh) | 14.9      | 14.9 | 14.9 | 10.8      | 10.8 | 10.8 | 22.3       | 22.3 | 22.3 | 14.9       | 14.9 | 14.9         | 17.6 |      |      |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |      |      |
| 2012 Build Scenario 4 with LU                | LOS             |           |      |      | B         | B    | B    | A          | A    |      |            |      |              | B    | B    | B    |
|  | Delay (sec/veh) |           |      |      | 17.5      | 17.5 | 17.5 | 7.5        | 7.5  |      |            |      |              | 11.9 | 11.9 | 11.4 |
|  | 95th queue(ft)  |           |      |      | 51        | 51   | 51   | 46         | 46   |      |            |      |              | 179  | 179  |      |
| 2012 Build Scenario A                        | LOS             |           |      |      | A         | A    | A    | C          | C    |      |            |      |              | C    | C    | A    |
|  | Delay (sec/veh) |           |      |      | 0.0       | 0.0  | 0.0  | 15.6       | 15.6 |      |            |      |              | 16.6 | 16.6 | 3.0  |
|  | 95th queue(ft)  |           |      |      |           |      |      | 10         | 10   |      |            |      |              | 31   | 31   |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             |           |      |      | A         | A    | A    | C          | C    |      |            |      |              | C    | C    | A    |
|  | Delay (sec/veh) |           |      |      | 0.0       | 0.0  | 0.0  | 15.6       | 15.6 |      |            |      |              | 16.6 | 16.6 | 3.0  |
|  | 95th queue(ft)  |           |      |      |           |      |      | 10         | 10   |      |            |      |              | 31   | 31   |      |
| 2012 Build Scenario B                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | C          | C    | C            | C    | C    | C    |
|  | Delay (sec/veh) | 15.0      | 15.0 | 15.0 | 11.4      | 11.4 | 11.4 | 20.7       | 20.7 | 20.7 | 15.3       | 15.3 | 15.3         | 16.9 |      |      |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |      |      |
| 2012 Build Scenario C                        | LOS             | A         | A    | A    | A         | A    | A    | C          | C    | C    | C          | C    | C            | A    | A    | A    |
|  | Delay (sec/veh) | 0.2       | 0.9  | 0.9  | 0.1       | 0.1  | 0.1  | 18.6       | 18.6 | 18.6 | 19.8       | 19.8 | 19.8         | 3.9  |      |      |
|  | 95th queue(ft)  | 10        | 10   | 10   | 10        | 10   | 10   | 15         | 15   | 15   | 41         | 41   | 41           |      |      |      |

*10th Ave E/2nd St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |  |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|--|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |  |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |  |      |
| Existing Condition                           | LOS             | B         | B    | B    |           |      |      |            |      |      | B          | B    | A            | A    |  | B    |
|  | Delay (sec/veh) | 19.7      | 19.7 | 19.7 |           |      |      |            |      |      | 10.8       | 10.8 | 9.4          | 9.4  |  | 15.8 |
|  | 95th queue(ft)  | 175       | 175  | 175  |           |      |      |            |      |      | 87         | 87   | 35           | 35   |  |      |
| 2012 Base Build                              | LOS             | C         | C    | C    |           |      |      |            |      |      | B          | B    | A            | A    |  | B    |
|  | Delay (sec/veh) | 21.9      | 21.9 | 21.9 |           |      |      |            |      |      | 14.3       | 14.3 | 5.6          | 5.6  |  | 16.5 |
|  | 95th queue(ft)  | 197       | 197  | 197  |           |      |      |            |      |      | 139        | 139  | 28           | 28   |  |      |
| 2012 Build Scenario 1                        | LOS             | C         | C    | C    |           |      |      |            |      |      | B          | B    | A            | A    |  | B    |
|  | Delay (sec/veh) | 22.0      | 22.0 | 22.0 |           |      |      |            |      |      | 12.1       | 12.1 | 5.8          | 5.8  |  | 16.3 |
|  | 95th queue(ft)  | 198       | 198  | 198  |           |      |      |            |      |      | 111        | 111  | 24           | 24   |  |      |
| 2012 Build Scenario 2                        | LOS             | A         | A    |      |           |      |      |            |      |      |            |      | B            |      |  | A    |
|  | Delay (sec/veh) | 0.3       | 0.4  |      |           |      |      |            |      |      |            |      | 15.0         |      |  | 1.6  |
|  | 95th queue(ft)  | 10        | 10   |      |           |      |      |            |      |      |            |      | 17           |      |  |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | A         | A    |      |           |      |      |            |      |      |            |      | C            |      |  | A    |
|  | Delay (sec/veh) | 0.3       | 0.4  |      |           |      |      |            |      |      |            |      | 15.2         |      |  | 1.6  |
|  | 95th queue(ft)  | 10        | 10   |      |           |      |      |            |      |      |            |      | 17           |      |  |      |
| 2012 Build Scenario 3                        | LOS             | C         | C    | C    | B         | B    | B    | C          | C    | C    | B          | B    | A            | A    |  | C    |
|  | Delay (sec/veh) | 29.1      | 29.1 | 29.1 | 18.4      | 18.4 | 18.4 | 27.1       | 27.1 | 27.1 | 20.0       | 20.0 | 20.0         | 25.1 |  |      |
|  | 95th queue(ft)  | 329       | 329  | 329  | 139       | 139  | 139  | 239        | 239  | 239  | 168        | 168  | 168          |      |  |      |
| 2012 Build Scenario 4 with LU                | LOS             | C         | C    | C    |           |      |      |            |      |      | B          | B    | A            | A    |  | B    |
|  | Delay (sec/veh) | 22.0      | 22.0 | 22.0 |           |      |      |            |      |      | 19.3       | 19.3 | 7.6          | 7.6  |  | 18.2 |
|  | 95th queue(ft)  | 198       | 198  | 198  |           |      |      |            |      |      | 291        | 291  | 49           | 49   |  |      |
| 2012 Build Scenario A                        | LOS             | A         | A    |      |           |      |      |            |      |      |            |      | B            |      |  | A    |
|  | Delay (sec/veh) | 0.3       | 0.4  |      |           |      |      |            |      |      |            |      | 15.0         |      |  | 1.6  |
|  | 95th queue(ft)  | 10        | 10   |      |           |      |      |            |      |      |            |      | 17           |      |  |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | A         | A    |      |           |      |      |            |      |      |            |      | C            |      |  | A    |
|  | Delay (sec/veh) | 0.3       | 0.4  |      |           |      |      |            |      |      |            |      | 15.6         |      |  | 1.5  |
|  | 95th queue(ft)  | 10        | 10   |      |           |      |      |            |      |      |            |      | 18           |      |  |      |
| 2012 Build Scenario B                        | LOS             | C         | C    | C    | B         | B    | B    | C          | C    | C    | C          | C    | C            | C    |  | C    |
|  | Delay (sec/veh) | 22.2      | 22.2 | 22.2 | 15.1      | 15.1 | 15.1 | 24.3       | 24.3 | 24.3 | 24.0       | 24.0 | 24.0         | 22.0 |  |      |
|  | 95th queue(ft)  | 290       | 290  | 290  | 124       | 124  | 124  | 307        | 307  | 307  | 185        | 185  | 185          |      |  |      |
| 2012 Build Scenario C                        | LOS             | A         | A    |      |           |      |      | A          | A    |      |            |      | C            |      |  | A    |
|  | Delay (sec/veh) | 0.3       | 0.5  |      |           |      |      | 0.0        | 0.0  |      |            |      | 17.8         |      |  | 2.1  |
|  | 95th queue(ft)  | 10        | 10   |      |           |      |      |            |      |      |            |      | 28           |      |  |      |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*10th Ave E/1th St*

| Scenario                                     | MOE             | Movements |     |     |           |      |      |            |      |     |            |      | Intersection |      |
|--|-----------------|-----------|-----|-----|-----------|------|------|------------|------|-----|------------|------|--------------|------|
|  |                 | Eastbound |     |     | Westbound |      |      | Northbound |      |     | Southbound |      |              |      |
|  |                 | EBL       | EBT | EBR | WBL       | WBT  | WBR  | NBL        | NBT  | NBR | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             |           |     |     | B         | B    | B    | C          | C    |     |            | B    | B            | B    |
|  | Delay (sec/veh) |           |     |     | 14.5      | 14.5 | 14.5 | 28.5       | 28.5 |     |            | 19.0 | 19.0         | 20.0 |
|  | 95th queue(ft)  |           |     |     | 123       | 123  | 123  | 205        | 205  |     |            | 153  | 153          |      |
| 2012 Base Build                              | LOS             |           |     |     | B         | B    | B    | B          | B    |     |            | B    | B            | B    |
|  | Delay (sec/veh) |           |     |     | 15.2      | 15.2 | 15.2 | 18.7       | 18.7 |     |            | 10.1 | 10.1         | 14.4 |
|  | 95th queue(ft)  |           |     |     | 78        | 78   | 78   | 190        | 190  |     |            | 131  | 131          |      |
| 2012 Build Scenario 1                        | LOS             |           |     |     | C         | C    | C    | B          | B    |     |            | A    | A            | B    |
|  | Delay (sec/veh) |           |     |     | 23.3      | 23.3 | 23.3 | 16.3       | 16.3 |     |            | 9.0  | 9.0          | 15.9 |
|  | 95th queue(ft)  |           |     |     | 128       | 128  | 128  | 153        | 153  |     |            | 130  | 130          |      |
| 2012 Build Scenario 2                        | LOS             | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | Delay (sec/veh) | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | 95th queue(ft)  | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | Delay (sec/veh) | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | 95th queue(ft)  | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
| 2012 Build Scenario 3                        | LOS             |           |     |     | B         | B    | B    | B          | B    |     |            | B    | B            | B    |
|  | Delay (sec/veh) |           |     |     | 13.1      | 13.1 | 13.1 | 19.1       | 19.1 |     |            | 12.4 | 12.4         | 14.7 |
|  | 95th queue(ft)  |           |     |     | 87        | 87   | 87   | 227        | 227  |     |            | 111  | 111          |      |
| 2012 Build Scenario 4 with LU                | LOS             |           |     |     | B         | B    | B    | B          | B    |     |            | B    | B            | B    |
|  | Delay (sec/veh) |           |     |     | 15.5      | 15.5 | 15.5 | 17.4       | 17.4 |     |            | 10.2 | 10.2         | 14.2 |
|  | 95th queue(ft)  |           |     |     | 75        | 75   | 75   | 189        | 189  |     |            | 139  | 139          |      |
| 2012 Build Scenario A                        | LOS             | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | Delay (sec/veh) | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | 95th queue(ft)  | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | Delay (sec/veh) | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | 95th queue(ft)  | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
| 2012 Build Scenario B                        | LOS             |           |     |     | B         | B    | B    | B          | B    |     |            | A    | A            | B    |
|  | Delay (sec/veh) |           |     |     | 15.3      | 15.3 | 15.3 | 13.9       | 13.9 |     |            | 8.1  | 8.1          | 12.2 |
|  | 95th queue(ft)  |           |     |     | 94        | 94   | 94   | 146        | 146  |     |            | 107  | 107          |      |
| 2012 Build Scenario C                        | LOS             | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | Delay (sec/veh) | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |
|  | 95th queue(ft)  | Vacant    |     |     |           |      |      |            |      |     |            |      |              |      |

