

# APPENDICES

# **APPENDIX A**

## **TRAFFIC DATA**

**Study Name** Chenoweth Rd & Elmwood Ave  
**Start Date** Tuesday, August 27, 2013 7:00 AM  
**End Date** Tuesday, August 27, 2013 6:00 PM  
**Site Code**

## Report Summary

| Time Period       | Class.     | Southbound |      |    |      |      | Northbound |      |    |      |      | Eastbound |      |    |      |      | Total |
|-------------------|------------|------------|------|----|------|------|------------|------|----|------|------|-----------|------|----|------|------|-------|
|                   |            | R          | T    | U  | I    | O    | T          | L    | U  | I    | O    | R         | L    | U  | I    | O    |       |
| Peak 1            | Car        | 2          | 684  | 0  | 686  | 236  | 227        | 4    | 0  | 231  | 696  | 12        | 9    | 0  | 21   | 6    | 938   |
| Specified Period  | %          | 100%       | 99%  | 0% | 99%  | 97%  | 97%        | 80%  | 0% | 96%  | 99%  | 92%       | 100% | 0% | 95%  | 86%  | 98%   |
| 7:00 AM - 9:00 AM | Truck      | 0          | 5    | 0  | 5    | 8    | 8          | 1    | 0  | 9    | 6    | 1         | 0    | 0  | 1    | 1    | 15    |
| One Hour Peak     | %          | 0%         | 1%   | 0% | 1%   | 3%   | 3%         | 20%  | 0% | 4%   | 1%   | 3%        | 0%   | 0% | 5%   | 14%  | 2%    |
| 7:15 AM - 8:15 AM | Total      | 2          | 689  | 0  | 691  | 244  | 235        | 5    | 0  | 240  | 702  | 13        | 9    | 0  | 22   | 7    | 953   |
|                   | PHF        | 0.5        | 0.77 | 0  | 0.76 | 0.92 | 0.9        | 0.42 | 0  | 0.91 | 0.77 | 0.46      | 0.75 | 0  | 0.79 | 0.44 | 0.81  |
|                   | Approach % |            |      |    | 73%  | 26%  |            |      |    | 25%  | 74%  |           |      |    | 2%   | 1%   |       |
| Peak 2            | Car        | 7          | 588  | 0  | 595  | 510  | 506        | 9    | 0  | 515  | 595  | 7         | 4    | 0  | 11   | 16   | 1121  |
| Specified Period  | %          | 100%       | 100% | 0% | 100% | 100% | 100%       | 100% | 0% | 100% | 100% | 100%      | 100% | 0% | 100% | 100% | 100%  |
| 4:00 PM - 6:00 PM | Truck      | 0          | 1    | 0  | 1    | 1    | 1          | 0    | 0  | 1    | 1    | 0         | 0    | 0  | 0    | 0    | 2     |
| One Hour Peak     | %          | 0%         | 0%   | 0% | 0%   | 0%   | 0%         | 0%   | 0% | 0%   | 0%   | 0%        | 0%   | 0% | 0%   | 0%   | 0%    |
| 5:00 PM - 6:00 PM | Total      | 7          | 589  | 0  | 596  | 511  | 507        | 9    | 0  | 516  | 596  | 7         | 4    | 0  | 11   | 16   | 1123  |
|                   | PHF        | 0.58       | 0.91 | 0  | 0.91 | 0.97 | 0.97       | 0.56 | 0  | 0.98 | 0.93 | 0.58      | 0.5  | 0  | 0.55 | 0.8  | 0.95  |
|                   | Approach % |            |      |    | 53%  | 46%  |            |      |    | 46%  | 53%  |           |      |    | 1%   | 1%   |       |

**Study Name** Chenoweth Ln & Washington Square  
**Start Date** Wednesday, August 28, 2013 7:00 AM  
**End Date** Wednesday, August 28, 2013 6:00 PM  
**Site Code**

## Report Summary

| Time Period       | Class.       | Southbound |            |          |            |            | Northbound |           |          |            |            | Eastbound |          |          |           |           |
|-------------------|--------------|------------|------------|----------|------------|------------|------------|-----------|----------|------------|------------|-----------|----------|----------|-----------|-----------|
|                   |              | R          | T          | U        | I          | O          | T          | L         | U        | I          | O          | R         | L        | U        | I         | O         |
| <b>Peak 1</b>     | Car          | 2          | 679        | 0        | 681        | 250        | 249        | 2         | 0        | 251        | 685        | 6         | 1        | 0        | 7         | 4         |
| Specified Period  | %            | 100%       | 99%        | 0%       | 99%        | 95%        | 95%        | 67%       | 0%       | 95%        | 99%        | 86%       | 100%     | 0%       | 88%       | 98%       |
| 7:00 AM - 9:00 AM | Truck        | 0          | 9          | 0        | 9          | 12         | 12         | 1         | 0        | 13         | 10         | 1         | 0        | 0        | 1         | 1         |
| One Hour Peak     | %            | 0%         | 1%         | 0%       | 1%         | 5%         | 5%         | 33%       | 0%       | 5%         | 1%         | 14%       | 0%       | 0%       | 13%       | 20%       |
| 7:15 AM - 8:15 AM | <b>Total</b> | <b>2</b>   | <b>688</b> | <b>0</b> | <b>690</b> | <b>262</b> | <b>261</b> | <b>3</b>  | <b>0</b> | <b>264</b> | <b>695</b> | <b>7</b>  | <b>1</b> | <b>0</b> | <b>8</b>  | <b>5</b>  |
|                   | PHF          | 0.5        | 0.73       | 0        | 0.73       | 0.78       | 0.78       | 0.75      | 0        | 0.78       | 0.73       | 0.58      | 0.25     | 0        | 0.67      | 0.62      |
|                   | Approach %   |            |            |          | 72%        | 27%        |            |           |          | 27%        | 72%        |           |          |          | 1%        | 1%        |
| <b>Peak 2</b>     | Car          | 4          | 574        | 0        | 578        | 475        | 469        | 14        | 0        | 483        | 584        | 10        | 6        | 0        | 16        | 18        |
| Specified Period  | %            | 100%       | 99%        | 0%       | 99%        | 100%       | 100%       | 100%      | 0%       | 100%       | 99%        | 100%      | 100%     | 0%       | 100%      | 100%      |
| 4:00 PM - 6:00 PM | Truck        | 0          | 3          | 0        | 3          | 0          | 0          | 0         | 0        | 0          | 3          | 0         | 0        | 0        | 0         | 0         |
| One Hour Peak     | %            | 0%         | 1%         | 0%       | 1%         | 0%         | 0%         | 0%        | 0%       | 0%         | 1%         | 0%        | 0%       | 0%       | 0%        | 0%        |
| 5:00 PM - 6:00 PM | <b>Total</b> | <b>4</b>   | <b>577</b> | <b>0</b> | <b>581</b> | <b>475</b> | <b>469</b> | <b>14</b> | <b>0</b> | <b>483</b> | <b>587</b> | <b>10</b> | <b>6</b> | <b>0</b> | <b>16</b> | <b>18</b> |
|                   | PHF          | 0.5        | 0.91       | 0        | 0.92       | 0.91       | 0.92       | 0.7       | 0        | 0.91       | 0.92       | 0.5       | 0.5      | 0        | 0.57      | 0.75      |
|                   | Approach %   |            |            |          | 54%        | 44%        |            |           |          | 45%        | 54%        |           |          |          | 1%        | 2%        |

**Study Name**    Chenoweth Ln & Ormand Ave  
**Start Date**    Thursday, May 29, 2014 6:00 AM  
**End Date**      Thursday, May 29, 2014 6:00 PM  
**Site Code**

## Report Summary

| Time Period       | Class.         | Southbound |            |          |            |            | Northbound |           |          |            |            | Eastbound |          |          |           |           |
|-------------------|----------------|------------|------------|----------|------------|------------|------------|-----------|----------|------------|------------|-----------|----------|----------|-----------|-----------|
|                   |                | R          | T          | U        | I          | O          | T          | L         | U        | I          | O          | R         | L        | U        | I         | O         |
| <b>Peak 1</b>     | Lights         | 4          | 597        | 0        | 601        | 334        | 328        | 8         | 0        | 336        | 602        | 5         | 6        | 0        | 11        | 12        |
| Specified Period  | %              | 100%       | 99%        | 0%       | 99%        | 98%        | 98%        | 100%      | 0%       | 98%        | 99%        | 83%       | 100%     | 0%       | 92%       | 100%      |
| 6:00 AM - 9:00 AM | Other Vehicle: | 0          | 8          | 0        | 8          | 7          | 7          | 0         | 0        | 7          | 9          | 1         | 0        | 0        | 1         | 0         |
| One Hour Peak     | %              | 0%         | 1%         | 0%       | 1%         | 2%         | 2%         | 0%        | 0%       | 2%         | 1%         | 17%       | 0%       | 0%       | 8%        | 0%        |
| 8:00 AM - 9:00 AM | <b>Total</b>   | <b>4</b>   | <b>605</b> | <b>0</b> | <b>609</b> | <b>341</b> | <b>335</b> | <b>8</b>  | <b>0</b> | <b>343</b> | <b>611</b> | <b>6</b>  | <b>6</b> | <b>0</b> | <b>12</b> | <b>12</b> |
|                   | PHF            | 0.5        | 0.84       | 0        | 0.84       | 0.92       | 0.9        | 0.67      | 0        | 0.89       | 0.83       | 0.5       | 0.5      | 0        | 0.6       | 0.6       |
|                   | Approach %     |            |            |          | 63%        | 35%        |            |           |          | 36%        | 63%        |           |          |          | 1%        | 1%        |
| <b>Peak 2</b>     | Lights         | 7          | 666        | 0        | 673        | 471        | 468        | 13        | 0        | 481        | 673        | 7         | 3        | 0        | 10        | 20        |
| Specified Period  | %              | 100%       | 100%       | 0%       | 100%       | 99%        | 99%        | 100%      | 0%       | 99%        | 99%        | 88%       | 100%     | 0%       | 91%       | 100%      |
| 3:00 PM - 6:00 PM | Other Vehicle: | 0          | 3          | 0        | 3          | 6          | 6          | 0         | 0        | 6          | 4          | 1         | 0        | 0        | 1         | 0         |
| One Hour Peak     | %              | 0%         | 0%         | 0%       | 0%         | 1%         | 1%         | 0%        | 0%       | 1%         | 1%         | 13%       | 0%       | 0%       | 9%        | 0%        |
| 5:00 PM - 6:00 PM | <b>Total</b>   | <b>7</b>   | <b>669</b> | <b>0</b> | <b>676</b> | <b>477</b> | <b>474</b> | <b>13</b> | <b>0</b> | <b>487</b> | <b>677</b> | <b>8</b>  | <b>3</b> | <b>0</b> | <b>11</b> | <b>20</b> |
|                   | PHF            | 0.44       | 0.83       | 0        | 0.83       | 0.91       | 0.9        | 0.65      | 0        | 0.92       | 0.83       | 0.67      | 0.75     | 0        | 0.69      | 0.56      |
|                   | Approach %     |            |            |          | 58%        | 41%        |            |           |          | 41%        | 58%        |           |          |          | 1%        | 2%        |

**Study Name** Chenoweth Ln & Leland Ave  
**Start Date** Thursday, May 29, 2014 6:00 AM  
**End Date** Thursday, May 29, 2014 6:00 PM  
**Site Code**

## Report Summary

| Time Period                                                                           | Class.         | Southbound |      |      |      |      | Westbound |      |      |      |      | Northbound |      |      |     |      | Eastbound |      |      |      |      | Total |      |      |      |      |
|---------------------------------------------------------------------------------------|----------------|------------|------|------|------|------|-----------|------|------|------|------|------------|------|------|-----|------|-----------|------|------|------|------|-------|------|------|------|------|
|                                                                                       |                | R          | T    | L    | U    | I    | O         | R    | T    | L    | U    | I          | O    | R    | T   | L    | U         | I    | O    | R    | T    |       | L    | U    | I    | O    |
| Peak 1<br>Specified Period<br>6:00 AM - 9:00 AM<br>One Hour Peak<br>8:00 AM - 9:00 AM | Lights         | 2          | 585  | 14   | 0    | 601  | 338       | 18   | 0    | 18   | 0    | 36         | 17   | 3    | 314 | 2    | 0         | 319  | 616  | 13   | 0    | 6     | 0    | 19   | 4    | 975  |
|                                                                                       | %              |            | 87%  | 100% | 0%   | 99%  | 98%       | 100% | 0%   | 100% | 0%   | 100%       | 100% | 100% | 94% | 100% | 0%        | 98%  | 99%  | 100% | 0%   | 100%  | 0%   | 100% | 98%  | 99%  |
|                                                                                       | Other Vehicle: | 1          | 8    | 0    | 0    | 9    | 7         | 0    | 0    | 0    | 0    | 0          | 0    | 0    | 7   | 0    | 0         | 7    | 8    | 0    | 0    | 0     | 0    | 1    | 16   |      |
|                                                                                       | %              |            | 33%  | 0%   | 0%   | 1%   | 2%        | 0%   | 0%   | 0%   | 0%   | 0%         | 0%   | 0%   | 2%  | 0%   | 0%        | 2%   | 1%   | 0%   | 0%   | 0%    | 0%   | 20%  | 2%   |      |
|                                                                                       | Total          | 3          | 593  | 14   | 0    | 610  | 345       | 18   | 0    | 18   | 0    | 36         | 17   | 3    | 321 | 2    | 0         | 326  | 624  | 13   | 0    | 6     | 0    | 19   | 5    | 991  |
| PHF                                                                                   | 0.38           | 0.81       | 0.7  | 0    | 0.81 | 0.93 | 0.45      | 0    | 0.75 | 0    | 0.69 | 0.85       | 0.75 | 0.89 | 0.5 | 0    | 0.91      | 0.8  | 0.65 | 0    | 0.38 | 0     | 0.79 | 0.42 | 0.89 |      |
| Approach %                                                                            |                |            |      |      |      | 62%  | 35%       |      |      |      |      | 4%         | 2%   |      |     |      | 33%       | 63%  |      |      |      |       | 2%   | 1%   |      |      |
| Peak 2<br>Specified Period<br>3:00 PM - 6:00 PM<br>One Hour Peak<br>5:00 PM - 6:00 PM | Lights         | 8          | 656  | 21   | 0    | 685  | 471       | 11   | 0    | 18   | 0    | 29         | 33   | 10   | 453 | 18   | 0         | 481  | 690  | 16   | 2    | 7     | 0    | 25   | 26   | 1220 |
|                                                                                       | %              |            | 89%  | 100% | 0%   | 99%  | 95%       | 100% | 0%   | 85%  | 0%   | 97%        | 100% | 100% | 99% | 100% | 0%        | 99%  | 99%  | 94%  | 100% | 100%  | 0%   | 94%  | 96%  | 99%  |
|                                                                                       | Other Vehicle: | 1          | 3    | 0    | 0    | 4    | 6         | 0    | 0    | 1    | 0    | 1          | 0    | 0    | 6   | 0    | 0         | 6    | 5    | 1    | 0    | 0     | 0    | 1    | 12   |      |
|                                                                                       | %              |            | 11%  | 0%   | 0%   | 1%   | 1%        | 0%   | 0%   | 5%   | 0%   | 3%         | 0%   | 0%   | 1%  | 0%   | 0%        | 1%   | 1%   | 6%   | 0%   | 0%    | 0%   | 4%   | 4%   | 1%   |
|                                                                                       | Total          | 9          | 659  | 21   | 0    | 689  | 477       | 11   | 0    | 19   | 0    | 30         | 33   | 10   | 459 | 18   | 0         | 487  | 695  | 17   | 2    | 7     | 0    | 26   | 27   | 1232 |
| PHF                                                                                   | 0.45           | 0.83       | 0.58 | 0    | 0.82 | 0.87 | 0.39      | 0    | 0.59 | 0    | 0.62 | 0.69       | 0.5  | 0.88 | 0.9 | 0    | 0.89      | 0.83 | 0.61 | 0.5  | 0.44 | 0     | 0.65 | 0.75 | 0.93 |      |
| Approach %                                                                            |                |            |      |      |      | 56%  | 39%       |      |      |      |      | 2%         | 3%   |      |     |      | 40%       | 56%  |      |      |      |       | 2%   | 2%   |      |      |

Site Code

## Report Summary

| Time Period                                                                            | Class. | Southbound |      |      |      |      |      | Westbound |      |      |      |      |      | Northbound |      |      |      |      |      | Eastbound |      |      |      |      |      | Total |
|----------------------------------------------------------------------------------------|--------|------------|------|------|------|------|------|-----------|------|------|------|------|------|------------|------|------|------|------|------|-----------|------|------|------|------|------|-------|
|                                                                                        |        | R          | T    | L    | U    | I    | O    | R         | T    | L    | U    | I    | O    | R          | T    | L    | U    | I    | O    | R         | T    | L    | U    | I    | O    |       |
| Peak 1<br>Specified Period<br>6:00 AM - 12:00 PM<br>One Hour Peak<br>7:15 AM - 8:15 AM | Car    | 16         | 16   | 16   | 0    | 48   | 108  | 54        | 623  | 2    | 0    | 679  | 416  | 7          | 28   | 32   | 0    | 67   | 51   | 33        | 393  | 26   | 0    | 452  | 671  | 1246  |
|                                                                                        | %      | 100%       | 91%  | 100% | 0%   | 98%  | 100% | 100%      | 99%  | 100% | 0%   | 99%  | 98%  | 8%         | 100% | 97%  | 0%   | 97%  | 98%  | 100%      | 98%  | 100% | 0%   | 98%  | 99%  | 99%   |
|                                                                                        | Truck  | 0          | 1    | 0    | 0    | 1    | 0    | 0         | 8    | 0    | 0    | 8    | 8    | 1          | 0    | 1    | 0    | 2    | 1    | 0         | 7    | 0    | 0    | 7    | 9    | 18    |
|                                                                                        | %      | 0%         | 6%   | 0%   | 0%   | 2%   | 0%   | 1%        | 0%   | 1%   | 0%   | 1%   | 2%   | 13%        | 0%   | 3%   | 0%   | 3%   | 2%   | 0%        | 2%   | 0%   | 0%   | 7%   | 1%   | 1%    |
|                                                                                        | Total  | 16         | 17   | 16   | 0    | 49   | 108  | 54        | 631  | 2    | 0    | 687  | 424  | 8          | 28   | 33   | 0    | 69   | 52   | 33        | 400  | 26   | 0    | 459  | 680  | 1264  |
| PHF                                                                                    | 0.8    | 0.53       | 0.67 | 0    | 0.77 | 0.82 | 0.84 | 0.72      | 0.5  | 0    | 0.75 | 0.66 | 0.4  | 0.7        | 0.63 | 0    | 0.64 | 0.68 | 0.55 | 0.65      | 0.93 | 0    | 0.66 | 0.74 | 0.73 |       |
| Approach %                                                                             |        |            |      |      |      | 4%   | 9%   |           |      |      | 51%  | 34%  |      |            |      |      | 5%   | 4%   |      |           |      |      | 36%  | 5%   |      |       |
| Peak 2<br>Specified Period<br>12:00 PM - 7:00 PM<br>One Hour Peak<br>5:00 PM - 6:00 PM | Car    | 23         | 31   | 38   | 0    | 92   | 253  | 150       | 496  | 11   | 0    | 657  | 574  | 14         | 40   | 69   | 0    | 123  | 109  | 67        | 522  | 63   | 0    | 652  | 588  | 1524  |
|                                                                                        | %      | 100%       | 97%  | 100% | 0%   | 99%  | 100% | 100%      | 99%  | 100% | 0%   | 99%  | 99%  | 8%         | 100% | 100% | 0%   | 98%  | 99%  | 100%      | 99%  | 98%  | 0%   | 99%  | 99%  | 99%   |
|                                                                                        | Truck  | 0          | 1    | 0    | 0    | 1    | 1    | 0         | 6    | 0    | 0    | 6    | 7    | 2          | 0    | 0    | 0    | 2    | 1    | 0         | 5    | 1    | 0    | 6    | 6    | 15    |
|                                                                                        | %      | 0%         | 3%   | 0%   | 0%   | 1%   | 0%   | 0%        | 1%   | 0%   | 0%   | 1%   | 1%   | 13%        | 0%   | 0%   | 0%   | 2%   | 1%   | 0%        | 3%   | 2%   | 0%   | 1%   | 1%   | 1%    |
|                                                                                        | Total  | 23         | 32   | 38   | 0    | 93   | 254  | 150       | 502  | 11   | 0    | 663  | 581  | 16         | 40   | 69   | 0    | 125  | 110  | 67        | 527  | 64   | 0    | 658  | 594  | 1539  |
| PHF                                                                                    | 0.72   | 0.89       | 0.79 | 0    | 0.89 | 0.87 | 0.87 | 0.94      | 0.55 | 0    | 0.93 | 0.91 | 0.57 | 0.83       | 0.86 | 0    | 0.87 | 0.95 | 0.84 | 0.93      | 0.84 | 0    | 0.92 | 0.95 | 0.95 |       |
| Approach %                                                                             |        |            |      |      |      | 6%   | 17%  |           |      |      | 41%  | 30%  |      |            |      |      | 8%   | 7%   |      |           |      |      | 43%  | 39%  |      |       |

