

SimTraffic Simulation Summary  
Baseline 2014/4/5

Summary of All Intervals

|                      |      |
|----------------------|------|
| Start Time           | 2:50 |
| End Time             | 4:00 |
| Total Time (min)     | 70   |
| Time Recorded (min)  | 60   |
| # of Intervals       | 2    |
| # of Recorded Intvls | 1    |
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
| End Time         | 3:00 |
| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
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| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Baseline 2014/4/5

### 6: Broad St & Larimer Ave Performance by movement

| Movement            | EBTWBT |     | NETSWT |      | All  |     |
|---------------------|--------|-----|--------|------|------|-----|
| Total Delay (hr)    | 0.2    | 0.1 | 0.8    | 0.3  | 1.4  |     |
| Delay / Veh (s)     | 3.6    | 2.8 | 33.0   | 26.0 | 10.7 |     |
| Total Stops         | 60     | 25  | 71     | 29   | 185  |     |
| Travel Dist (mi)    | 13.3   | 6.4 | 4.4    | 2.9  | 26.9 |     |
| Travel Time (hr)    |        | 1.0 | 0.3    | 1.0  | 0.4  | 2.7 |
| Avg Speed (mph)     |        | 13  | 21     | 5    | 8    | 10  |
| Fuel Used (gal)     | 1.0    | 0.2 | 0.3    | 0.1  | 1.7  |     |
| HC Emissions (g)    |        | 8   | 3      | 1    | 2    | 14  |
| CO Emissions (g)    |        | 451 | 96     | 68   | 40   | 656 |
| NOx Emissions (g)   |        | 34  | 10     | 6    | 5    | 56  |
| Vehicles Entered    |        | 221 | 116    | 86   | 38   | 461 |
| Vehicles Exited     |        | 219 | 116    | 85   | 38   | 458 |
| Hourly Exit Rate    |        | 219 | 116    | 85   | 38   | 458 |
| Input Volume        |        | 214 | 128    | 96   | 39   | 477 |
| % of Volume         |        | 102 | 91     | 89   | 97   | 96  |
| Denied Entry Before |        | 0   | 0      | 0    | 0    | 0   |
| Denied Entry After  |        | 0   | 0      | 0    | 0    | 0   |

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### Queuing and Blocking Report Baseline 2014/4/5

Intersection: 6: Broad St & Larimer Ave

| Movement              | EB  | EB  | WB  | WB  | NE  | SW  |
|-----------------------|-----|-----|-----|-----|-----|-----|
| Directions Served     | LT  | TR  | LT  | TR  | LTR | LTR |
| Maximum Queue (ft)    | 25  | 51  | 45  | 46  | 108 | 78  |
| Average Queue (ft)    | 10  | 34  | 13  | 5   | 45  | 19  |
| 95th Queue (ft)       | 30  | 60  | 37  | 25  | 87  | 48  |
| Link Distance (ft)    | 236 | 236 | 282 | 282 | 258 | 391 |
| Upstream Blk Time (%) |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |

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### Actuated Signals, Observed Splits Baseline 2014/4/5

Intersection: 6: Broad St & Larimer Ave

|       |   |   |   |   |
|-------|---|---|---|---|
| Phase | 2 | 4 | 6 | 8 |
|-------|---|---|---|---|

| Movement(s) Served   | EBTL | SWTL | WBTL | NETL |
|----------------------|------|------|------|------|
| Maximum Green (s)    | 58.0 | 9.0  | 58.0 | 9.0  |
| Minimum Green (s)    | 58.0 | 6.0  | 58.0 | 6.0  |
| Recall               | None | Max  | None | Max  |
| Avg. Green (s)       | 58.0 | 13.1 | 58.0 | 13.1 |
| g/C Ratio            | 0.69 | 0.16 | 0.69 | 0.16 |
| Cycles Skipped (%)   | 0    | 0    | 0    | 0    |
| Cycles @ Minimum (%) |      | 100  | 0    | 100  |
| Cycles Maxed Out (%) | 100  | 100  | 100  | 100  |
| Cycles with Peds (%) | 0    | 0    | 0    | 0    |

### Controller Summary

Average Cycle Length (s): 84.1

Number of Complete Cycles : 42

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Summary of All Intervals

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| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
| End Time         | 3:00 |
| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
| Vehs Entered         | 4163 |
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| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Baseline 2014/4/5