*10th Ave E/Superior St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             | C         | C    | C    | B         | B    | B    | D          | D    | D    | D          | D    | D            | C    |
|  | Delay (sec/veh) | 27.6      | 27.6 | 27.6 | 12.8      | 12.8 | 12.8 | 51.5       | 51.5 | 51.5 | 51.6       | 51.6 | 51.6         | 33.5 |
|  | 95th queue(ft)  | #378      | #378 | #378 | 62        | 62   | 62   | 199        | 199  | 199  | #325       | #325 | #325         |      |
| 2012 Base Build (w/t Mitigation)             | LOS             | E         | E    | E    | C         | C    | C    | E          | E    | E    | E          | E    | E            | D    |
|  | Delay (sec/veh) | 57.0      | 57.0 | 57.0 | 24.3      | 24.3 | 24.3 | 57.6       | 57.6 | 57.6 | 58.3       | 58.3 | 58.3         | 48.1 |
|  | 95th queue(ft)  | #621      | #621 | #621 | #392      | #392 | #392 | #224       | #224 | #224 | #435       | #435 | #435         |      |
| 2012 Base Build (w/ Mitigation)              | LOS             | C         | C    | A    | B         | B    | A    | E          | E    | E    | D          | D    | D            | C    |
|  | Delay (sec/veh) | 30.6      | 30.6 | 4.3  | 16.3      | 16.3 | 2.5  | 55.4       | 55.4 | 55.4 | 49.5       | 49.5 | 49.5         | 29.2 |
|  | 95th queue(ft)  | 292       | 292  | 48   | 114       | 114  | 15   | 223        | 223  | 223  | #429       | #429 | #429         |      |
| 2012 Build Scenario 1                        | LOS             | C         | C    | A    | B         | B    | A    | D          | D    | D    | D          | D    | D            | C    |
|  | Delay (sec/veh) | 30.4      | 30.4 | 4.3  | 17.6      | 17.6 | 1.7  | 45.1       | 45.1 | 45.1 | 48.7       | 48.7 | 48.7         | 28.0 |
|  | 95th queue(ft)  | 294       | 294  | 48   | 92        | 92   | 10   | 225        | 225  | 225  | #430       | #430 | #430         |      |
| 2012 Build Scenario 2                        | LOS             |           | A    | A    | A         | A    |      | C          |      |      | C          |      |              | A    |
|  | Delay (sec/veh) |           | 5.7  | 5.7  | 5.3       | 5.3  |      | 29.3       |      |      | 29.3       |      |              | 7.6  |
|  | 95th queue(ft)  |           | 169  | 169  | 167       | 167  |      | 67         |      |      | 67         |      |              |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           | A    | A    | A         | A    |      | C          |      |      | C          |      |              | A    |
|  | Delay (sec/veh) |           | 5.5  | 5.5  | 5.4       | 5.4  |      | 30.4       |      |      | 30.4       |      |              | 7.7  |
|  | 95th queue(ft)  |           | 159  | 159  | 172       | 172  |      | 77         |      |      | 77         |      |              |      |
| 2012 Build Scenario 3                        | LOS             | C         | C    | A    | C         | C    | A    | D          | D    | D    | D          | D    | D            | C    |
|  | Delay (sec/veh) | 30.8      | 30.8 | 4.3  | 23.5      | 23.5 | 4.9  | 52.3       | 52.3 | 52.3 | 46.7       | 46.7 | 46.7         | 29.7 |
|  | 95th queue(ft)  | 292       | 292  | 48   | 156       | 156  | 27   | 217        | 217  | 217  | #401       | #401 | #401         |      |
| 2012 Build Scenario 4 with LU                | LOS             | C         | C    | A    | C         | C    | A    | E          | E    | E    | D          | D    | D            | C    |
|  | Delay (sec/veh) | 33.8      | 33.8 | 4.5  | 20.2      | 20.2 | 2.7  | 55.8       | 55.8 | 55.8 | 46.9       | 46.9 | 46.9         | 30.7 |
|  | 95th queue(ft)  | 293       | 293  | 48   | 120       | 120  | 15   | 280        | 280  | 280  | #465       | #465 | #465         |      |
| 2012 Build Scenario A                        | LOS             |           | A    | A    | A         | A    |      | D          |      |      | D          |      |              | A    |
|  | Delay (sec/veh) |           | 6.5  | 6.5  | 6.6       | 6.6  |      | 46.0       |      |      | 46.0       |      |              | 10.0 |
|  | 95th queue(ft)  |           | 186  | 186  | 259       | 259  |      | 142        |      |      | 142        |      |              |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             |           | A    | A    | A         | A    |      | D          |      |      | D          |      |              | A    |
|  | Delay (sec/veh) |           | 5.7  | 5.7  | 5.5       | 5.5  |      | 46.0       |      |      | 46.0       |      |              | 9.3  |
|  | 95th queue(ft)  |           | 155  | 155  | 156       | 156  |      | 142        |      |      | 142        |      |              |      |
| 2012 Build Scenario B                        | LOS             | C         | C    | A    | C         | C    | A    | D          | D    | D    | D          | D    | D            | C    |
|  | Delay (sec/veh) | 30.8      | 30.8 | 4.3  | 23.5      | 23.5 | 4.9  | 52.3       | 52.3 | 52.3 | 46.7       | 46.7 | 46.7         | 29.7 |
|  | 95th queue(ft)  | 292       | 292  | 48   | 156       | 156  | 27   | 217        | 217  | 217  | #401       | #401 | #401         |      |
| 2012 Build Scenario C                        | LOS             |           | A    | A    | A         | A    |      | D          |      |      | D          |      |              | A    |
|  | Delay (sec/veh) |           | 6.6  | 6.6  | 5.9       | 5.9  |      | 49.6       |      |      | 49.6       |      |              | 10.0 |
|  | 95th queue(ft)  |           | 237  | 237  | 232       | 232  |      | 133        |      |      | 133        |      |              |      |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*12th Ave E/3rd St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             |           |      |      | B         | B    |      |            |      |      |            | B    | B            | B    |
|  | Delay (sec/veh) |           |      |      | 12.0      | 12.0 |      |            |      |      |            | 12.7 | 12.7         | 12.2 |
|  | 95th queue(ft)  |           |      |      | 40        | 40   |      |            |      |      |            | 32   | 32           |      |
| 2012 Base Build                              | LOS             |           |      |      | B         | B    |      |            |      |      |            | B    | B            | B    |
|  | Delay (sec/veh) |           |      |      | 11.5      | 11.5 |      |            |      |      |            | 12.3 | 12.3         | 11.7 |
|  | 95th queue(ft)  |           |      |      | 84        | 84   |      |            |      |      |            | 30   | 30           |      |
| 2012 Build Scenario 1                        | LOS             |           |      |      | A         | A    |      | B          | B    |      |            | B    | B            | A    |
|  | Delay (sec/veh) |           |      |      | 0.2       | 0.9  |      | 13.3       | 13.3 |      |            | 12.0 | 12.0         | 5.1  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   |      | 15         | 15   |      |            | 13   | 13           |      |
| 2012 Build Scenario 2                        | LOS             |           |      |      | A         | A    |      |            |      |      |            | C    | C            | B    |
|  | Delay (sec/veh) |           |      |      | 6.0       | 6.0  |      |            |      |      |            | 23.8 | 23.8         | 10.1 |
|  | 95th queue(ft)  |           |      |      | 63        | 63   |      |            |      |      |            | 66   | 66           |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           |      |      | A         | A    |      |            |      |      |            | C    | C            | A    |
|  | Delay (sec/veh) |           |      |      | 5.9       | 5.9  |      |            |      |      |            | 23.8 | 23.8         | 10.0 |
|  | 95th queue(ft)  |           |      |      | 59        | 59   |      |            |      |      |            | 66   | 66           |      |
| 2012 Build Scenario 3                        | LOS             |           | A    | A    | A         | A    |      |            |      |      | B          | B    | B            | A    |
|  | Delay (sec/veh) |           | 0.0  | 0.0  | 0.5       | 4.6  |      |            |      |      | 14.3       | 13.4 | 12.5         | 4.8  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   |      |            |      |      | 13         | 14   | 14           |      |
| 2012 Build Scenario 4 with LU                | LOS             |           |      |      | B         | B    |      |            |      |      |            | B    | B            | B    |
|  | Delay (sec/veh) |           |      |      | 11.5      | 11.5 |      |            |      |      |            | 12.3 | 12.3         | 11.7 |
|  | 95th queue(ft)  |           |      |      | 80        | 80   |      |            |      |      |            | 31   | 31           |      |
| 2012 Build Scenario A                        | LOS             |           |      |      | A         | A    | A    | D          | D    |      |            | D    | D            | B    |
|  | Delay (sec/veh) |           |      |      | 0.3       | 0.5  | 0.0  | 31.2       | 31.2 |      |            | 34.2 | 34.2         | 10.2 |
|  | 95th queue(ft)  |           |      |      | 10        | 10   |      | 63         | 63   |      |            | 103  | 103          |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             |           |      |      | A         | A    | A    | D          | D    |      |            | D    | D            | B    |
|  | Delay (sec/veh) |           |      |      | 0.3       | 0.5  | 0.0  | 31.2       | 31.2 |      |            | 34.2 | 34.2         | 10.2 |
|  | 95th queue(ft)  |           |      |      | 10        | 10   |      | 63         | 63   |      |            | 103  | 103          |      |
| 2012 Build Scenario B                        | LOS             | A         | A    | A    | A         | A    | A    | B          | B    | B    | B          | B    | B            | A    |
|  | Delay (sec/veh) | 0.1       | 0.5  | 0.5  | 0.2       | 3.1  | 3.1  | 15.0       | 15.0 | 15.0 | 13.3       | 13.3 | 13.3         | 5.8  |
|  | 95th queue(ft)  | 10        | 10   | 10   | 10        | 10   | 10   | 24         | 24   | 24   | 17         | 17   | 17           |      |
| 2012 Build Scenario C                        | LOS             | B         | B    | B    | E         | E    | E    | B          | B    | B    | B          | B    | B            | D    |
|  | Delay (sec/veh) | 14.6      | 14.6 | 14.6 | 42.0      | 42.0 | 42.0 | 12.7       | 12.7 | 12.7 | 14.7       | 14.7 | 14.7         | 27.3 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |

*12th Ave E/2nd St*

| Scenario                                     | MOE             | Movements |      |     |           |      |      |            |      |      |            |      | Intersection |      |
|--|-----------------|-----------|------|-----|-----------|------|------|------------|------|------|------------|------|--------------|------|
|  |                 | Eastbound |      |     | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |
|  |                 | EBL       | EBT  | EBR | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             |           | A    | A   |           |      |      |            |      |      |            | C    | C            | A    |
|  | Delay (sec/veh) |           | 2.9  | 0.5 |           |      |      |            |      |      |            | 20.7 | 20.7         | 5.3  |
|  | 95th queue(ft)  |           | 22   | 10  |           |      |      |            |      |      |            | 47   | 47           |      |
| 2012 Base Build                              | LOS             |           | A    | A   |           |      |      |            |      |      |            | B    | B            | A    |
|  | Delay (sec/veh) |           | 6.8  | 0.7 |           |      |      |            |      |      |            | 19.8 | 19.8         | 7.8  |
|  | 95th queue(ft)  |           | 46   | 10  |           |      |      |            |      |      |            | 35   | 35           |      |
| 2012 Build Scenario 1                        | LOS             |           | A    | A   |           |      |      |            | C    | C    |            | C    | C            | A    |
|  | Delay (sec/veh) |           | 0.1  | 0.3 |           |      |      |            | 15.2 | 15.2 |            | 19.8 | 19.8         | 3.3  |
|  | 95th queue(ft)  |           | 10   | 10  |           |      |      |            | 18   | 18   |            | 19   | 19           |      |
| 2012 Build Scenario 2                        | LOS             |           | B    | A   |           |      |      |            |      |      |            | A    | A            | A    |
|  | Delay (sec/veh) |           | 10.5 | 4.8 |           |      |      |            |      |      |            | 1.6  | 1.6          | 7.3  |
|  | 95th queue(ft)  |           | 162  | 94  |           |      |      |            |      |      |            | 10   | 10           |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           | A    | A   |           |      |      |            |      |      |            | A    | A            | A    |
|  | Delay (sec/veh) |           | 10.0 | 5.4 |           |      |      |            |      |      |            | 1.6  | 1.6          | 6.8  |
|  | 95th queue(ft)  |           | 136  | 125 |           |      |      |            |      |      |            | 10   | 10           |      |
| 2012 Build Scenario 3                        | LOS             |           | A    | A   | A         | A    |      |            |      |      |            | C    | C            | C    |
|  | Delay (sec/veh) |           | 0.0  | 0.0 | 0.2       | 1.0  |      |            |      |      |            | 18.3 | 17.6         | 16.9 |
|  | 95th queue(ft)  |           |      |     | 10        | 10   |      |            |      |      |            | 23   | 23           | 19   |
| 2012 Build Scenario 4 with LU                | LOS             |           | A    | A   |           |      |      |            |      |      |            | B    | B            | A    |
|  | Delay (sec/veh) |           | 5.4  | 0.5 |           |      |      |            |      |      |            | 19.4 | 19.4         | 6.8  |
|  | 95th queue(ft)  |           | 37   | 10  |           |      |      |            |      |      |            | 33   | 33           |      |
| 2012 Build Scenario A                        | LOS             | A         | A    | A   |           |      |      |            | C    | C    |            | E    | E            | A    |
|  | Delay (sec/veh) | 0.1       | 0.2  | 0.0 |           |      |      |            | 22.1 | 22.1 |            | 37.2 | 37.2         | 7.2  |
|  | 95th queue(ft)  | 10        | 10   |     |           |      |      |            | 41   | 41   |            | 98   | 98           |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | A         | A    | A   |           |      |      |            | C    | C    |            | E    | E            | A    |
|  | Delay (sec/veh) | 0.1       | 0.2  | 0.0 |           |      |      |            | 23.3 | 23.3 |            | 42.1 | 42.1         | 7.6  |
|  | 95th queue(ft)  | 10        | 10   |     |           |      |      |            | 44   | 44   |            | 108  | 108          |      |
| 2012 Build Scenario B                        | LOS             | A         | A    | A   | A         | A    | A    | C          | C    | C    | C          | C    | C            | A    |
|  | Delay (sec/veh) | 0.2       | 0.5  | 0.5 | 0.2       | 1.0  | 1.0  | 19.8       | 19.8 | 19.8 | 21.4       | 21.4 | 21.4         | 5.2  |
|  | 95th queue(ft)  | 10        | 10   | 10  | 10        | 10   | 10   | 31         | 31   | 31   | 34         | 34   | 34           |      |
| 2012 Build Scenario C                        | LOS             | A         | A    | A   | B         | B    | B    | B          | B    | B    | C          | C    | C            | B    |
|  | Delay (sec/veh) | 9.7       | 9.7  | 9.7 | 13.7      | 13.7 | 13.7 | 20.0       | 20.0 | 20.0 | 22.3       | 22.3 | 22.3         | 13.3 |
|  | 95th queue(ft)  | 147       | 147  | 147 | 118       | 118  | 118  | 72         | 72   | 72   | 135        | 135  | 135          |      |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*12th Ave E/1th St*

| Scenario                                     | MOE             | Movements |     |     |           |      |      |            |     |     |            |      | Intersection |      |
|--|-----------------|-----------|-----|-----|-----------|------|------|------------|-----|-----|------------|------|--------------|------|
|  |                 | Eastbound |     |     | Westbound |      |      | Northbound |     |     | Southbound |      |              |      |
|  |                 | EBL       | EBT | EBR | WBL       | WBT  | WBR  | NBL        | NBT | NBR | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             |           |     |     | B         | B    |      |            |     |     |            | B    | B            | B    |
|  | Delay (sec/veh) |           |     |     | 14.7      | 14.7 |      |            |     |     |            | 13.3 | 13.3         | 13.9 |
|  | 95th queue(ft)  |           |     |     | 62        | 62   |      |            |     |     |            | 67   | 67           |      |
| 2012 Base Build                              | LOS             |           |     |     | B         | B    |      |            |     |     |            | A    | A            | A    |
|  | Delay (sec/veh) |           |     |     | 15.3      | 15.3 |      |            |     |     |            | 6.0  | 6.0          | 9.9  |
|  | 95th queue(ft)  |           |     |     | 71        | 71   |      |            |     |     |            | 30   | 30           |      |
| 2012 Build Scenario 1                        | LOS             |           |     |     | A         | A    |      | A          | A   |     |            | B    | B            | A    |
|  | Delay (sec/veh) |           |     |     | 9.0       | 8.8  |      | 9.0        | 9.0 |     |            | 10.1 | 10.1         | 9.3  |
|  | 95th queue(ft)  |           |     |     |           |      |      |            |     |     |            |      |              |      |
| 2012 Build Scenario 2                        | LOS             |           |     |     | B         |      |      |            |     |     |            | A    | A            | A    |
|  | Delay (sec/veh) |           |     |     | 10.4      |      |      |            |     |     |            | 0.0  | 0.0          | 0.2  |
|  | 95th queue(ft)  |           |     |     | 71        |      |      |            |     |     |            |      |              |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           |     |     | B         |      |      |            |     |     |            | A    | A            | A    |
|  | Delay (sec/veh) |           |     |     | 13.6      |      |      |            |     |     |            | 0.7  | 1.2          | 1.8  |
|  | 95th queue(ft)  |           |     |     | 10        |      |      |            |     |     |            | 10   | 10           |      |
| 2012 Build Scenario 3                        | LOS             |           |     |     | B         | B    |      |            |     |     |            | B    | B            | B    |
|  | Delay (sec/veh) |           |     |     | 18.4      | 18.4 |      |            |     |     |            | 13.4 | 13.4         | 15.5 |
|  | 95th queue(ft)  |           |     |     | 78        | 78   |      |            |     |     |            | 94   | 94           |      |
| 2012 Build Scenario 4 with LU                | LOS             |           |     |     | B         | B    |      |            |     |     |            | A    | A            | B    |
|  | Delay (sec/veh) |           |     |     | 15.3      | 15.3 |      |            |     |     |            | 6.8  | 6.8          | 10.3 |
|  | 95th queue(ft)  |           |     |     | 71        | 71   |      |            |     |     |            | 36   | 36           |      |
| 2012 Build Scenario A                        | LOS             |           |     |     | B         |      | A    |            | A   |     |            | A    |              | A    |
|  | Delay (sec/veh) |           |     |     | 12.3      |      | 9.1  |            | 0.0 |     |            | 0.0  |              | 0.6  |
|  | 95th queue(ft)  |           |     |     | 10        |      | 10   |            |     |     |            |      |              |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             |           |     |     | B         |      | B    |            | A   | A   | A          | A    |              | A    |
|  | Delay (sec/veh) |           |     |     | 10.6      |      | 10.6 |            | 0.0 | 0.0 | 0.2        | 0.6  |              | 1.1  |
|  | 95th queue(ft)  |           |     |     | 10        |      | 10   |            |     |     |            |      |              |      |
| 2012 Build Scenario B                        | LOS             |           |     |     | A         | A    | A    | A          | A   |     |            | B    | B            | A    |
|  | Delay (sec/veh) |           |     |     | 9.0       | 8.8  | 8.5  | 9.0        | 9.0 |     |            | 10.1 | 10.1         | 9.3  |
|  | 95th queue(ft)  |           |     |     |           |      |      |            |     |     |            |      |              |      |
| 2012 Build Scenario C                        | LOS             |           |     |     | B         |      | A    |            | A   |     |            | A    |              | A    |
|  | Delay (sec/veh) |           |     |     | 12.4      |      | 9.2  |            | 0.0 |     |            | 0.0  |              | 0.6  |
|  | 95th queue(ft)  |           |     |     | 10        |      | 10   |            |     |     |            |      |              |      |