# Kentucky Traffic Counts

Route: KY 1932 Street: BRECKINRIDGE LANE  
 From MP: 5.523 At: US 60 (SHELBYVILLE ROAD)  
 To MP: 6.590 At: US 42 (BROWNSBORO ROAD)

District: 5  
 County: JEFFERSON  
 City: LOUISVILLE

**Last Actual Count:**  
 11,171 in 2009

Station ID: 208 Station Cnty: JEFFERSON

Station Type: Full Coverage

Functional Class: URBAN - Minor Arterial

New Road Year:

Impact Year:

| <u>Year</u> | <u>Count</u> | <u>Type</u>       |
|-------------|--------------|-------------------|
| 2012        | 10,607       | Actual Count      |
| 2011        | 11,600       | Computer Estimate |
| 2010        | 11,500       | Computer Estimate |
| 2009        | 11,200       | Actual Count      |
| 2008        |              |                   |
| 2007        |              |                   |
| 2006        | 12,100       | Actual Count      |
| 2005        |              |                   |
| 2004        |              |                   |
| 2003        |              |                   |
| 2002        | 11,500       | Actual Count      |
| 2001        |              |                   |
| 2000        |              |                   |
| 1999        |              |                   |
| 1998        |              |                   |
| 1997        | 14,300       | Actual Count      |
| 1996        |              |                   |
| 1995        |              |                   |
| 1994        |              |                   |
| 1993        |              |                   |
| 1992        |              |                   |
| 1991        | 12,000       | Actual Count      |
| 1990        |              |                   |
| 1989        |              |                   |
| 1988        |              |                   |
| 1987        |              |                   |
| 1986        |              |                   |
| 1985        | 8,800        | Actual Count      |
| 1984        |              |                   |
| 1983        |              |                   |
| 1982        |              |                   |
| 1981        | 9,460        | Actual Count      |
| 1980        |              |                   |
| 1979        |              |                   |
| 1978        |              |                   |
| 1977        |              |                   |
| 1976        |              |                   |
| 1975        |              |                   |
| 1974        |              |                   |
| 1973        |              |                   |
| 1972        |              |                   |
| 1971        |              |                   |

# Kentucky Traffic Counts

Route: US 60 Street: FRANKFORT AVENUE

District: 5

From MP: 2.735 At: KY 2048/FENLEY AVENUE

County: JEFFERSON

To MP: 3.459 At: US 60A (LEXINGTON ROAD)

City:

Station ID: 165 Station Cnty: JEFFERSON

Last Actual Count:

11,853 in 2009

Station Type: Rest Areas(RtSuffix=RA) & Ramps(RtSuffix=RP)

Functional Class: URBAN - Other Principal Arterial

New Road Year:

Impact Year:

| <u>Year</u> | <u>Count</u> | <u>Type</u>          |
|-------------|--------------|----------------------|
| 2011        | 11,800       | Computer Estimate    |
| 2010        | 11,900       | Computer Estimate    |
| 2009        | 11,900       | Actual Count         |
| 2008        |              |                      |
| 2007        |              |                      |
| 2006        | 11,400       | Actual Count         |
| 2005        |              |                      |
| 2004        |              |                      |
| 2003        | 14,700       | Actual Count         |
| 2002        |              |                      |
| 2001        |              |                      |
| 2000        | 13,500       | Actual Count         |
| 1999        |              |                      |
| 1998        |              |                      |
| 1997        |              |                      |
| 1996        | 16,100       | Actual Count         |
| 1995        | 14,200       | Adjusted by Engineer |
| 1994        |              |                      |
| 1993        |              |                      |
| 1992        |              |                      |
| 1991        | 14,300       | Actual Count         |
| 1990        |              |                      |
| 1989        |              |                      |
| 1988        |              |                      |
| 1987        |              |                      |
| 1986        |              |                      |
| 1985        | 11,400       | Actual Count         |
| 1984        |              |                      |
| 1983        |              |                      |
| 1982        |              |                      |
| 1981        |              |                      |
| 1980        |              |                      |
| 1979        |              |                      |
| 1978        |              |                      |
| 1977        |              |                      |
| 1976        |              |                      |
| 1975        |              |                      |
| 1974        |              |                      |
| 1973        |              |                      |
| 1972        |              |                      |
| 1971        |              |                      |

# **APPENDIX B**

## **CAPACITY ANALYSIS**

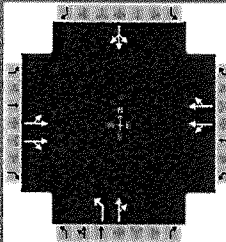
# HCS 2010 Signalized Intersection Results Summary

## General Information

|                     |                           |               |               |
|---------------------|---------------------------|---------------|---------------|
| Agency              | Qk4                       |               |               |
| Analyst             | JJL                       | Analysis Date | Sep 18, 2013  |
| Jurisdiction        | Louisville Metro          | Time Period   | AM Peak Hour  |
| Intersection        | Frankfort Ave & Masonic H | Analysis Year | 2013 Existing |
| File Name           | AM Peak Hour Existing.xus |               |               |
| Project Description | Masonic Homes             |               |               |

## Intersection Information

|                 |         |
|-----------------|---------|
| Duration, h     | 1.00    |
| Area Type       | Other   |
| PHF             | 1.00    |
| Analysis Period | 1> 7:00 |



## Demand Information

| Approach Movement | EB |     |    | WB |     |    | NB |    |   | SB |    |    |
|-------------------|----|-----|----|----|-----|----|----|----|---|----|----|----|
|                   | L  | T   | R  | L  | T   | R  | L  | T  | R | L  | T  | R  |
| Demand (v), veh/h | 26 | 400 | 33 | 2  | 631 | 54 | 33 | 28 | 8 | 16 | 17 | 16 |

## Signal Information

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| Cycle, s | 73.8 | Reference Phase | 2 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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## Timer Results

|                                           | EBL | EBT  | WBL | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|-----|------|-----|------|-----|------|-----|------|
| Assigned Phase                            |     | 2    |     | 6    |     | 8    |     | 4    |
| Phase Number                              |     | 8.0  |     | 8.0  |     | 10.0 |     | 12.0 |
| Phase Duration, s                         |     | 50.9 |     | 50.9 |     | 10.8 |     | 12.1 |
| Change Period, (Y+R <sub>0</sub> ), s     |     | 5.9  |     | 5.9  |     | 5.5  |     | 7.7  |
| Max Allow Headway (MAH), s                |     | 4.7  |     | 4.6  |     | 4.6  |     | 4.7  |
| Queue Clearance Time (g <sub>s</sub> ), s |     | 6.5  |     | 9.0  |     | 3.4  |     | 4.0  |
| Green Extension Time (g <sub>e</sub> ), s |     | 2.3  |     | 3.5  |     | 0.3  |     | 0.2  |
| Phase Call Probability                    |     | 1.00 |     | 1.00 |     | 0.76 |     | 0.63 |
| Max Out Probability                       |     | 0.00 |     | 0.00 |     | 0.00 |     | 0.00 |

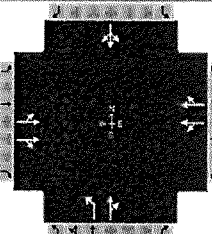
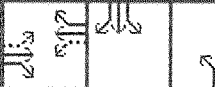
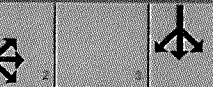
## Movement Group Results

| Approach Movement                               | EB    |   |       | WB    |   |       | NB    |       |    | SB |       |    |
|-------------------------------------------------|-------|---|-------|-------|---|-------|-------|-------|----|----|-------|----|
|                                                 | L     | T | R     | L     | T | R     | L     | T     | R  | L  | T     | R  |
| Assigned Movement                               | 5     | 2 | 12    | 1     | 6 | 16    | 3     | 8     | 18 | 7  | 4     | 14 |
| Adjusted Flow Rate (v), veh/h                   | 235   |   | 224   | 364   |   | 323   | 33    | 36    |    |    | 49    |    |
| Adjusted Saturation Flow Rate (s), veh/h/ln     | 1688  |   | 1651  | 1880  |   | 1662  | 1757  | 1774  |    |    | 1733  |    |
| Queue Service Time (g <sub>s</sub> ), s         | 0.0   |   | 4.5   | 0.0   |   | 7.0   | 1.3   | 1.4   |    |    | 2.0   |    |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s | 4.2   |   | 4.5   | 6.9   |   | 7.0   | 1.3   | 1.4   |    |    | 2.0   |    |
| Green Ratio (g/C)                               | 0.61  |   | 0.61  | 0.61  |   | 0.61  | 0.07  | 0.07  |    |    | 0.06  |    |
| Capacity (c), veh/h                             | 1083  |   | 1006  | 1195  |   | 1013  | 126   | 127   |    |    | 104   |    |
| Volume-to-Capacity Ratio (X)                    | 0.217 |   | 0.223 | 0.305 |   | 0.319 | 0.261 | 0.282 |    |    | 0.470 |    |
| Available Capacity (c <sub>a</sub> ), veh/h     | 1950  |   | 2492  | 2208  |   | 2616  | 952   | 961   |    |    | 938   |    |
| Back of Queue (Q), veh/ln (50th percentile)     | 1.4   |   | 1.3   | 2.3   |   | 2.0   | 0.6   | 0.6   |    |    | 0.9   |    |
| Queue Storage Ratio (RQ) (50th percentile)      | 0.00  |   | 0.00  | 0.00  |   | 0.00  | 0.00  | 0.00  |    |    | 0.00  |    |
| Uniform Delay (d <sub>1</sub> ), s/veh          | 6.4   |   | 6.5   | 7.0   |   | 7.0   | 32.4  | 32.5  |    |    | 33.6  |    |
| Incremental Delay (d <sub>2</sub> ), s/veh      | 0.1   |   | 0.1   | 0.2   |   | 0.2   | 1.3   | 1.4   |    |    | 4.0   |    |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   |    |    | 0.0   |    |
| Control Delay (d), s/veh                        | 6.6   |   | 6.7   | 7.2   |   | 7.2   | 33.7  | 33.9  |    |    | 37.5  |    |
| Level of Service (LOS)                          | A     |   | A     | A     |   | A     | C     | C     |    |    | D     |    |
| Approach Delay, s/veh / LOS                     | 6.6   |   | A     | 7.2   |   | A     | 33.8  |       | C  |    | 37.5  | D  |
| Intersection Delay, s/veh / LOS                 | 9.6   |   |       |       |   |       | A     |       |    |    |       |    |

## Multimodal Results

| Pedestrian LOS Score / LOS | EB  |  |   | WB  |  |   | NB  |  |   | SB  |  |   |
|----------------------------|-----|--|---|-----|--|---|-----|--|---|-----|--|---|
|                            | 2.2 |  | B | 2.1 |  | B | 2.7 |  | B | 2.7 |  | B |
| Bicycle LOS Score / LOS    | 0.9 |  | A | 1.1 |  | A | 0.6 |  | A | 0.6 |  | A |

# HCS 2010 Signalized Intersection Results Summary

| General Information                             |       |                           |     |                                                                                   |                                                                                    | Intersection Information                                                            |                                                                                     |                 |       |         |       |  |     |       |    |   |   |  |  |  |
|-------------------------------------------------|-------|---------------------------|-----|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------------|-------|---------|-------|-------------------------------------------------------------------------------------|-----|-------|----|---|---|--|--|--|
| Agency                                          |       | Qk4                       |     |                                                                                   |                                                                                    | Duration, h                                                                         |                                                                                     | 0.25            |       |         |       |                                                                                     |     |       |    |   |   |  |  |  |
| Analyst                                         |       | JJL                       |     | Analysis Date                                                                     |                                                                                    | Sep 18, 2013                                                                        |                                                                                     | Area Type       |       | Other   |       |                                                                                     |     |       |    |   |   |  |  |  |
| Jurisdiction                                    |       | Louisville Metro          |     | Time Period                                                                       |                                                                                    | PM Peak Hour                                                                        |                                                                                     | PHF             |       | 0.95    |       |                                                                                     |     |       |    |   |   |  |  |  |
| Intersection                                    |       | Frankfort Ave & Masonic H |     | Analysis Year                                                                     |                                                                                    | 2013 Existing                                                                       |                                                                                     | Analysis Period |       | 1> 7:00 |       |                                                                                     |     |       |    |   |   |  |  |  |
| File Name                                       |       | PM Peak Hour Existing.xus |     |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                 |       |         |       |                                                                                     |     |       |    |   |   |  |  |  |
| Project Description                             |       | Masonic Homes             |     |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                 |       |         |       |                                                                                     |     |       |    |   |   |  |  |  |
| Demand Information                              |       |                           |     | EB                                                                                |                                                                                    |                                                                                     | WB                                                                                  |                 |       | NB      |       |                                                                                     | SB  |       |    |   |   |  |  |  |
| Approach Movement                               |       |                           |     | L                                                                                 | T                                                                                  | R                                                                                   | L                                                                                   | T               | R     | L       | T     | R                                                                                   | L   | T     | R  |   |   |  |  |  |
| Demand (v), veh/h                               |       |                           |     | 64                                                                                | 527                                                                                | 67                                                                                  | 11                                                                                  | 502             | 150   | 69      | 40    | 16                                                                                  | 38  | 32    | 23 |   |   |  |  |  |
| Signal Information                              |       |                           |     |  |  |  |  | 1               |       |         | 2     |                                                                                     |     | 3     |    |   | 4 |  |  |  |
| Cycle, s                                        | 76.8  | Reference Phase           | 2   |                                                                                   |                                                                                    |                                                                                     |                                                                                     | Green           | 45.0  | 6.1     | 6.6   | 0.0                                                                                 | 0.0 | 0.0   |    |   |   |  |  |  |
| Offset, s                                       | 0     | Reference Point           | End |                                                                                   |                                                                                    |                                                                                     |                                                                                     | Yellow          | 3.6   | 3.6     | 3.6   | 0.0                                                                                 | 0.0 | 0.0   |    |   |   |  |  |  |
| Uncoordinated                                   | Yes   | Simult. Gap E/W           | Off |                                                                                   |                                                                                    |                                                                                     |                                                                                     | Red             | 2.3   | 4.1     | 1.9   | 0.0                                                                                 | 0.0 | 0.0   |    |   |   |  |  |  |
| Force Mode                                      | Fixed | Simult. Gap N/S           | Off |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                 |       |         |       |                                                                                     |     |       |    |   |   |  |  |  |
| Timer Results                                   |       |                           |     | EBL                                                                               | EBT                                                                                |                                                                                     | WBL                                                                                 | WBT             |       | NBL     | NBT   |                                                                                     | SBL | SBT   |    |   |   |  |  |  |
| Assigned Phase                                  |       |                           |     |                                                                                   | 2                                                                                  |                                                                                     |                                                                                     | 6               |       |         | 8     |                                                                                     |     | 4     |    |   |   |  |  |  |
| Phase Number                                    |       |                           |     |                                                                                   | 8.0                                                                                |                                                                                     |                                                                                     | 8.0             |       |         | 10.0  |                                                                                     |     | 12.0  |    |   |   |  |  |  |
| Phase Duration, s                               |       |                           |     |                                                                                   | 50.9                                                                               |                                                                                     |                                                                                     | 50.9            |       |         | 12.1  |                                                                                     |     | 13.8  |    |   |   |  |  |  |
| Change Period, (Y+R <sub>c</sub> ), s           |       |                           |     |                                                                                   | 5.9                                                                                |                                                                                     |                                                                                     | 5.9             |       |         | 5.5   |                                                                                     |     | 7.7   |    |   |   |  |  |  |
| Max Allow Headway (MAH), s                      |       |                           |     |                                                                                   | 4.8                                                                                |                                                                                     |                                                                                     | 4.6             |       |         | 4.6   |                                                                                     |     | 4.6   |    |   |   |  |  |  |
| Queue Clearance Time (g <sub>s</sub> ), s       |       |                           |     |                                                                                   | 10.8                                                                               |                                                                                     |                                                                                     | 10.2            |       |         | 5.3   |                                                                                     |     | 6.1   |    |   |   |  |  |  |
| Green Extension Time (g <sub>e</sub> ), s       |       |                           |     |                                                                                   | 4.0                                                                                |                                                                                     |                                                                                     | 3.7             |       |         | 0.6   |                                                                                     |     | 0.4   |    |   |   |  |  |  |
| Phase Call Probability                          |       |                           |     |                                                                                   | 1.00                                                                               |                                                                                     |                                                                                     | 1.00            |       |         | 0.94  |                                                                                     |     | 0.88  |    |   |   |  |  |  |
| Max Out Probability                             |       |                           |     |                                                                                   | 0.00                                                                               |                                                                                     |                                                                                     | 0.00            |       |         | 0.00  |                                                                                     |     | 0.00  |    |   |   |  |  |  |
| Movement Group Results                          |       |                           |     | EB                                                                                |                                                                                    |                                                                                     | WB                                                                                  |                 |       | NB      |       |                                                                                     | SB  |       |    |   |   |  |  |  |
| Approach Movement                               |       |                           |     | L                                                                                 | T                                                                                  | R                                                                                   | L                                                                                   | T               | R     | L       | T     | R                                                                                   | L   | T     | R  |   |   |  |  |  |
| Assigned Movement                               |       |                           |     | 5                                                                                 | 2                                                                                  | 12                                                                                  | 1                                                                                   | 6               | 16    | 3       | 8     | 18                                                                                  | 7   | 4     | 14 |   |   |  |  |  |
| Adjusted Flow Rate (v), veh/h                   |       |                           |     | 336                                                                               |                                                                                    | 357                                                                                 | 377                                                                                 |                 | 321   | 73      | 59    |                                                                                     |     | 98    |    |   |   |  |  |  |
| Adjusted Saturation Flow Rate (s), veh/h/ln     |       |                           |     | 1520                                                                              |                                                                                    | 1653                                                                                | 1857                                                                                |                 | 1573  | 1601    | 1807  |                                                                                     |     | 1766  |    |   |   |  |  |  |
| Queue Service Time (g <sub>s</sub> ), s         |       |                           |     | 0.1                                                                               |                                                                                    | 8.8                                                                                 | 0.0                                                                                 |                 | 8.2   | 3.3     | 2.4   |                                                                                     |     | 4.1   |    |   |   |  |  |  |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s |       |                           |     | 8.2                                                                               |                                                                                    | 8.8                                                                                 | 8.0                                                                                 |                 | 8.2   | 3.3     | 2.4   |                                                                                     |     | 4.1   |    |   |   |  |  |  |
| Green Ratio (g/C)                               |       |                           |     | 0.59                                                                              |                                                                                    | 0.59                                                                                | 0.59                                                                                |                 | 0.59  | 0.09    | 0.09  |                                                                                     |     | 0.08  |    |   |   |  |  |  |
| Capacity (c), veh/h                             |       |                           |     | 947                                                                               |                                                                                    | 968                                                                                 | 1136                                                                                |                 | 921   | 137     | 155   |                                                                                     |     | 141   |    |   |   |  |  |  |
| Volume-to-Capacity Ratio (X)                    |       |                           |     | 0.355                                                                             |                                                                                    | 0.368                                                                               | 0.332                                                                               |                 | 0.348 | 0.529   | 0.381 |                                                                                     |     | 0.694 |    |   |   |  |  |  |
| Available Capacity (c <sub>a</sub> ), veh/h     |       |                           |     | 1703                                                                              |                                                                                    | 2690                                                                                | 2077                                                                                |                 |       | 834     | 941   |                                                                                     |     | 920   |    |   |   |  |  |  |
| Back of Queue (Q), veh/ln (50th percentile)     |       |                           |     | 2.4                                                                               |                                                                                    | 2.7                                                                                 | 2.8                                                                                 |                 | 2.4   | 1.4     | 1.1   |                                                                                     |     | 2.0   |    |   |   |  |  |  |
| Queue Storage Ratio (RQ) (50th percentile)      |       |                           |     | 0.00                                                                              |                                                                                    | 0.00                                                                                | 0.00                                                                                |                 | 0.00  | 0.00    | 0.00  |                                                                                     |     | 0.00  |    |   |   |  |  |  |
| Uniform Delay (d <sub>1</sub> ), s/veh          |       |                           |     | 8.0                                                                               |                                                                                    | 8.4                                                                                 | 8.2                                                                                 |                 | 8.3   | 33.6    | 33.2  |                                                                                     |     | 34.4  |    |   |   |  |  |  |
| Incremental Delay (d <sub>2</sub> ), s/veh      |       |                           |     | 0.3                                                                               |                                                                                    | 0.3                                                                                 | 0.2                                                                                 |                 | 0.3   | 3.8     | 1.9   |                                                                                     |     | 7.2   |    |   |   |  |  |  |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    |       |                           |     | 0.0                                                                               |                                                                                    | 0.0                                                                                 | 0.0                                                                                 |                 | 0.0   | 0.0     | 0.0   |                                                                                     |     | 0.0   |    |   |   |  |  |  |
| Control Delay (d), s/veh                        |       |                           |     | 8.3                                                                               |                                                                                    | 8.7                                                                                 | 8.4                                                                                 |                 | 8.5   | 37.4    | 35.0  |                                                                                     |     | 41.6  |    |   |   |  |  |  |
| Level of Service (LOS)                          |       |                           |     | A                                                                                 |                                                                                    | A                                                                                   | A                                                                                   |                 | A     | D       | D     |                                                                                     |     | D     |    |   |   |  |  |  |
| Approach Delay, s/veh / LOS                     |       |                           |     | 8.5                                                                               |                                                                                    | A                                                                                   | 8.5                                                                                 |                 | A     | 36.4    |       | D                                                                                   |     | 41.6  |    | D |   |  |  |  |
| Intersection Delay, s/veh / LOS                 |       |                           |     | 12.8                                                                              |                                                                                    |                                                                                     |                                                                                     |                 |       | B       |       |                                                                                     |     |       |    |   |   |  |  |  |
| Multimodal Results                              |       |                           |     | EB                                                                                |                                                                                    |                                                                                     | WB                                                                                  |                 |       | NB      |       |                                                                                     | SB  |       |    |   |   |  |  |  |
| Pedestrian LOS Score / LOS                      |       |                           |     | 2.2                                                                               |                                                                                    | B                                                                                   | 2.1                                                                                 |                 | B     | 2.7     |       | B                                                                                   | 2.7 |       | B  |   |   |  |  |  |
| Bicycle LOS Score / LOS                         |       |                           |     | 1.1                                                                               |                                                                                    | A                                                                                   | 1.1                                                                                 |                 | A     | 0.7     |       | A                                                                                   | 0.6 |       | A  |   |   |  |  |  |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Elmwood Ave  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2013 Existing  
 Project ID: Masonic Homes  
 East/West Street: Elmwood Ave  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |    | Southbound |      |      |
|------------------------|----------|------------|------|----|------------|------|------|
|                        | Movement | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |          | L          | T    | R  | L          | T    | R    |
| Volume                 |          | 5          | 235  |    |            | 689  | 2    |
| Peak-Hour Factor, PHF  |          | 0.42       | 0.90 |    |            | 0.77 | 0.50 |
| Hourly Flow Rate, HFR  |          | 11         | 261  |    |            | 894  | 4    |
| Percent Heavy Vehicles |          | 20         | --   | -- |            | --   | --   |
| Median Type/Storage    |          | Undivided  |      |    | /          |      |      |
| RT Channelized?        |          |            |      |    |            |      |      |
| Lanes                  |          | 0          | 1    |    |            | 1    | 0    |
| Configuration          |          | LT         |      |    |            | TR   |      |
| Upstream Signal?       |          | No         |      |    |            | No   |      |