### 7: Broad St & Penn Cir E Performance by movement

| Movement            | WBT  | WBR  | NBL | NBT  | NBR | SBL | SBT | All  |     |
|---------------------|------|------|-----|------|-----|-----|-----|------|-----|
| Total Delay (hr)    | 0.8  | 0.3  | 0.1 | 0.3  | 0.1 | 0.0 | 0.1 | 1.8  |     |
| Delay / Veh (s)     | 17.7 | 18.5 | 5.7 | 3.1  | 1.6 | 7.6 | 6.1 | 6.6  |     |
| Total Stops         | 131  | 50   | 19  | 61   | 59  | 4   | 18  | 342  |     |
| Travel Dist (mi)    | 7.9  | 2.9  | 1.4 | 12.0 | 6.6 | 0.7 | 4.9 | 36.4 |     |
| Travel Time (hr)    |      | 1.1  | 0.4 | 0.1  | 0.8 | 0.5 | 0.0 | 0.3  | 3.3 |
| Avg Speed (mph)     |      | 7    | 7   | 10   | 15  | 14  | 16  | 19   | 11  |
| Fuel Used (gal)     | 0.5  | 0.1  | 0.1 | 0.9  | 0.3 | 0.0 | 0.2 | 2.1  |     |
| HC Emissions (g)    | 5    | 3    | 1   | 14   | 2   | 0   | 5   | 31   |     |
| CO Emissions (g)    | 135  | 69   | 36  | 583  | 67  | 2   | 123 | 1014 |     |
| NOx Emissions (g)   | 16   | 8    | 5   | 49   | 9   | 0   | 14  | 102  |     |
| Vehicles Entered    | 166  | 60   | 43  | 395  | 212 | 8   | 63  | 947  |     |
| Vehicles Exited     | 168  | 59   | 43  | 394  | 213 | 8   | 63  | 948  |     |
| Hourly Exit Rate    | 168  | 59   | 43  | 394  | 213 | 8   | 63  | 948  |     |
| Input Volume        | 196  | 65   | 33  | 378  | 208 | 6   | 70  | 956  |     |
| % of Volume         | 86   | 91   | 130 | 104  | 102 | 133 | 90  | 99   |     |
| Denied Entry Before | 0    | 0    | 0   | 0    | 0   | 0   | 0   | 0    |     |
| Denied Entry After  | 0    | 0    | 0   | 0    | 0   | 0   | 0   | 0    |     |

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### Queuing and Blocking Report Baseline 2014/4/5

Intersection: 7: Broad St & Penn Cir E

| Movement              | WB  | WB  | NB | NB | NB | SB  | SB  |
|-----------------------|-----|-----|----|----|----|-----|-----|
| Directions Served     | LT  | R   | L  | T  | R  | L   | TR  |
| Maximum Queue (ft)    | 133 | 116 | 38 | 67 | 71 | 30  | 74  |
| Average Queue (ft)    | 73  | 38  | 11 | 31 | 28 | 4   | 16  |
| 95th Queue (ft)       | 129 | 85  | 29 | 58 | 47 | 21  | 51  |
| Link Distance (ft)    | 236 | 236 | 30 | 30 | 30 | 299 | 299 |
| Upstream Blk Time (%) |     |     | 1  | 7  | 4  |     |     |
| Queuing Penalty (veh) |     |     | 1  | 14 | 7  |     |     |
| Storage Bay Dist (ft) |     |     |    |    |    |     |     |
| Storage Blk Time (%)  |     |     |    |    |    |     |     |
| Queuing Penalty (veh) |     |     |    |    |    |     |     |

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### Actuated Signals, Observed Splits Baseline 2014/4/5

Intersection: 7: Broad St & Penn Cir E

|       |   |   |   |
|-------|---|---|---|
| Phase | 2 | 6 | 8 |
|-------|---|---|---|

| Movement(s) Served   | NBTL | SBTL | WBTL   |
|----------------------|------|------|--------|
| Maximum Green (s)    | 29.0 | 29.0 | 10.0   |
| Minimum Green (s)    | 29.0 | 29.0 | 10.0   |
| Recall               | Max  | Max  | None   |
| Avg. Green (s)       | 33.1 | 33.1 | 10.0   |
| g/C Ratio            | 0.60 | 0.60 | 0.18   |
| Cycles Skipped (%)   | 0    | 0    | 0      |
| Cycles @ Minimum (%) |      | 85   | 85 100 |
| Cycles Maxed Out (%) | 100  | 100  | 100    |
| Cycles with Peds (%) | 0    | 0    | 0      |

#### Controller Summary

Average Cycle Length (s): 55.2

Number of Complete Cycles : 64

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Summary of All Intervals

|                      |      |
|----------------------|------|
| Start Time           | 2:50 |
| End Time             | 4:00 |
| Total Time (min)     | 70   |
| Time Recorded (min)  | 60   |
| # of Intervals       | 2    |
| # of Recorded Intvls | 1    |
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
| End Time         | 3:00 |
| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Baseline 2014/4/5

### 5: Kirkwood St & Penn Cir E Performance by movement

| Movement            | EB   | LE   | BT   | WBL  | WBR  | NBT  | SBT  | All |
|---------------------|------|------|------|------|------|------|------|-----|
| Total Delay (hr)    | 0.7  | 0.1  | 1.4  | 0.5  | 1.3  | 0.5  | 4.5  |     |
| Delay / Veh (s)     | 34.0 | 23.0 | 41.8 | 37.2 | 8.7  | 12.8 | 17.5 |     |
| Total Stops         | 65   | 15   | 122  | 48   | 224  | 34   | 508  |     |
| Travel Dist (mi)    | 2.9  | 0.9  | 17.5 | 7.1  | 20.9 | 2.4  | 51.6 |     |
| Travel Time (hr)    | 0.8  | 0.2  | 2.1  | 0.8  | 2.5  | 0.5  | 6.9  |     |
| Avg Speed (mph)     | 3    | 5    | 8    | 9    | 8    | 5    | 8    |     |
| Fuel Used (gal)     | 0.3  | 0.1  | 0.9  | 0.3  | 1.5  | 0.2  | 3.3  |     |
| HC Emissions (g)    | 1    | 0    | 5    | 3    | 16   | 3    | 28   |     |
| CO Emissions (g)    | 31   | 10   | 263  | 91   | 524  | 70   | 989  |     |
| NOx Emissions (g)   | 3    | 1    | 20   | 9    | 63   | 8    | 105  |     |
| Vehicles Entered    | 75   | 23   | 124  | 51   | 537  | 125  | 935  |     |
| Vehicles Exited     | 72   | 22   | 122  | 49   | 537  | 129  | 931  |     |
| Hourly Exit Rate    | 72   | 22   | 122  | 49   | 537  | 129  | 931  |     |
| Input Volume        | 68   | 17   | 131  | 49   | 508  | 131  | 904  |     |
| % of Volume         | 106  | 129  | 93   | 100  | 106  | 98   | 103  |     |
| Denied Entry Before | 0    | 0    | 0    | 0    | 0    | 1    | 1    |     |
| Denied Entry After  | 0    | 0    | 0    | 0    | 0    | 0    | 0    |     |