*12th Ave E/Superior St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |      |
| Existing Condition                           | LOS             |           | C    | C    | B         | B    |      |            |      |      |            | A    | A            | A    | B    |
|  | Delay (sec/veh) |           | 24.0 | 24.0 | 10.9      | 10.9 |      |            |      |      |            | 4.8  | 4.8          | 4.8  | 14.0 |
|  | 95th queue(ft)  |           | 255  | 255  | 72        | 72   |      |            |      |      |            | 20   | 20           | 20   |      |
| 2012 Base Build                              | LOS             |           | A    | A    | B         | B    |      | C          |      | A    | B          | B    | B            | A    |      |
|  | Delay (sec/veh) |           | 5.6  | 5.6  | 11.9      | 11.7 |      | 26.3       |      | 7.5  | 10.3       | 10.3 | 10.3         | 9.8  |      |
|  | 95th queue(ft)  |           | 97   | 97   | 179       | 179  |      | 64         |      | 23   | 57         | 57   | 57           |      |      |
| 2012 Build Scenario 1                        | LOS             | A         | A    | A    | B         | B    | B    | C          | A    | A    | C          | C    | C            | B    |      |
|  | Delay (sec/veh) | 9.9       | 9.9  | 9.9  | 13.5      | 13.5 | 13.5 | 24.2       | 9.6  | 9.6  | 33.1       | 33.1 | 33.1         | 16.1 |      |
|  | 95th queue(ft)  | 169       | 169  | 169  | 211       | 211  | 211  | 55         | 30   | 30   | 212        | 212  | 212          |      |      |
| 2012 Build Scenario 2                        | LOS             |           | B    | B    | B         | B    |      | C          |      | A    | B          | B    | B            | B    |      |
|  | Delay (sec/veh) |           | 11.1 | 11.1 | 15.0      | 15.0 |      | 28.5       |      | 7.0  | 16.6       | 16.6 | 16.6         | 14.8 |      |
|  | 95th queue(ft)  |           | 126  | 126  | 276       | 276  |      | 68         |      | 22   | 134        | 134  | 134          |      |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           | B    | B    | B         | B    |      | C          |      | A    | B          | B    | B            | B    |      |
|  | Delay (sec/veh) |           | 10.9 | 10.9 | 15.0      | 15.0 |      | 28.5       |      | 7.0  | 16.5       | 16.5 | 16.5         | 14.8 |      |
|  | 95th queue(ft)  |           | 121  | 121  | 275       | 275  |      | 68         |      | 22   | 131        | 131  | 131          |      |      |
| 2012 Build Scenario 3                        | LOS             | A         | A    | A    | B         | B    | B    | C          |      | A    | B          | B    | B            | B    |      |
|  | Delay (sec/veh) | 7.6       | 7.6  | 7.6  | 11.7      | 11.7 | 11.7 | 26.3       |      | 7.5  | 12.4       | 12.4 | 12.4         | 11.0 |      |
|  | 95th queue(ft)  | 125       | 125  | 125  | 205       | 205  | 205  | 64         |      | 23   | 37         | 37   | 37           |      |      |
| 2012 Build Scenario 4 with LU                | LOS             |           | A    | A    | B         | B    |      | C          |      | A    | B          | B    | B            | A    |      |
|  | Delay (sec/veh) |           | 5.9  | 5.9  | 12.0      | 12.0 |      | 26.3       |      | 7.5  | 10.2       | 10.2 | 10.2         | 9.9  |      |
|  | 95th queue(ft)  |           | m93  | m93  | 183       | 183  |      | 64         |      | 23   | 53         | 53   | 53           |      |      |
| 2012 Build Scenario A                        | LOS             | B         | B    | B    | C         | C    | C    | B          | B    | B    | C          | C    | C            | C    |      |
|  | Delay (sec/veh) | 17.9      | 17.9 | 17.9 | 20.4      | 20.4 | 20.4 | 15.0       | 15.0 | 15.0 | 33.0       | 33.0 | 33.0         | 22.5 |      |
|  | 95th queue(ft)  | 237       | 237  | 237  | 300       | 300  | 300  | 74         | 74   | 74   | 342        | 342  | 342          |      |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | B         | B    | B    | B         | B    | B    | B          | B    | B    | C          | C    | C            | C    |      |
|  | Delay (sec/veh) | 16.9      | 16.9 | 16.9 | 20.0      | 20.0 | 20.0 | 15.0       | 15.0 | 15.0 | 33.0       | 33.0 | 33.0         | 22.2 |      |
|  | 95th queue(ft)  | 200       | 200  | 200  | 298       | 298  | 298  | 74         | 74   | 74   | 342        | 342  | 342          |      |      |
| 2012 Build Scenario B                        | LOS             | A         | A    | A    | B         | B    | B    | B          | B    | B    | D          | D    | D            | B    |      |
|  | Delay (sec/veh) | 7.8       | 7.8  | 7.8  | 14.1      | 14.1 | 14.1 | 19.2       | 19.2 | 19.2 | 37.6       | 37.6 | 37.6         | 16.6 |      |
|  | 95th queue(ft)  | 145       | 145  | 145  | 268       | 268  | 268  | 78         | 78   | 78   | 228        | 228  | 228          |      |      |
| 2012 Build Scenario C                        | LOS             | B         | B    | B    | C         | C    | C    | B          | B    | B    | C          | C    | C            | B    |      |
|  | Delay (sec/veh) | 16.0      | 16.0 | 16.0 | 21.4      | 21.4 | 21.4 | 14.5       | 14.5 | 14.5 | 20.7       | 20.7 | 20.7         | 19.2 |      |
|  | 95th queue(ft)  | 173       | 173  | 173  | 324       | 324  | 324  | 72         | 72   | 72   | 279        | 279  | 279          |      |      |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*13th Ave E/Superior St*

| Scenario                                     | MOE             | Movements |     |     |           |     |     |            |      |      |            |      | Intersection |     |
|--|-----------------|-----------|-----|-----|-----------|-----|-----|------------|------|------|------------|------|--------------|-----|
|  |                 | Eastbound |     |     | Westbound |     |     | Northbound |      |      | Southbound |      |              |     |
|  |                 | EBL       | EBT | EBR | WBL       | WBT | WBR | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR |
| Existing Condition                           | LOS             | A         | A   | A   | A         | A   | A   | B          | B    | B    | B          | B    | B            | A   |
|  | Delay (sec/veh) | 0.7       | 1.9 | 1.9 | 0.4       | 1.4 | 1.4 | 15.0       | 15.0 | 15.0 | 14.7       | 14.7 | 14.7         | 3.8 |
|  | 95th queue(ft)  | 10        | 10  | 10  | 10        | 10  | 10  | 20         | 20   | 20   | 14         | 14   | 14           |     |
| 2012 Base Build                              | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 8.6       | 0.0 | 0.0 | 8.9       | 0.0 | 0.0 | 36.4       | 36.4 | 11.7 | 36.3       | 36.3 | 10.2         | 5.4 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 44         | 44   | 15   | 31         | 31   | 10           |     |
| 2012 Build Scenario 1                        | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 9.1       | 0.0 | 0.0 | 8.8       | 0.0 | 0.0 | 41.5       | 41.5 | 11.4 | 40.1       | 40.1 | 11.1         | 5.5 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 49         | 49   | 14   | 34         | 34   | 10           |     |
| 2012 Build Scenario 2                        | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | A            | A   |
|  | Delay (sec/veh) | 8.4       | 0.0 | 0.0 | 9.0       | 0.0 | 0.0 | 43.5       | 43.5 | 12.0 | 42.6       | 42.6 | 9.9          | 5.6 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 52         | 52   | 14   | 36         | 36   | 10           |     |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 8.4       | 0.0 | 0.0 | 9.0       | 0.0 | 0.0 | 41.4       | 41.4 | 11.9 | 40.6       | 40.6 | 10.7         | 5.5 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 49         | 49   | 15   | 35         | 35   | 10           |     |
| 2012 Build Scenario 3                        | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 8.6       | 0.0 | 0.0 | 8.9       | 0.0 | 0.0 | 35.3       | 35.3 | 11.7 | 35.4       | 35.4 | 10.2         | 5.3 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 42         | 42   | 15   | 30         | 30   | 10           |     |
| 2012 Build Scenario 4 with LU                | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 8.6       | 0.0 | 0.0 | 8.9       | 0.0 | 0.0 | 36.6       | 36.6 | 11.7 | 36.5       | 36.5 | 10.2         | 5.4 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 44         | 44   | 15   | 31         | 31   | 10           |     |
| 2012 Build Scenario A                        | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 9.7       | 0.0 | 0.0 | 8.6       | 0.0 | 0.0 | 45.3       | 45.3 | 11.1 | 42.7       | 42.7 | 11.8         | 5.6 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 44         | 44   | 15   | 31         | 31   | 10           |     |
| 2012 Build Scenario A with 1st St Conversion | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 9.7       | 0.0 | 0.0 | 8.6       | 0.0 | 0.0 | 45.3       | 45.3 | 11.1 | 42.7       | 42.7 | 11.8         | 5.6 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 44         | 44   | 15   | 31         | 31   | 10           |     |
| 2012 Build Scenario B                        | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 9.2       | 0.0 | 0.0 | 8.8       | 0.0 | 0.0 | 37.9       | 37.9 | 11.4 | 37.0       | 37.0 | 11.1         | 5.2 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 45         | 45   | 11   | 32         | 32   | 10           |     |
| 2012 Build Scenario C                        | LOS             | A         | A   | A   | A         | A   | A   | E          | E    | B    | E          | E    | B            | A   |
|  | Delay (sec/veh) | 9.7       | 0.0 | 0.0 | 8.6       | 0.0 | 0.0 | 45.2       | 45.2 | 10.8 | 42.5       | 42.5 | 11.4         | 5.5 |
|  | 95th queue(ft)  | 10        |     |     | 10        |     |     | 44         | 44   | 15   | 31         | 31   | 10           |     |