| Minor Street:                    | Approach | Westbound |   |   | Eastbound |    |      |
|----------------------------------|----------|-----------|---|---|-----------|----|------|
|                                  | Movement | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |          | L         | T | R | L         | T  | R    |
| Volume                           |          |           |   |   | 9         |    | 13   |
| Peak Hour Factor, PHF            |          |           |   |   | 0.75      |    | 0.45 |
| Hourly Flow Rate, HFR            |          |           |   |   | 12        |    | 28   |
| Percent Heavy Vehicles           |          |           |   |   | 0         |    | 8    |
| Percent Grade (%)                |          | 0         |   |   |           | 0  |      |
| Flared Approach: Exists?/Storage |          |           |   |   | / No /    |    |      |
| Lanes                            |          |           |   |   | 0         |    | 0    |
| Configuration                    |          |           |   |   | LR        |    |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |    |
|------------------|------|----|-----------|---|---|-----------|------|----|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   | 12 |
| Lane Config      | LT   |    |           |   |   |           | LR   |    |
| v (vph)          | 11   |    |           |   |   |           | 40   |    |
| C(m) (vph)       | 686  |    |           |   |   |           | 282  |    |
| v/c              | 0.02 |    |           |   |   |           | 0.14 |    |
| 95% queue length | 0.05 |    |           |   |   |           | 0.49 |    |
| Control Delay    | 10.3 |    |           |   |   |           | 19.9 |    |
| LOS              | B    |    |           |   |   |           | C    |    |
| Approach Delay   |      |    |           |   |   |           | 19.9 |    |
| Approach LOS     |      |    |           |   |   |           | C    |    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Elmwood Ave  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2013 Existing  
 Project ID: Masonic Homes  
 East/West Street: Elmwood Ave  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street: Approach<br>Movement | Northbound |      |    |   | Southbound |      |   |
|------------------------------------|------------|------|----|---|------------|------|---|
|                                    | 1          | 2    | 3  |   | 4          | 5    | 6 |
|                                    | L          | T    | R  |   | L          | T    | R |
| Volume                             | 9          | 507  |    |   | 589        | 7    |   |
| Peak-Hour Factor, PHF              | 0.56       | 0.97 |    |   | 0.91       | 0.58 |   |
| Hourly Flow Rate, HFR              | 16         | 522  |    |   | 647        | 12   |   |
| Percent Heavy Vehicles             | 0          | --   | -- |   | --         | --   |   |
| Median Type/Storage                | Undivided  |      |    | / |            |      |   |
| RT Channelized?                    |            |      |    |   |            |      |   |
| Lanes                              | 0          | 1    |    |   | 1          | 0    |   |
| Configuration                      | LT         |      |    |   | TR         |      |   |
| Upstream Signal?                   | No         |      |    |   | No         |      |   |

| Minor Street: Approach<br>Movement | Westbound |        |        |   | Eastbound |         |         |
|------------------------------------|-----------|--------|--------|---|-----------|---------|---------|
|                                    | 7<br>L    | 8<br>T | 9<br>R |   | 10<br>L   | 11<br>T | 12<br>R |
| Volume                             |           |        |        |   | 4         |         | 7       |
| Peak Hour Factor, PHF              |           |        |        |   | 0.50      |         | 0.58    |
| Hourly Flow Rate, HFR              |           |        |        |   | 8         |         | 12      |
| Percent Heavy Vehicles             |           |        |        |   | 0         |         | 0       |
| Percent Grade (%)                  |           | 0      |        |   |           | 0       |         |
| Flared Approach: Exists?/Storage   |           |        |        | / | No        |         |         |
| Lanes                              |           |        |        |   | 0         |         | 0       |
| Configuration                      |           |        |        |   | LR        |         |         |

## Delay, Queue Length, and Level of Service

| Approach<br>Movement | NB   | SB | Westbound |   |   |  | Eastbound |      |
|----------------------|------|----|-----------|---|---|--|-----------|------|
|                      | 1    | 4  | 7         | 8 | 9 |  | 10        | 11   |
| Lane Config          | LT   |    |           |   |   |  |           | LR   |
| v (vph)              | 16   |    |           |   |   |  |           | 20   |
| C(m) (vph)           | 939  |    |           |   |   |  |           | 306  |
| v/c                  | 0.02 |    |           |   |   |  |           | 0.07 |
| 95% queue length     | 0.05 |    |           |   |   |  |           | 0.21 |
| Control Delay        | 8.9  |    |           |   |   |  |           | 17.6 |
| LOS                  | A    |    |           |   |   |  |           | C    |
| Approach Delay       |      |    |           |   |   |  |           | 17.6 |
| Approach LOS         |      |    |           |   |   |  |           | C    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Washington Sq  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2013 Existing  
 Project ID: Masonic Homes  
 East/West Street: Washington Square  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |    | Southbound |      |      |
|------------------------|----------|------------|------|----|------------|------|------|
|                        | Movement | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |          | L          | T    | R  | L          | T    | R    |
| Volume                 |          | 3          | 261  |    |            | 688  | 2    |
| Peak-Hour Factor, PHF  |          | 0.75       | 0.78 |    |            | 0.73 | 0.50 |
| Hourly Flow Rate, HFR  |          | 4          | 334  |    |            | 942  | 4    |
| Percent Heavy Vehicles |          | 33         | --   | -- |            | --   | --   |
| Median Type/Storage    |          | Undivided  |      |    | /          |      |      |
| RT Channelized?        |          |            |      |    |            |      |      |
| Lanes                  |          | 0          | 1    |    |            | 1    | 0    |
| Configuration          |          | LT         |      |    | TR         |      |      |
| Upstream Signal?       |          | No         |      |    | No         |      |      |

| Minor Street:                    | Approach | Westbound |   |   | Eastbound |    |      |
|----------------------------------|----------|-----------|---|---|-----------|----|------|
|                                  | Movement | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |          | L         | T | R | L         | T  | R    |
| Volume                           |          |           |   |   | 1         |    | 7    |
| Peak Hour Factor, PHF            |          |           |   |   | 0.25      |    | 0.58 |
| Hourly Flow Rate, HFR            |          |           |   |   | 4         |    | 12   |
| Percent Heavy Vehicles           |          |           |   |   | 0         |    | 14   |
| Percent Grade (%)                |          | 0         |   |   | 0         |    |      |
| Flared Approach: Exists?/Storage |          |           |   |   | / No /    |    |      |
| Lanes                            |          |           |   |   | 0 0       |    |      |
| Configuration                    |          |           |   |   | LR        |    |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |       |
|------------------|------|----|-----------|---|---|-----------|-------|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11 12 |
| Lane Config      | LT   |    |           |   |   |           | LR    |
| v (vph)          | 4    |    |           |   |   |           | 16    |
| C(m) (vph)       | 614  |    |           |   |   |           | 259   |
| v/c              | 0.01 |    |           |   |   |           | 0.06  |
| 95% queue length | 0.02 |    |           |   |   |           | 0.20  |
| Control Delay    | 10.9 |    |           |   |   |           | 19.8  |
| LOS              | B    |    |           |   |   |           | C     |
| Approach Delay   |      |    |           |   |   |           | 19.8  |
| Approach LOS     |      |    |           |   |   |           | C     |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Washington Sq  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2013 Existing  
 Project ID: Masonic Homes  
 East/West Street: Washington Square  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |    | Southbound |      |      |
|------------------------|----------|------------|------|----|------------|------|------|
|                        | Movement | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |          | L          | T    | R  | L          | T    | R    |
| Volume                 |          | 14         | 469  |    |            | 577  | 4    |
| Peak-Hour Factor, PHF  |          | 0.70       | 0.92 |    |            | 0.91 | 0.50 |
| Hourly Flow Rate, HFR  |          | 20         | 509  |    |            | 634  | 8    |
| Percent Heavy Vehicles |          | 0          | --   | -- |            | --   | --   |
| Median Type/Storage    |          | Undivided  |      |    | /          |      |      |
| RT Channelized?        |          |            |      |    |            |      |      |
| Lanes                  |          | 0          | 1    |    |            | 1    | 0    |
| Configuration          |          | LT         |      |    |            | TR   |      |
| Upstream Signal?       |          | No         |      |    |            | No   |      |

| Minor Street:                    | Approach | Westbound |   |   | Eastbound |    |      |
|----------------------------------|----------|-----------|---|---|-----------|----|------|
|                                  | Movement | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |          | L         | T | R | L         | T  | R    |
| Volume                           |          |           |   |   | 6         |    | 10   |
| Peak Hour Factor, PHF            |          |           |   |   | 0.50      |    | 0.50 |
| Hourly Flow Rate, HFR            |          |           |   |   | 12        |    | 20   |
| Percent Heavy Vehicles           |          |           |   |   | 0         |    | 0    |
| Percent Grade (%)                |          |           | 0 |   |           | 0  |      |
| Flared Approach: Exists?/Storage |          |           |   |   | /         | No | /    |
| Lanes                            |          |           |   |   | 0         |    | 0    |
| Configuration                    |          |           |   |   |           | LR |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |    |
|------------------|------|----|-----------|---|---|-----------|------|----|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   | 12 |
| Lane Config      | LT   |    |           |   |   |           | LR   |    |
| v (vph)          | 20   |    |           |   |   |           | 32   |    |
| C(m) (vph)       | 952  |    |           |   |   |           | 320  |    |
| v/c              | 0.02 |    |           |   |   |           | 0.10 |    |
| 95% queue length | 0.06 |    |           |   |   |           | 0.33 |    |
| Control Delay    | 8.9  |    |           |   |   |           | 17.5 |    |
| LOS              | A    |    |           |   |   |           | C    |    |
| Approach Delay   |      |    |           |   |   |           | 17.5 |    |
| Approach LOS     |      |    |           |   |   |           | C    |    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Leland Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2013 Existing  
 Project ID: Masonic Homes  
 East/West Street: Leland Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street: Approach Movement | Northbound |      |      | Southbound |      |      |
|---------------------------------|------------|------|------|------------|------|------|
|                                 | 1          | 2    | 3    | 4          | 5    | 6    |
|                                 | L          | T    | R    | L          | T    | R    |
| Volume                          | 2          | 231  | 3    | 14         | 593  | 3    |
| Peak-Hour Factor, PHF           | 0.50       | 0.89 | 0.75 | 0.70       | 0.81 | 0.38 |
| Hourly Flow Rate, HFR           | 4          | 259  | 4    | 20         | 732  | 7    |
| Percent Heavy Vehicles          | 2          | --   | --   | 1          | --   | --   |
| Median Type/Storage             | Undivided  |      |      | /          |      |      |
| RT Channelized?                 |            |      |      |            |      |      |
| Lanes                           | 0          | 1    | 0    | 0          | 1    | 0    |
| Configuration                   | LTR        |      |      | LTR        |      |      |
| Upstream Signal?                | No         |      |      | No         |      |      |

| Minor Street: Approach Movement  | Westbound |        |        | Eastbound |         |         |
|----------------------------------|-----------|--------|--------|-----------|---------|---------|
|                                  | 7<br>L    | 8<br>T | 9<br>R | 10<br>L   | 11<br>T | 12<br>R |
| Volume                           | 18        | 0      | 8      | 6         | 0       | 13      |
| Peak Hour Factor, PHF            | 0.75      | 1.00   | 0.45   | 0.38      | 1.00    | 0.65    |
| Hourly Flow Rate, HFR            | 24        | 0      | 17     | 15        | 0       | 20      |
| Percent Heavy Vehicles           | 0         | 0      | 0      | 0         | 0       | 0       |
| Percent Grade (%)                | 0         |        |        | 0         |         |         |
| Flared Approach: Exists?/Storage | No        |        |        | /         |         |         |
| Lanes                            | 0         | 1      | 0      | 0         | 1       | 0       |
| Configuration                    | LTR       |        |        | LTR       |         |         |

## Delay, Queue Length, and Level of Service

| Approach Movement Lane Config | NB   | SB   | Westbound |      |   | Eastbound |      |    |
|-------------------------------|------|------|-----------|------|---|-----------|------|----|
|                               | 1    | 4    | 7         | 8    | 9 | 10        | 11   | 12 |
|                               | LTR  | LTR  |           | LTR  |   |           | LTR  |    |
| v (vph)                       | 4    | 20   |           | 41   |   |           | 35   |    |
| C(m) (vph)                    | 867  | 1307 |           | 277  |   |           | 283  |    |
| v/c                           | 0.00 | 0.02 |           | 0.15 |   |           | 0.12 |    |
| 95% queue length              | 0.01 | 0.05 |           | 0.51 |   |           | 0.42 |    |
| Control Delay                 | 9.2  | 7.8  |           | 20.2 |   |           | 19.5 |    |
| LOS                           | A    | A    |           | C    |   |           | C    |    |
| Approach Delay                |      |      |           | 20.2 |   |           | 19.5 |    |
| Approach LOS                  |      |      |           | C    |   |           | C    |    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Leland Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2013 Existing  
 Project ID: Masonic Homes  
 East/West Street: Leland Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street: Approach Movement | Northbound |      |      | Southbound |      |      |
|---------------------------------|------------|------|------|------------|------|------|
|                                 | 1          | 2    | 3    | 4          | 5    | 6    |
|                                 | L          | T    | R    | L          | T    | R    |
| Volume                          | 18         | 459  | 10   | 21         | 659  | 9    |
| Peak-Hour Factor, PHF           | 0.90       | 0.88 | 0.50 | 0.58       | 0.83 | 0.45 |
| Hourly Flow Rate, HFR           | 20         | 521  | 20   | 36         | 793  | 20   |
| Percent Heavy Vehicles          | 1          | --   | --   | 1          | --   | --   |
| Median Type/Storage             | Undivided  |      |      | /          |      |      |
| RT Channelized?                 |            |      |      |            |      |      |
| Lanes                           | 0          | 1    | 0    | 0          | 1    | 0    |
| Configuration                   | LTR        |      |      | LTR        |      |      |
| Upstream Signal?                | No         |      |      | No         |      |      |

| Minor Street: Approach Movement  | Westbound |        |        | Eastbound |         |         |
|----------------------------------|-----------|--------|--------|-----------|---------|---------|
|                                  | 7<br>L    | 8<br>T | 9<br>R | 10<br>L   | 11<br>T | 12<br>R |
| Volume                           | 19        | 0      | 11     | 7         | 2       | 17      |
| Peak Hour Factor, PHF            | 0.59      | 1.00   | 0.39   | 0.44      | 0.50    | 0.61    |
| Hourly Flow Rate, HFR            | 32        | 0      | 28     | 15        | 4       | 27      |
| Percent Heavy Vehicles           | 5         | 0      | 0      | 0         | 0       | 6       |
| Percent Grade (%)                | 0         |        |        | 0         |         |         |
| Flared Approach: Exists?/Storage | No        |        |        | /         |         |         |
| Lanes                            | 0         | 1      | 0      | 0         | 1       | 0       |
| Configuration                    | LTR       |        |        | LTR       |         |         |

## Delay, Queue Length, and Level of Service

| Approach Movement | NB   | SB   | Westbound |      |   | Eastbound |      |    |
|-------------------|------|------|-----------|------|---|-----------|------|----|
|                   | 1    | 4    | 7         | 8    | 9 | 10        | 11   | 12 |
| Lane Config       | LTR  | LTR  |           | LTR  |   |           | LTR  |    |
| v (vph)           | 20   | 36   |           | 60   |   |           | 46   |    |
| C(m) (vph)        | 818  | 1033 |           | 145  |   |           | 175  |    |
| v/c               | 0.02 | 0.03 |           | 0.41 |   |           | 0.26 |    |
| 95% queue length  | 0.08 | 0.11 |           | 1.81 |   |           | 1.01 |    |
| Control Delay     | 9.5  | 8.6  |           | 46.3 |   |           | 32.8 |    |
| LOS               | A    | A    |           | E    |   |           | D    |    |
| Approach Delay    |      |      |           | 46.3 |   |           | 32.8 |    |
| Approach LOS      |      |      |           | E    |   |           | D    |    |



## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Ormand Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2013 Existing  
 Project ID: Masonic Homes  
 East/West Street: Ormand Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach<br>Movement | Northbound |        |        |        | Southbound |        |  |
|------------------------|----------------------|------------|--------|--------|--------|------------|--------|--|
|                        |                      | 1<br>L     | 2<br>T | 3<br>R | 4<br>L | 5<br>T     | 6<br>R |  |
| Volume                 |                      | 13         | 474    |        |        | 669        | 7      |  |
| Peak-Hour Factor, PHF  |                      | 0.65       | 0.90   |        |        | 0.83       | 0.44   |  |
| Hourly Flow Rate, HFR  |                      | 20         | 526    |        |        | 806        | 15     |  |
| Percent Heavy Vehicles |                      | 0          | --     | --     |        | --         | --     |  |
| Median Type/Storage    |                      | Undivided  |        |        |        | /          |        |  |
| RT Channelized?        |                      |            |        |        |        |            |        |  |
| Lanes                  |                      | 0          | 1      |        |        | 1          | 0      |  |
| Configuration          |                      | LT         |        |        |        | TR         |        |  |
| Upstream Signal?       |                      | No         |        |        |        | No         |        |  |

| Minor Street:                    | Approach<br>Movement | Westbound |        |        | Eastbound |         |         |      |
|----------------------------------|----------------------|-----------|--------|--------|-----------|---------|---------|------|
|                                  |                      | 7<br>L    | 8<br>T | 9<br>R | 10<br>L   | 11<br>T | 12<br>R |      |
| Volume                           |                      |           |        |        | 3         |         | 8       |      |
| Peak Hour Factor, PHF            |                      |           |        |        | 0.75      |         | 0.67    |      |
| Hourly Flow Rate, HFR            |                      |           |        |        | 4         |         | 11      |      |
| Percent Heavy Vehicles           |                      |           |        |        | 0         |         | 13      |      |
| Percent Grade (%)                |                      |           | 0      |        |           | 0       |         |      |
| Flared Approach: Exists?/Storage |                      |           |        |        | /         |         |         | No / |
| Lanes                            |                      |           |        |        | 0         |         | 0       |      |
| Configuration                    |                      |           |        |        | LR        |         |         |      |