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### Queuing and Blocking Report Baseline 2014/4/5

#### Intersection: 5: Kirkwood St & Penn Cir E

| Movement              | EB  | EB  | WB  | WB  | NB | NB  | SB |  |
|-----------------------|-----|-----|-----|-----|----|-----|----|--|
| Directions Served     | L   | TR  | L   | R   | T  | TR  | LT |  |
| Maximum Queue (ft)    | 91  | 53  | 152 | 73  | 76 | 121 | 80 |  |
| Average Queue (ft)    | 38  | 15  | 74  | 35  | 34 | 92  | 27 |  |
| 95th Queue (ft)       | 76  | 39  | 127 | 62  | 77 | 112 | 57 |  |
| Link Distance (ft)    | 196 | 196 | 738 | 738 | 80 | 80  | 30 |  |
| Upstream Blk Time (%) |     |     |     |     | 0  | 16  | 8  |  |
| Queuing Penalty (veh) |     |     |     |     | 0  | 41  | 4  |  |
| Storage Bay Dist (ft) |     |     |     |     |    |     |    |  |
| Storage Blk Time (%)  |     |     |     |     |    |     |    |  |
| Queuing Penalty (veh) |     |     |     |     |    |     |    |  |

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### Actuated Signals, Observed Splits Baseline 2014/4/5

#### Intersection: 5: Kirkwood St & Penn Cir E

|       |   |   |   |   |
|-------|---|---|---|---|
| Phase | 2 | 4 | 6 | 8 |
|-------|---|---|---|---|



| Movement(s) Served   | NBT  | EBTL | SBTL | WBL  |
|----------------------|------|------|------|------|
| Maximum Green (s)    | 52.0 | 15.0 | 52.0 | 15.0 |
| Minimum Green (s)    | 52.0 | 15.0 | 52.0 | 15.0 |
| Recall               | Max  | None | Max  | None |
| Avg. Green (s)       | 52.0 | 15.0 | 52.0 | 15.0 |
| g/C Ratio            | 0.66 | 0.19 | 0.66 | 0.19 |
| Cycles Skipped (%)   | 0    | 0    | 0    | 0    |
| Cycles @ Minimum (%) |      | 100  | 100  | 100  |
| Cycles Maxed Out (%) | 100  | 100  | 100  | 100  |
| Cycles with Peds (%) | 0    | 0    | 0    | 0    |

#### Controller Summary

Average Cycle Length (s): 79.0

Number of Complete Cycles : 45

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Baseline 2014/4/5

Summary of All Intervals

|                      |      |
|----------------------|------|
| Start Time           | 2:50 |
| End Time             | 4:00 |
| Total Time (min)     | 70   |
| Time Recorded (min)  | 60   |
| # of Intervals       | 2    |
| # of Recorded Intvls | 1    |
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
| End Time         | 3:00 |
| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Baseline 2014/4/5

## 2: Penn Ave & EastsideIII Dr Performance by movement

| Movement            | EBT  | WBT  | All  |
|---------------------|------|------|------|
| Total Delay (hr)    | 0.3  | 0.5  | 0.8  |
| Delay / Veh (s)     | 1.7  | 3.2  | 2.3  |
| Total Stops         | 27   | 66   | 93   |
| Travel Dist (mi)    | 34.9 | 36.3 | 71.2 |
| Travel Time (hr)    | 2.0  | 1.7  | 3.7  |
| Avg Speed (mph)     | 18   | 22   | 20   |
| Fuel Used (gal)     | 2.5  | 1.1  | 3.6  |
| HC Emissions (g)    | 43   | 12   | 55   |
| CO Emissions (g)    | 1547 | 333  | 1880 |
| NOx Emissions (g)   | 149  | 36   | 185  |
| Vehicles Entered    | 676  | 528  | 1204 |
| Vehicles Exited     | 674  | 526  | 1200 |
| Hourly Exit Rate    | 674  | 526  | 1200 |
| Input Volume        | 651  | 527  | 1178 |
| % of Volume         | 104  | 100  | 102  |
| Denied Entry Before | 0    | 0    | 0    |
| Denied Entry After  | 0    | 0    | 0    |

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## Queuing and Blocking Report Baseline 2014/4/5