*14th Ave E/3rd St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             |           |      |      |           |      | B    | B          | B    | A    |            |      |              | B    |
|  | Delay (sec/veh) |           |      |      |           |      | 15.0 | 15.0       | 15.0 | 9.0  |            |      |              | 11.8 |
|  | 95th queue(ft)  |           |      |      |           |      | 51   | 51         | 51   | 48   |            |      |              |      |
| 2012 Base Build                              | LOS             |           |      |      |           |      | B    | B          | B    | B    |            |      |              | B    |
|  | Delay (sec/veh) |           |      |      |           |      | 14.5 | 14.5       | 10.5 | 10.5 |            |      |              | 12.3 |
|  | 95th queue(ft)  |           |      |      |           |      | 62   | 62         | 59   | 59   |            |      |              |      |
| 2012 Build Scenario 1                        | LOS             |           |      |      | A         | A    | A    | A          | A    |      |            | A    | A            | A    |
|  | Delay (sec/veh) |           |      |      | 8.3       | 8.1  | 7.8  | 9.4        | 9.4  |      |            | 8.1  | 8.1          | 8.6  |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario 2                        | LOS             |           |      |      |           | C    | C    | A          | A    |      |            |      |              | B    |
|  | Delay (sec/veh) |           |      |      |           | 26.9 | 26.9 | 5.7        | 5.7  |      |            |      |              | 12.8 |
|  | 95th queue(ft)  |           |      |      |           | 120  | 120  | 51         | 51   |      |            |      |              |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           |      |      |           | C    | C    | A          | A    |      |            |      |              | B    |
|  | Delay (sec/veh) |           |      |      |           | 26.9 | 26.9 | 5.5        | 5.5  |      |            |      |              | 12.7 |
|  | 95th queue(ft)  |           |      |      |           | 120  | 120  | 44         | 44   |      |            |      |              |      |
| 2012 Build Scenario 3                        | LOS             | B         | B    |      |           | A    | A    | A          | A    | A    |            |      |              | A    |
|  | Delay (sec/veh) | 10.1      | 10.1 |      |           | 8.0  | 8.0  | 8.9        | 8.4  | 8.0  |            |      |              | 9.1  |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario 4 with LU                | LOS             |           |      |      |           |      | B    | B          | B    | B    |            |      |              | B    |
|  | Delay (sec/veh) |           |      |      |           |      | 14.6 | 14.6       | 10.4 | 10.4 |            |      |              | 12.3 |
|  | 95th queue(ft)  |           |      |      |           |      | 53   | 53         | 63   | 63   |            |      |              |      |
| 2012 Build Scenario A                        | LOS             |           |      |      |           | B    | B    | B          | C    | C    |            | A    | A            | C    |
|  | Delay (sec/veh) |           |      |      |           | 10.8 | 10.5 | 10.3       | 20.4 | 20.4 |            | 9.5  | 9.5          | 15.6 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             |           |      |      |           | B    | B    | B          | C    | C    |            | A    | A            | C    |
|  | Delay (sec/veh) |           |      |      |           | 10.8 | 10.5 | 10.3       | 20.4 | 20.4 |            | 9.5  | 9.5          | 15.6 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario B                        | LOS             | B         | B    | B    | A         | A    | A    | A          | A    | A    | A          | A    | A            | A    |
|  | Delay (sec/veh) | 10.3      | 10.3 | 10.3 | 8.6       | 8.6  | 8.6  | 9.9        | 9.9  | 9.9  | 8.6        | 8.6  | 8.6          | 9.8  |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario C                        | LOS             | C         | C    | C    | B         | B    | B    | D          | D    | D    | B          | B    | B            | C    |
|  | Delay (sec/veh) | 15.3      | 15.3 | 15.3 | 12.6      | 12.6 | 12.6 | 29.8       | 29.8 | 29.8 | 11.2       | 11.2 | 11.2         | 21.1 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*14th Ave E/2nd St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |
| Existing Condition                           | LOS             | A         | A    |      |           |      |      |            | B    | B    |            |      |              | A    |
|  | Delay (sec/veh) | 5.5       | 5.5  |      |           |      |      |            | 13.4 | 13.4 |            |      |              | 7.3  |
|  | 95th queue(ft)  | 30        | 30   |      |           |      |      |            | 42   | 42   |            |      |              |      |
| 2012 Base Build                              | LOS             | A         | A    |      |           |      |      |            | B    | B    |            |      |              | A    |
|  | Delay (sec/veh) | 7.0       | 7.0  |      |           |      |      |            | 12.2 | 12.2 |            |      |              | 8.4  |
|  | 95th queue(ft)  | 75        | 75   |      |           |      |      |            | 54   | 54   |            |      |              |      |
| 2012 Build Scenario 1                        | LOS             | A         | A    | A    |           |      |      |            | C    | C    | C          | C    |              | A    |
|  | Delay (sec/veh) | 0.3       | 0.7  | 0.0  |           |      |      |            | 21.8 | 21.8 | 20.5       | 20.5 |              | 8.4  |
|  | 95th queue(ft)  | 10        | 10   |      |           |      |      |            | 61   | 61   | 27         | 27   |              |      |
| 2012 Build Scenario 2                        | LOS             | B         | B    |      |           |      |      |            | B    | B    |            |      |              | B    |
|  | Delay (sec/veh) | 15.1      | 15.1 |      |           |      |      |            | 16.7 | 16.7 |            |      |              | 15.7 |
|  | 95th queue(ft)  | 272       | 272  |      |           |      |      |            | 154  | 154  |            |      |              |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | B         | B    |      |           |      |      |            | B    | B    |            |      |              | B    |
|  | Delay (sec/veh) | 14.8      | 14.8 |      |           |      |      |            | 17.0 | 17.0 |            |      |              | 15.7 |
|  | 95th queue(ft)  | 237       | 237  |      |           |      |      |            | 151  | 151  |            |      |              |      |
| 2012 Build Scenario 3                        | LOS             | A         | A    |      |           | A    | A    | C          | C    | C    |            |      |              | A    |
|  | Delay (sec/veh) | 0.4       | 1.3  |      |           | 0.0  | 0.0  | 18.6       | 17.7 | 16.7 |            |      |              | 5.4  |
|  | 95th queue(ft)  | 10        | 10   |      |           |      |      | 26         | 32   | 32   |            |      |              |      |
| 2012 Build Scenario 4 with LU                | LOS             | A         | A    |      |           |      |      |            | B    | B    |            |      |              | A    |
|  | Delay (sec/veh) | 6.5       | 6.5  |      |           |      |      |            | 12.6 | 12.6 |            |      |              | 8.2  |
|  | 95th queue(ft)  | 67        | 67   |      |           |      |      |            | 57   | 57   |            |      |              |      |
| 2012 Build Scenario A                        | LOS             | B         | B    | B    |           |      |      |            | C    | C    | B          | B    |              | B    |
|  | Delay (sec/veh) | 16.4      | 16.4 | 16.4 |           |      |      |            | 22.2 | 22.2 | 16.1       | 16.1 |              | 18.2 |
|  | 95th queue(ft)  | 234       | 234  | 234  |           |      |      |            | 274  | 274  | 63         | 63   |              |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | B         | B    | B    |           |      |      |            | C    | C    | B          | B    |              | B    |
|  | Delay (sec/veh) | 15.0      | 15.0 | 15.0 |           |      |      |            | 22.2 | 22.2 | 16.1       | 16.1 |              | 17.2 |
|  | 95th queue(ft)  | 222       | 222  | 222  |           |      |      |            | 274  | 274  | 63         | 63   |              |      |
| 2012 Build Scenario B                        | LOS             | A         | A    | A    | A         | A    | A    | D          | D    | D    | D          | D    | D            | A    |
|  | Delay (sec/veh) | 0.4       | 1.2  | 1.2  | 0.2       | 1.0  | 1.0  | 29.5       | 29.5 | 29.5 | 25.7       | 25.7 | 25.7         | 9.1  |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |
| 2012 Build Scenario C                        | LOS             | A         | A    | A    | B         | B    | B    | B          | B    | B    | A          | A    | A            | B    |
|  | Delay (sec/veh) | 10.0      | 10.0 | 10.0 | 20.0      | 20.0 | 20.0 | 17.7       | 17.7 | 17.7 | 9.8        | 9.8  | 9.8          | 13.8 |
|  | 95th queue(ft)  | 95        | 95   | 95   | 138       | 138  | 138  | 233        | 233  | 233  | 36         | 36   | 36           |      |

*14th Ave E/1st St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |     |     |            |     | Intersection |     |
|--|-----------------|-----------|------|------|-----------|------|------|------------|-----|-----|------------|-----|--------------|-----|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |     |     | Southbound |     |              |     |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT | NBR | SBL        | SBT |              | SBR |
| Existing Condition                           | LOS             |           |      |      |           | A    | A    | A          | A   |     |            |     |              | A   |
|  | Delay (sec/veh) |           |      |      |           | 7.5  | 7.1  | 7.8        | 7.6 |     |            |     |              | 7.5 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |     |     |            |     |              |     |
| 2012 Base Build                              | LOS             |           |      |      |           | A    | A    | A          | A   |     |            |     |              | A   |
|  | Delay (sec/veh) |           |      |      |           | 7.8  | 7.4  | 8.1        | 8.1 |     |            |     |              | 7.9 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |     |     |            |     |              |     |
| 2012 Build Scenario 1                        | LOS             |           |      |      | A         | A    | A    | A          | A   |     |            | A   | A            | A   |
|  | Delay (sec/veh) |           |      |      | 8.1       | 8.0  | 7.8  | 9.1        | 9.1 |     |            | 8.4 | 8.4          | 8.5 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |     |     |            |     |              |     |
| 2012 Build Scenario 2                        | LOS             |           |      |      |           | B    | B    | A          | A   |     |            |     |              | A   |
|  | Delay (sec/veh) |           |      |      |           | 13.1 | 10.8 | 0.1        | 0.2 |     |            |     |              | 2.6 |
|  | 95th queue(ft)  |           |      |      |           | 10   | 15   | 10         | 10  |     |            |     |              |     |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | C         | C    |      |           | B    | B    | A          | A   |     |            |     |              | A   |
|  | Delay (sec/veh) | 15.9      | 15.9 |      |           | 13.0 | 13.0 | 0.1        | 0.2 |     |            |     |              | 4.8 |
|  | 95th queue(ft)  | 27        | 27   |      |           | 10   | 10   | 10         | 10  |     |            |     |              |     |
| 2012 Build Scenario 3                        | LOS             |           |      |      |           | A    | A    | A          | A   |     |            |     |              | A   |
|  | Delay (sec/veh) |           |      |      |           | 7.8  | 7.4  | 8.1        | 8.1 |     |            |     |              | 7.9 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |     |     |            |     |              |     |
| 2012 Build Scenario 4 with LU                | LOS             |           |      |      |           | A    | A    | A          | A   |     |            |     |              | A   |
|  | Delay (sec/veh) |           |      |      |           | 7.8  | 7.4  | 8.1        | 8.1 |     |            |     |              | 8.0 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |     |     |            |     |              |     |
| 2012 Build Scenario A                        | LOS             |           |      |      | C         | C    | B    | A          | A   |     |            | A   | A            | A   |
|  | Delay (sec/veh) |           |      |      | 19.7      | 16.1 | 12.5 | 0.1        | 0.4 |     |            | 0.0 | 0.0          | 2.5 |
|  | 95th queue(ft)  |           |      |      | 13        | 17   | 17   | 10         | 10  |     |            |     |              |     |
| 2012 Build Scenario A with 1st St Conversion | LOS             | D         | D    | D    | C         | C    | C    | A          | A   | A   | A          | A   | A            | A   |
|  | Delay (sec/veh) | 28.6      | 28.6 | 28.6 | 23.1      | 23.1 | 23.1 | 0.1        | 0.4 | 0.4 | 0.5        | 1.4 | 1.4          | 6.1 |
|  | 95th queue(ft)  | 40        | 40   | 40   | 55        | 55   | 55   | 10         | 10  | 10  | 10         | 10  | 10           |     |
| 2012 Build Scenario B                        | LOS             |           |      |      |           | A    | A    | A          | A   |     |            | A   | A            | A   |
|  | Delay (sec/veh) |           |      |      |           | 8.1  | 8.0  | 7.8        | 9.1 | 9.1 |            | 8.4 | 8.4          | 8.5 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |     |     |            |     |              |     |
| 2012 Build Scenario C                        | LOS             |           |      |      | C         | C    | B    | A          | A   |     |            | A   | A            | A   |
|  | Delay (sec/veh) |           |      |      | 19.7      | 16.1 | 12.5 | 0.1        | 0.4 |     |            | 0.0 | 0.0          | 2.5 |
|  | 95th queue(ft)  |           |      |      | 13        | 17   | 17   | 10         | 10  |     |            |     |              |     |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*14th Ave E/Superior St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |      |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |      |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |      |      |
| Existing Condition                           | LOS             | B         | B    |      |           |      |      | B          | B    | B    |            |      |              |      | B    |      |
|  | Delay (sec/veh) | 18.0      | 18.0 |      |           |      |      | 12.5       | 12.5 | 14.4 | 14.4       | 14.4 |              |      | 15.5 |      |
|  | 95th queue(ft)  | 274       | 274  |      |           |      |      | 149        | 149  | 32   | 32         | 32   |              |      |      |      |
| 2012 Base Build                              | LOS             | B         | B    |      |           |      |      | A          | A    | C    | C          | C    |              |      | B    |      |
|  | Delay (sec/veh) | 14.0      | 14.0 |      |           |      |      | 6.2        | 6.2  | 27.4 | 27.4       | 27.4 |              |      | 14.5 |      |
|  | 95th queue(ft)  | 297       | 297  |      |           |      |      | 50         | 50   | 86   | 86         | 86   |              |      |      |      |
| 2012 Build Scenario 1                        | LOS             | D         | D    |      |           |      |      | C          | C    | C    | C          | C    | B            |      | B    | C    |
|  | Delay (sec/veh) | 29.5      | 29.5 |      |           |      |      | 17.3       | 17.3 | 15.7 | 15.7       | 15.7 | 11.8         |      | 11.8 | 21.5 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |      |      |
| 2012 Build Scenario 2                        | LOS             | B         | B    |      |           |      |      | A          | A    | C    | C          | C    |              |      |      | B    |
|  | Delay (sec/veh) | 14.0      | 14.0 |      |           |      |      | 7.2        | 7.2  | 30.4 | 30.4       | 30.4 |              |      |      | 16.5 |
|  | 95th queue(ft)  | 305       | 305  |      |           |      |      | 195        | 195  | 141  | 141        | 141  |              |      |      |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | B         | B    |      |           |      |      | A          | A    | C    | C          | C    |              |      |      | B    |
|  | Delay (sec/veh) | 12.7      | 12.7 |      |           |      |      | 7.4        | 7.4  | 31.0 | 31.0       | 31.0 |              |      |      | 16.2 |
|  | 95th queue(ft)  | 291       | 291  |      |           |      |      | 214        | 214  | 134  | 134        | 134  |              |      |      |      |
| 2012 Build Scenario 3                        | LOS             | B         | B    |      |           |      |      | A          | A    | C    | C          | C    |              |      |      | B    |
|  | Delay (sec/veh) | 13.2      | 13.2 |      |           |      |      | 6.8        | 6.8  | 31.3 | 31.3       | 31.3 |              |      |      | 15.1 |
|  | 95th queue(ft)  | 275       | 275  |      |           |      |      | 116        | 116  | 83   | 83         | 83   |              |      |      |      |
| 2012 Build Scenario 4 with LU                | LOS             | B         | B    |      |           |      |      | A          | A    | C    | C          | C    |              |      |      | B    |
|  | Delay (sec/veh) | 13.4      | 13.4 |      |           |      |      | 6.3        | 6.3  | 28.1 | 28.1       | 28.1 |              |      |      | 14.5 |
|  | 95th queue(ft)  | 297       | 297  |      |           |      |      | 91         | 91   | 87   | 87         | 87   |              |      |      |      |
| 2012 Build Scenario A                        | LOS             | C         | B    | B    | C         |      |      | C          | C    | C    | B          | B    | B            | B    | B    | B    |
|  | Delay (sec/veh) | 28.6      | 19.9 | 19.9 | 22.1      | 22.1 | 22.1 | 28.9       | 13.2 | 13.2 | 12.3       | 12.3 | 12.3         | 12.3 | 12.3 | 20.0 |
|  | 95th queue(ft)  | 128       | 192  | 192  | 328       | 328  | 328  | 163        | 63   | 63   | 113        | 113  | 113          | 113  | 113  |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | C         | B    | B    | C         |      |      | C          | C    | C    | B          | B    | B            | B    | B    | B    |
|  | Delay (sec/veh) | 28.2      | 19.0 | 19.0 | 23.6      | 23.6 | 23.6 | 27.2       | 12.6 | 12.6 | 12.1       | 12.1 | 12.1         | 12.1 | 19.9 |      |
|  | 95th queue(ft)  | 121       | 162  | 162  | 333       | 333  | 333  | 158        | 62   | 62   | 118        | 118  | 118          | 118  | 118  |      |
| 2012 Build Scenario B                        | LOS             | D         | D    |      |           |      |      | C          | C    | C    | C          | C    | B            |      | B    | C    |
|  | Delay (sec/veh) | 29.5      | 29.5 |      |           |      |      | 17.3       | 17.3 | 15.7 | 15.7       | 15.7 | 11.8         |      | 11.8 | 21.5 |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |      |      |
| 2012 Build Scenario C                        | LOS             | C         | B    | B    | C         |      |      | C          | D    | B    | B          | B    | B            | B    | B    | C    |
|  | Delay (sec/veh) | 22.3      | 16.8 | 16.8 | 25.0      | 25.0 | 25.0 | 37.8       | 14.3 | 14.3 | 17.4       | 17.4 | 17.4         | 17.4 | 22.2 |      |
|  | 95th queue(ft)  | 113       | 180  | 180  | 312       | 312  | 312  | 181        | 78   | 78   | 147        | 147  | 147          | 147  | 147  |      |