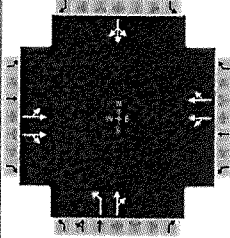
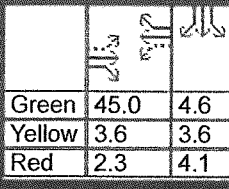
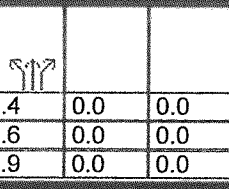
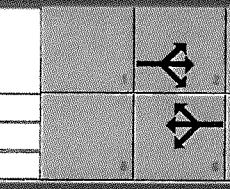
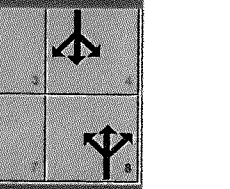
## Delay, Queue Length, and Level of Service

| Approach    | NB | SB | Westbound |   |   | Eastbound |    |    |
|-------------|----|----|-----------|---|---|-----------|----|----|
|             |    |    | 7         | 8 | 9 | 10        | 11 | 12 |
| Movement    | 1  | 4  |           |   |   |           |    |    |
| Lane Config | LT |    |           |   |   |           | LR |    |

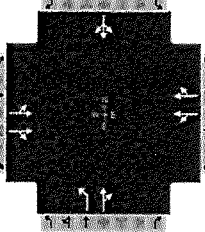
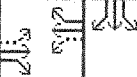
  

|                  |      |  |  |  |  |  |      |  |
|------------------|------|--|--|--|--|--|------|--|
| v (vph)          | 20   |  |  |  |  |  | 15   |  |
| C(m) (vph)       | 817  |  |  |  |  |  | 268  |  |
| v/c              | 0.02 |  |  |  |  |  | 0.06 |  |
| 95% queue length | 0.08 |  |  |  |  |  | 0.18 |  |
| Control Delay    | 9.5  |  |  |  |  |  | 19.2 |  |
| LOS              | A    |  |  |  |  |  | C    |  |
| Approach Delay   |      |  |  |  |  |  | 19.2 |  |
| Approach LOS     |      |  |  |  |  |  | C    |  |

# HCS 2010 Signalized Intersection Results Summary

| General Information                             |       |                           |     |                                                                                   |      | Intersection Information |                                                                                    |                 |       |                                                                                     |       |  |                                                                                     |       |    |     |  |      |  |
|-------------------------------------------------|-------|---------------------------|-----|-----------------------------------------------------------------------------------|------|--------------------------|------------------------------------------------------------------------------------|-----------------|-------|-------------------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------|----|-----|--|------|--|
| Agency                                          |       | Qk4                       |     |                                                                                   |      | Duration, h              |                                                                                    | 1.00            |       |                                                                                     |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Analyst                                         |       | JJL                       |     | Analysis Date                                                                     |      | Sep 18, 2013             |                                                                                    | Area Type       |       | Other                                                                               |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Jurisdiction                                    |       | Louisville Metro          |     | Time Period                                                                       |      | AM Peak Hour             |                                                                                    | PHF             |       | 1.00                                                                                |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Intersection                                    |       | Frankfort Ave & Masonic H |     | Analysis Year                                                                     |      | 2020 Future Year         |                                                                                    | Analysis Period |       | 1> 7:00                                                                             |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| File Name                                       |       | AM Peak Hour Existing.xus |     |                                                                                   |      |                          |                                                                                    |                 |       |                                                                                     |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Project Description                             |       | Masonic Homes             |     |                                                                                   |      |                          |                                                                                    |                 |       |                                                                                     |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Demand Information                              |       |                           |     | EB                                                                                |      |                          | WB                                                                                 |                 |       | NB                                                                                  |       |                                                                                     | SB                                                                                  |       |    |     |  |      |  |
| Approach Movement                               |       |                           |     | L                                                                                 | T    | R                        | L                                                                                  | T               | R     | L                                                                                   | T     | R                                                                                   | L                                                                                   | T     | R  |     |  |      |  |
| Demand (v), veh/h                               |       |                           |     | 27                                                                                | 429  | 33                       | 2                                                                                  | 677             | 57    | 35                                                                                  | 29    | 9                                                                                   | 17                                                                                  | 18    | 17 |     |  |      |  |
| Signal Information                              |       |                           |     |  |      |                          |  |                 |       |  |       |                                                                                     |  |       |    |     |  |      |  |
| Cycle, s                                        | 74.2  | Reference Phase           | 2   |                                                                                   |      |                          |                                                                                    |                 |       |                                                                                     |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Offset, s                                       | 0     | Reference Point           | End |                                                                                   |      |                          |                                                                                    |                 |       |                                                                                     |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Uncoordinated                                   | Yes   | Simult. Gap E/W           | Off |                                                                                   |      |                          |                                                                                    |                 |       |                                                                                     |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Force Mode                                      | Fixed | Simult. Gap N/S           | Off |                                                                                   |      |                          |                                                                                    |                 |       |                                                                                     |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
|                                                 |       |                           |     | Green                                                                             | 45.0 | 4.6                      | 5.4                                                                                | 0.0             | 0.0   | 0.0                                                                                 |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
|                                                 |       |                           |     | Yellow                                                                            | 3.6  | 3.6                      | 3.6                                                                                | 0.0             | 0.0   | 0.0                                                                                 |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
|                                                 |       |                           |     | Red                                                                               | 2.3  | 4.1                      | 1.9                                                                                | 0.0             | 0.0   | 0.0                                                                                 |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Timer Results                                   |       |                           |     | EBL                                                                               |      | EBT                      |                                                                                    | WBL             |       | WBT                                                                                 |       | NBL                                                                                 |                                                                                     | NBT   |    | SBL |  | SBT  |  |
| Assigned Phase                                  |       |                           |     |                                                                                   |      | 2                        |                                                                                    |                 |       | 6                                                                                   |       |                                                                                     |                                                                                     | 8     |    |     |  | 4    |  |
| Phase Number                                    |       |                           |     |                                                                                   |      | 8.0                      |                                                                                    |                 |       | 8.0                                                                                 |       |                                                                                     |                                                                                     | 10.0  |    |     |  | 12.0 |  |
| Phase Duration, s                               |       |                           |     |                                                                                   |      | 50.9                     |                                                                                    |                 |       | 50.9                                                                                |       |                                                                                     |                                                                                     | 10.9  |    |     |  | 12.3 |  |
| Change Period, (Y+R <sub>c</sub> ), s           |       |                           |     |                                                                                   |      | 5.9                      |                                                                                    |                 |       | 5.9                                                                                 |       |                                                                                     |                                                                                     | 5.5   |    |     |  | 7.7  |  |
| Max Allow Headway (MAH), s                      |       |                           |     |                                                                                   |      | 4.7                      |                                                                                    |                 |       | 4.6                                                                                 |       |                                                                                     |                                                                                     | 4.6   |    |     |  | 4.7  |  |
| Queue Clearance Time (g <sub>s</sub> ), s       |       |                           |     |                                                                                   |      | 6.9                      |                                                                                    |                 |       | 9.7                                                                                 |       |                                                                                     |                                                                                     | 3.5   |    |     |  | 4.2  |  |
| Green Extension Time (g <sub>e</sub> ), s       |       |                           |     |                                                                                   |      | 2.5                      |                                                                                    |                 |       | 3.8                                                                                 |       |                                                                                     |                                                                                     | 0.3   |    |     |  | 0.2  |  |
| Phase Call Probability                          |       |                           |     |                                                                                   |      | 1.00                     |                                                                                    |                 |       | 1.00                                                                                |       |                                                                                     |                                                                                     | 0.78  |    |     |  | 0.66 |  |
| Max Out Probability                             |       |                           |     |                                                                                   |      | 0.00                     |                                                                                    |                 |       | 0.00                                                                                |       |                                                                                     |                                                                                     | 0.00  |    |     |  | 0.00 |  |
| Movement Group Results                          |       |                           |     | EB                                                                                |      |                          | WB                                                                                 |                 |       | NB                                                                                  |       |                                                                                     | SB                                                                                  |       |    |     |  |      |  |
| Approach Movement                               |       |                           |     | L                                                                                 | T    | R                        | L                                                                                  | T               | R     | L                                                                                   | T     | R                                                                                   | L                                                                                   | T     | R  |     |  |      |  |
| Assigned Movement                               |       |                           |     | 5                                                                                 | 2    | 12                       | 1                                                                                  | 6               | 16    | 3                                                                                   | 8     | 18                                                                                  | 7                                                                                   | 4     | 14 |     |  |      |  |
| Adjusted Flow Rate (v), veh/h                   |       |                           |     | 249                                                                               |      | 240                      | 390                                                                                |                 | 346   | 35                                                                                  | 38    |                                                                                     |                                                                                     | 52    |    |     |  |      |  |
| Adjusted Saturation Flow Rate (s), veh/h/ln     |       |                           |     | 1682                                                                              |      | 1654                     | 1880                                                                               |                 | 1663  | 1757                                                                                | 1769  |                                                                                     |                                                                                     | 1732  |    |     |  |      |  |
| Queue Service Time (g <sub>s</sub> ), s         |       |                           |     | 0.0                                                                               |      | 4.9                      | 0.0                                                                                |                 | 7.7   | 1.4                                                                                 | 1.5   |                                                                                     |                                                                                     | 2.2   |    |     |  |      |  |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s |       |                           |     | 4.5                                                                               |      | 4.9                      | 7.6                                                                                |                 | 7.7   | 1.4                                                                                 | 1.5   |                                                                                     |                                                                                     | 2.2   |    |     |  |      |  |
| Green Ratio (g/C)                               |       |                           |     | 0.61                                                                              |      | 0.61                     | 0.61                                                                               |                 | 0.61  | 0.07                                                                                | 0.07  |                                                                                     |                                                                                     | 0.06  |    |     |  |      |  |
| Capacity (c), veh/h                             |       |                           |     | 1074                                                                              |      | 1004                     | 1190                                                                               |                 | 1009  | 129                                                                                 | 130   |                                                                                     |                                                                                     | 108   |    |     |  |      |  |
| Volume-to-Capacity Ratio (X)                    |       |                           |     | 0.232                                                                             |      | 0.239                    | 0.328                                                                              |                 | 0.343 | 0.271                                                                               | 0.292 |                                                                                     |                                                                                     | 0.483 |    |     |  |      |  |
| Available Capacity (c <sub>a</sub> ), veh/h     |       |                           |     | 1932                                                                              |      | 2439                     | 2199                                                                               |                 | 2593  | 948                                                                                 | 954   |                                                                                     |                                                                                     | 934   |    |     |  |      |  |
| Back of Queue (Q), veh/ln (50th percentile)     |       |                           |     | 1.5                                                                               |      | 1.4                      | 2.5                                                                                |                 | 2.2   | 0.6                                                                                 | 0.7   |                                                                                     |                                                                                     | 1.0   |    |     |  |      |  |
| Queue Storage Ratio (RQ) (50th percentile)      |       |                           |     | 0.00                                                                              |      | 0.00                     | 0.00                                                                               |                 | 0.00  | 0.00                                                                                | 0.00  |                                                                                     |                                                                                     | 0.00  |    |     |  |      |  |
| Uniform Delay (d <sub>1</sub> ), s/veh          |       |                           |     | 6.6                                                                               |      | 6.7                      | 7.2                                                                                |                 | 7.2   | 32.5                                                                                | 32.5  |                                                                                     |                                                                                     | 33.6  |    |     |  |      |  |
| Incremental Delay (d <sub>2</sub> ), s/veh      |       |                           |     | 0.1                                                                               |      | 0.1                      | 0.2                                                                                |                 | 0.2   | 1.4                                                                                 | 1.5   |                                                                                     |                                                                                     | 4.1   |    |     |  |      |  |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    |       |                           |     | 0.0                                                                               |      | 0.0                      | 0.0                                                                                |                 | 0.0   | 0.0                                                                                 | 0.0   |                                                                                     |                                                                                     | 0.0   |    |     |  |      |  |
| Control Delay (d), s/veh                        |       |                           |     | 6.7                                                                               |      | 6.8                      | 7.4                                                                                |                 | 7.5   | 33.8                                                                                | 34.0  |                                                                                     |                                                                                     | 37.7  |    |     |  |      |  |
| Level of Service (LOS)                          |       |                           |     | A                                                                                 |      | A                        | A                                                                                  |                 | A     | C                                                                                   | C     |                                                                                     |                                                                                     | D     |    |     |  |      |  |
| Approach Delay, s/veh / LOS                     |       |                           |     | 6.8                                                                               |      | A                        | 7.5                                                                                |                 | A     | 33.9                                                                                |       | C                                                                                   |                                                                                     | 37.7  | D  |     |  |      |  |
| Intersection Delay, s/veh / LOS                 |       |                           |     | 9.8                                                                               |      |                          |                                                                                    |                 |       | A                                                                                   |       |                                                                                     |                                                                                     |       |    |     |  |      |  |
| Multimodal Results                              |       |                           |     | EB                                                                                |      |                          | WB                                                                                 |                 |       | NB                                                                                  |       |                                                                                     | SB                                                                                  |       |    |     |  |      |  |
| Pedestrian LOS Score / LOS                      |       |                           |     | 2.2                                                                               |      | B                        | 2.1                                                                                |                 | B     | 2.7                                                                                 |       | B                                                                                   | 2.7                                                                                 |       | B  |     |  |      |  |
| Bicycle LOS Score / LOS                         |       |                           |     | 0.9                                                                               |      | A                        | 1.1                                                                                |                 | A     | 0.6                                                                                 |       | A                                                                                   | 0.6                                                                                 |       | A  |     |  |      |  |

# HCS 2010 Signalized Intersection Results Summary

| General Information                             |       |                           |     |                                                                                   |                                                                                   | Intersection Information                                                           |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |  |     |       |    |   |
|-------------------------------------------------|-------|---------------------------|-----|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----|-------|----|---|
| Agency                                          |       | Qk4                       |     |                                                                                   |                                                                                   | Duration, h                                                                        |                                                                                     | 0.25                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |       |    |   |
| Analyst                                         |       | JJL                       |     | Analysis Date                                                                     |                                                                                   | Sep 18, 2013                                                                       |                                                                                     | Area Type                                                                           |                                                                                     | Other                                                                               |                                                                                     |                                                                                     |     |       |    |   |
| Jurisdiction                                    |       | Louisville Metro          |     | Time Period                                                                       |                                                                                   | PM Peak Hour                                                                       |                                                                                     | PHF                                                                                 |                                                                                     | 0.95                                                                                |                                                                                     |                                                                                     |     |       |    |   |
| Intersection                                    |       | Frankfort Ave & Masonic H |     | Analysis Year                                                                     |                                                                                   | 2020 Future Year                                                                   |                                                                                     | Analysis Period                                                                     |                                                                                     | 1> 7:00                                                                             |                                                                                     |                                                                                     |     |       |    |   |
| File Name                                       |       | PM Peak Hour Existing.xus |     |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |       |    |   |
| Project Description                             |       | Masonic Homes             |     |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |       |    |   |
| Demand Information                              |       |                           |     | EB                                                                                |                                                                                   |                                                                                    | WB                                                                                  |                                                                                     |                                                                                     | NB                                                                                  |                                                                                     |                                                                                     | SB  |       |    |   |
| Approach Movement                               |       |                           |     | L                                                                                 | T                                                                                 | R                                                                                  | L                                                                                   | T                                                                                   | R                                                                                   | L                                                                                   | T                                                                                   | R                                                                                   | L   | T     | R  |   |
| Demand (v), veh/h                               |       |                           |     | 65                                                                                | 565                                                                               | 72                                                                                 | 12                                                                                  | 538                                                                                 | 152                                                                                 | 74                                                                                  | 40                                                                                  | 17                                                                                  | 40  | 34    | 24 |   |
| Signal Information                              |       |                           |     |  |  |  |  |  |  |  |  |                                                                                     |     |       |    |   |
| Cycle, s                                        | 77.0  | Reference Phase           | 2   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |       |    |   |
| Offset, s                                       | 0     | Reference Point           | End |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |       |    |   |
| Uncoordinated                                   | Yes   | Simult. Gap E/W           | Off |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |       |    |   |
| Force Mode                                      | Fixed | Simult. Gap N/S           | Off |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |     |       |    |   |
| Green                                           | 45.0  | 6.2                       | 6.6 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0 | 0.0   |    |   |
| Yellow                                          | 3.6   | 3.6                       | 3.6 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0 | 0.0   |    |   |
| Red                                             | 2.3   | 4.1                       | 1.9 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0 | 0.0   |    |   |
| Timer Results                                   |       |                           |     | EBL                                                                               | EBT                                                                               | WBL                                                                                | WBT                                                                                 | NBL                                                                                 | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 |                                                                                     |     |       |    |   |
| Assigned Phase                                  |       |                           |     |                                                                                   | 2                                                                                 |                                                                                    | 6                                                                                   |                                                                                     | 8                                                                                   |                                                                                     | 4                                                                                   |                                                                                     |     |       |    |   |
| Phase Number                                    |       |                           |     |                                                                                   | 8.0                                                                               |                                                                                    | 8.0                                                                                 |                                                                                     | 10.0                                                                                |                                                                                     | 12.0                                                                                |                                                                                     |     |       |    |   |
| Phase Duration, s                               |       |                           |     |                                                                                   | 50.9                                                                              |                                                                                    | 50.9                                                                                |                                                                                     | 12.1                                                                                |                                                                                     | 13.9                                                                                |                                                                                     |     |       |    |   |
| Change Period, (Y+R <sub>c</sub> ), s           |       |                           |     |                                                                                   | 5.9                                                                               |                                                                                    | 5.9                                                                                 |                                                                                     | 5.5                                                                                 |                                                                                     | 7.7                                                                                 |                                                                                     |     |       |    |   |
| Max Allow Headway (MAH), s                      |       |                           |     |                                                                                   | 4.8                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     | 4.6                                                                                 |                                                                                     | 4.6                                                                                 |                                                                                     |     |       |    |   |
| Queue Clearance Time (g <sub>s</sub> ), s       |       |                           |     |                                                                                   | 11.6                                                                              |                                                                                    | 10.8                                                                                |                                                                                     | 5.6                                                                                 |                                                                                     | 6.4                                                                                 |                                                                                     |     |       |    |   |
| Green Extension Time (g <sub>e</sub> ), s       |       |                           |     |                                                                                   | 4.3                                                                               |                                                                                    | 4.0                                                                                 |                                                                                     | 0.6                                                                                 |                                                                                     | 0.4                                                                                 |                                                                                     |     |       |    |   |
| Phase Call Probability                          |       |                           |     |                                                                                   | 1.00                                                                              |                                                                                    | 1.00                                                                                |                                                                                     | 0.95                                                                                |                                                                                     | 0.89                                                                                |                                                                                     |     |       |    |   |
| Max Out Probability                             |       |                           |     |                                                                                   | 0.00                                                                              |                                                                                    | 0.00                                                                                |                                                                                     | 0.00                                                                                |                                                                                     | 0.00                                                                                |                                                                                     |     |       |    |   |
| Movement Group Results                          |       |                           |     | EB                                                                                |                                                                                   |                                                                                    | WB                                                                                  |                                                                                     |                                                                                     | NB                                                                                  |                                                                                     |                                                                                     | SB  |       |    |   |
| Approach Movement                               |       |                           |     | L                                                                                 | T                                                                                 | R                                                                                  | L                                                                                   | T                                                                                   | R                                                                                   | L                                                                                   | T                                                                                   | R                                                                                   | L   | T     | R  |   |
| Assigned Movement                               |       |                           |     | 5                                                                                 | 2                                                                                 | 12                                                                                 | 1                                                                                   | 6                                                                                   | 16                                                                                  | 3                                                                                   | 8                                                                                   | 18                                                                                  | 7   | 4     | 14 |   |
| Adjusted Flow Rate (v), veh/h                   |       |                           |     | 357                                                                               |                                                                                   | 382                                                                                | 399                                                                                 |                                                                                     | 340                                                                                 | 78                                                                                  | 60                                                                                  |                                                                                     |     | 103   |    |   |
| Adjusted Saturation Flow Rate (s), veh/h/ln     |       |                           |     | 1513                                                                              |                                                                                   | 1653                                                                               | 1854                                                                                |                                                                                     | 1578                                                                                | 1601                                                                                | 1803                                                                                |                                                                                     |     | 1767  |    |   |
| Queue Service Time (g <sub>s</sub> ), s         |       |                           |     | 0.1                                                                               |                                                                                   | 9.6                                                                                | 0.0                                                                                 |                                                                                     | 8.8                                                                                 | 3.6                                                                                 | 2.4                                                                                 |                                                                                     |     | 4.4   |    |   |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s |       |                           |     | 8.9                                                                               |                                                                                   | 9.6                                                                                | 8.6                                                                                 |                                                                                     | 8.8                                                                                 | 3.6                                                                                 | 2.4                                                                                 |                                                                                     |     | 4.4   |    |   |
| Green Ratio (g/C)                               |       |                           |     | 0.58                                                                              |                                                                                   | 0.58                                                                               | 0.58                                                                                |                                                                                     | 0.58                                                                                | 0.09                                                                                | 0.09                                                                                |                                                                                     |     | 0.08  |    |   |
| Capacity (c), veh/h                             |       |                           |     | 940                                                                               |                                                                                   | 966                                                                                | 1132                                                                                |                                                                                     | 923                                                                                 | 138                                                                                 | 155                                                                                 |                                                                                     |     | 143   |    |   |
| Volume-to-Capacity Ratio (X)                    |       |                           |     | 0.380                                                                             |                                                                                   | 0.395                                                                              | 0.352                                                                               |                                                                                     | 0.369                                                                               | 0.564                                                                               | 0.386                                                                               |                                                                                     |     | 0.721 |    |   |
| Available Capacity (c <sub>a</sub> ), veh/h     |       |                           |     | 1692                                                                              |                                                                                   | 2689                                                                               | 2067                                                                                |                                                                                     | -3799<br>7                                                                          | 832                                                                                 | 937                                                                                 |                                                                                     |     | 918   |    |   |
| Back of Queue (Q), veh/ln (50th percentile)     |       |                           |     | 2.6                                                                               |                                                                                   | 3.0                                                                                | 3.0                                                                                 |                                                                                     | 2.6                                                                                 | 1.5                                                                                 | 1.1                                                                                 |                                                                                     |     | 2.1   |    |   |
| Queue Storage Ratio (RQ) (50th percentile)      |       |                           |     | 0.00                                                                              |                                                                                   | 0.00                                                                               | 0.00                                                                                |                                                                                     | 0.00                                                                                | 0.00                                                                                | 0.00                                                                                |                                                                                     |     | 0.00  |    |   |
| Uniform Delay (d <sub>1</sub> ), s/veh          |       |                           |     | 8.2                                                                               |                                                                                   | 8.6                                                                                | 8.4                                                                                 |                                                                                     | 8.5                                                                                 | 33.8                                                                                | 33.2                                                                                |                                                                                     |     | 34.5  |    |   |
| Incremental Delay (d <sub>2</sub> ), s/veh      |       |                           |     | 0.3                                                                               |                                                                                   | 0.3                                                                                | 0.2                                                                                 |                                                                                     | 0.3                                                                                 | 4.3                                                                                 | 1.9                                                                                 |                                                                                     |     | 8.0   |    |   |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    |       |                           |     | 0.0                                                                               |                                                                                   | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |     | 0.0   |    |   |
| Control Delay (d), s/veh                        |       |                           |     | 8.5                                                                               |                                                                                   | 9.0                                                                                | 8.7                                                                                 |                                                                                     | 8.8                                                                                 | 38.1                                                                                | 35.1                                                                                |                                                                                     |     | 42.5  |    |   |
| Level of Service (LOS)                          |       |                           |     | A                                                                                 |                                                                                   | A                                                                                  | A                                                                                   |                                                                                     | A                                                                                   | D                                                                                   | D                                                                                   |                                                                                     |     | D     |    |   |
| Approach Delay, s/veh / LOS                     |       |                           |     | 8.7                                                                               |                                                                                   | A                                                                                  | 8.7                                                                                 |                                                                                     | A                                                                                   | 36.8                                                                                |                                                                                     | D                                                                                   |     | 42.5  |    | D |
| Intersection Delay, s/veh / LOS                 |       |                           |     | 13.0                                                                              |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |     |       |    |   |
| Multimodal Results                              |       |                           |     | EB                                                                                |                                                                                   |                                                                                    | WB                                                                                  |                                                                                     |                                                                                     | NB                                                                                  |                                                                                     |                                                                                     | SB  |       |    |   |
| Pedestrian LOS Score / LOS                      |       |                           |     | 2.2                                                                               |                                                                                   | B                                                                                  | 2.1                                                                                 |                                                                                     | B                                                                                   | 2.7                                                                                 |                                                                                     | B                                                                                   | 2.7 |       | B  |   |
| Bicycle LOS Score / LOS                         |       |                           |     | 1.1                                                                               |                                                                                   | A                                                                                  | 1.1                                                                                 |                                                                                     | A                                                                                   | 0.7                                                                                 |                                                                                     | A                                                                                   | 0.7 |       | A  |   |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Elmwood Ave  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Future Year  
 Project ID: Masonic Homes  
 East/West Street: Elmwood Ave  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |    |   | Southbound |      |
|------------------------|----------|------------|------|----|---|------------|------|
|                        | Movement | 1          | 2    | 3  | 4 | 5          | 6    |
|                        |          | L          | T    | R  | L | T          | R    |
| Volume                 |          | 5          | 252  |    |   | 739        | 2    |
| Peak-Hour Factor, PHF  |          | 0.42       | 0.90 |    |   | 0.77       | 0.50 |
| Hourly Flow Rate, HFR  |          | 11         | 280  |    |   | 959        | 4    |
| Percent Heavy Vehicles |          | 20         | --   | -- |   | --         | --   |
| Median Type/Storage    |          | Undivided  |      |    |   | /          |      |
| RT Channelized?        |          |            |      |    |   |            |      |
| Lanes                  |          | 0          | 1    |    |   | 1          | 0    |
| Configuration          |          | LT         |      |    |   | TR         |      |
| Upstream Signal?       |          | No         |      |    |   | No         |      |