### Intersection: 2: Penn Ave & EastsideIII Dr

| Movement              | EB  | EB  | WB  | WB  | WB  |
|-----------------------|-----|-----|-----|-----|-----|
| Directions Served     | T   | TR  | LT  | T   | T   |
| Maximum Queue (ft)    | 100 | 116 | 55  | 163 | 137 |
| Average Queue (ft)    | 10  | 15  | 4   | 35  | 18  |
| 95th Queue (ft)       | 47  | 65  | 23  | 107 | 66  |
| Link Distance (ft)    | 166 | 166 | 362 | 362 | 362 |
| Upstream Blk Time (%) |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |

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## Actuated Signals, Observed Splits Baseline 2014/4/5

### Intersection: 2: Penn Ave & EastsideIII Dr

|       |   |   |   |
|-------|---|---|---|
| Phase | 2 | 6 | 8 |
|-------|---|---|---|

| Movement(s) Served   | EBT   | WBTL  | NEL    |
|----------------------|-------|-------|--------|
| Maximum Green (s)    | 428.0 | 428.0 | 6.0    |
| Minimum Green (s)    | 428.0 | 428.0 | 6.0    |
| Recall               | None  | None  | Max    |
| Avg. Green (s)       | 428.0 | 428.0 | 6.2    |
| g/C Ratio            | 0.96  | 0.96  | 0.01   |
| Cycles Skipped (%)   | 0     | 0     | 0      |
| Cycles @ Minimum (%) |       | 100   | 100 88 |
| Cycles Maxed Out (%) | 100   | 100   | 100    |
| Cycles with Peds (%) | 0     | 0     | 0      |

#### Controller Summary

Average Cycle Length (s): 447.0

Number of Complete Cycles : 7

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Summary of All Intervals

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| Total Stops          | 3874 |
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Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
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| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
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| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Baseline 2014/4/5

9: Penn Ave & N Highland St Performance by movement

| Movement            | EB   | LE   | BT   | WBL  | WBT  | NBL | NBT  | SBL | SBT  | All |
|---------------------|------|------|------|------|------|-----|------|-----|------|-----|
| Total Delay (hr)    | 0.3  | 1.3  | 0.4  | 1.8  | 0.2  | 0.1 | 0.3  | 0.3 | 4.6  |     |
| Delay / Veh (s)     | 28.0 | 15.4 | 25.6 | 20.2 | 11.8 | 6.2 | 11.6 | 7.1 | 15.5 |     |
| Total Stops         | 35   | 174  | 40   | 225  | 28   | 30  | 51   | 57  | 640  |     |
| Travel Dist (mi)    | 2.1  | 16.5 | 1.5  | 9.6  | 1.1  | 1.5 | 4.7  | 7.1 | 44.0 |     |
| Travel Time (hr)    |      | 0.4  | 1.9  | 0.4  | 2.2  | 0.2 | 0.2  | 0.5 | 0.6  | 6.4 |
| Avg Speed (mph)     |      | 5    | 9    | 3    | 5    | 5   | 8    | 9   | 13   | 7   |
| Fuel Used (gal)     | 0.1  | 0.9  | 0.1  | 0.9  | 0.1  | 0.1 | 0.2  | 0.3 | 2.8  |     |
| HC Emissions (g)    | 0    | 11   | 0    | 5    | 0    | 1   | 3    | 3   | 24   |     |
| CO Emissions (g)    | 17   | 313  | 14   | 172  | 9    | 52  | 80   | 114 | 771  |     |
| NOx Emissions (g)   | 1    | 36   | 2    | 21   | 1    | 4   | 10   | 10  | 85   |     |
| Vehicles Entered    | 38   | 295  | 50   | 319  | 47   | 67  | 97   | 148 | 1061 |     |
| Vehicles Exited     | 37   | 293  | 50   | 315  | 47   | 67  | 96   | 149 | 1054 |     |
| Hourly Exit Rate    | 37   | 293  | 50   | 315  | 47   | 67  | 96   | 149 | 1054 |     |
| Input Volume        | 47   | 322  | 58   | 283  | 45   | 75  | 99   | 157 | 1086 |     |
| % of Volume         | 79   | 91   | 86   | 111  | 104  | 89  | 97   | 95  | 97   |     |
| Denied Entry Before | 0    | 0    | 0    | 0    | 0    | 0   | 0    | 1   | 1    |     |
| Denied Entry After  | 0    | 0    | 0    | 0    | 0    | 0   | 0    | 0   | 0    |     |

SimTraffic Report  
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Queuing and Blocking Report  
Baseline 2014/4/5

Intersection: 9: Penn Ave & N Highland St

| Movement              | EB  | EB  | WB  | WB  | NB  | NB  | SB  | SB  |  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Directions Served     | L   | TR  | L   | TR  | L   | TR  | L   | TR  |  |
| Maximum Queue (ft)    | 65  | 151 | 69  | 177 | 52  | 66  | 115 | 100 |  |
| Average Queue (ft)    | 26  | 86  | 29  | 121 | 22  | 26  | 39  | 38  |  |
| 95th Queue (ft)       | 55  | 144 | 61  | 193 | 54  | 56  | 90  | 81  |  |
| Link Distance (ft)    | 286 | 286 | 150 | 150 | 117 | 117 | 248 | 248 |  |
| Upstream Blk Time (%) |     |     |     |     | 6   |     |     |     |  |
| Queuing Penalty (veh) |     |     |     |     | 0   |     |     |     |  |
| Storage Bay Dist (ft) |     |     |     |     |     |     |     |     |  |
| Storage Blk Time (%)  |     |     |     |     |     |     |     |     |  |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |  |