*14th Ave E/London Rd*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      | Intersection |      |      |     |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|--------------|------|------|-----|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |              |      |      |     |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  |              | SBR  |      |     |
| Existing Condition                           | LOS             | A         | A    | A    | A         | A    | A    | B          | B    | B    |            |      |              |      |      | A   |
|  | Delay (sec/veh) | 8.1       | 0.0  | 0.0  | 0.1       | 0.5  | 0.0  | 14.4       | 14.4 | 14.4 |            |      |              |      |      | 1.0 |
|  | 95th queue(ft)  | 10        |      |      | 10        | 10   |      | 10         | 10   | 10   |            |      |              |      |      |     |
| 2012 Base Build                              | LOS             | A         | A    | A    | A         | A    | A    | B          | B    | B    |            |      |              |      |      | A   |
|  | Delay (sec/veh) | 8.2       | 0.0  | 0.0  | 0.1       | 0.5  | 0.0  | 15.0       | 15.0 | 15.0 |            |      |              |      |      | 1.1 |
|  | 95th queue(ft)  | 10        |      |      | 10        | 10   |      | 11         | 11   | 11   |            |      |              |      |      |     |
| 2012 Build Scenario 1                        | LOS             | A         | A    | A    | A         | A    | A    | B          | B    | B    |            |      |              |      |      | A   |
|  | Delay (sec/veh) | 8.2       | 0.0  | 0.0  | 0.1       | 0.5  | 0.0  | 15.0       | 15.0 | 15.0 |            |      |              |      |      | 1.1 |
|  | 95th queue(ft)  | 10        |      |      | 10        | 10   |      | 11         | 11   | 11   |            |      |              |      |      |     |
| 2012 Build Scenario 2                        | LOS             | A         | A    | A    | A         | A    | A    | B          | B    | B    |            |      |              |      |      | A   |
|  | Delay (sec/veh) | 8.2       | 0.0  | 0.0  | 0.1       | 0.7  | 0.0  | 11.4       | 11.4 | 11.4 |            |      |              |      |      | 1.2 |
|  | 95th queue(ft)  | 10        |      |      | 10        | 10   |      | 10         | 10   | 10   |            |      |              |      |      |     |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | A         | A    | A    | A         | A    | A    | B          | B    | B    |            |      |              |      |      | A   |
|  | Delay (sec/veh) | 8.2       | 0.0  | 0.0  | 0.1       | 0.7  | 0.0  | 11.4       | 11.4 | 11.4 |            |      |              |      |      | 1.2 |
|  | 95th queue(ft)  | 10        |      |      | 10        | 10   |      | 10         | 10   | 10   |            |      |              |      |      |     |
| 2012 Build Scenario 3                        | LOS             | A         | A    | A    | A         | A    | A    | B          | B    | B    |            |      |              |      |      | A   |
|  | Delay (sec/veh) | 8.2       | 0.0  | 0.0  | 0.1       | 0.5  | 0.0  | 15.0       | 15.0 | 15.0 |            |      |              |      |      | 1.1 |
|  | 95th queue(ft)  | 10        |      |      | 10        | 10   |      | 10         | 10   | 10   |            |      |              |      |      |     |
| 2012 Build Scenario 4 with LU                | LOS             | A         | A    | A    | A         | A    | A    | C          | C    | C    |            |      |              |      |      | A   |
|  | Delay (sec/veh) | 8.4       | 0.0  | 0.0  | 8.8       | 0.0  | 0.0  | 15.5       | 15.5 | 15.5 |            |      |              |      |      | 1.0 |
|  | 95th queue(ft)  | 10        |      |      | 10        |      |      | 11         | 11   | 11   |            |      |              |      |      |     |
| 2012 Build Scenario A                        | LOS             | A         | C    | C    | B         | B    | B    | A          | A    | A    | C          | C    | C            | C    | B    |     |
|  | Delay (sec/veh) | 9.3       | 17.3 | 17.3 | 10.9      | 11.6 | 11.6 | 10.0       | 10.0 | 10.0 | 17.2       | 17.2 | 17.2         | 17.2 | 14.6 |     |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |      |     |
| 2012 Build Scenario A with 1st St Conversion | LOS             | A         | C    | C    | B         | B    | B    | A          | A    | A    | C          | C    | C            | C    | B    |     |
|  | Delay (sec/veh) | 9.3       | 17.3 | 17.3 | 10.9      | 11.6 | 11.6 | 10.0       | 10.0 | 10.0 | 17.2       | 17.2 | 17.2         | 17.2 | 14.6 |     |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |      |     |
| 2012 Build Scenario B                        | LOS             | A         | A    | A    | A         | A    | A    | B          | B    | B    |            |      |              |      | A    |     |
|  | Delay (sec/veh) | 8.2       | 0.0  | 0.0  | 0.1       | 0.5  | 0.0  | 15.0       | 15.0 | 15.0 |            |      |              |      | 1.1  |     |
|  | 95th queue(ft)  | 10        |      |      | 10        | 10   |      | 11         | 11   | 11   |            |      |              |      |      |     |
| 2012 Build Scenario C                        | LOS             | A         | C    | C    | A         | C    | C    | B          | B    | B    | C          | C    | C            | C    | B    |     |
|  | Delay (sec/veh) | 9.4       | 17.9 | 17.9 | 9.0       | 20.0 | 20.0 | 10.4       | 10.4 | 10.4 | 18.2       | 18.2 | 18.2         | 18.2 | 18.0 |     |
|  | 95th queue(ft)  |           |      |      |           |      |      |            |      |      |            |      |              |      |      |     |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*21th Ave E/3rd St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |     |     |            |     | Intersection |      |
|--|-----------------|-----------|------|------|-----------|------|------|------------|-----|-----|------------|-----|--------------|------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |     |     | Southbound |     |              |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT | NBR | SBL        | SBT |              | SBR  |
| Existing Condition                           | LOS             |           |      |      | E         | E    | E    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) |           |      |      | 38.5      | 38.5 | 38.5 | 9.5        | 0.0 | 0.0 | 9.5        | 0.0 | 0.0          | 0.7  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |              |      |
| 2012 Base Build                              | LOS             |           |      |      | E         | E    | E    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) |           |      |      | 42.0      | 42.0 | 42.0 | 9.7        | 0.0 | 0.0 | 9.7        | 0.0 | 0.0          | 0.7  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |              |      |
| 2012 Build Scenario 1                        | LOS             |           |      |      | E         | E    | E    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) |           |      |      | 42.0      | 42.0 | 42.0 | 9.7        | 0.0 | 0.0 | 9.6        | 0.0 | 0.0          | 0.7  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |              |      |
| 2012 Build Scenario 2                        | LOS             |           |      |      | E         | E    | E    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) |           |      |      | 44.1      | 44.1 | 44.1 | 9.7        | 0.0 | 0.0 | 9.6        | 0.0 | 0.0          | 0.7  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |              |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             |           |      |      | E         | E    | E    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) |           |      |      | 44.1      | 44.1 | 44.1 | 9.7        | 0.0 | 0.0 | 9.6        | 0.0 | 0.0          | 0.7  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |              |      |
| 2012 Build Scenario 3                        | LOS             | C         | C    | C    | C         | C    | C    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) | 32.6      | 32.6 | 32.6 | 28.8      | 28.8 | 28.8 | 2.8        | 5.2 | 5.2 | 4.0        | 9.5 | 9.5          | 9.6  |
|  | 95th queue(ft)  | 118       | 118  | 118  | 10        | 10   | 10   | 10         | 101 | 101 | 10         | 306 | 306          |      |
| 2012 Build Scenario 4 with LU                | LOS             |           |      |      | F         | F    | F    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) |           |      |      | 50.4      | 50.4 | 50.4 | 9.8        | 0.0 | 0.0 | 9.9        | 0.0 | 0.0          | 0.8  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |              |      |
| 2012 Build Scenario A                        | LOS             |           |      |      | E         | E    | E    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) |           |      |      | 42.1      | 42.1 | 42.1 | 9.7        | 0.0 | 0.0 | 9.6        | 0.0 | 0.0          | 0.7  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |              |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             |           |      |      | E         | E    | E    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) |           |      |      | 42.1      | 42.1 | 42.1 | 9.7        | 0.0 | 0.0 | 9.6        | 0.0 | 0.0          | 0.7  |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |              |      |
| 2012 Build Scenario B                        | LOS             | C         | C    | C    | C         | C    | C    | A          | A   | A   | A          | A   | A            | A    |
|  | Delay (sec/veh) | 32.6      | 32.6 | 32.6 | 28.8      | 28.8 | 28.8 | 2.8        | 5.2 | 5.2 | 4.0        | 9.5 | 9.5          | 9.6  |
|  | 95th queue(ft)  | 118       | 118  | 118  | 10        | 10   | 10   | 10         | 101 | 101 | 10         | 306 | 306          |      |
| 2012 Build Scenario C                        | LOS             | C         | C    | C    | C         | C    | C    | A          | A   | A   | A          | A   | A            | B    |
|  | Delay (sec/veh) | 32.6      | 32.6 | 32.6 | 28.8      | 28.8 | 28.8 | 5.0        | 6.8 | 6.8 | 4.0        | 9.7 | 9.7          | 10.4 |
|  | 95th queue(ft)  | 118       | 118  | 118  | 10        | 10   | 10   | 10         | 204 | 204 | 10         | 306 | 306          |      |

*21th Ave E/2nd St*

| Scenario                                     | MOE             | Movements |      |      |           |     |     |            |     |      |            |     | Intersection |      |
|--|-----------------|-----------|------|------|-----------|-----|-----|------------|-----|------|------------|-----|--------------|------|
|  |                 | Eastbound |      |      | Westbound |     |     | Northbound |     |      | Southbound |     |              |      |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT | WBR | NBL        | NBT | NBR  | SBL        | SBT |              | SBR  |
| Existing Condition                           | LOS             | C         | C    | C    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 33.7      | 26.0 | 26.0 |           |     |     |            |     | 5.3  | 5.3        | 5.2 | 8.4          | 11.2 |
|  | 95th queue(ft)  | 83        | 78   | 78   |           |     |     |            |     | m52  | m52        | 10  | 250          |      |
| 2012 Base Build                              | LOS             | D         | D    | D    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 42.2      | 37.7 | 37.7 |           |     |     |            |     | 6.3  | 6.3        | 6.0 | 8.8          | 14.4 |
|  | 95th queue(ft)  | 108       | 117  | 117  |           |     |     |            |     | 80   | 80         | 10  | 302          |      |
| 2012 Build Scenario 1                        | LOS             | D         | D    | D    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 42.2      | 37.7 | 37.7 |           |     |     |            |     | 6.3  | 6.3        | 6.0 | 8.8          | 14.4 |
|  | 95th queue(ft)  | 108       | 117  | 117  |           |     |     |            |     | 80   | 80         | 10  | 302          |      |
| 2012 Build Scenario 2                        | LOS             | C         | D    | D    |           |     |     |            |     | B    | B          | A   | B            | C    |
|  | Delay (sec/veh) | 28.1      | 39.6 | 39.6 |           |     |     |            |     | 11.3 | 11.3       | 9.5 | 16.5         | 21.9 |
|  | 95th queue(ft)  | 99        | 226  | 226  |           |     |     |            |     | 141  | 141        | 10  | 359          |      |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | C         | D    | D    |           |     |     |            |     | B    | B          | A   | B            | C    |
|  | Delay (sec/veh) | 28.1      | 39.6 | 39.6 |           |     |     |            |     | 11.3 | 11.3       | 9.5 | 16.5         | 21.9 |
|  | 95th queue(ft)  | 99        | 226  | 226  |           |     |     |            |     | 141  | 141        | 10  | 359          |      |
| 2012 Build Scenario 3                        | LOS             | D         | D    | D    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 42.2      | 42.2 | 42.2 |           |     |     |            |     | 4.2  | 6.8        | 6.8 | 3.8          | 8.9  |
|  | 95th queue(ft)  | 151       | 151  | 151  |           |     |     |            |     | 11   | 94         | 94  | 10           | 195  |
| 2012 Build Scenario 4 with LU                | LOS             | D         | D    | D    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 42.0      | 37.8 | 37.8 |           |     |     |            |     | 8.1  | 8.1        | 6.0 | 9.2          | 15.0 |
|  | 95th queue(ft)  | 108       | 118  | 118  |           |     |     |            |     | 85   | 85         | 10  | 323          |      |
| 2012 Build Scenario A                        | LOS             | D         | D    | D    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 39.8      | 35.5 | 35.5 |           |     |     |            |     | 6.3  | 6.3        | 6.8 | 9.7          | 14.6 |
|  | 95th queue(ft)  | 104       | 119  | 119  |           |     |     |            |     | 76   | 76         | 10  | 329          |      |
| 2012 Build Scenario A with 1st St Conversion | LOS             | D         | D    | D    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 39.8      | 35.5 | 35.5 |           |     |     |            |     | 6.3  | 6.3        | 6.8 | 9.7          | 14.6 |
|  | 95th queue(ft)  | 104       | 119  | 119  |           |     |     |            |     | 76   | 76         | 10  | 329          |      |
| 2012 Build Scenario B                        | LOS             | D         | D    | D    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 47.6      | 47.6 | 47.6 |           |     |     |            |     | 5.8  | 6.8        | 6.8 | 3.0          | 7.1  |
|  | 95th queue(ft)  | 168       | 168  | 168  |           |     |     |            |     | 10   | 94         | 94  | 10           | 185  |
| 2012 Build Scenario C                        | LOS             | D         | D    | D    |           |     |     |            |     | A    | A          | A   | A            | B    |
|  | Delay (sec/veh) | 41.4      | 41.4 | 41.4 |           |     |     |            |     | 5.9  | 8.6        | 8.6 | 4.0          | 8.9  |
|  | 95th queue(ft)  | 159       | 159  | 159  |           |     |     |            |     | 10   | 90         | 90  | 10           | 195  |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*21th Ave E/1st St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |     |     |            |     |     | Intersection |
|--|-----------------|-----------|------|------|-----------|------|------|------------|-----|-----|------------|-----|-----|--------------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |     |     | Southbound |     |     |              |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT | NBR | SBL        | SBT | SBR |              |
| Existing Condition                           | LOS             |           |      |      | C         | C    | C    | A          | A   | A   | A          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 19.0      | 19.0 | 19.0 | 9.9        | 0.0 | 0.0 | 9.9        | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Base Build                              | LOS             |           |      |      | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 20.7      | 20.7 | 20.7 | 10.1       | 0.0 | 0.0 | 10.1       | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario 1                        | LOS             |           |      |      | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 20.7      | 20.7 | 20.7 | 10.1       | 0.0 | 0.0 | 10.1       | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario 2                        | LOS             |           |      |      | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 22.9      | 22.9 | 22.9 | 12.1       | 0.0 | 0.0 | 12.1       | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | C         | C    | C    | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) | 20.3      | 20.3 | 20.3 | 23.8      | 23.8 | 23.8 | 12.1       | 0.0 | 0.0 | 12.1       | 0.0 | 0.0 | 0.8          |
|  | 95th queue(ft)  | 10        | 10   | 10   | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario 3                        | LOS             |           |      |      | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 20.1      | 20.1 | 20.1 | 10.1       | 0.0 | 0.0 | 10.1       | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario 4 with LU                | LOS             |           |      |      | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 22.9      | 22.9 | 22.9 | 10.3       | 0.0 | 0.0 | 10.3       | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario A                        | LOS             |           |      |      | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 20.7      | 20.7 | 20.7 | 10.2       | 0.0 | 0.0 | 10.2       | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario A with 1st St Conversion | LOS             | C         | C    | C    | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) | 21.3      | 21.3 | 21.3 | 20.6      | 20.6 | 20.6 | 10.2       | 0.0 | 0.0 | 10.2       | 0.0 | 0.0 | 1.0          |
|  | 95th queue(ft)  | 14        | 14   | 14   | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario B                        | LOS             |           |      |      | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 20.1      | 20.1 | 20.1 | 10.1       | 0.0 | 0.0 | 10.1       | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |
| 2012 Build Scenario C                        | LOS             |           |      |      | C         | C    | C    | B          | A   | A   | B          | A   | A   | A            |
|  | Delay (sec/veh) |           |      |      | 19.1      | 19.1 | 19.1 | 10.1       | 0.0 | 0.0 | 10.1       | 0.0 | 0.0 | 0.5          |
|  | 95th queue(ft)  |           |      |      | 10        | 10   | 10   | 10         |     |     | 10         |     |     |              |