| Minor Street:                    | Approach | Westbound |   |   | Eastbound |    |      |
|----------------------------------|----------|-----------|---|---|-----------|----|------|
|                                  | Movement | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |          | L         | T | R | L         | T  | R    |
| Volume                           |          |           |   |   | 10        |    | 14   |
| Peak Hour Factor, PHF            |          |           |   |   | 0.75      |    | 0.45 |
| Hourly Flow Rate, HFR            |          |           |   |   | 13        |    | 31   |
| Percent Heavy Vehicles           |          |           |   |   | 0         |    | 8    |
| Percent Grade (%)                |          | 0         |   |   | 0         |    |      |
| Flared Approach: Exists?/Storage |          |           |   |   | / No /    |    |      |
| Lanes                            |          |           |   |   | 0         |    | 0    |
| Configuration                    |          |           |   |   | LR        |    |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |       |
|------------------|------|----|-----------|---|---|-----------|-------|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11 12 |
| Lane Config      | LT   |    |           |   |   |           | LR    |
| v (vph)          | 11   |    |           |   |   |           | 44    |
| C(m) (vph)       | 647  |    |           |   |   |           | 256   |
| v/c              | 0.02 |    |           |   |   |           | 0.17  |
| 95% queue length | 0.05 |    |           |   |   |           | 0.61  |
| Control Delay    | 10.7 |    |           |   |   |           | 22.0  |
| LOS              | B    |    |           |   |   |           | C     |
| Approach Delay   |      |    |           |   |   |           | 22.0  |
| Approach LOS     |      |    |           |   |   |           | C     |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Elmwood Ave  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Future Year  
 Project ID: Masonic Homes  
 East/West Street: Elmwood Ave  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach Movement | Northbound |      |    | Southbound |      |      |
|------------------------|-------------------|------------|------|----|------------|------|------|
|                        |                   | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |                   | L          | T    | R  | L          | T    | R    |
| Volume                 |                   | 10         | 544  |    |            | 561  | 8    |
| Peak-Hour Factor, PHF  |                   | 0.56       | 0.97 |    |            | 0.91 | 0.58 |
| Hourly Flow Rate, HFR  |                   | 17         | 560  |    |            | 616  | 13   |
| Percent Heavy Vehicles |                   | 0          | --   | -- |            | --   | --   |
| Median Type/Storage    |                   | Undivided  |      |    | /          |      |      |
| RT Channelized?        |                   |            |      |    |            |      |      |
| Lanes                  |                   | 0          | 1    |    |            | 1    | 0    |
| Configuration          |                   | LT         |      |    | TR         |      |      |
| Upstream Signal?       |                   | No         |      |    | No         |      |      |

| Minor Street:                    | Approach Movement | Westbound |   |   | Eastbound |    |      |
|----------------------------------|-------------------|-----------|---|---|-----------|----|------|
|                                  |                   | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |                   | L         | T | R | L         | T  | R    |
| Volume                           |                   |           |   |   | 4         |    | 8    |
| Peak Hour Factor, PHF            |                   |           |   |   | 0.50      |    | 0.58 |
| Hourly Flow Rate, HFR            |                   |           |   |   | 8         |    | 13   |
| Percent Heavy Vehicles           |                   |           |   |   | 0         |    | 0    |
| Percent Grade (%)                |                   |           | 0 |   |           | 0  |      |
| Flared Approach: Exists?/Storage |                   |           |   |   | /         | No | /    |
| Lanes                            |                   |           |   |   | 0         |    | 0    |
| Configuration                    |                   |           |   |   | LR        |    |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |    |
|------------------|------|----|-----------|---|---|-----------|------|----|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   | 12 |
| Lane Config      | LT   |    |           |   |   |           | LR   |    |
| v (vph)          | 17   |    |           |   |   |           | 21   |    |
| C(m) (vph)       | 963  |    |           |   |   |           | 314  |    |
| v/c              | 0.02 |    |           |   |   |           | 0.07 |    |
| 95% queue length | 0.05 |    |           |   |   |           | 0.21 |    |
| Control Delay    | 8.8  |    |           |   |   |           | 17.3 |    |
| LOS              | A    |    |           |   |   |           | C    |    |
| Approach Delay   |      |    |           |   |   |           | 17.3 |    |
| Approach LOS     |      |    |           |   |   |           | C    |    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Washington Sq  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Future Year  
 Project ID: Masonic Homes  
 East/West Street: Washington Square  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach<br>Movement | Northbound |      |    | Southbound |      |      |
|------------------------|----------------------|------------|------|----|------------|------|------|
|                        |                      | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |                      | L          | T    | R  | L          | T    | R    |
| Volume                 |                      | 3          | 280  |    |            | 738  | 2    |
| Peak-Hour Factor, PHF  |                      | 0.75       | 0.78 |    |            | 0.73 | 0.50 |
| Hourly Flow Rate, HFR  |                      | 4          | 358  |    |            | 1010 | 4    |
| Percent Heavy Vehicles |                      | 33         | --   | -- |            | --   | --   |
| Median Type/Storage    |                      | Undivided  |      |    | /          |      |      |
| RT Channelized?        |                      |            |      |    |            |      |      |
| Lanes                  |                      | 0          | 1    |    |            | 1    | 0    |
| Configuration          |                      | LT         |      |    |            | TR   |      |
| Upstream Signal?       |                      | No         |      |    |            | No   |      |

| Minor Street:                    | Approach<br>Movement | Westbound |   |   | Eastbound |    |      |
|----------------------------------|----------------------|-----------|---|---|-----------|----|------|
|                                  |                      | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |                      | L         | T | R | L         | T  | R    |
| Volume                           |                      |           |   |   | 1         |    | 8    |
| Peak Hour Factor, PHF            |                      |           |   |   | 0.25      |    | 0.58 |
| Hourly Flow Rate, HFR            |                      |           |   |   | 4         |    | 13   |
| Percent Heavy Vehicles           |                      |           |   |   | 0         |    | 14   |
| Percent Grade (%)                |                      |           | 0 |   |           | 0  |      |
| Flared Approach: Exists?/Storage |                      |           |   |   | /         |    |      |
| Lanes                            |                      |           |   |   | 0         |    | 0    |
| Configuration                    |                      |           |   |   | LR        |    |      |

## Delay, Queue Length, and Level of Service

| Approach<br>Movement | NB   | SB | Westbound |   |   | Eastbound |      |    |
|----------------------|------|----|-----------|---|---|-----------|------|----|
|                      |      |    | 7         | 8 | 9 | 10        | 11   | 12 |
|                      |      |    | LT        |   |   |           | LR   |    |
| v (vph)              | 4    |    |           |   |   |           | 17   |    |
| C(m) (vph)           | 576  |    |           |   |   |           | 235  |    |
| v/c                  | 0.01 |    |           |   |   |           | 0.07 |    |
| 95% queue length     | 0.02 |    |           |   |   |           | 0.23 |    |
| Control Delay        | 11.3 |    |           |   |   |           | 21.5 |    |
| LOS                  | B    |    |           |   |   |           | C    |    |
| Approach Delay       |      |    |           |   |   |           | 21.5 |    |
| Approach LOS         |      |    |           |   |   |           | C    |    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Washington Sq  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Future Year  
 Project ID: Masonic Homes  
 East/West Street: Washington Square  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach Movement | Northbound |      |    | Southbound |      |      |
|------------------------|-------------------|------------|------|----|------------|------|------|
|                        |                   | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |                   | L          | T    | R  | L          | T    | R    |
| Volume                 |                   | 15         | 503  |    |            | 619  | 4    |
| Peak-Hour Factor, PHF  |                   | 0.70       | 0.92 |    |            | 0.91 | 0.50 |
| Hourly Flow Rate, HFR  |                   | 21         | 546  |    |            | 680  | 8    |
| Percent Heavy Vehicles |                   | 0          | --   | -- |            | --   | --   |
| Median Type/Storage    |                   | Undivided  |      |    | /          |      |      |
| RT Channelized?        |                   |            |      |    |            |      |      |
| Lanes                  |                   | 0          | 1    |    |            | 1    | 0    |
| Configuration          |                   | LT         |      |    |            | TR   |      |
| Upstream Signal?       |                   | No         |      |    |            | No   |      |

| Minor Street:                    | Approach Movement | Westbound |   |   | Eastbound |    |      |
|----------------------------------|-------------------|-----------|---|---|-----------|----|------|
|                                  |                   | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |                   | L         | T | R | L         | T  | R    |
| Volume                           |                   |           |   |   | 6         |    | 11   |
| Peak Hour Factor, PHF            |                   |           |   |   | 0.50      |    | 0.50 |
| Hourly Flow Rate, HFR            |                   |           |   |   | 12        |    | 22   |
| Percent Heavy Vehicles           |                   |           |   |   | 0         |    | 0    |
| Percent Grade (%)                |                   |           | 0 |   |           | 0  |      |
| Flared Approach: Exists?/Storage |                   |           |   |   | /         | No | /    |
| Lanes                            |                   |           |   |   | 0         |    | 0    |
| Configuration                    |                   |           |   |   |           | LR |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |    |
|------------------|------|----|-----------|---|---|-----------|------|----|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   | 12 |
| Lane Config      | LT   |    |           |   |   |           | LR   |    |
| v (vph)          | 21   |    |           |   |   |           | 34   |    |
| C(m) (vph)       | 916  |    |           |   |   |           | 298  |    |
| v/c              | 0.02 |    |           |   |   |           | 0.11 |    |
| 95% queue length | 0.07 |    |           |   |   |           | 0.38 |    |
| Control Delay    | 9.0  |    |           |   |   |           | 18.6 |    |
| LOS              | A    |    |           |   |   |           | C    |    |
| Approach Delay   |      |    |           |   |   |           | 18.6 |    |
| Approach LOS     |      |    |           |   |   |           | C    |    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Leland Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 No Build  
 Project ID: Masonic Homes  
 East/West Street: Leland Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street: Approach<br>Movement | Northbound |      |      | Southbound |      |      |
|------------------------------------|------------|------|------|------------|------|------|
|                                    | 1          | 2    | 3    | 4          | 5    | 6    |
|                                    | L          | T    | R    | L          | T    | R    |
| Volume                             | 2          | 245  | 3    | 15         | 629  | 3    |
| Peak-Hour Factor, PHF              | 0.50       | 0.89 | 0.75 | 0.70       | 0.81 | 0.38 |
| Hourly Flow Rate, HFR              | 4          | 275  | 4    | 21         | 776  | 7    |
| Percent Heavy Vehicles             | 2          | --   | --   | 1          | --   | --   |
| Median Type/Storage                | Undivided  |      |      | /          |      |      |
| RT Channelized?                    |            |      |      |            |      |      |
| Lanes                              | 0          | 1    | 0    | 0          | 1    | 0    |
| Configuration                      | LTR        |      |      | LTR        |      |      |
| Upstream Signal?                   | No         |      |      | No         |      |      |

| Minor Street: Approach Movement  | Westbound |        |        | Eastbound |         |         |
|----------------------------------|-----------|--------|--------|-----------|---------|---------|
|                                  | 7<br>L    | 8<br>T | 9<br>R | 10<br>L   | 11<br>T | 12<br>R |
| Volume                           | 19        | 0      | 8      | 6         | 0       | 13      |
| Peak Hour Factor, PHF            | 0.75      | 1.00   | 0.45   | 0.38      | 1.00    | 0.65    |
| Hourly Flow Rate, HFR            | 25        | 0      | 17     | 15        | 0       | 20      |
| Percent Heavy Vehicles           | 0         | 0      | 0      | 0         | 0       | 0       |
| Percent Grade (%)                | 0         |        |        | 0         |         |         |
| Flared Approach: Exists?/Storage | No        |        |        | /         |         |         |
| Lanes                            | 0         | 1      | 0      | 0         | 1       | 0       |
| Configuration                    | LTR       |        |        | LTR       |         |         |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB   | Westbound |      |   | Eastbound |      |    |  |
|------------------|------|------|-----------|------|---|-----------|------|----|--|
| Movement         | 1    | 4    | 7         | 8    | 9 | 10        | 11   | 12 |  |
| Lane Config      | LTR  | LTR  | LTR       |      |   | LTR       |      |    |  |
| v (vph)          | 4    | 21   | 42        |      |   | 35        |      |    |  |
| C(m) (vph)       | 835  | 1289 | 251       |      |   | 260       |      |    |  |
| v/c              | 0.00 | 0.02 | 0.17      |      |   | 0.13      |      |    |  |
| 95% queue length | 0.01 | 0.05 | 0.59      |      |   | 0.46      |      |    |  |
| Control Delay    | 9.3  | 7.8  | 22.2      |      |   | 21.0      |      |    |  |
| LOS              | A    | A    | C         |      |   | C         |      |    |  |
| Approach Delay   |      |      |           | 22.2 |   |           | 21.0 |    |  |
| Approach LOS     |      |      |           | C    |   |           | C    |    |  |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Leland Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 No Build  
 Project ID: Masonic Homes  
 East/West Street: Leland Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |      | Southbound |      |      |
|------------------------|----------|------------|------|------|------------|------|------|
|                        | Movement | 1          | 2    | 3    | 4          | 5    | 6    |
|                        |          | L          | T    | R    | L          | T    | R    |
| Volume                 |          | 19         | 487  | 11   | 22         | 700  | 10   |
| Peak-Hour Factor, PHF  |          | 0.90       | 0.88 | 0.50 | 0.58       | 0.83 | 0.45 |
| Hourly Flow Rate, HFR  |          | 21         | 553  | 22   | 37         | 843  | 22   |
| Percent Heavy Vehicles |          | 1          | --   | --   | 1          | --   | --   |
| Median Type/Storage    |          | Undivided  |      |      | /          |      |      |
| RT Channelized?        |          |            |      |      |            |      |      |
| Lanes                  |          | 0          | 1    | 0    | 0          | 1    | 0    |
| Configuration          |          | LTR        |      |      | LTR        |      |      |
| Upstream Signal?       |          | No         |      |      | No         |      |      |

| Minor Street:                    | Approach | Westbound |      |      | Eastbound |      |      |
|----------------------------------|----------|-----------|------|------|-----------|------|------|
|                                  | Movement | 7         | 8    | 9    | 10        | 11   | 12   |
|                                  |          | L         | T    | R    | L         | T    | R    |
| Volume                           |          | 20        | 0    | 12   | 7         | 2    | 18   |
| Peak Hour Factor, PHF            |          | 0.59      | 1.00 | 0.39 | 0.44      | 0.50 | 0.61 |
| Hourly Flow Rate, HFR            |          | 33        | 0    | 30   | 15        | 4    | 29   |
| Percent Heavy Vehicles           |          | 5         | 0    | 0    | 0         | 0    | 6    |
| Percent Grade (%)                |          |           | 0    |      |           | 0    |      |
| Flared Approach: Exists?/Storage |          |           |      | No   | /         |      | No   |
| Lanes                            |          | 0         | 1    | 0    | 0         | 1    | 0    |
| Configuration                    |          | LTR       |      |      | LTR       |      |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB   | Westbound |      |   | Eastbound |      |    |
|------------------|------|------|-----------|------|---|-----------|------|----|
| Movement         | 1    | 4    | 7         | 8    | 9 | 10        | 11   | 12 |
| Lane Config      | LTR  | LTR  |           | LTR  |   |           | LTR  |    |
| v (vph)          | 21   | 37   |           | 63   |   |           | 48   |    |
| C(m) (vph)       | 782  | 1003 |           | 125  |   |           | 157  |    |
| v/c              | 0.03 | 0.04 |           | 0.50 |   |           | 0.31 |    |
| 95% queue length | 0.08 | 0.11 |           | 2.34 |   |           | 1.21 |    |
| Control Delay    | 9.7  | 8.7  |           | 60.0 |   |           | 37.7 |    |
| LOS              | A    | A    |           | F    |   |           | E    |    |
| Approach Delay   |      |      |           | 60.0 |   |           | 37.7 |    |
| Approach LOS     |      |      |           | F    |   |           | E    |    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Ormand Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 No Build  
 Project ID: Masonic Homes  
 East/West Street: Ormand Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |    |   | Southbound |      |
|------------------------|----------|------------|------|----|---|------------|------|
|                        | Movement | 1          | 2    | 3  | 4 | 5          | 6    |
|                        |          | L          | T    | R  | L | T          | R    |
| Volume                 |          | 8          | 356  |    |   | 642        | 4    |
| Peak-Hour Factor, PHF  |          | 0.67       | 0.90 |    |   | 0.84       | 0.50 |
| Hourly Flow Rate, HFR  |          | 11         | 395  |    |   | 764        | 8    |
| Percent Heavy Vehicles |          | 0          | --   | -- |   | --         | --   |
| Median Type/Storage    |          | Undivided  |      |    |   | /          |      |
| RT Channelized?        |          |            |      |    |   |            |      |
| Lanes                  |          | 0          | 1    |    |   | 1          | 0    |
| Configuration          |          | LT         |      |    |   | TR         |      |
| Upstream Signal?       |          | No         |      |    |   | No         |      |

| Minor Street:                    | Approach | Westbound |   |   |      | Eastbound |      |
|----------------------------------|----------|-----------|---|---|------|-----------|------|
|                                  | Movement | 7         | 8 | 9 | 10   | 11        | 12   |
|                                  |          | L         | T | R | L    | T         | R    |
| Volume                           |          |           |   |   | 6    |           | 6    |
| Peak Hour Factor, PHF            |          |           |   |   | 0.50 |           | 0.50 |
| Hourly Flow Rate, HFR            |          |           |   |   | 12   |           | 12   |
| Percent Heavy Vehicles           |          |           |   |   | 0    |           | 17   |
| Percent Grade (%)                |          |           | 0 |   |      | 0         |      |
| Flared Approach: Exists?/Storage |          |           |   |   | /    | No        | /    |
| Lanes                            |          |           |   |   | 0    |           | 0    |
| Configuration                    |          |           |   |   |      | LR        |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |    |
|------------------|------|----|-----------|---|---|-----------|------|----|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   | 12 |
| Lane Config      | LT   |    |           |   |   |           | LR   |    |
| v (vph)          | 11   |    |           |   |   |           | 24   |    |
| C(m) (vph)       | 852  |    |           |   |   |           | 269  |    |
| v/c              | 0.01 |    |           |   |   |           | 0.09 |    |
| 95% queue length | 0.04 |    |           |   |   |           | 0.29 |    |
| Control Delay    | 9.3  |    |           |   |   |           | 19.7 |    |
| LOS              | A    |    |           |   |   |           | C    |    |
| Approach Delay   |      |    |           |   |   |           | 19.7 |    |
| Approach LOS     |      |    |           |   |   |           | C    |    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Ormand Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 No Build  
 Project ID: Masonic Homes  
 East/West Street: Ormand Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |    | Southbound |      |      |
|------------------------|----------|------------|------|----|------------|------|------|
|                        | Movement | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |          | L          | T    | R  | L          | T    | R    |
| Volume                 |          | 14         | 503  |    |            | 731  | 7    |
| Peak-Hour Factor, PHF  |          | 0.65       | 0.90 |    |            | 0.83 | 0.44 |
| Hourly Flow Rate, HFR  |          | 21         | 558  |    |            | 880  | 15   |
| Percent Heavy Vehicles |          | 0          | --   | -- |            | --   | --   |
| Median Type/Storage    |          | Undivided  |      |    | /          |      |      |
| RT Channelized?        |          |            |      |    |            |      |      |
| Lanes                  |          | 0          | 1    |    |            | 1    | 0    |
| Configuration          |          | LT         |      |    | TR         |      |      |
| Upstream Signal?       |          | No         |      |    | No         |      |      |