SimTraffic Report  
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Actuated Signals, Observed Splits  
Baseline 2014/4/5

Intersection: 9: Penn Ave & N Highland St

|       |   |   |   |   |
|-------|---|---|---|---|
| Phase | 2 | 4 | 6 | 8 |
|-------|---|---|---|---|

| Movement(s) Served   | NBTL | EBTL | SBTL | WBTL |
|----------------------|------|------|------|------|
| Maximum Green (s)    | 32.0 | 20.0 | 32.0 | 20.0 |
| Minimum Green (s)    | 32.0 | 20.0 | 32.0 | 20.0 |
| Recall               | Max  | None | Max  | None |
| Avg. Green (s)       | 32.0 | 20.0 | 32.0 | 20.0 |
| g/C Ratio            | 0.52 | 0.32 | 0.52 | 0.32 |
| Cycles Skipped (%)   | 0    | 0    | 0    | 0    |
| Cycles @ Minimum (%) |      | 100  | 100  | 100  |
| Cycles Maxed Out (%) | 100  | 100  | 100  | 100  |
| Cycles with Peds (%) | 0    | 0    | 0    | 0    |

Controller Summary

Average Cycle Length (s): 62.0  
Number of Complete Cycles : 57

SimTraffic Simulation Summary  
Baseline 2014/4/5

Summary of All Intervals

|                      |      |
|----------------------|------|
| Start Time           | 2:50 |
| End Time             | 4:00 |
| Total Time (min)     | 70   |
| Time Recorded (min)  | 60   |
| # of Intervals       | 2    |
| # of Recorded Intvls | 1    |
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
| End Time         | 3:00 |
| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |



Baseline 2014/4/5

1: Penn Ave & Penn Cir E Performance by movement

| Movement            | EB   | LE   | BT   | WBL  | WBT  | WBR  | NET  | NER  | SWL  | SWT  | All  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|
| Total Delay (hr)    | 0.6  | 2.3  | 2.9  | 3.8  | 3.7  | 2.9  | 1.3  | 1.4  | 1.2  | 20.0 |      |
| Delay / Veh (s)     | 29.0 | 33.0 | 70.4 | 42.1 | 51.6 | 33.7 | 19.0 | 69.0 | 21.4 | 38.4 |      |
| Total Stops         | 59   | 181  | 134  | 175  | 210  | 198  | 134  | 69   | 99   | 1259 |      |
| Travel Dist (mi)    | 3.2  | 10.1 | 7.0  | 15.6 | 12.0 | 17.3 | 15.6 | 2.8  | 7.9  | 91.5 |      |
| Travel Time (hr)    |      | 0.8  | 2.7  | 3.2  | 4.3  | 4.3  | 3.5  | 2.1  | 1.5  | 1.5  | 23.9 |
| Avg Speed (mph)     |      | 4    | 4    | 3    | 5    | 4    | 5    | 7    | 2    | 5    | 4    |
| Fuel Used (gal)     | 0.3  | 1.0  | 0.9  | 1.4  | 1.1  | 1.1  | 0.7  | 0.4  | 0.7  | 7.6  |      |
| HC Emissions (g)    |      | 1    | 12   | 3    | 8    | 5    | 8    | 6    | 2    | 8    | 53   |
| CO Emissions (g)    |      | 50   | 313  | 91   | 195  | 141  | 229  | 164  | 61   | 263  | 1508 |
| NOx Emissions (g)   |      | 5    | 34   | 9    | 23   | 13   | 22   | 15   | 6    | 29   | 155  |
| Vehicles Entered    |      | 75   | 248  | 146  | 324  | 259  | 306  | 237  | 72   | 200  | 1867 |
| Vehicles Exited     |      | 76   | 247  | 146  | 324  | 259  | 308  | 238  | 73   | 201  | 1872 |
| Hourly Exit Rate    |      | 76   | 247  | 146  | 324  | 259  | 308  | 238  | 73   | 201  | 1872 |
| Input Volume        |      | 70   | 237  | 139  | 332  | 261  | 302  | 210  | 82   | 194  | 1827 |
| % of Volume         |      | 109  | 104  | 105  | 98   | 99   | 102  | 113  | 89   | 104  | 102  |
| Denied Entry Before |      | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 1    |
| Denied Entry After  |      | 0    | 0    | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 1    |

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Queuing and Blocking Report  
Baseline 2014/4/5

Intersection: 1: Penn Ave & Penn Cir E

| Movement              | EB  | EB  | EB  | WB  | WB  | WB  | NE  | NE  | SW | SW  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|
| Directions Served     | L   | T   | TR  | L   | T   | R   | T   | R   | L  | TR  |
| Maximum Queue (ft)    | 89  | 147 | 155 | 177 | 181 | 184 | 187 | 172 | 88 | 87  |
| Average Queue (ft)    | 26  | 62  | 79  | 108 | 142 | 131 | 122 | 85  | 53 | 68  |
| 95th Queue (ft)       | 62  | 116 | 140 | 165 | 201 | 204 | 196 | 161 | 91 | 107 |
| Link Distance (ft)    | 206 | 206 | 206 | 166 | 166 | 166 | 180 | 180 | 80 | 80  |
| Upstream Blk Time (%) |     |     |     | 2   | 10  | 9   | 3   | 0   | 7  | 13  |
| Queuing Penalty (veh) |     |     |     | 3   | 18  | 16  | 8   | 0   | 9  | 17  |
| Storage Bay Dist (ft) |     |     |     |     |     |     |     |     |    |     |
| Storage Blk Time (%)  |     |     |     |     |     |     |     |     |    |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |    |     |