*21th Ave E/Superior St*

| Scenario                                     | MOE             | Movements |       |       |           |      |      |            |      |      |            |       |       | Intersection |
|--|-----------------|-----------|-------|-------|-----------|------|------|------------|------|------|------------|-------|-------|--------------|
|  |                 | Eastbound |       |       | Westbound |      |      | Northbound |      |      | Southbound |       |       |              |
|  |                 | EBL       | EBT   | EBR   | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT   | SBR   |              |
| Existing Condition                           | LOS             | C         | D     | D     | B         | C    | C    | A          | C    | C    | B          | C     | C     | C            |
|  | Delay (sec/veh) | 22.3      | 42.4  | 42.4  | 19.3      | 34.8 | 34.8 | 8.6        | 34.2 | 34.2 | 14.3       | 32.2  | 32.2  | 32.5         |
|  | 95th queue(ft)  | 73        | #237  | #237  | 37        | 129  | 129  | 50         | #579 | #579 | 54         | #588  | #588  |              |
| 2012 Base Build                              | LOS             | C         | D     | D     | C         | D    | D    | A          | C    | C    | B          | C     | C     | C            |
|  | Delay (sec/veh) | 23.0      | 49.9  | 49.9  | 25.6      | 44.7 | 44.7 | 6.9        | 30.8 | 30.8 | 12.0       | 28.0  | 28.0  | 32.3         |
|  | 95th queue(ft)  | 105       | #332  | #332  | 50        | 185  | 185  | 14         | #581 | #581 | 47         | #622  | #622  |              |
| 2012 Build Scenario 1                        | LOS             | C         | E     | E     | C         | D    | D    | A          | C    | C    | B          | C     | C     | C            |
|  | Delay (sec/veh) | 30.2      | 59.2  | 59.2  | 26.0      | 45.2 | 45.2 | 4.1        | 24.3 | 24.3 | 11.7       | 26.4  | 26.4  | 31.6         |
|  | 95th queue(ft)  | 97        | #326  | #326  | 50        | 185  | 185  | 14         | #587 | #587 | 47         | #620  | #620  |              |
| 2012 Build Scenario 2                        | LOS             | B         | D     | D     | D         | E    | E    | A          | C    | C    | A          | D     | D     | D            |
|  | Delay (sec/veh) | 18.8      | 47.0  | 47.0  | 41.3      | 63.9 | 63.9 | 7.2        | 25.3 | 25.3 | 9.9        | 50.7  | 50.7  | 41.0         |
|  | 95th queue(ft)  | 64        | #338  | #338  | 70        | 204  | 204  | 10         | #556 | #556 | 25         | m#938 | m#938 |              |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | B         | D     | D     | D         | E    | E    | A          | C    | C    | A          | D     | D     | D            |
|  | Delay (sec/veh) | 19.4      | 48.1  | 48.1  | 40.4      | 63.0 | 63.0 | 7.1        | 24.7 | 24.7 | 9.7        | 51.0  | 51.0  | 41.0         |
|  | 95th queue(ft)  | 70        | #337  | #337  | 70        | 204  | 204  | 10         | #551 | #551 | 25         | #939  | #939  |              |
| 2012 Build Scenario 3                        | LOS             | C         | D     | D     | D         | E    | E    | A          | C    | C    | B          | C     | C     | C            |
|  | Delay (sec/veh) | 28.2      | 48.5  | 48.5  | 37.0      | 61.3 | 61.3 | 6.7        | 30.2 | 30.2 | 11.9       | 23.7  | 23.7  | 32.6         |
|  | 95th queue(ft)  | 84        | #236  | #236  | 53        | 203  | 203  | 21         | #585 | #585 | 48         | #610  | #610  |              |
| 2012 Build Scenario 4 with LU                | LOS             | B         | D     | D     | C         | D    | D    | A          | D    | D    | B          | C     | C     | D            |
|  | Delay (sec/veh) | 19.9      | 41.6  | 41.6  | 23.8      | 40.2 | 40.2 | 7.9        | 41.0 | 41.0 | 15.0       | 34.8  | 34.8  | 36.0         |
|  | 95th queue(ft)  | 98        | #295  | #295  | 49        | 178  | 178  | 14         | #695 | #695 | 58         | #742  | #742  |              |
| 2012 Build Scenario A                        | LOS             | C         | E     | E     | C         | D    | D    | A          | C    | C    | B          | C     | C     | C            |
|  | Delay (sec/veh) | 27.2      | 62.5  | 62.5  | 27.0      | 47.8 | 47.8 | 5.3        | 26.2 | 26.2 | 11.5       | 25.7  | 25.7  | 32.4         |
|  | 95th queue(ft)  | 110       | m#337 | m#337 | 51        | 188  | 188  | 10         | #555 | #555 | 50         | #622  | #622  |              |
| 2012 Build Scenario A with 1st St Conversion | LOS             | C         | E     | E     | C         | D    | D    | A          | C    | C    | B          | C     | C     | C            |
|  | Delay (sec/veh) | 25.4      | 65.9  | 65.9  | 26.5      | 42.6 | 42.6 | 5.9        | 27.1 | 27.1 | 11.9       | 26.0  | 26.0  | 32.7         |
|  | 95th queue(ft)  | 82        | m#332 | m#332 | 50        | 185  | 185  | 12         | #568 | #568 | 51         | #634  | #634  |              |
| 2012 Build Scenario B                        | LOS             | C         | D     | D     | D         | E    | E    | A          | C    | C    | B          | C     | C     | C            |
|  | Delay (sec/veh) | 28.2      | 48.5  | 48.5  | 37.0      | 61.3 | 61.3 | 6.7        | 30.2 | 30.2 | 11.9       | 23.7  | 23.7  | 32.6         |
|  | 95th queue(ft)  | 84        | #236  | #236  | 53        | 203  | 203  | 21         | #585 | #585 | 48         | #610  | #610  |              |
| 2012 Build Scenario C                        | LOS             | B         | D     | D     | C         | D    | D    | A          | D    | D    | B          | C     | C     | C            |
|  | Delay (sec/veh) | 18.4      | 48.8  | 48.8  | 24.8      | 42.7 | 42.7 | 8.5        | 35.5 | 35.5 | 12.0       | 25.6  | 25.6  | 32.6         |
|  | 95th queue(ft)  | 52        | #201  | #201  | 46        | 147  | 147  | 17         | 592  | 592  | 49         | 647   | 647   |              |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

*21th Ave E/London Rd*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |     |            |      |      | Intersection |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|-----|------------|------|------|--------------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |     | Southbound |      |      |              |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR | SBL        | SBT  | SBR  |              |
| Existing Condition                           | LOS             | B         | C    | C    | B         | C    | C    | B          | C    | A   | A          | D    | D    | C            |
|  | Delay (sec/veh) | 18.3      | 30.4 | 30.4 | 18.1      | 26.2 | 26.2 | 16.7       | 30.6 | 5.6 | 8.0        | 43.2 | 43.2 | 29.7         |
|  | 95th queue(ft)  | 57        | #239 | #239 | 35        | 102  | 102  | 61         | #366 | 33  | 23         | #567 | #567 |              |
| 2012 Base Build                              | LOS             | C         | D    | D    | C         | C    | C    | B          | C    | A   | A          | C    | C    | C            |
|  | Delay (sec/veh) | 24.8      | 47.9 | 47.9 | 25.3      | 32.8 | 32.8 | 19.7       | 28.3 | 4.6 | 6.8        | 28.4 | 28.4 | 32.1         |
|  | 95th queue(ft)  | 76        | #319 | #319 | 48        | 141  | 141  | 68         | 341  | 32  | 15         | #579 | #579 |              |
| 2012 Build Scenario 1                        | LOS             | C         | D    | D    | C         | C    | C    | B          | C    | A   | A          | C    | C    | C            |
|  | Delay (sec/veh) | 21.7      | 46.4 | 46.4 | 25.3      | 32.8 | 32.8 | 19.7       | 28.3 | 4.6 | 6.5        | 28.2 | 28.2 | 31.5         |
|  | 95th queue(ft)  | 60        | #323 | #323 | 48        | 141  | 141  | 68         | 341  | 32  | 15         | #582 | #582 |              |
| 2012 Build Scenario 2                        | LOS             | C         | B    | B    | C         | D    | D    | B          | C    | A   | B          | B    | B    | C            |
|  | Delay (sec/veh) | 28.2      | 13.8 | 13.8 | 27.2      | 36.7 | 36.7 | 14.7       | 31.4 | 5.0 | 18.7       | 14.8 | 14.8 | 21.2         |
|  | 95th queue(ft)  | 75        | 85   | 85   | 48        | 136  | 136  | 68         | 360  | 34  | 79         | 347  | 347  |              |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | C         | B    | B    | C         | D    | D    | B          | C    | A   | B          | B    | B    | C            |
|  | Delay (sec/veh) | 28.3      | 13.8 | 13.8 | 27.2      | 36.7 | 36.7 | 14.7       | 30.7 | 5.0 | 18.2       | 15.5 | 15.5 | 21.3         |
|  | 95th queue(ft)  | 75        | 85   | 85   | 48        | 136  | 136  | 68         | 360  | 34  | 79         | 363  | 363  |              |
| 2012 Build Scenario 3                        | LOS             | C         | D    | D    | C         | C    | C    | B          | C    | A   | A          | C    | C    | C            |
|  | Delay (sec/veh) | 27.4      | 51.4 | 51.4 | 25.3      | 32.8 | 32.8 | 19.7       | 28.3 | 4.6 | 6.0        | 26.2 | 26.2 | 32.6         |
|  | 95th queue(ft)  | 77        | #322 | #322 | 48        | 141  | 141  | 68         | 341  | 32  | 15         | #582 | #582 |              |
| 2012 Build Scenario 4 with LU                | LOS             | C         | D    | D    | C         | C    | C    | C          | C    | A   | A          | C    | C    | C            |
|  | Delay (sec/veh) | 23.9      | 38.2 | 35.6 | 26.7      | 32.2 | 32.2 | 33.9       | 31.1 | 4.5 | 7.4        | 32.2 | 32.2 | 30.6         |
|  | 95th queue(ft)  | 73        | 185  | #262 | 91        | 170  | 170  | #124       | 354  | 38  | 16         | #596 | #596 |              |
| 2012 Build Scenario A                        | LOS             | C         | D    | D    | C         | C    | C    | B          | C    | A   | A          | C    | C    | C            |
|  | Delay (sec/veh) | 25.8      | 42.3 | 42.3 | 26.4      | 31.7 | 31.7 | 19.3       | 29.8 | 5.0 | 6.1        | 23.2 | 23.2 | 29.1         |
|  | 95th queue(ft)  | 76        | #276 | #276 | 48        | 136  | 136  | 68         | 360  | 34  | 17         | #549 | #549 |              |
| 2012 Build Scenario A with 1st St Conversion | LOS             | C         | D    | D    | C         | C    | C    | B          | C    | A   | A          | C    | C    | C            |
|  | Delay (sec/veh) | 25.8      | 42.3 | 42.3 | 26.4      | 31.7 | 31.7 | 19.3       | 29.8 | 5.0 | 6.1        | 23.2 | 23.2 | 29.1         |
|  | 95th queue(ft)  | 76        | #276 | #276 | 48        | 136  | 136  | 68         | 360  | 34  | 17         | #549 | #549 |              |
| 2012 Build Scenario B                        | LOS             | C         | D    | D    | C         | C    | C    | B          | C    | A   | A          | C    | C    | C            |
|  | Delay (sec/veh) | 27.4      | 51.4 | 51.4 | 25.3      | 32.8 | 32.8 | 19.7       | 28.3 | 4.6 | 6.0        | 26.2 | 26.2 | 32.6         |
|  | 95th queue(ft)  | 77        | #322 | #322 | 48        | 141  | 141  | 68         | 341  | 32  | 15         | #582 | #582 |              |
| 2012 Build Scenario C                        | LOS             | C         | D    | D    | C         | C    | C    | B          | C    | A   | A          | C    | C    | C            |
|  | Delay (sec/veh) | 27.4      | 51.4 | 51.4 | 25.3      | 32.8 | 32.8 | 19.7       | 28.3 | 4.6 | 6.0        | 26.2 | 26.2 | 32.6         |
|  | 95th queue(ft)  | 77        | #322 | #322 | 48        | 141  | 141  | 68         | 341  | 32  | 15         | #582 | #582 |              |

*26th Ave E/Superior St*

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      |      | Intersection |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|------|--------------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |      |              |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  | SBR  |              |
| Existing Condition                           | LOS             | A         | A    | A    | A         | A    | A    | E          | E    | E    | C          | C    | C    | B            |
|  | Delay (sec/veh) | 0.1       | 0.3  | 0.3  | 0.5       | 2.2  | 2.2  | 39.9       | 39.9 | 39.9 | 22.8       | 22.8 | 22.8 | 14.8         |
|  | 95th queue(ft)  | 10        | 10   | 10   | 10        | 10   | 10   | 185        | 185  | 185  | 49         | 49   | 49   |              |
| 2012 Base Build (w/t Mitigation)             | LOS             | A         | A    | A    | A         | A    | A    | F          | F    | F    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 0.1       | 0.3  | 0.3  | 0.6       | 2.2  | 2.2  | 91.2       | 91.2 | 91.2 | 34.5       | 34.5 | 34.5 | 30.4         |
|  | 95th queue(ft)  | 10        | 10   | 10   | 10        | 10   | 10   | 328        | 328  | 328  | 82         | 82   | 82   |              |
| 2012 Base Build (w/ Mitigation)              | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |
| 2012 Build Scenario 1                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |
| 2012 Build Scenario 2                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |
| 2012 Build Scenario 3                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |
| 2012 Build Scenario 4 with LU                | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.8      | 11.8 | 11.8 | 10.8      | 10.8 | 10.8 | 29.9       | 29.9 | 29.9 | 17.4       | 17.4 | 17.4 | 17.4         |
|  | 95th queue(ft)  | 250       | 250  | 250  | 145       | 145  | 145  | 206        | 206  | 206  | 79         | 79   | 79   |              |
| 2012 Build Scenario A                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |
| 2012 Build Scenario A with 1st St Conversion | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |
| 2012 Build Scenario B                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |
| 2012 Build Scenario C                        | LOS             | B         | B    | B    | B         | B    | B    | C          | C    | C    | B          | B    | B    | B            |
|  | Delay (sec/veh) | 11.1      | 11.1 | 11.1 | 10.3      | 10.3 | 10.3 | 29.9       | 29.9 | 29.9 | 17.6       | 17.6 | 17.6 | 17.0         |
|  | 95th queue(ft)  | 235       | 235  | 235  | 136       | 136  | 136  | 198        | 198  | 198  | 78         | 78   | 78   |              |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Table 3 - Intersection Measures of Effectiveness Summary -Contd.**