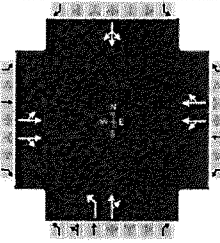
| Minor Street:                    | Approach | Westbound |   |   | Eastbound |    |      |
|----------------------------------|----------|-----------|---|---|-----------|----|------|
|                                  | Movement | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |          | L         | T | R | L         | T  | R    |
| Volume                           |          |           |   |   | 3         |    | 8    |
| Peak Hour Factor, PHF            |          |           |   |   | 0.75      |    | 0.67 |
| Hourly Flow Rate, HFR            |          |           |   |   | 4         |    | 11   |
| Percent Heavy Vehicles           |          |           |   |   | 0         |    | 13   |
| Percent Grade (%)                |          |           | 0 |   |           | 0  |      |
| Flared Approach: Exists?/Storage |          |           |   |   | /         |    |      |
| Lanes                            |          |           |   |   | 0         |    | 0    |
| Configuration                    |          |           |   |   | LR        |    |      |

## Delay, Queue Length, and Level of Service

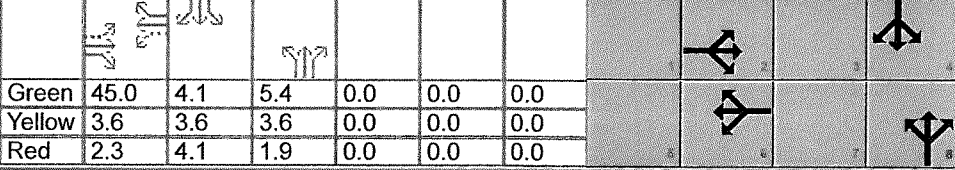
| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |    |
|------------------|------|----|-----------|---|---|-----------|------|----|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   | 12 |
| Lane Config      | LT   |    |           |   |   |           | LR   |    |
| v (vph)          | 21   |    |           |   |   |           | 15   |    |
| C(m) (vph)       | 767  |    |           |   |   |           | 236  |    |
| v/c              | 0.03 |    |           |   |   |           | 0.06 |    |
| 95% queue length | 0.08 |    |           |   |   |           | 0.20 |    |
| Control Delay    | 9.8  |    |           |   |   |           | 21.3 |    |
| LOS              | A    |    |           |   |   |           | C    |    |
| Approach Delay   |      |    |           |   |   |           | 21.3 |    |
| Approach LOS     |      |    |           |   |   |           | C    |    |

# HCS 2010 Signalized Intersection Results Summary

| General Information |  |                           |  |               |  | Intersection Information |  |                 |  |         |  |  |  |
|---------------------|--|---------------------------|--|---------------|--|--------------------------|--|-----------------|--|---------|--|--|--|
| Agency              |  | Qk4                       |  |               |  | Duration, h              |  | 1.00            |  |         |  |  |  |
| Analyst             |  | JJL                       |  | Analysis Date |  | Sep 18, 2013             |  | Area Type       |  | Other   |  |  |  |
| Jurisdiction        |  | Louisville Metro          |  | Time Period   |  | AM Peak Hour             |  | PHF             |  | 1.00    |  |  |  |
| Intersection        |  | Frankfort Ave & Masonic H |  | Analysis Year |  | 2020 Diverted            |  | Analysis Period |  | 1> 7:00 |  |  |  |
| File Name           |  | AM Peak Hour Existing.xus |  |               |  |                          |  |                 |  |         |  |  |  |
| Project Description |  | Masonic Homes             |  |               |  |                          |  |                 |  |         |  |  |  |



| Demand Information |  |  |  | EB |     |    | WB |     |    | NB |    |   | SB |    |    |
|--------------------|--|--|--|----|-----|----|----|-----|----|----|----|---|----|----|----|
| Approach Movement  |  |  |  | L  | T   | R  | L  | T   | R  | L  | T  | R | L  | T  | R  |
| Demand (v), veh/h  |  |  |  | 27 | 429 | 35 | 2  | 677 | 28 | 35 | 29 | 9 | 8  | 18 | 17 |

| Signal Information |       |                 |     |  |     |     |
|--------------------|-------|-----------------|-----|------------------------------------------------------------------------------------|-----|-----|
| Cycle, s           | 73.6  | Reference Phase | 2   |                                                                                    |     |     |
| Offset, s          | 0     | Reference Point | End |                                                                                    |     |     |
| Uncoordinated      | Yes   | Simult. Gap E/W | Off |                                                                                    |     |     |
| Force Mode         | Fixed | Simult. Gap N/S | Off |                                                                                    |     |     |
| Green              | 45.0  | 4.1             | 5.4 | 0.0                                                                                | 0.0 | 0.0 |
| Yellow             | 3.6   | 3.6             | 3.6 | 0.0                                                                                | 0.0 | 0.0 |
| Red                | 2.3   | 4.1             | 1.9 | 0.0                                                                                | 0.0 | 0.0 |

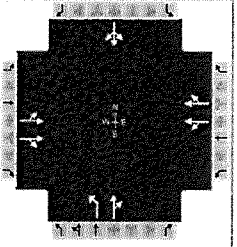
| Timer Results                             |  | EBL | EBT  | WBL | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|--|-----|------|-----|------|-----|------|-----|------|
| Assigned Phase                            |  |     | 2    |     | 6    |     | 8    |     | 4    |
| Phase Number                              |  |     | 8.0  |     | 8.0  |     | 10.0 |     | 12.0 |
| Phase Duration, s                         |  |     | 50.9 |     | 50.9 |     | 10.9 |     | 11.8 |
| Change Period, (Y+R <sub>c</sub> ), s     |  |     | 5.9  |     | 5.9  |     | 5.5  |     | 7.7  |
| Max Allow Headway (MAH), s                |  |     | 4.7  |     | 4.5  |     | 4.6  |     | 4.7  |
| Queue Clearance Time (g <sub>s</sub> ), s |  |     | 6.9  |     | 9.1  |     | 3.5  |     | 3.8  |
| Green Extension Time (g <sub>e</sub> ), s |  |     | 2.5  |     | 3.6  |     | 0.3  |     | 0.1  |
| Phase Call Probability                    |  |     | 1.00 |     | 1.00 |     | 0.78 |     | 0.59 |
| Max Out Probability                       |  |     | 0.00 |     | 0.00 |     | 0.00 |     | 0.00 |

| Movement Group Results                          |  | EB    |   |       | WB    |   |       | NB    |       |    | SB   |       |    |
|-------------------------------------------------|--|-------|---|-------|-------|---|-------|-------|-------|----|------|-------|----|
| Approach Movement                               |  | L     | T | R     | L     | T | R     | L     | T     | R  | L    | T     | R  |
| Assigned Movement                               |  | 5     | 2 | 12    | 1     | 6 | 16    | 3     | 8     | 18 | 7    | 4     | 14 |
| Adjusted Flow Rate (v), veh/h                   |  | 251   |   | 240   | 373   |   | 334   | 35    | 38    |    |      | 43    |    |
| Adjusted Saturation Flow Rate (s), veh/h/ln     |  | 1690  |   | 1652  | 1880  |   | 1686  | 1757  | 1769  |    |      | 1724  |    |
| Queue Service Time (g <sub>s</sub> ), s         |  | 0.0   |   | 4.9   | 0.0   |   | 7.1   | 1.4   | 1.5   |    |      | 1.8   |    |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s |  | 4.5   |   | 4.9   | 7.1   |   | 7.1   | 1.4   | 1.5   |    |      | 1.8   |    |
| Green Ratio (g/C)                               |  | 0.61  |   | 0.61  | 0.61  |   | 0.61  | 0.07  | 0.07  |    |      | 0.06  |    |
| Capacity (c), veh/h                             |  | 1087  |   | 1009  | 1198  |   | 1031  | 130   | 131   |    |      | 96    |    |
| Volume-to-Capacity Ratio (X)                    |  | 0.231 |   | 0.238 | 0.311 |   | 0.325 | 0.270 | 0.291 |    |      | 0.448 |    |
| Available Capacity (c <sub>a</sub> ), veh/h     |  | 1957  |   | 2493  | 2214  |   | 2281  | 954   | 961   |    |      | 936   |    |
| Back of Queue (Q), veh/ln (50th percentile)     |  | 1.4   |   | 1.4   | 2.3   |   | 2.1   | 0.6   | 0.7   |    |      | 0.8   |    |
| Queue Storage Ratio (RQ) (50th percentile)      |  | 0.00  |   | 0.00  | 0.00  |   | 0.00  | 0.00  | 0.00  |    |      | 0.00  |    |
| Uniform Delay (d <sub>1</sub> ), s/veh          |  | 6.4   |   | 6.5   | 6.9   |   | 6.9   | 32.2  | 32.3  |    |      | 33.7  |    |
| Incremental Delay (d <sub>2</sub> ), s/veh      |  | 0.1   |   | 0.1   | 0.2   |   | 0.2   | 1.3   | 1.5   |    |      | 3.9   |    |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    |  | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   |    |      | 0.0   |    |
| Control Delay (d), s/veh                        |  | 6.6   |   | 6.7   | 7.1   |   | 7.2   | 33.6  | 33.8  |    |      | 37.6  |    |
| Level of Service (LOS)                          |  | A     |   | A     | A     |   | A     | C     | C     |    |      | D     |    |
| Approach Delay, s/veh / LOS                     |  | 6.6   |   | A     | 7.1   |   | A     | 33.7  |       | C  | 37.6 |       | D  |
| Intersection Delay, s/veh / LOS                 |  | 9.4   |   |       |       |   |       | A     |       |    |      |       |    |

| Multimodal Results         |  | EB  |   | WB  |   | NB  |   | SB  |   |
|----------------------------|--|-----|---|-----|---|-----|---|-----|---|
| Pedestrian LOS Score / LOS |  | 2.2 | B | 2.1 | B | 2.7 | B | 2.7 | B |
| Bicycle LOS Score / LOS    |  | 0.9 | A | 1.1 | A | 0.6 | A | 0.6 | A |

# HCS 2010 Signalized Intersection Results Summary

| General Information |                           |               |               | Intersection Information |         |
|---------------------|---------------------------|---------------|---------------|--------------------------|---------|
| Agency              | Qk4                       |               |               | Duration, h              | 0.25    |
| Analyst             | JJL                       | Analysis Date | Sep 18, 2013  | Area Type                | Other   |
| Jurisdiction        | Louisville Metro          | Time Period   | PM Peak Hour  | PHF                      | 0.95    |
| Intersection        | Frankfort Ave & Masonic H | Analysis Year | 2020 Diverted | Analysis Period          | 1> 7:00 |
| File Name           | PM Peak Hour Existing.xus |               |               |                          |         |
| Project Description | Masonic Homes             |               |               |                          |         |



| Demand Information | EB |     |    | WB |     |    | NB |    |    | SB |    |    |
|--------------------|----|-----|----|----|-----|----|----|----|----|----|----|----|
| Approach Movement  | L  | T   | R  | L  | T   | R  | L  | T  | R  | L  | T  | R  |
| Demand (v), veh/h  | 65 | 565 | 72 | 12 | 538 | 76 | 74 | 40 | 17 | 20 | 34 | 24 |

| Signal Information |       |                 |     |  |  |  |  |  |  |  |  |  |
|--------------------|-------|-----------------|-----|--|--|--|--|--|--|--|--|--|
| Cycle, s           | 76.5  | Reference Phase | 2   |  |  |  |  |  |  |  |  |  |
| Offset, s          | 0     | Reference Point | End |  |  |  |  |  |  |  |  |  |
| Uncoordinated      | Yes   | Simult. Gap E/W | Off |  |  |  |  |  |  |  |  |  |
| Force Mode         | Fixed | Simult. Gap N/S | Off |  |  |  |  |  |  |  |  |  |

| Timer Results                             | EBL | EBT  | WBL | WBT  | NBL | NBT  | SBL | SBT  |
|-------------------------------------------|-----|------|-----|------|-----|------|-----|------|
| Assigned Phase                            |     | 2    |     | 6    |     | 8    |     | 4    |
| Phase Number                              |     | 8.0  |     | 8.0  |     | 10.0 |     | 12.0 |
| Phase Duration, s                         |     | 50.9 |     | 50.9 |     | 12.1 |     | 13.5 |
| Change Period, (Y+R <sub>c</sub> ), s     |     | 5.9  |     | 5.9  |     | 5.5  |     | 7.7  |
| Max Allow Headway (MAH), s                |     | 4.7  |     | 4.6  |     | 4.6  |     | 4.7  |
| Queue Clearance Time (g <sub>s</sub> ), s |     | 11.3 |     | 9.4  |     | 5.6  |     | 5.5  |
| Green Extension Time (g <sub>e</sub> ), s |     | 4.3  |     | 3.4  |     | 0.6  |     | 0.3  |
| Phase Call Probability                    |     | 1.00 |     | 1.00 |     | 0.95 |     | 0.83 |
| Max Out Probability                       |     | 0.00 |     | 0.00 |     | 0.00 |     | 0.00 |

| Movement Group Results                          | EB    |   |       | WB    |   |       | NB    |       |    | SB   |       |    |
|-------------------------------------------------|-------|---|-------|-------|---|-------|-------|-------|----|------|-------|----|
| Approach Movement                               | L     | T | R     | L     | T | R     | L     | T     | R  | L    | T     | R  |
| Assigned Movement                               | 5     | 2 | 12    | 1     | 6 | 16    | 3     | 8     | 18 | 7    | 4     | 14 |
| Adjusted Flow Rate (v), veh/h                   | 363   |   | 376   | 350   |   | 309   | 78    | 60    |    |      | 82    |    |
| Adjusted Saturation Flow Rate (s), veh/h/ln     | 1566  |   | 1652  | 1850  |   | 1636  | 1601  | 1803  |    |      | 1761  |    |
| Queue Service Time (g <sub>s</sub> ), s         | 0.0   |   | 9.3   | 0.0   |   | 7.4   | 3.6   | 2.4   |    |      | 3.5   |    |
| Cycle Queue Clearance Time (g <sub>c</sub> ), s | 7.5   |   | 9.3   | 7.2   |   | 7.4   | 3.6   | 2.4   |    |      | 3.5   |    |
| Green Ratio (g/C)                               | 0.59  |   | 0.59  | 0.59  |   | 0.59  | 0.09  | 0.09  |    |      | 0.08  |    |
| Capacity (c), veh/h                             | 977   |   | 972   | 1137  |   | 962   | 139   | 156   |    |      | 133   |    |
| Volume-to-Capacity Ratio (X)                    | 0.372 |   | 0.387 | 0.307 |   | 0.322 | 0.561 | 0.384 |    |      | 0.617 |    |
| Available Capacity (c <sub>a</sub> ), veh/h     | 1757  |   | 2726  | 2072  |   | 3215  | 837   | 943   |    |      | 921   |    |
| Back of Queue (Q), veh/ln (50th percentile)     | 2.6   |   | 2.8   | 2.5   |   | 2.2   | 1.5   | 1.1   |    |      | 1.6   |    |
| Queue Storage Ratio (RQ) (50th percentile)      | 0.00  |   | 0.00  | 0.00  |   | 0.00  | 0.00  | 0.00  |    |      | 0.00  |    |
| Uniform Delay (d <sub>1</sub> ), s/veh          | 8.0   |   | 8.4   | 8.0   |   | 8.0   | 33.5  | 33.0  |    |      | 34.3  |    |
| Incremental Delay (d <sub>2</sub> ), s/veh      | 0.3   |   | 0.3   | 0.2   |   | 0.2   | 4.2   | 1.9   |    |      | 5.5   |    |
| Initial Queue Delay (d <sub>3</sub> ), s/veh    | 0.0   |   | 0.0   | 0.0   |   | 0.0   | 0.0   | 0.0   |    |      | 0.0   |    |
| Control Delay (d), s/veh                        | 8.3   |   | 8.7   | 8.2   |   | 8.2   | 37.8  | 34.9  |    |      | 39.8  |    |
| Level of Service (LOS)                          | A     |   | A     | A     |   | A     | D     | C     |    |      | D     |    |
| Approach Delay, s/veh / LOS                     | 8.5   | A |       | 8.2   | A |       | 36.5  | D     |    | 39.8 | D     |    |
| Intersection Delay, s/veh / LOS                 | 12.4  |   |       |       |   |       | B     |       |    |      |       |    |

| Multimodal Results         | EB  |   |  | WB  |   |  | NB  |   |  | SB  |   |  |
|----------------------------|-----|---|--|-----|---|--|-----|---|--|-----|---|--|
| Pedestrian LOS Score / LOS | 2.2 | B |  | 2.1 | B |  | 2.7 | B |  | 2.7 | B |  |
| Bicycle LOS Score / LOS    | 1.1 | A |  | 1.0 | A |  | 0.7 | A |  | 0.6 | A |  |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Elmwood Ave  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Diverted  
 Project ID: Masonic Homes  
 East/West Street: Elmwood Ave  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |    | Southbound |      |      |
|------------------------|----------|------------|------|----|------------|------|------|
|                        | Movement | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |          | L          | T    | R  | L          | T    | R    |
| Volume                 |          | 5          | 258  |    |            | 741  | 2    |
| Peak-Hour Factor, PHF  |          | 0.42       | 0.90 |    |            | 0.77 | 0.50 |
| Hourly Flow Rate, HFR  |          | 11         | 286  |    |            | 962  | 4    |
| Percent Heavy Vehicles |          | 20         | --   | -- |            | --   | --   |
| Median Type/Storage    |          | Undivided  |      |    | /          |      |      |
| RT Channelized?        |          |            |      |    |            |      |      |
| Lanes                  |          | 0          | 1    |    |            | 1    | 0    |
| Configuration          |          | LT         |      |    |            | TR   |      |
| Upstream Signal?       |          | No         |      |    |            | No   |      |