SimTraffic Report  
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Actuated Signals, Observed Splits  
Baseline 2014/4/5

Intersection: 1: Penn Ave & Penn Cir E

| Phase | 1 | 2 | 3 | 4 | 6 | 7 | 8 |
|-------|---|---|---|---|---|---|---|
|-------|---|---|---|---|---|---|---|

| Movement(s) Served   | SWL  | NETWBL | EBTL | SWT  | EBL  | WBT       |
|----------------------|------|--------|------|------|------|-----------|
| Maximum Green (s)    | 10.0 | 32.0   | 13.0 | 31.0 | 49.0 | 14.0 31.0 |
| Minimum Green (s)    | 10.0 | 32.0   | 13.0 | 31.0 | 49.0 | 14.0 31.0 |
| Recall               | None | Max    | None | None | Max  | None      |
| Avg. Green (s)       | 10.0 | 32.6   | 13.0 | 31.0 | 49.0 | 14.0 35.7 |
| g/C Ratio            | 0.08 | 0.28   | 0.11 | 0.27 | 0.42 | 0.09 0.31 |
| Cycles Skipped (%)   | 3    | 0      | 0    | 0    | 0    | 23 0      |
| Cycles @ Minimum (%) |      | 97     | 97   | 100  | 100  | 100 77 77 |
| Cycles Maxed Out (%) | 97   | 100    | 100  | 100  | 100  | 77 100    |
| Cycles with Peds (%) | 0    | 0      | 0    | 0    | 0    | 0 0       |

### Controller Summary

Average Cycle Length (s): 116.0

Number of Complete Cycles : 30

SimTraffic Report

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SimTraffic Simulation Summary  
Baseline 2014/4/5

Summary of All Intervals

|                      |      |
|----------------------|------|
| Start Time           | 2:50 |
| End Time             | 4:00 |
| Total Time (min)     | 70   |
| Time Recorded (min)  | 60   |
| # of Intervals       | 2    |
| # of Recorded Intvls | 1    |
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
| End Time         | 3:00 |
| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Baseline 2014/4/5

#### 4: Penn Cir S & Performance by movement

| Movement            | EB   | LE   | TE   | BR   | WBL  | WBT  | NBL  | NBT  | SBL  | SBT  | All |
|---------------------|------|------|------|------|------|------|------|------|------|------|-----|
| Total Delay (hr)    | 0.4  | 1.3  | 0.2  | 0.4  | 0.8  | 0.2  | 1.0  | 0.6  | 0.7  | 5.6  |     |
| Delay / Veh (s)     | 19.0 | 11.7 | 10.6 | 24.7 | 10.1 | 23.1 | 21.0 | 26.6 | 17.6 | 15.4 |     |
| Total Stops         | 53   | 206  | 33   | 52   | 109  | 26   | 122  | 68   | 95   | 764  |     |
| Travel Dist (mi)    | 3.0  | 18.3 | 2.2  | 2.6  | 12.8 | 1.2  | 6.6  | 3.0  | 5.8  | 55.6 |     |
| Travel Time (hr)    |      | 0.5  | 2.1  | 0.3  | 0.5  | 1.2  | 0.3  | 1.3  | 0.8  | 1.0  | 7.9 |
| Avg Speed (mph)     |      | 6    | 9    | 8    | 5    | 11   | 4    | 5    | 4    | 6    | 7   |
| Fuel Used (gal)     | 0.2  | 1.1  | 0.1  | 0.1  | 0.6  | 0.1  | 0.5  | 0.2  | 0.4  | 3.3  |     |
| HC Emissions (g)    | 0    | 11   | 1    | 1    | 4    | 0    | 5    | 1    | 2    | 25   |     |
| CO Emissions (g)    | 28   | 333  | 18   | 22   | 133  | 13   | 158  | 38   | 83   | 827  |     |
| NOx Emissions (g)   | 3    | 41   | 1    | 2    | 15   | 1    | 17   | 5    | 8    | 93   |     |
| Vehicles Entered    | 66   | 416  | 52   | 57   | 271  | 35   | 177  | 80   | 145  | 1299 |     |
| Vehicles Exited     | 67   | 410  | 52   | 57   | 272  | 35   | 178  | 80   | 146  | 1297 |     |
| Hourly Exit Rate    | 67   | 410  | 52   | 57   | 272  | 35   | 178  | 80   | 146  | 1297 |     |
| Input Volume        | 61   | 392  | 59   | 60   | 256  | 34   | 173  | 72   | 171  | 1278 |     |
| % of Volume         | 110  | 105  | 88   | 95   | 106  | 103  | 103  | 111  | 85   | 101  |     |
| Denied Entry Before | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |     |
| Denied Entry After  | 0    | 1    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 1    |     |

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#### Queuing and Blocking Report Baseline 2014/4/5