26th Ave E/London Rd

| Scenario                                     | MOE             | Movements |      |      |           |      |      |            |      |      |            |      |      | Intersection |
|--|-----------------|-----------|------|------|-----------|------|------|------------|------|------|------------|------|------|--------------|
|  |                 | Eastbound |      |      | Westbound |      |      | Northbound |      |      | Southbound |      |      |              |
|  |                 | EBL       | EBT  | EBR  | WBL       | WBT  | WBR  | NBL        | NBT  | NBR  | SBL        | SBT  | SBR  |              |
| Existing Condition                           | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 28.0      | 38.9 | 13.0 | 46.6      | 40.8 | 12.2 | 40.4       | 55.8 | 55.8 | 39.5       | 42.7 | 42.7 | 42.3         |
|  | 95th queue(ft)  | 83        | 429  | 35   | 298       | 257  | 21   | 65         | #368 | #368 | 38         | 251  | 251  |              |
| 2012 Base Build                              | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |
| 2012 Build Scenario 1                        | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |
| 2012 Build Scenario 2                        | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |
| 2012 Build Scenario 2 with 1st St Conversion | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |
| 2012 Build Scenario 3                        | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |
| 2012 Build Scenario 4 with LU                | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 30.6      | 45.7 | 15.5 | 53.0      | 47.0 | 12.0 | 49.3       | 71.6 | 71.6 | 48.8       | 50.9 | 50.9 | 50.1         |
|  | 95th queue(ft)  | 113       | #642 | 44   | 356       | 319  | 23   | 80         | #468 | #468 | 49         | 325  | 325  |              |
| 2012 Build Scenario A                        | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |
| 2012 Build Scenario A with 1st St Conversion | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |
| 2012 Build Scenario B                        | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |
| 2012 Build Scenario C                        | LOS             | C         | D    | B    | D         | D    | B    | D          | E    | E    | D          | D    | D    | D            |
|  | Delay (sec/veh) | 29.7      | 43.4 | 14.3 | 52.1      | 46.6 | 11.9 | 47.2       | 69.6 | 69.6 | 47.6       | 49.0 | 49.0 | 48.9         |
|  | 95th queue(ft)  | 94        | #561 | 42   | 342       | 310  | 23   | 78         | #470 | #470 | 47         | 306  | 306  |              |

Note: 1) Results reported from Synchro; 2) The # footnote indicates that the volume for the 95th percentile cycle exceeds capacity.

**Appendix B: Cost Detail and Assumptions**

| Duluth, MN<br>Endion Land Use & Transportation Plan<br>File #:31810223 |  |   | Order of Magnitude |      |           |           | Date: November 2007 |          |     |          |           |
|--|--|---|--------------------|------|-----------|-----------|---------------------|----------|-----|----------|-----------|
|  |  |   | Estimate Basics    |      |           |           |                     |          |     |          |           |
|  |  |   | Quantity           | Unit | Unit Cost | Extension |                     |          |     |          |           |
| <b>1. Civil Construction</b>   |  |   |                    |      |           |           |                     |          |     |          |           |
| 1  |  | Unclassified Excavation                             | 1                  | CY   | \$30      | \$30      | 25%                 | \$8      | 20% | \$6      | \$44      |
| 2  |  | Landscaping Allowance                               | 1                  | LS   | \$10,000  | \$10,000  | 25%                 | \$2,500  | 20% | \$2,000  | \$14,500  |
| 3  |  | Rebuild Commercial Driveways                        | 1                  | EA   | \$10,000  | \$10,000  | 25%                 | \$2,500  | 20% | \$2,000  | \$14,500  |
| 4  |  | Rebuild Residential Driveway                        | 1                  | EA   | \$5,000   | \$5,000   | 25%                 | \$1,250  | 20% | \$1,000  | \$7,250   |
| 5  |  | Curb & Gutter Allowance                             | 1                  | LF   | \$35      | \$35      | 25%                 | \$9      | 20% | \$7      | \$51      |
| 6  |  | Roadway Construction Bituminous                     | 1                  | SF   | \$9       | \$9       | 25%                 | \$2      | 20% | \$2      | \$13      |
| 7  |  | Roadway Construction Concrete                       | 1                  | SF   | \$12      | \$12      | 25%                 | \$3      | 20% | \$2      | \$17      |
| 8  |  | Sidewalk Construction                               | 1                  | SF   | \$8       | \$8       | 25%                 | \$2      | 20% | \$2      | \$12      |
| 9  |  | Signal Removal (One Way)                            | 1                  | EA   | \$21,000  | \$21,000  | 25%                 | \$5,250  | 20% | \$4,200  | \$30,450  |
| 10   |  | Signal Removal (Two Way)                            | 1                  | EA   | \$28,000  | \$28,000  | 25%                 | \$7,000  | 20% | \$5,600  | \$40,600  |
| 11   |  | Minor Traffic signal (One Way)                      | 1                  | EA   | \$200,000 | \$200,000 | 25%                 | \$50,000 | 20% | \$40,000 | \$290,000 |
| 12   |  | Major Traffic Signal (Two Way)                      | 1                  | EA   | \$230,000 | \$230,000 | 25%                 | \$57,500 | 20% | \$46,000 | \$333,500 |
| 13   |  | Traffic Signal Modifications                        | 1                  | LS   | \$50,000  | \$50,000  | 25%                 | \$12,500 | 20% | \$10,000 | \$72,500  |
| 14   |  | Traffic Light Programing Modifications              | 1                  | EA   | \$2,000   | \$2,000   | 25%                 | \$500    | 20% | \$400    | \$2,900   |
| 15   |  | One Way to Two Way (per intersection)               | 1                  | EA   | \$15,000  | \$15,000  | 25%                 | \$3,750  | 20% | \$3,000  | \$21,750  |
| 16   |  | Catch Basin Relocation                              | 1                  | EA   | \$7,500   | \$7,500   | 25%                 | \$1,875  | 20% | \$1,500  | \$10,875  |
| 17   |  | Utility Allowance                                   | 1                  | LF   | \$670     | \$670     | 25%                 | \$168    | 20% | \$134    | \$972     |
| 18   |  | Traffic Control Allowance                           | 1                  | LF   | \$80      | \$80      | 25%                 | \$20     | 20% | \$16     | \$116     |
| 19   |  | Signing and Striping                                | 1                  | LF   | \$75      | \$75      | 25%                 | \$19     | 20% | \$15     | \$109     |
| 20   |  | Lighting Allowance                                  | 1                  | LS   | \$50,000  | \$50,000  | 25%                 | \$12,500 | 20% | \$10,000 | \$72,500  |
| 21   |  | Rain Garden   | 1                  | EA   | \$5,000   | \$5,000   | 25%                 | \$1,250  | 20% | \$1,000  | \$7,250   |
| <b>Total</b>   |  |   |                    |      |           |           |                     |          |     |          |           |
| <b>14. Professional Services</b>                                       |  |   |                    |      |           |           |                     |          |     |          |           |
|  |  | Preliminary Engineering                             |                    |      |           |           |                     |          |     | 3%       |           |
|  |  | Final Design  |                    |      |           |           |                     |          |     | 5%       |           |
|  |  | Project management for Design Construction          |                    |      |           |           |                     |          |     | 3%       |           |
|  |  | Construction Administration & Management            |                    |      |           |           |                     |          |     | 7%       |           |
|  |  | Insurance   |                    |      |           |           |                     |          |     | 2%       |           |
|  |  | Legal: Permits: Review Fees by other agencies, citi |                    |      |           |           |                     |          |     | 2%       |           |
|  |  | Survey, Testing, Investigation, Inspection          |                    |      |           |           |                     |          |     | 2%       |           |
|  |  | Start-up Cost & Agency Force Account Work           |                    |      |           |           |                     |          |     | 1%       |           |
|  |  |   |                    |      |           |           |                     |          |     | 25%      |           |
| <b>15. Contingency</b>   |  |   |                    |      |           |           |                     |          |     |          |           |
|  |  | Unallocated contingency                             |                    |      |           |           |                     |          |     | 20%      |           |

**Notes for line items above:**

- 1 Additional Excavation
- 2 Allowance given for Landscaping
- 3 Driveway allowance included removals, all incidentals, and construction of new drive
- 4 Driveway allowance included removals, all incidentals, and construction of new drive
- 5 Includes Removal and Replacement
- 6 Removal and Replacement
- 7 Removal and Replacement
- 8 Removal and Replacement
- 9 Assumes removal of 3 signal lights typ of dual one way intersection
- 10 Assumes removal of 4 signal lights
- 11 3 Traffic signals for dual one way intersection (turnkey price)
- 12 4 Traffic signals for intersection (turn key Price)
- 13 traffic count , signal optimization, application
- 14 Includes Stripping, new striping (50'), symbols, and signs
- 15 Removal of Catchbasin, all incidentals and placment of new CB
- 16 To include Sanitary, Water, Electrical, Telephone
- 17 Used for areas of construction
- 18 Includes striping, new striping, symbols, signs
- 19 Allowance for Removal and Replacement of light poles

Table. Summary of Mitigation Measures Recommended for Each Analysis Scenarios

| Intersection                              | Base Build 2012   | Base Build 2012 | 2012 Build Scenario 1  | 2012 Build Scenario 1 | 2012 Build Scenario 2/Scenario 2 with 1st St Conversion   | 2012 Build Scenario 2/Scenario 2 with 1st St Conversion | 2012 Build Scenario 3   | 2012 Build Scenario 3 | 2012 Build Scenario 4   | 2012 Build Scenario 4 |
|---|---|-----------------|--|-----------------------|---|---|---|-----------------------|---|-----------------------|
|   |   | Cost            |  | Cost                  |   | Cost  |   | Cost                  |   | Cost                  |
| 6 <sup>th</sup> Ave E/4 <sup>th</sup> St  | (1) The east approach to be one left turn lane, one through lane, and one right turn lane with approximately 150 feet of storage space. (2) Extend left turn lane on the west approach to include approximately 125 feet of storage space. (3) Provide protecte | \$21,931        | Same as Base Build 2012  | \$21,931              | Same as Base Build 2012   | \$21,931  | Same as Base Build 2012   | \$21,931              | Same as Base Build 2012   | \$21,931              |
| 6 <sup>th</sup> Ave E/3 <sup>rd</sup> St  | Remain as Existing  |                 | Remain as Existing   |                       | (1) The north approach to include one through lane, and one right turn lane. (2) The east approach to include one shared left turn/through lane and one shared through/right turn lane.   | \$10,150  | (1) The north approach to include one left turn lane and one right turn lane. (2) The east approach to include one shared through/right turn lane.  | \$10,150              | Remain as Existing  |                       |
| 6 <sup>th</sup> Ave E/2 <sup>nd</sup> St  | Remain as Existing  |                 | Remain as Existing   |                       | (1) The west approach to include one left turn lane, one shared left turn/through lane, and one shared through/right turn lane. (2) The north approach include one shared left turn/through lane. (3) Install a new traffic signal. | \$672,728   | (1) The west approach to include one shared through/right turn lane, and two left turn lanes (free left turn). (2) The east approach to include one shared left turn/right turn lane. (3) A yield control shall be installed at the merge point north of the in | \$7,613               | Remain as Existing  |                       |
| 10 <sup>th</sup> Ave E/4 <sup>th</sup> St | Install a new traffic signal.   | \$343,650       | Same as Base Build 2012  | \$343,650             | Remain as Existing  |   | Remain as Existing  |                       | Same as Base Build 2012   | \$343,650             |
| 10 <sup>th</sup> Ave E/3 <sup>rd</sup> St | Remain as Existing  |                 | Remain as Existing   |                       | Remove signal and install Two-way stop control on 10th Ave E  | \$50,750  | Remove signal and install All-way stop control.   | \$50,750              | Remain as Existing  |                       |
| 10 <sup>th</sup> Ave E/2 <sup>nd</sup> St | Remain as Existing  |                 | Remain as Existing   |                       | Remove signal and install One-way stop control on 10th Ave E  | \$38,063  | Replace old signal system   | \$381,713             | Remain as Existing  |                       |
| 10 <sup>th</sup> Ave E/1 <sup>st</sup> St | Remain as Existing  |                 | Remain as Existing   |                       | Vacant  |   | Remain as Existing  |                       | Remain as Existing  |                       |
| 10th Ave E/Superior St                    | (1) The west approach to include one shared left turn/through lane and one right turn lane with approximately 200 feet of storage space. (2)The east approach to include one shared left turn/through lane and one right turn lane with approximately 100 ft of | \$219,675       | Same as Base Build 2012  | \$219,675             | Remain Signalized   | \$14,500  | Same as Base Build 2012   | \$219,675             | Same as Base Build 2012   | \$219,675             |
| 12 <sup>th</sup> Ave E/3 <sup>rd</sup> St | Remain as Existing  |                 | Remove signal and install Two-way stop control on 12th Ave E                     | \$35,525              | Remain as Existing  |   | Remove signal and install One-way stop control on 12th Ave E  | \$45,675              | Remain as Existing  |                       |
| 12 <sup>th</sup> Ave E/2 <sup>nd</sup> St | Remain as Existing  |                 | Remove signal and install Two-way stop control on 12th Ave E                     | \$35,525              | Remain as Existing  |   | Remove signal and install One-way stop control on 12th Ave E  | \$35,525              | Remain as Existing  |                       |
| 12 <sup>th</sup> Ave E/1 <sup>st</sup> St | Remain as Existing  |                 | Remove signal and install All-way stop control                                   | \$40,600              | Remove signal and install One-way stop control on 1st St  | \$35,525  | Remain as Existing  |                       | Remain as Existing  |                       |
| 12 <sup>th</sup> Ave E/Superior St        | (1) Add a south approach for site entry/exit. (2) Replace old signal system   | \$343,650       | Same as Base Build 2012  | \$343,650             | Same as Base Build 2012   | \$343,650   | Same as Base Build 2012   | \$343,650             | Same as Base Build 2012   | \$343,650             |
| 13 <sup>th</sup> Ave E/Superior St        | (1) The west and east approach to include one left turn lane with approximately 75 feet storage space and one shared through/right turn lane. (2) The north and south approach to be one shared left turn/through lane and one right turn lane. (3) Stop contro | \$12,688        | Same as Base Build 2012  | \$12,688              | Same as Base Build 2012   | \$12,688  | Same as Base Build 2012   | \$12,688              | Same as Base Build 2012   | \$12,688              |
| 14 <sup>th</sup> Ave E/3 <sup>rd</sup> St | Remain as Existing  |                 | Remove signal and install All-way stop control                                   | \$40,600              | Remain as Existing  |   | Remove signal and install All-way stop control  | \$40,600              | Remain as Existing  |                       |
| 14 <sup>th</sup> Ave E/2 <sup>nd</sup> St | Remain as Existing  |                 | Remove signal and install Two-way stop control on 14th Ave E                     | \$35,525              | Remain as Existing  |   | Remove signal and install One-way stop control on 14th Ave E  | \$35,525              | Remain as Existing  |                       |
| 14 <sup>th</sup> Ave E/1 <sup>st</sup> St | Remain as Existing  |                 | Remain existing All-way stop control and install a stop sign on the new approach | \$7,613               | Remove All-way stop control and install One-way or Two-way stop control on 1st St   | \$40,600  | Remain as Existing  |                       | Remain as Existing  |                       |
| 14 <sup>th</sup> Ave E/Superior St        | Remain as Existing  |                 | Remove signal and install All-way stop control                                   | \$40,600              | Remain as Existing  |   | Remain as Existing  |                       | Remain as Existing  |                       |
| 14 <sup>th</sup> Ave E/London Rd          | Remain as Existing  |                 | Remain as Existing (the north approach remain existing one way)                  |                       | Remain as Existing  |   | Remain as Existing  |                       | The east approach to be one left turn lane, one through lane, and one right turn lane.          | \$7,613               |
| 21 <sup>st</sup> Ave E/3 <sup>rd</sup> St | Remain as Existing  |                 | Remain as Existing   |                       | Remain as Existing  |   | Install a new traffic signal  | \$341,113             | Remain as Existing  |                       |
| 21 <sup>st</sup> Ave E/2 <sup>nd</sup> St | Remain as Existing  |                 | Remain as Existing   |                       | Remain as Existing  |   | (1) The south approach to include one left turn lane and one through lane. (2) Remain signalized.   | \$10,513              | Remain as Existing  |                       |
| 21 <sup>st</sup> Ave E/1 <sup>st</sup> St | Remain as Existing  |                 | Remain as Existing   |                       | Remain as Existing - Scenario 2: Install Two-way stop control on 1st St - Scenario 2 with 1st St Conversion   | \$5,075   | Remain as Existing  |                       | Remain as Existing  |                       |
| 21 <sup>st</sup> Ave E/Superior St        | Remain as Existing (See Note 6)   |                 | Remain as Existing (See Note 6)  |                       | Remain as Existing (See Note 6)   |   | Remain as Existing (See Note 6)   |                       | Remain as Existing (See Note 6)   |                       |
| 21 <sup>st</sup> Ave E/London Rd          | Remain as Existing  |                 | Remain as Existing   |                       | Remain as Existing  |   | Remain as Existing  |                       | Remain the existing with a channelized right turn lane added on the west approach. (see note 7) | \$196,113             |
| 26 <sup>th</sup> Ave E/Superior St        | install a new traffic signal. See note (8).   | \$310,300       | Same as Base Build 2012  | \$310,300             | Same as Base Build 2012   | \$310,300   | Same as Base Build 2012   | \$310,300             | Same as Base Build 2012   | \$310,300             |
| 26 <sup>th</sup> Ave E/London Rd          | Coordinate with MnDOT Study   |                 | Coordinate with MnDOT Study  |                       | Coordinate with MnDOT Study   |   | Coordinate with MnDOT Study   |                       | Coordinate with MnDOT Study   |                       |
| STREET CLOSURES                           | Vacate 12th (L-s) , Vacate 13th L - 1st), Vacate Jefferson (13-14th)  |                 | Vacate 12th (L-s) , Vacate 13th L - 1st), Vacate Jefferson (13-14th)             |                       | Vacate 12th (L-s) , Vacate 13th L - 1st), Vacate Jefferson (13-14th), Vacate 10th (S-2), Vacate 1st (8-12)  |   | Vacate 12th (L-s) , Vacate 13th L - 1st), Vacate Jefferson (13-14th)  |                       | Vacate 12th (L-s) , Vacate 13th L - 1st), Vacate Jefferson (13-14th)                            |                       |
| ONE WAY-TWOWAY                            |   |                 | 12th and 14th from One Way to Two Way  | \$20,300              | 6th Ave (2nd-3rd), 1st St (8-21)  | \$101,500   | 3rd St (6-21), and 2nd St (6-21)  | \$223,300             |   |                       |
| LONDON RD 4 TO 3                          |   |                 |  |                       |   |   |   |                       | London Rd from 4-3 lane with bike lane option   | \$3,356,000           |
| MITIGATION SUB-TOTAL                      | Base Build 2012   | \$1,300,000     | 2012 Build Scenario 1  | \$1,600,000           | 2012 Build Scenario 2/Scenario 2 with 1st St Conversion   | \$1,700,000   | 2012 Build Scenario 3   | \$2,100,000           | 2012 Build Scenario 4   | \$4,900,000           |
| AMOUNT OVER BASE                          | NA  |                 | Mitigation difference from Base Build  | \$300,000             | Mitigation difference from Base Build   | \$500,000   | Mitigation difference from Base Build   | \$900,000             | Mitigation difference from Base Build   | \$3,600,000           |
| DIAGONAL PARKING                          | Plaza Army - Superior diagonal parking  | \$1,400,000     | Plaza Army - Superior diagonal parking   | \$1,400,000           | Plaza Army - Superior diagonal parking  | \$1,400,000   | Plaza Army - Superior diagonal parking  | \$1,400,000           | Plaza Army - Superior diagonal parking  | \$1,400,000           |
| TOTAL                                     | Base Build 2012 plus Diagonal Parking   | \$2,700,000     | 2012 Build Scenario 1  | \$3,000,000           | 2012 Build Scenario 2/Scenario 2 with 1st St Conversion   | \$3,100,000   | 2012 Build Scenario 3   | \$3,500,000           | 2012 Build Scenario 4   | \$10,800,000          |