| Minor Street:                    | Approach | Westbound |   |   | Eastbound |    |      |
|----------------------------------|----------|-----------|---|---|-----------|----|------|
|                                  | Movement | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |          | L         | T | R | L         | T  | R    |
| Volume                           |          |           |   |   | 24        |    | 16   |
| Peak Hour Factor, PHF            |          |           |   |   | 0.75      |    | 0.45 |
| Hourly Flow Rate, HFR            |          |           |   |   | 32        |    | 35   |
| Percent Heavy Vehicles           |          |           |   |   | 0         |    | 8    |
| Percent Grade (%)                |          | 0         |   |   |           | 0  |      |
| Flared Approach: Exists?/Storage |          |           |   |   | /         |    | No / |
| Lanes                            |          |           |   |   | 0         |    | 0    |
| Configuration                    |          |           |   |   |           | LR |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |
|------------------|------|----|-----------|---|---|-----------|------|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   |
| Lane Config      | LT   |    |           |   |   |           | LR   |
| v (vph)          | 11   |    |           |   |   |           | 67   |
| C(m) (vph)       | 646  |    |           |   |   |           | 231  |
| v/c              | 0.02 |    |           |   |   |           | 0.29 |
| 95% queue length | 0.05 |    |           |   |   |           | 1.16 |
| Control Delay    | 10.7 |    |           |   |   |           | 26.8 |
| LOS              | B    |    |           |   |   |           | D    |
| Approach Delay   |      |    |           |   |   |           | 26.8 |
| Approach LOS     |      |    |           |   |   |           | D    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Elmwood Ave  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Diverted  
 Project ID: Masonic Homes  
 East/West Street: Elmwood Ave  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach | Northbound |      |    |   | Southbound |      |
|------------------------|----------|------------|------|----|---|------------|------|
|                        | Movement | 1          | 2    | 3  | 4 | 5          | 6    |
|                        |          | L          | T    | R  | L | T          | R    |
| Volume                 |          | 10         | 552  |    |   | 632        | 8    |
| Peak-Hour Factor, PHF  |          | 0.56       | 0.97 |    |   | 0.91       | 0.58 |
| Hourly Flow Rate, HFR  |          | 17         | 569  |    |   | 694        | 13   |
| Percent Heavy Vehicles |          | 0          | --   | -- |   | --         | --   |
| Median Type/Storage    |          | Undivided  |      |    |   | /          |      |
| RT Channelized?        |          |            |      |    |   |            |      |
| Lanes                  |          | 0          | 1    |    |   | 1          | 0    |
| Configuration          |          | LT         |      |    |   | TR         |      |
| Upstream Signal?       |          | No         |      |    |   | No         |      |

| Minor Street:                    | Approach | Westbound |   |   | Eastbound |    |      |
|----------------------------------|----------|-----------|---|---|-----------|----|------|
|                                  | Movement | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |          | L         | T | R | L         | T  | R    |
| Volume                           |          |           |   |   | 17        |    | 9    |
| Peak Hour Factor, PHF            |          |           |   |   | 0.50      |    | 0.58 |
| Hourly Flow Rate, HFR            |          |           |   |   | 34        |    | 15   |
| Percent Heavy Vehicles           |          |           |   |   | 0         |    | 0    |
| Percent Grade (%)                |          |           | 0 |   |           | 0  |      |
| Flared Approach: Exists?/Storage |          |           |   |   | /         | No | /    |
| Lanes                            |          |           |   |   | 0         |    | 0    |
| Configuration                    |          |           |   |   |           | LR |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |
|------------------|------|----|-----------|---|---|-----------|------|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   |
| Lane Config      | LT   |    |           |   |   |           | LR   |
| v (vph)          | 17   |    |           |   |   |           | 49   |
| C(m) (vph)       | 901  |    |           |   |   |           | 216  |
| v/c              | 0.02 |    |           |   |   |           | 0.23 |
| 95% queue length | 0.06 |    |           |   |   |           | 0.85 |
| Control Delay    | 9.1  |    |           |   |   |           | 26.5 |
| LOS              | A    |    |           |   |   |           | D    |
| Approach Delay   |      |    |           |   |   |           | 26.5 |
| Approach LOS     |      |    |           |   |   |           | D    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Washington Sq  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Diverted  
 Project ID: Masonic Homes  
 East/West Street: Washington Square  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach<br>Movement | Northbound |      |    | Southbound |      |      |
|------------------------|----------------------|------------|------|----|------------|------|------|
|                        |                      | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |                      | L          | T    | R  | L          | T    | R    |
| Volume                 |                      | 6          | 297  |    |            | 740  | 32   |
| Peak-Hour Factor, PHF  |                      | 0.75       | 0.78 |    |            | 0.73 | 0.50 |
| Hourly Flow Rate, HFR  |                      | 8          | 380  |    |            | 1013 | 64   |
| Percent Heavy Vehicles |                      | 33         | --   | -- |            | --   | --   |
| Median Type/Storage    |                      | Undivided  |      |    | /          |      |      |
| RT Channelized?        |                      |            |      |    |            |      |      |
| Lanes                  |                      | 0          | 1    |    |            | 1    | 0    |
| Configuration          |                      | LT         |      |    |            | TR   |      |
| Upstream Signal?       |                      | No         |      |    |            | No   |      |

| Minor Street:                    | Approach | Westbound |   |   |      | Eastbound |      |
|----------------------------------|----------|-----------|---|---|------|-----------|------|
|                                  | Movement | 7         | 8 | 9 | 10   | 11        | 12   |
|                                  |          | L         | T | R | L    | T         | R    |
| Volume                           |          |           |   |   | 1    |           | 8    |
| Peak Hour Factor, PHF            |          |           |   |   | 0.25 |           | 0.58 |
| Hourly Flow Rate, HFR            |          |           |   |   | 4    |           | 13   |
| Percent Heavy Vehicles           |          |           |   |   | 0    |           | 14   |
| Percent Grade (%)                |          | 0         |   |   |      | 0         |      |
| Flared Approach: Exists?/Storage |          | /         |   |   |      | No        | /    |
| Lanes                            |          |           |   |   | 0    | 0         |      |
| Configuration                    |          | LR        |   |   |      |           |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |
|------------------|------|----|-----------|---|---|-----------|------|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   |
| Lane Config      | LT   |    |           |   |   |           | LR   |
| v (vph)          | 8    |    |           |   |   |           | 17   |
| C(m) (vph)       | 544  |    |           |   |   |           | 221  |
| v/c              | 0.01 |    |           |   |   |           | 0.08 |
| 95% queue length | 0.04 |    |           |   |   |           | 0.25 |
| Control Delay    | 11.7 |    |           |   |   |           | 22.6 |
| LOS              | B    |    |           |   |   |           | C    |
| Approach Delay   |      |    |           |   |   |           | 22.6 |
| Approach LOS     |      |    |           |   |   |           | C    |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJJ  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Washington Sq  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Diverted  
 Project ID: Masonic Homes  
 East/West Street: Washington Square  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach Movement | Northbound |      |    | Southbound |      |      |
|------------------------|-------------------|------------|------|----|------------|------|------|
|                        |                   | 1          | 2    | 3  | 4          | 5    | 6    |
|                        |                   | L          | T    | R  | L          | T    | R    |
| Volume                 |                   | 19         | 520  |    |            | 620  | 36   |
| Peak-Hour Factor, PHF  |                   | 0.70       | 0.92 |    |            | 0.91 | 0.50 |
| Hourly Flow Rate, HFR  |                   | 27         | 565  |    |            | 681  | 72   |
| Percent Heavy Vehicles |                   | 0          | --   | -- |            | --   | --   |
| Median Type/Storage    |                   | Undivided  |      |    | /          |      |      |
| RT Channelized?        |                   |            |      |    |            |      |      |
| Lanes                  |                   | 0          | 1    |    |            | 1    | 0    |
| Configuration          |                   | LT         |      |    | TR         |      |      |
| Upstream Signal?       |                   | No         |      |    | No         |      |      |

| Minor Street:                    | Approach Movement | Westbound |   |   | Eastbound |    |      |
|----------------------------------|-------------------|-----------|---|---|-----------|----|------|
|                                  |                   | 7         | 8 | 9 | 10        | 11 | 12   |
|                                  |                   | L         | T | R | L         | T  | R    |
| Volume                           |                   |           |   |   | 6         |    | 11   |
| Peak Hour Factor, PHF            |                   |           |   |   | 0.50      |    | 0.50 |
| Hourly Flow Rate, HFR            |                   |           |   |   | 12        |    | 22   |
| Percent Heavy Vehicles           |                   |           |   |   | 0         |    | 0    |
| Percent Grade (%)                |                   |           | 0 |   |           | 0  |      |
| Flared Approach: Exists?/Storage |                   |           |   |   | /         | No | /    |
| Lanes                            |                   |           |   |   | 0         |    | 0    |
| Configuration                    |                   |           |   |   | LR        |    |      |

## Delay, Queue Length, and Level of Service

| Approach         | NB   | SB | Westbound |   |   | Eastbound |      |    |
|------------------|------|----|-----------|---|---|-----------|------|----|
| Movement         | 1    | 4  | 7         | 8 | 9 | 10        | 11   | 12 |
| Lane Config      | LT   |    |           |   |   |           | LR   |    |
| v (vph)          | 27   |    |           |   |   |           | 34   |    |
| C(m) (vph)       | 866  |    |           |   |   |           | 276  |    |
| v/c              | 0.03 |    |           |   |   |           | 0.12 |    |
| 95% queue length | 0.10 |    |           |   |   |           | 0.42 |    |
| Control Delay    | 9.3  |    |           |   |   |           | 19.9 |    |
| LOS              | A    |    |           |   |   |           | C    |    |
| Approach Delay   |      |    |           |   |   |           | 19.9 |    |
| Approach LOS     |      |    |           |   |   |           | C    |    |

## HCS+: Unsignalized Intersections Release 5.6

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: AM Peak Hour  
 Intersection: Chenoweth Ln & Leland Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Build  
 Project ID: Masonic Homes  
 East/West Street: Leland Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street:          | Approach<br>Movement | Northbound |        |        | Southbound |        |        |
|------------------------|----------------------|------------|--------|--------|------------|--------|--------|
|                        |                      | 1<br>L     | 2<br>T | 3<br>R | 4<br>L     | 5<br>T | 6<br>R |
| Volume                 |                      | 5          | 257    | 3      | 15         | 661    | 34     |
| Peak-Hour Factor, PHF  |                      | 0.50       | 0.89   | 0.75   | 0.70       | 0.81   | 0.38   |
| Hourly Flow Rate, HFR  |                      | 10         | 288    | 4      | 21         | 816    | 89     |
| Percent Heavy Vehicles |                      | 2          | --     | --     | 1          | --     | --     |
| Median Type/Storage    |                      | Undivided  |        |        | /          |        |        |
| RT Channelized?        |                      |            |        |        |            |        |        |
| Lanes                  |                      | 0          | 1      | 0      | 0          | 1      | 0      |
| Configuration          |                      | LTR        |        |        | LTR        |        |        |
| Upstream Signal?       |                      | No         |        |        | No         |        |        |

| Minor Street:                    | Approach<br>Movement | Westbound |        |        | Eastbound |         |         |
|----------------------------------|----------------------|-----------|--------|--------|-----------|---------|---------|
|                                  |                      | 7<br>L    | 8<br>T | 9<br>R | 10<br>L   | 11<br>T | 12<br>R |
| Volume                           |                      | 19        | 0      | 8      | 6         | 0       | 4       |
| Peak Hour Factor, PHF            |                      | 0.75      | 1.00   | 0.45   | 0.38      | 1.00    | 0.65    |
| Hourly Flow Rate, HFR            |                      | 25        | 0      | 17     | 15        | 0       | 6       |
| Percent Heavy Vehicles           |                      | 0         | 0      | 0      | 0         | 0       | 0       |
| Percent Grade (%)                |                      |           | 0      |        |           | 0       |         |
| Flared Approach: Exists?/Storage |                      |           |        | No     | /         |         | No      |
| Lanes                            |                      | 0         | 1      | 0      | 0         | 1       | 0       |
| Configuration                    |                      | LTR       |        |        | LTR       |         |         |

## Delay, Queue Length, and Level of Service

| Approach         | NB   |      | SB    |      | Westbound |     |     | Eastbound |     |     |
|------------------|------|------|-------|------|-----------|-----|-----|-----------|-----|-----|
|                  | 1    | 4    | 7     | 8    | 9         | 10  | 11  | 12        |     |     |
| Movement         | LTR  | LTR  | LTR   | LTR  | LTR       | LTR | LTR | LTR       | LTR | LTR |
| Lane Config      | LTR  | LTR  | LTR   | LTR  | LTR       | LTR | LTR | LTR       | LTR | LTR |
| v (vph)          | 10   | 21   | 42    | 21   |           |     |     |           |     |     |
| C(m) (vph)       | 752  | 1275 | 222   | 178  |           |     |     |           |     |     |
| v/c              | 0.01 | 0.02 | 0.19  | 0.12 |           |     |     |           |     |     |
| 95% queue length | 0.04 | 0.05 | 0.68  | 0.39 |           |     |     |           |     |     |
| Control Delay    | 9.9  | 7.9  | 25.0- | 27.9 |           |     |     |           |     |     |
| LOS              | A    | A    | C     | D    |           |     |     |           |     |     |
| Approach Delay   |      |      | 25.0- | 27.9 |           |     |     |           |     |     |
| Approach LOS     |      |      | C     | D    |           |     |     |           |     |     |

## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Leland Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Build  
 Project ID: Masonic Homes  
 East/West Street: Leland Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street: Approach Movement | Northbound |        |        | Southbound |        |        |
|---------------------------------|------------|--------|--------|------------|--------|--------|
|                                 | 1<br>L     | 2<br>T | 3<br>R | 4<br>L     | 5<br>T | 6<br>R |
| Volume                          | 23         | 500    | 11     | 22         | 733    | 42     |
| Peak-Hour Factor, PHF           | 0.90       | 0.88   | 0.50   | 0.58       | 0.83   | 0.45   |
| Hourly Flow Rate, HFR           | 25         | 568    | 22     | 37         | 883    | 93     |
| Percent Heavy Vehicles          | 1          | --     | --     | 1          | --     | --     |
| Median Type/Storage             | Undivided  |        |        | /          |        |        |
| RT Channelized?                 |            |        |        |            |        |        |
| Lanes                           | 0          | 1      | 0      | 0          | 1      | 0      |
| Configuration                   | LTR        |        |        | LTR        |        |        |
| Upstream Signal?                | No         |        |        | No         |        |        |

| Minor Street: Approach Movement  | Westbound |        |        | Eastbound |         |         |
|----------------------------------|-----------|--------|--------|-----------|---------|---------|
|                                  | 7<br>L    | 8<br>T | 9<br>R | 10<br>L   | 11<br>T | 12<br>R |
| Volume                           | 20        | 0      | 12     | 7         | 2       | 18      |
| Peak Hour Factor, PHF            | 0.59      | 1.00   | 0.39   | 0.44      | 0.50    | 0.61    |
| Hourly Flow Rate, HFR            | 33        | 0      | 30     | 15        | 4       | 29      |
| Percent Heavy Vehicles           | 5         | 0      | 0      | 0         | 0       | 6       |
| Percent Grade (%)                | 0         |        |        | 0         |         |         |
| Flared Approach: Exists?/Storage | No        |        |        | /         |         |         |
| Lanes                            | 0         | 1      | 0      | 0         | 1       | 0       |
| Configuration                    | LTR       |        |        | LTR       |         |         |

## Delay, Queue Length, and Level of Service

| Approach Movement Lane Config | NB       | SB       | Westbound |          |   | Eastbound |           |    |
|-------------------------------|----------|----------|-----------|----------|---|-----------|-----------|----|
|                               | 1<br>LTR | 4<br>LTR | 7         | 8<br>LTR | 9 | 10        | 11<br>LTR | 12 |
| v (vph)                       | 25       | 37       | 63        |          |   | 48        |           |    |
| C(m) (vph)                    | 711      | 990      | 105       |          |   | 133       |           |    |
| v/c                           | 0.04     | 0.04     | 0.60      |          |   | 0.36      |           |    |
| 95% queue length              | 0.11     | 0.12     | 2.90      |          |   | 1.49      |           |    |
| Control Delay                 | 10.2     | 8.8      | 81.0      |          |   | 46.6      |           |    |
| LOS                           | B        | A        | F         |          |   | E         |           |    |
| Approach Delay                |          |          |           | 81.0     |   |           | 46.6      |    |
| Approach LOS                  |          |          |           | F        |   |           | E         |    |



## TWO-WAY STOP CONTROL SUMMARY

Analyst: JJL  
 Agency/Co.: Qk4  
 Date Performed: 9/18/2013  
 Analysis Time Period: PM Peak Hour  
 Intersection: Chenoweth Ln & Ormand Rd  
 Jurisdiction: Louisville Metro  
 Units: U. S. Customary  
 Analysis Year: 2020 Build  
 Project ID: Masonic Homes  
 East/West Street: Ormand Rd  
 North/South Street: Chenoweth Ln  
 Intersection Orientation: NS

Study period (hrs): 0.25

## Vehicle Volumes and Adjustments

| Major Street: Approach<br>Movement | Northbound |        |        |   | Southbound |        |        |
|------------------------------------|------------|--------|--------|---|------------|--------|--------|
|                                    | 1<br>L     | 2<br>T | 3<br>R |   | 4<br>L     | 5<br>T | 6<br>R |
| Volume                             | 14         | 515    |        |   |            | 795    | 7      |
| Peak-Hour Factor, PHF              | 0.65       | 0.90   |        |   |            | 0.83   | 0.44   |
| Hourly Flow Rate, HFR              | 21         | 572    |        |   |            | 957    | 15     |
| Percent Heavy Vehicles             | 0          | --     | --     |   |            | --     | --     |
| Median Type/Storage                | Undivided  |        |        | / |            |        |        |
| RT Channelized?                    |            |        |        |   |            |        |        |
| Lanes                              | 0          | 1      |        |   |            | 1      | 0      |
| Configuration                      | LT         |        |        |   | TR         |        |        |
| Upstream Signal?                   | No         |        |        |   | No         |        |        |

| Minor Street: Approach<br>Movement | Westbound |        |        |   | Eastbound |         |         |
|------------------------------------|-----------|--------|--------|---|-----------|---------|---------|
|                                    | 7<br>L    | 8<br>T | 9<br>R |   | 10<br>L   | 11<br>T | 12<br>R |
| Volume                             |           |        |        |   | 15        |         | 9       |
| Peak Hour Factor, PHF              |           |        |        |   | 0.75      |         | 0.67    |
| Hourly Flow Rate, HFR              |           |        |        |   | 20        |         | 13      |
| Percent Heavy Vehicles             |           |        |        |   | 0         |         | 13      |
| Percent Grade (%)                  |           | 0      |        |   |           | 0       |         |
| Flared Approach: Exists?/Storage   |           |        |        | / | No        |         |         |
| Lanes                              |           |        |        |   | 0         |         | 0       |
| Configuration                      |           |        |        |   | LR        |         |         |

## Delay, Queue Length, and Level of Service

| Approach<br>Movement<br>Lane Config | NB   | SB | Westbound |   |   | Eastbound |      |    |
|-------------------------------------|------|----|-----------|---|---|-----------|------|----|
|                                     | 1    | 4  | 7         | 8 | 9 | 10        | 11   | 12 |
|                                     | LT   |    |           |   |   |           | LR   |    |
| v (vph)                             | 21   |    |           |   |   |           | 33   |    |
| C(m) (vph)                          | 717  |    |           |   |   |           | 155  |    |
| v/c                                 | 0.03 |    |           |   |   |           | 0.21 |    |
| 95% queue length                    | 0.09 |    |           |   |   |           | 0.77 |    |
| Control Delay                       | 10.2 |    |           |   |   |           | 34.4 |    |
| LOS                                 | B    |    |           |   |   |           | D    |    |
| Approach Delay                      |      |    |           |   |   |           | 34.4 |    |
| Approach LOS                        |      |    |           |   |   |           | D    |    |