Intersection: 4: Penn Cir S &

| Movement              | EB  | EB  | EB  | WB  | WB  | NB  | NB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | L   | T   | R   | L   | TR  | L   | TR  | L   | TR  |
| Maximum Queue (ft)    | 56  | 218 | 70  | 65  | 136 | 58  | 139 | 82  | 118 |
| Average Queue (ft)    | 19  | 109 | 23  | 24  | 71  | 12  | 56  | 36  | 46  |
| 95th Queue (ft)       | 44  | 185 | 50  | 47  | 127 | 34  | 111 | 72  | 94  |
| Link Distance (ft)    | 219 | 219 | 219 | 168 | 168 | 171 | 171 | 186 | 186 |
| Upstream Blk Time (%) |     | 0   |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     | 0   |     |     |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |     |     |     |

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#### Actuated Signals, Observed Splits Baseline 2014/4/5

Intersection: 4: Penn Cir S &

|       |   |   |   |   |
|-------|---|---|---|---|
| Phase | 2 | 4 | 6 | 8 |
|-------|---|---|---|---|

| Movement(s) Served   | EBTL | SBTL | WBTL | NBTL |
|----------------------|------|------|------|------|
| Maximum Green (s)    | 38.0 | 22.0 | 38.0 | 22.0 |
| Minimum Green (s)    | 38.0 | 22.0 | 38.0 | 22.0 |
| Recall               | None | Max  | None | Max  |
| Avg. Green (s)       | 38.0 | 22.0 | 38.0 | 22.0 |
| g/C Ratio            | 0.51 | 0.30 | 0.51 | 0.30 |
| Cycles Skipped (%)   | 0    | 0    | 0    | 0    |
| Cycles @ Minimum (%) |      | 100  | 100  | 100  |
| Cycles Maxed Out (%) | 100  | 100  | 100  | 100  |
| Cycles with Peds (%) | 0    | 0    | 0    | 0    |

#### Controller Summary

Average Cycle Length (s): 74.0

Number of Complete Cycles : 47

SimTraffic Report

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SimTraffic Simulation Summary  
Baseline 2014/4/5

Summary of All Intervals

|                      |      |
|----------------------|------|
| Start Time           | 2:50 |
| End Time             | 4:00 |
| Total Time (min)     | 70   |
| Time Recorded (min)  | 60   |
| # of Intervals       | 2    |
| # of Recorded Intvls | 1    |
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
| End Time         | 3:00 |
| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Baseline 2014/4/5

### 3: Penn Cir S & Shakespeare St Performance by movement

| Movement            | EBT  | WBT  | NBR   | All  |
|---------------------|------|------|-------|------|
| Total Delay (hr)    | 0.5  | 0.1  | 0.6   | 1.2  |
| Delay / Veh (s)     | 3.2  | 1.3  | 251.5 | 4.7  |
| Total Stops         | 37   | 5    | 8     | 50   |
| Travel Dist (mi)    | 32.9 | 21.9 | 0.3   | 55.1 |
| Travel Time (hr)    | 1.6  | 1.0  | 0.6   | 3.2  |
| Avg Speed (mph)     | 21   | 21   | 0     | 17   |
| Fuel Used (gal)     | 1.7  | 1.3  | 0.1   | 3.1  |
| HC Emissions (g)    | 20   | 17   | 0     | 38   |
| CO Emissions (g)    | 701  | 659  | 8     | 1367 |
| NOx Emissions (g)   | 82   | 64   | 0     | 146  |
| Vehicles Entered    | 536  | 347  | 8     | 891  |
| Vehicles Exited     | 535  | 347  | 8     | 890  |
| Hourly Exit Rate    | 535  | 347  | 8     | 890  |
| Input Volume        | 504  | 333  | 8     | 845  |
| % of Volume         | 106  | 104  | 100   | 105  |
| Denied Entry Before | 0    | 0    | 0     | 0    |
| Denied Entry After  | 0    | 0    | 0     | 0    |

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### Queuing and Blocking Report Baseline 2014/4/5

#### Intersection: 3: Penn Cir S & Shakespeare St

| Movement              | EB  | WB  | NB  |
|-----------------------|-----|-----|-----|
| Directions Served     | TR  | LT  | R   |
| Maximum Queue (ft)    | 182 | 72  | 50  |
| Average Queue (ft)    | 34  | 4   | 15  |
| 95th Queue (ft)       | 129 | 29  | 39  |
| Link Distance (ft)    | 168 | 180 | 179 |
| Upstream Blk Time (%) | 0   |     |     |
| Queuing Penalty (veh) | 1   |     |     |
| Storage Bay Dist (ft) |     |     |     |
| Storage Blk Time (%)  |     |     |     |
| Queuing Penalty (veh) |     |     |     |

SimTraffic Report  
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### Actuated Signals, Observed Splits Baseline 2014/4/5

#### Intersection: 3: Penn Cir S & Shakespeare St

|       |   |   |   |
|-------|---|---|---|
| Phase | 2 | 6 | 8 |
|-------|---|---|---|

| Movement(s) Served   | EBT   | WBTL  | NBL    |
|----------------------|-------|-------|--------|
| Maximum Green (s)    | 521.0 | 521.0 | 5.0    |
| Minimum Green (s)    | 521.0 | 521.0 | 5.0    |
| Recall               | None  | None  | Max    |
| Avg. Green (s)       | 521.0 | 521.0 | 7.0    |
| g/C Ratio            | 0.96  | 0.96  | 0.01   |
| Cycles Skipped (%)   | 0     | 0     | 0      |
| Cycles @ Minimum (%) |       | 100   | 100 43 |
| Cycles Maxed Out (%) | 100   | 100   | 100    |
| Cycles with Peds (%) | 0     | 0     | 0      |