Table. Summary of Mitigation Measures Recommended for Each Analysis Scenarios

| Intersection                              | 2012 Build Scenario A/Scenario A with 1st St Conversion  | 2012 Build Scenario A/Scenario A with 1st St Conversion | 2012 Build Scenario B   | 2012 Build Scenario B | 2012 Build Scenario C   | 2012 Build Scenario C |
|---|--|---|---|-----------------------|---|-----------------------|
|   |  | Cost  |   | Cost                  |   | Cost                  |
| 6 <sup>th</sup> Ave E/4 <sup>th</sup> St  | Same as 2012 Build Scenario  | \$21,931  | Same as Base Build 2012   | \$21,931              | Same as Base Build 2012   | \$21,931              |
| 6 <sup>th</sup> Ave E/3 <sup>rd</sup> St  | (1) The north approach to include one through lane, and one right turn lane. (2) The east approach to include one shared left turn/through lane and one shared through/right turn lane.  | \$10,150  | (1) The north approach to include one left turn lane and one right turn lane. (2) The east approach to include one shared through/right turn lane.  | \$10,150              | (1) The north approach to include one shared left turn/through lane and one right turn lane (2) The east approach to include one shared left turn/through/right turn lane.  | \$10,150              |
| 6 <sup>th</sup> Ave E/2 <sup>nd</sup> St  | (1) The west approach to include one left turn lane, one shared left turn/through lane, and one shared through/right turn lane. (2) The north approach include one shared left turn/through lane. (3) Install a new traffic signal.                            | \$672,728   | (1) The west approach to include one shared through/right turn lane, and two left turn lanes (free left turn). (2) The east approach to include one shared left turn/right turn lane. (3) A yield control shall be installed at the merge point north of the in | \$7,613               | (1) the west approach to include one left turn lane, one shared left turn/through lane, and one shared through/right turn lane (2) the north approach to include one shared left turn/through lane (3) Install a new traffic signal (4) split phases shall be p | \$672,728             |
| 10 <sup>th</sup> Ave E/4 <sup>th</sup> St | Remain as Existing   |   | Remain as Existing  |                       | Remain as Existing  |                       |
| 10 <sup>th</sup> Ave E/3 <sup>rd</sup> St | Remove signal and install Two-way stop control on 10th Ave E   | \$50,750  | Remove signal and install All-way stop control.   | \$50,750              | Remove signal and install Two-way stop control on 10th Ave E  | \$40,600              |
| 10 <sup>th</sup> Ave E/2 <sup>nd</sup> St | Remove signal and install One-way stop control on 10th Ave E   | \$38,063  | Replace old signal system   | \$343,650             | (1) The west approach to include one shared left turn/through lane and one through lane. (2) Remove signal and install One-way stop control on 10th Ave E   | \$35,525              |
| 10 <sup>th</sup> Ave E/1 <sup>st</sup> St | vacant   |   | Remain as Existing  |                       | vacant  |                       |
| 10th Ave E/Superior St                    | Remain Signalized  | \$14,500  | Same as Base Build 2012   | \$219,675             | Remain Signalized   | \$14,500              |
| 12 <sup>th</sup> Ave E/3 <sup>rd</sup> St | Remove signal and install Two-way stop control on 12th Ave E   | \$40,600  | Remove signal and install Two-way stop control on 12th Ave E  | \$35,525              | Remove signal and install Four-way stop control   | \$40,600              |
| 12 <sup>th</sup> Ave E/2 <sup>nd</sup> St | Remove signal and install Two-way stop control on 12th Ave E   | \$40,600  | Remove signal and install Two-way stop control on 12th Ave E  | \$35,525              | (1) The west approach to include one shared left turn/through lane and one shared through/right turn lane. (2) Replace old signal system  | \$374,100             |
| 12 <sup>th</sup> Ave E/1 <sup>st</sup> St | Remove signal and install One-way stop control on 1st St   | \$32,988  | Remove signal and install All-way stop control  | \$35,525              | Remove signal and install One-way stop control on 1st St  | \$32,988              |
| 12 <sup>th</sup> Ave E/Superior St        | Same as Base Build 2012  | \$343,650   | Same as Base Build 2012   | \$343,650             | Same as Base Build 2012   | \$343,650             |
| 13 <sup>th</sup> Ave E/Superior St        | Same as Base Build 2012  | \$12,688  | Same as Base Build 2012   | \$12,688              | Same as Base Build 2012   | \$12,688              |
| 14 <sup>th</sup> Ave E/3 <sup>rd</sup> St | Remove signal and install All-way stop control   | \$40,600  | Remove signal and install All-way stop control  | \$40,600              | Remove signal and install All-way stop control  | \$43,138              |
| 14 <sup>th</sup> Ave E/2 <sup>nd</sup> St | Replace old signal system  | \$325,525   | Remove signal and install Two-way stop control on 14th Ave E  | \$40,600              | (1) The west approach to include one shared left turn/through and one shared through/right turn lane (2) Replace old signal system  | \$374,100             |
| 14 <sup>th</sup> Ave E/1 <sup>st</sup> St | Replace All-way stop control with One-way or Two-way stop control on 1st St  | \$7,613   | Remain existing All-way stop control and install a stop sign on the new approach  | \$7,613               | (1) Replace All-way stop control with One-way stop control on 1st St  | \$7,613               |
| 14 <sup>th</sup> Ave E/Superior St        | (1) The west approach to include one left turn lane with approximately 150 feet of storage space and one shared through/right turn lane. (2) The south approach to include one left turn lane with approximately 125 feet of storage space and one shared thro | \$349,994   | Remove signal and install All-way stop control  | \$40,600              | (1) The west approach to include one left turn lane with approximately 150 feet of storage space and one shared through/right turn lane. (2) The south approach to include one left turn lane with approximately 125 feet of storage space and one shared thro  | \$334,406             |
| 14 <sup>th</sup> Ave E/London Rd          | Replace One-way stop control with All-way stop control   | \$10,150  | Remain as Existing (the north approach remain existing one way)   |                       | (1) The east approach to be one left turn lane, one through lane, and one right turn lane. (2) Replace One-way stop control with All-way stop control.  | \$10,150              |
| 21 <sup>st</sup> Ave E/3 <sup>rd</sup> St | Remain as Existing   |   | Install a new traffic signal  | \$243,600             | Install a new traffic signal  | \$300,150             |
| 21 <sup>st</sup> Ave E/2 <sup>nd</sup> St | Remain as Existing   |   | (1) The south approach to include one left turn lane and one through lane. (2) Remain signalized.   | \$10,513              | (1) The south approach to include one left turn lane and one through lane. (2) Remain signalized.   | \$10,513              |
| 21 <sup>st</sup> Ave E/1 <sup>st</sup> St | Remain as Existing - Scenario 2: Install Two-way stop control on 1st St - Scenario 2 with 1st St Conversion  | \$7,613   | Remain as Existing  |                       | Remain as Existing  |                       |
| 21 <sup>st</sup> Ave E/Superior St        | Remain as Existing (See Note 6)  |   | Remain as Existing (See Note 6)   |                       | Remain as Existing (See Note 6)   |                       |
| 21 <sup>st</sup> Ave E/London Rd          | Remain as Existing   |   | Remain as Existing  |                       | Remain as Existing  |                       |
| 26 <sup>th</sup> Ave E/Superior St        | Same as Base Build 2012  | \$310,300   | Same as Base Build 2012   | \$310,300             | Same as Base Build 2012   | \$310,300             |
| 26 <sup>th</sup> Ave E/London Rd          | Coordinate with MnDOT Study  |   | Coordinate with MnDOT Study   |                       | Coordinate with MnDOT Study   |                       |
| STREET CLOSURES                           | Vacate 12th (L-s) , Vacate 13th L - 1st), Vacate Jefferson (13-14th), Vacate 10th (S-2), Vacate 1st (8-12)   |   | Vacate 12th (L-s) , Vacate 13th L - 1st), Vacate Jefferson (13-14th)  |                       | Vacate 12th (L-s) , Vacate 13th L - 1st), Vacate Jefferson (13-14th), Vacate 10th Ave (S-2), Vacate 1st St (8-12)   |                       |
| ONE WAY-TWOWAY                            | 6th Ave (2nd-3rd), 1st St (8-21), 12th Ave (4th-S), 14th Ave (4th-London)  | \$91,350  | 3rd St (6-21), and 2nd St (6-21), 12th Ave (S-4), 14th (L-4)  | \$324,800             | 3rd St (6-21), 2nd St (6-21), 12th Ave (S-4), 14th (L-4),6th Ave (2-3)  | \$243,600             |
| LONDON RD 4 TO 3                          |  |   |   |                       | London Rd from 4-3 lane with bike lane option   | \$3,356,000           |
| MITIGATION SUB-TOTAL                      | 2012 Build Scenario A  | \$2,500,000   | 2012 Build Scenario B   | \$2,200,000           | 2012 Build Scenario C   | \$6,600,000           |
| AMOUNT OVER BASE                          | Mitigation difference from Base Build  | \$1,200,000   | Mitigation difference from Base Build   | \$900,000             | Mitigation difference from Base Build   | \$5,400,000           |
| DIAGONAL PARKING                          | Plaza Armory - Superior diagonal parking   | \$1,400,000   | Plaza Armory - Superior diagonal parking  | \$1,400,000           | Plaza Armory - Superior diagonal parking  | \$1,400,000           |
| TOTALS                                    | 2012 Build Scenario A  | \$3,900,000   | 2012 Build Scenario B   | \$3,600,000           | 2012 Build Scenario C   | \$8,000,000           |