# **APPENDIX C**

## **WALKING SURVEY**

**Study Name** Elmwood Ave Ped Count  
**Start Date** 05/24/2013  
**Start Time** 7:00 AM  
**Site Code**

|            | Westbound Approach<br>Westbound | Eastbound Approach<br>Eastbound |
|------------|---------------------------------|---------------------------------|
| Start Time | Thru                            | Thru                            |
| 7:00 AM    | 0                               | 0                               |
| 7:15 AM    | 0                               | 0                               |
| 7:30 AM    | 1                               | 1                               |
| 7:45 AM    | 0                               | 0                               |
| 8:00 AM    | 0                               | 0                               |
| 8:15 AM    | 0                               | 0                               |
| 8:30 AM    | 2                               | 0                               |
| 8:45 AM    | 0                               | 0                               |
| 9:00 AM    | 0                               | 0                               |
| 9:15 AM    | 1                               | 0                               |
| 9:30 AM    | 1                               | 1                               |
| 9:45 AM    | 0                               | 0                               |
| 10:00 AM   | 0                               | 0                               |
| 10:15 AM   | 0                               | 0                               |
| 10:30 AM   | 0                               | 0                               |
| 10:45 AM   | 0                               | 0                               |
| 11:00 AM   | 0                               | 0                               |
| 11:15 AM   | 0                               | 0                               |
| 11:30 AM   | 0                               | 0                               |
| 11:45 AM   | 0                               | 0                               |
| 12:00 PM   | 0                               | 0                               |
| 12:15 PM   | 0                               | 0                               |
| 12:30 PM   | 0                               | 0                               |
| 12:45 PM   | 0                               | 0                               |
| 1:00 PM    | 0                               | 0                               |
| 1:15 PM    | 0                               | 0                               |
| 1:30 PM    | 0                               | 1                               |
| 1:45 PM    | 1                               | 0                               |
| 2:00 PM    | 0                               | 0                               |
| 2:15 PM    | 0                               | 0                               |
| 2:30 PM    | 0                               | 0                               |
| 2:45 PM    | 0                               | 0                               |
| 3:00 PM    | 0                               | 0                               |
| 3:15 PM    | 0                               | 0                               |
| 3:30 PM    | 0                               | 0                               |
| 3:45 PM    | 0                               | 0                               |
| 4:00 PM    | 0                               | 0                               |
| 4:15 PM    | 3                               | 1                               |
| 4:30 PM    | 0                               | 0                               |
| 4:45 PM    | 0                               | 0                               |
| 5:00 PM    | 4                               | 1                               |
| 5:15 PM    | 0                               | 0                               |
| 5:30 PM    | 3                               | 1                               |
| 5:45 PM    | 2                               | 0                               |
| 6:00 PM    | 1                               | 0                               |
| 6:15 PM    | 4                               | 0                               |
| 6:30 PM    | 2                               | 0                               |
| 6:45 PM    | 3                               | 0                               |
| 7:00 PM    | 1                               | 0                               |
| 7:15 PM    | 0                               | 0                               |
| 7:30 PM    | 0                               | 1                               |
| 7:45 PM    | 0                               | 0                               |
| 8:00 PM    | 0                               | 0                               |
| 8:15 PM    | 0                               | 0                               |
| 8:30 PM    | 0                               | 0                               |
| 8:45 PM    | 0                               | 0                               |

**Study Name** Washington Square Pedestrian Gate  
**Start Date** 05/24/2013  
**Start Time** 7:00 AM  
**Site Code**

|            | Westbound Approach<br>Westbound | Eastbound Approach<br>Eastbound |
|------------|---------------------------------|---------------------------------|
| Start Time | Thru                            | Thru                            |
| 7:00 AM    | 0                               | 0                               |
| 7:15 AM    | 1                               | 3                               |
| 7:30 AM    | 2                               | 1                               |
| 7:45 AM    | 3                               | 1                               |
| 8:00 AM    | 2                               | 0                               |
| 8:15 AM    | 0                               | 3                               |
| 8:30 AM    | 1                               | 4                               |
| 8:45 AM    | 1                               | 1                               |
| 9:00 AM    | 1                               | 0                               |
| 9:15 AM    | 0                               | 0                               |
| 9:30 AM    | 2                               | 2                               |
| 9:45 AM    | 2                               | 2                               |
| 10:00 AM   | 1                               | 2                               |
| 10:15 AM   | 2                               | 1                               |
| 10:30 AM   | 2                               | 5                               |
| 10:45 AM   | 0                               | 0                               |
| 11:00 AM   | 5                               | 0                               |
| 11:15 AM   | 4                               | 2                               |
| 11:30 AM   | 2                               | 4                               |
| 11:45 AM   | 2                               | 2                               |
| 12:00 PM   | 0                               | 1                               |
| 12:15 PM   | 0                               | 3                               |
| 12:30 PM   | 0                               | 1                               |
| 12:45 PM   | 2                               | 1                               |
| 1:00 PM    | 0                               | 0                               |
| 1:15 PM    | 2                               | 2                               |
| 1:30 PM    | 1                               | 2                               |
| 1:45 PM    | 1                               | 2                               |
| 2:00 PM    | 2                               | 2                               |
| 2:15 PM    | 2                               | 0                               |
| 2:30 PM    | 2                               | 2                               |
| 2:45 PM    | 3                               | 3                               |
| 3:00 PM    | 5                               | 3                               |
| 3:15 PM    | 1                               | 6                               |
| 3:30 PM    | 0                               | 1                               |
| 3:45 PM    | 0                               | 0                               |
| 4:00 PM    | 1                               | 0                               |
| 4:15 PM    | 3                               | 2                               |
| 4:30 PM    | 0                               | 3                               |
| 4:45 PM    | 0                               | 0                               |
| 5:00 PM    | 1                               | 0                               |
| 5:15 PM    | 0                               | 2                               |
| 5:30 PM    | 0                               | 1                               |
| 5:45 PM    | 1                               | 0                               |
| 6:00 PM    | 0                               | 3                               |
| 6:15 PM    | 0                               | 0                               |
| 6:30 PM    | 0                               | 2                               |
| 6:45 PM    | 0                               | 0                               |
| 7:00 PM    | 0                               | 0                               |
| 7:15 PM    | 0                               | 0                               |
| 7:30 PM    | 0                               | 4                               |
| 7:45 PM    | 0                               | 0                               |
| 8:00 PM    | 1                               | 0                               |
| 8:15 PM    | 0                               | 1                               |
| 8:30 PM    | 1                               | 0                               |
| 8:45 PM    | 1                               | 2                               |

# **APPENDIX D**

## **STAFF AND RESIDENT SURVEY**

Masonic Homes of Kentucky is currently reviewing traffic flow and accessibility on our Louisville campus. *You can help us by completing the following survey and returning it to the Sam Swope Care Center Concierge by close of business Wednesday, July 10.* Participation is voluntary and your responses are solely for Masonic Homes of Kentucky's use in creating a more enjoyable environment on our campus. If you have questions or concerns, please contact Masonic Homes' Senior Vice President for Human Resources Trasee Whitaker (753-8893; [twhitaker@mhky.com](mailto:twhitaker@mhky.com)).

**Where do you work on the Louisville campus?**

- ☐ Sproutlings   ☐ Miralea   ☐ Campus Maintenance   ☐ Corporate Office   ☐ Rehab
- ☐ Sam Swope Care Center   ☐ The Pillars Assisted Care Center   ☐ Security
- ☐ Masonic Home Village/Club Olmsted/The Bistro

**How do you usually get to and from work?**

- ☐ Drive my own vehicle   ☐ Bus   ☐ Walk   ☐ Carpool with another MHKY employee
- ☐ Dropped off and picked up by another driver

**In which Zip Code is your home located?** \_\_\_\_\_

**Do you currently use the walking gates on the east side of the Louisville campus?**

- ☐ Yes   ☐ No

**If you currently use the walking gates, how often do you use them?**

- ☐ Daily   ☐ 3 to 5 Times a Week   ☐ 1 or 2 Times a Week   ☐ I do not use the walking gates

**If available solely for resident and MHKY employee use, would you use an east campus exit to Chenoweth Lane?**   ☐ Yes   ☐ No

**If a restricted east campus exit to Chenoweth Lane was available for you to drive off and onto the Louisville campus, please estimate how often you would use it.**

- ☐ Daily   ☐ 5 Times a Week   ☐ 2 to 4 Times a Week   ☐ Once a Week   ☐ I would not use it

**How would you prefer MHKY and management at your location communicate with you?**

- ☐ Printed materials (like *Pillar Talk* and this survey)
- ☐ MHKY Intranet or MHKY e-mail
- ☐ Your personal e-mail
- ☐ Text messages to your mobile phone or tablet
- ☐ Group staff meetings

If you have any comments about these questions or this survey, please tell us:

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*Please return your completed survey to the Sam Swope Care Center Concierge by 5 p.m.  
Wednesday, July 10. Thank you for participating.*

| Location    | Mode of Transport | Zip Code | Currently use gate | # of times/week | Would you use gate? | If restricted how often would you use it? | Comments |
|-------------|-------------------|----------|--------------------|-----------------|---------------------|-------------------------------------------|----------|
| Corp        | own vehicle       | 40206    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Corp        | own vehicle       | 40207    | Yes                | 3-5/week        | Yes                 | Daily                                     |          |
| Corp        | own vehicle       | 47130    | No                 | N/A             | Yes                 | 5/week                                    |          |
| Corp        | own vehicle       | 40014    | No                 | N/A             | Yes                 | Daily                                     |          |
| Corp        | own vehicle       | 40241    | No                 | N/A             | Yes                 | 5/week                                    |          |
| Corp        | own vehicle       | 47150    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Corp        | own vehicle       | 40031    | No                 | N/A             | Yes                 | 5/week                                    |          |
| Corp        | own vehicle       | 40207    | Yes                | 5/week          | Yes                 | 5/week                                    |          |
| Corp        | own vehicle       | 40228    | No                 | N/A             | Yes                 | 1/week                                    |          |
| Corp        | own vehicle       | 40206    | No                 | N/A             | Yes                 | 5/week                                    |          |
| Corp        | own vehicle       | 40291    | Yes                | 3-5/week        | Yes                 | 2-4/week                                  |          |
| Corp        | own vehicle       | 40205    | No                 | N/A             | Yes                 | 1/week                                    |          |
| Corp        | own vehicle       | 40217    | No                 | N/A             | Yes                 | 1/week                                    |          |
| Corp        | own vehicle       | 40223    | Yes                | 3-5/week        | Yes                 | Daily                                     |          |
| Corp        | own vehicle       | 40223    | Yes                | 1-2/week        | Yes                 | Daily                                     |          |
| Corp        | own vehicle       | 40031    | Yes                | 1/month         | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 40213    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40213    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40223    | No                 | N/A             | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 40207    | Yes                | 3-5/week        | Yes                 | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40204    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40219    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40203    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40212    | Yes                | 1-2/week        | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 40047    | No                 | N/A             | No                  | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40206    | No                 | N/A             | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 40291    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40047    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40207    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40204    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40206    | No                 | N/A             | Yes                 | 5/week                                    |          |
| Maintenance | own vehicle       | 40291    | No                 | N/A             | Yes                 | 1/week                                    |          |
| Maintenance | own vehicle       | 40216    | No                 | N/A             | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 47130    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40216    | No                 | N/A             | Yes                 | 5/week                                    |          |
| Maintenance | bus               | 40216    | Yes                | 3-5/week        | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 40207    | No                 | N/A             | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 40207    | No                 | N/A             | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 40047    | Yes                | Daily           | Yes                 | 5/week                                    |          |
| Maintenance | own vehicle       | 40014    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40218    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40213    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40245    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Maintenance | own vehicle       | 40206    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40212    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40208    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40204    | No                 | N/A             | No                  | no                                        |          |
| Maintenance | own vehicle       | 40242    | No                 | N/A             | Yes                 | Daily                                     |          |
| Maintenance | own vehicle       | 40242    | No                 | N/A             | Yes                 | 1/week                                    |          |
| Maintenance | own vehicle       | 40206    | No                 | N/A             | No                  | no                                        |          |
| Security    | own vehicle       | 40258    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Security    | own vehicle       | 40215    | No                 | N/A             | Yes                 | Daily                                     |          |
| Security    | own vehicle       | 40258    | No                 | N/A             | No                  | no                                        |          |
| Security    | own vehicle       | 40214    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Security    | own vehicle       | 40214    | No                 | N/A             | No                  | no                                        |          |
| Security    | own vehicle       | 40208    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Security    | own vehicle       | 40214    | No                 | N/A             | No                  | no                                        |          |
| Sproutings  | own vehicle       | 40291    | No                 | N/A             | No                  | no                                        |          |
| Sproutings  | own vehicle       | 40291    | No                 | N/A             | Yes                 | 2-4/week                                  |          |
| Sproutings  | Bus               | 40211    | No                 | Daily           | No                  | no                                        |          |
| Sproutings  | own vehicle       | 40207    | No                 | N/A             | No                  | no                                        |          |

need more employee parking

|             |             |       |    |     |          |          |
|-------------|-------------|-------|----|-----|----------|----------|
| Sproutlings | own vehicle | 47150 | No | N/A | Yes      | 1/week   |
| Sproutlings | own vehicle | 40241 | No | N/A | Yes      | 5/week   |
| Sproutlings | own vehicle | 40206 | No | N/A | No       | no       |
| Sproutlings | own vehicle | 40206 | No | N/A | No       | no       |
| Sproutlings | own vehicle | 40291 | No | N/A | No       | no       |
| Sproutlings | own vehicle | 40222 | No | N/A | No       | no       |
| Sproutlings | own vehicle | 40245 | No | N/A | Possibly | 5/week   |
| Sproutlings | own vehicle | 40204 | No | N/A | No       | no       |
| Sproutlings | own vehicle | 40206 | No | N/A | Yes      | Daily    |
| Sproutlings | own vehicle | 40206 | No | N/A | Yes      | 1/week   |
| Sproutlings | Bus         | 40216 | No | N/A | Yes      | Daily    |
| Sproutlings | own vehicle | 40299 | No | N/A | Yes      | 2-4/week |
| Sproutlings | own vehicle | 40067 | No | N/A | No       | no       |
| Sproutlings | own vehicle | 40204 | No | N/A | Yes      | Daily    |
| Sproutlings | own vehicle | 40241 | No | N/A | Yes      | 2-4/week |
| Sproutlings | own vehicle | 40205 | No | N/A | No       | no       |
| Miralea     | own vehicle | 40206 | No | N/A | Yes      | 2-4/week |

| Location | Mode of Transport | Zip Code | Currently use gate | # of times/week | Would you use gate? | If restricted how often would you use it? | Comments |
|----------|-------------------|----------|--------------------|-----------------|---------------------|-------------------------------------------|----------|
| Pillars  | own vehicle       | 40202 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40229 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40216 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40211 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40216 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40245 N  |                    | N               | Y                   | 5/week                                    |          |
| Pillars  | own vehicle       | 40220 N  |                    | N               | N                   | 5/week                                    |          |
| Pillars  | own vehicle       | 40212 Y  |                    | 1-2/week        | Y                   | N                                         |          |
| Pillars  | own vehicle       | 40220 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40219 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40223 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40210 N  |                    | N               | N                   | N                                         |          |
| Pillars  | Bike              | 40211 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40211 N  |                    | N               | Y                   | N                                         |          |
| Pillars  | own vehicle       | 40211 N  |                    | N               | N                   | N                                         |          |
| Pillars  | bus               | 40211 N  |                    | N               | N                   | N                                         |          |
| Pillars  | bus               | 40214 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40211 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40214 N  |                    | N               | N                   | N                                         |          |
| Rehab    | own vehicle       | 40118 N  |                    | N               | N                   | N                                         |          |
| Rehab    | own vehicle       | 40217 N  |                    | N               | Y                   | 2-4/week                                  |          |
| Rehab    | own vehicle       | 40222 N  |                    | N               | Y                   | Daily                                     |          |
| Rehab    | own vehicle       | 40258 N  |                    | N               | Y                   | Daily                                     |          |
| Rehab    | own vehicle       | 40214 N  |                    | N               | Y                   | N                                         |          |
| Rehab    | own vehicle       | 40222 N  |                    | N               | Y                   | Daily                                     |          |
| Rehab    | own vehicle       | 40220 N  |                    | N               | Y                   | Daily                                     |          |
| Rehab    | own vehicle       | 40205 N  |                    | N               | N                   | N                                         |          |
| Rehab    | own vehicle       | 40218 N  |                    | N               | Y                   | 2-4/week                                  |          |
| Rehab    | own vehicle       | 40205 N  |                    | N               | Y                   | 1/week                                    |          |
| SSCC     | own vehicle       | 40059 N  |                    | N               | Y                   | 5/week                                    |          |
| SSCC     | own vehicle       | 40222 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 47150 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40258 N  |                    | N               | Y                   | 1/week                                    |          |
| SSCC     | own vehicle       | 47165 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40219 N  |                    | N               | Y                   | N                                         |          |
| SSCC     | own vehicle       | 40165 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40065 N  |                    | B               | Y                   | 5/week                                    |          |
| SSCC     | own vehicle       | 40299 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40220 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40047 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40272 N  |                    | N               | Y                   | 1/week                                    |          |
| SSCC     | own vehicle       | 40299 N  |                    | N               | Y                   | Daily                                     |          |
| SSCC     | own vehicle       | 40229 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40207 N  |                    | N               | Y                   | 2/4 week                                  |          |
| SSCC     | own vehicle       | 40291 N  |                    | N               | Y                   | 2/4 week                                  |          |
| SSCC     | own vehicle       | 40229 N  |                    | N               | Y                   | N                                         |          |
| SSCC     | own vehicle       | 40212 N  |                    | N               | Y                   | Daily                                     |          |
| SSCC     | own vehicle       | 40219 Y  |                    | 3-5/week        | Y                   | 2-4/week                                  |          |
| SSCC     | own vehicle       | 40299 N  |                    | N               | Y                   | 2/4 week                                  |          |

I would use the east gate if asked to

| Location | Mode of Transport | Zip Code | Currently use gate | # of times/week | Would you use gate? | If restricted how often would you use it? | Comments |
|----------|-------------------|----------|--------------------|-----------------|---------------------|-------------------------------------------|----------|
| SSCC     | own vehicle       | 40291 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40210 N  |                    | N               | N                   | N                                         |          |
| SSCC     | bus               | 40203 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40212 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40206 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40206 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40206 N  |                    | N               | Y                   | Daily                                     |          |
| SSCC     | own vehicle       | 40210 N  |                    | N               | Y                   | 5/week                                    |          |
| SSCC     | Carpool           | 40211 N  |                    | N               | Y                   | 5/week                                    |          |
| SSCC     | own vehicle       | 40219 N  |                    | N               | Y                   | Daily                                     |          |
| SSCC     | own vehicle       | 40291 N  |                    | N               | Y                   | 5/week                                    |          |
| SSCC     | own vehicle       | 40203 N  |                    | N               | Y                   | 5/week                                    |          |
| SSCC     | bus               | 40211 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40242 N  |                    | N               | Y                   | Daily                                     |          |
| SSCC     | own vehicle       | 40213 N  |                    | N               | Y                   | 2-4/week                                  |          |
| SSCC     | own vehicle       | 40220 N  |                    | N               | Y                   | 2-4/week                                  |          |
| SSCC     | own vehicle       | 40071 N  |                    | N               | Maybe               | 2-4/week                                  |          |
| SSCC     | own vehicle       | 40241 N  |                    | N               | Y                   | Daily                                     |          |
| SSCC     | own vehicle       | 40258 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40204 N  |                    | N               | N                   | N                                         |          |
| SSCC     | bus               | 40211 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40219 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40228 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40258 N  |                    | N               | N                   | N                                         |          |
| SSCC     | bus               | 40204 Y  |                    | 3-5/week        | Y                   | 5/week                                    |          |
| SSCC     | dropped           |          | N                  | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40291 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40208 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       |          | N                  | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40223 N  |                    | N               | Y                   | 1/week                                    |          |
| Rehab    | own vehicle       | 40204 N  |                    | N               | Y                   | 5/week                                    |          |
| SSCC     | bus               | 40214 N  |                    | N               | N                   | N                                         |          |
| SSCC     | dropped           | 40211 N  |                    | N               | N                   | N                                         |          |
| Pillars  | own vehicle       | 40216 N  |                    | N               | Y                   | 5/week                                    |          |
| SSCC     | own vehicle       | 40212 N  |                    | N               | Y                   | 2-4/week                                  |          |
| Pillars  | own vehicle       | 40216 N  |                    | N               | Y                   | Daily                                     |          |
| SSCC     | own vehicle       | 47135 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40219 N  |                    | N               | N                   | N                                         |          |
| SSCC     | dropped           | 40210 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 47130 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40229 N  |                    | N               | N                   | N                                         |          |
| SSCC     | own vehicle       | 40207 N  |                    | N               | N                   | N                                         |          |
| SSCC     | walk              | 40041 N  |                    | N               | Y                   | Daily                                     |          |
| SSCC     | own vehicle       | 40214 N  |                    | N               | N                   | N                                         |          |

Masonic Homes of Kentucky is currently reviewing traffic flow and accessibility on our Louisville campus. You have received this survey because you have registered a vehicle with us. *You can help us by completing the following survey and returning it to the Miralea Concierge by close of business Wednesday, July 10.* Your participation is voluntary and your responses are solely for Masonic Homes of Kentucky's use in creating a more enjoyable living experience for you on our campus. If you have questions or concerns, please contact Masonic Homes' Chief Communications Officer CJ Parrish (753-8806; cjparish@mhky.com). *Thank you for your participation.*

**How often do you drive your car off the Louisville campus?**

☐ Daily      ☐ 5 Times or More a Week      ☐ 2 to 4 Times a Week      ☐ Once a Week

**If available solely for resident and MHKY employee use, would you use an east campus exit to Chenoweth Lane?**

☐ Yes      ☐ No

**If a restricted east campus exit to Chenoweth Lane was available for you to drive off and onto the Louisville campus, please estimate how often you would use it.**

☐ Daily      ☐ 5 Times or More a Week      ☐ 2 to 4 times a week      ☐ Once a Week  
☐ I would not use it

**Do you currently use the walking gates on the east side of the Louisville campus?**

☐ Yes      ☐ No

**If you currently use the walking gates, how often do you use them?**

☐ Daily      ☐ 3 to 5 Times a Week      ☐ 1 or 2 Times a Week      ☐ I do not use the walking gates

**If you have any comments about these questions or this survey, please tell us:**

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*Please return your completed survey to the Miralea Concierge by 5 p.m. Wednesday, July 10. Thank you for participating.*