#### Controller Summary

Average Cycle Length (s): 540.2

Number of Complete Cycles : 6

SimTraffic Report

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SimTraffic Simulation Summary  
Baseline 2014/4/5

Summary of All Intervals

|                      |      |
|----------------------|------|
| Start Time           | 2:50 |
| End Time             | 4:00 |
| Total Time (min)     | 70   |
| Time Recorded (min)  | 60   |
| # of Intervals       | 2    |
| # of Recorded Intvls | 1    |
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 2:50 |
| End Time         | 3:00 |
| Total Time (min) | 10   |

Volumes adjusted by Growth Factors.  
No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 3:00 |
| End Time         | 4:00 |
| Total Time (min) | 60   |

Volumes adjusted by Growth Factors.

|                      |      |
|----------------------|------|
| Vehs Entered         | 4163 |
| Vehs Exited          | 4158 |
| Starting Vehs        | 68   |
| Ending Vehs          | 73   |
| Denied Entry Before  | 3    |
| Denied Entry After   | 2    |
| Travel Distance (mi) | 731  |
| Travel Time (hr)     | 70.1 |
| Total Delay (hr)     | 41.3 |
| Total Stops          | 3874 |
| Fuel Used (gal)      | 43.1 |

Baseline 2014/4/5

### 8: Station St & Penn Cir E Performance by movement

| Movement            | WBT  | NBL  | NBT  | SBL | SBT | All  |     |
|---------------------|------|------|------|-----|-----|------|-----|
| Total Delay (hr)    | 0.2  | 0.1  | 0.0  | 0.0 | 0.0 | 0.4  |     |
| Delay / Veh (s)     | 73.5 | 3.4  | 0.9  | 2.4 | 0.7 | 3.9  |     |
| Total Stops         | 10   | 17   | 1    | 2   | 3   | 33   |     |
| Travel Dist (mi)    | 0.4  | 10.4 | 11.9 | 0.6 | 2.4 | 25.8 |     |
| Travel Time (hr)    |      | 0.3  | 0.6  | 0.5 | 0.0 | 0.1  | 1.4 |
| Avg Speed (mph)     |      | 2    | 19   | 24  | 14  | 25   | 18  |
| Fuel Used (gal)     | 0.1  | 0.4  | 0.6  | 0.0 | 0.1 | 1.3  |     |
| HC Emissions (g)    | 0    | 7    | 11   | 0   | 6   | 25   |     |
| CO Emissions (g)    | 8    | 234  | 389  | 5   | 187 | 823  |     |
| NOx Emissions (g)   | 1    | 23   | 34   | 1   | 17  | 76   |     |
| Vehicles Entered    | 12   | 126  | 172  | 17  | 71  | 398  |     |
| Vehicles Exited     | 12   | 127  | 174  | 17  | 71  | 401  |     |
| Hourly Exit Rate    | 12   | 127  | 174  | 17  | 71  | 401  |     |
| Input Volume        | 12   | 129  | 176  | 16  | 76  | 409  |     |
| % of Volume         | 100  | 98   | 99   | 106 | 93  | 98   |     |
| Denied Entry Before | 0    | 0    | 0    | 0   | 0   | 0    |     |
| Denied Entry After  | 0    | 0    | 0    | 0   | 0   | 0    |     |

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### Queuing and Blocking Report Baseline 2014/4/5

#### Intersection: 8: Station St & Penn Cir E

| Movement              | WB  | NB  | NB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|
| Directions Served     |     | L   | R   | L   | R   |
| Maximum Queue (ft)    | 70  | 68  | 24  | 27  | 30  |
| Average Queue (ft)    | 14  | 11  | 1   | 2   | 3   |
| 95th Queue (ft)       | 47  | 38  | 8   | 13  | 18  |
| Link Distance (ft)    | 193 | 299 | 299 | 173 | 173 |
| Upstream Blk Time (%) |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |

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### Actuated Signals, Observed Splits Baseline 2014/4/5

#### Intersection: 8: Station St & Penn Cir E

|       |   |   |   |
|-------|---|---|---|
| Phase | 2 | 6 | 8 |
|-------|---|---|---|

| Movement(s) Served   | NBTL  | SBTL  | WBTL |
|----------------------|-------|-------|------|
| Maximum Green (s)    | 106.0 | 106.0 | 7.0  |
| Minimum Green (s)    | 106.0 | 106.0 | 7.0  |
| Recall               | None  | None  | None |
| Avg. Green (s)       | 520.1 | 520.1 | 10.5 |
| g/C Ratio            | 0.95  | 0.95  | 0.02 |
| Cycles Skipped (%)   | 0     | 0     | 0    |
| Cycles @ Minimum (%) |       | 0     | 0    |
| Cycles Maxed Out (%) | 100   | 100   | 100  |
| Cycles with Peds (%) | 0     | 0     | 0    |

#### Controller Summary

Average Cycle Length (s): 549.4

Number of Complete Cycles : 5

Average All-Red Dwell (s): 16.2

Cycles with All-Red Dwell (%): 40

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