Appendix F

Resource Use Patterns

Appendix F

Alternative A Traffic Noise Module

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt A AM SR 23 (west)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1322.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              46.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               69.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       72.0

DESCRIPTION OF RECEIVER #   2

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       69.1

DESCRIPTION OF RECEIVER #   3

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       66.5

DESCRIPTION OF RECEIVER #   4

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.7

DESCRIPTION OF RECEIVER #   5

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.9

DESCRIPTION OF RECEIVER #   6

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       60.4
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt A PM SR 23 (west)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1776.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              62.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               93.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       73.3

DESCRIPTION OF RECEIVER #   2

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       70.4

DESCRIPTION OF RECEIVER #   3

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       67.8

DESCRIPTION OF RECEIVER #   4

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.0

DESCRIPTION OF RECEIVER #   5

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.2

DESCRIPTION OF RECEIVER #   6

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.7
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt A AM SR 23 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	952.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	24.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	36.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 70.0

DESCRIPTION OF RECEIVER # 2

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 67.1

DESCRIPTION OF RECEIVER # 3

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.5

DESCRIPTION OF RECEIVER # 4

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.7

DESCRIPTION OF RECEIVER # 5

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.8

DESCRIPTION OF RECEIVER # 6

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.2

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt A PM SR 23 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	991.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	25.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	38.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 70.2

DESCRIPTION OF RECEIVER # 2

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 67.3

DESCRIPTION OF RECEIVER # 3

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.7

DESCRIPTION OF RECEIVER # 4

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.9

DESCRIPTION OF RECEIVER # 5

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.0

DESCRIPTION OF RECEIVER # 6

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt A AM Locust

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	298.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	6.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	9.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.7

DESCRIPTION OF RECEIVER # 2

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.8

DESCRIPTION OF RECEIVER # 3

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.2

DESCRIPTION OF RECEIVER # 4

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 56.4

DESCRIPTION OF RECEIVER # 5

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.4

DESCRIPTION OF RECEIVER # 6

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.8

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt A PM Locust

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                395.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              8.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               12.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.9

DESCRIPTION OF RECEIVER #   2

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.0

DESCRIPTION OF RECEIVER #   3

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       60.4

DESCRIPTION OF RECEIVER #   4

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       57.6

DESCRIPTION OF RECEIVER #   5

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.6

DESCRIPTION OF RECEIVER #   6

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.0
```

Appendix F

Alternative B Traffic Noise Module

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B AM Site 2 SR 19 (north)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1761.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              53.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               80.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       73.0

DESCRIPTION OF RECEIVER #   2

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       70.1

DESCRIPTION OF RECEIVER #   3

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       67.5

DESCRIPTION OF RECEIVER #   4

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       64.7

DESCRIPTION OF RECEIVER #   5

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.8

DESCRIPTION OF RECEIVER #   6

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.3
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B PM SR 19 (north)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                              2326.0
Average automobile speed (mph):                       45.0
Medium truck volume (v/h):                            70.0
Average medium truck speed (mph):                     45.0
Heavy truck volume (v/h):                             105.0
Average heavy truck speed (mph):                      45.0
Bus volume (v/h):                                     1.0
Average bus speed (mph):                              45.0
Motorcycle volume (v/h):                              1.0
Average Motorcycle speed (mph):                       45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       74.2

DESCRIPTION OF RECEIVER #   2

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       71.3

DESCRIPTION OF RECEIVER #   3

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       68.7

DESCRIPTION OF RECEIVER #   4

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.9

DESCRIPTION OF RECEIVER #   5

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       64.0

DESCRIPTION OF RECEIVER #   6

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.5
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B AM Site 1 SR 19 (south)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1284.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              39.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               58.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       71.6

DESCRIPTION OF RECEIVER #   2

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       68.7

DESCRIPTION OF RECEIVER #   3

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       66.1

DESCRIPTION OF RECEIVER #   4

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.3

DESCRIPTION OF RECEIVER #   5

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.5

DESCRIPTION OF RECEIVER #   6

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.9
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt B PM SR 19 (south)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1824.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	55.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	82.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 73.1

DESCRIPTION OF RECEIVER # 2

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 70.2

DESCRIPTION OF RECEIVER # 3

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 67.6

DESCRIPTION OF RECEIVER # 4

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.8

DESCRIPTION OF RECEIVER # 5

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.0

DESCRIPTION OF RECEIVER # 6

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.4

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B AM CR 26 (west)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                199.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              6.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               9.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.6

DESCRIPTION OF RECEIVER #   2

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.5

DESCRIPTION OF RECEIVER #   3

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       58.1

DESCRIPTION OF RECEIVER #   4

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.4

DESCRIPTION OF RECEIVER #   5

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       53.5

DESCRIPTION OF RECEIVER #   6

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       52.0
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B PM CR 26 (west)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                194.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              6.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               9.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.6

DESCRIPTION OF RECEIVER #   2

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.4

DESCRIPTION OF RECEIVER #   3

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       58.1

DESCRIPTION OF RECEIVER #   4

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.3

DESCRIPTION OF RECEIVER #   5

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       53.4

DESCRIPTION OF RECEIVER #   6

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       51.9
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt B AM CR 26 (mid)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	403.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	14.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	21.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.9

DESCRIPTION OF RECEIVER # 2

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.0

DESCRIPTION OF RECEIVER # 3

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.4

DESCRIPTION OF RECEIVER # 4

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.6

DESCRIPTION OF RECEIVER # 5

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 56.8

DESCRIPTION OF RECEIVER # 6

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.3

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B PM CR 26 (mid)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                469.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              16.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               24.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       67.5

DESCRIPTION OF RECEIVER #   2

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       64.6

DESCRIPTION OF RECEIVER #   3

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.0

DESCRIPTION OF RECEIVER #   4

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.2

DESCRIPTION OF RECEIVER #   5

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       57.4

DESCRIPTION OF RECEIVER #   6

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.9
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt B AM CR 26 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	341.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	12.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	18.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.2

DESCRIPTION OF RECEIVER # 2

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.0

DESCRIPTION OF RECEIVER # 3

CR 26 (east)

Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.7

DESCRIPTION OF RECEIVER # 4

CR 26 (east)

Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.0

DESCRIPTION OF RECEIVER # 5

CR 26 (east)

Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 56.1

DESCRIPTION OF RECEIVER # 6

CR 26 (east)

```
Distance from center of 12-ft wide, single lane roadway (ft):        150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.6
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt B PM CR 26 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	447.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	16.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	23.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 67.3

DESCRIPTION OF RECEIVER # 2

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.1

DESCRIPTION OF RECEIVER # 3

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.8

DESCRIPTION OF RECEIVER # 4

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.1

DESCRIPTION OF RECEIVER # 5

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.2

DESCRIPTION OF RECEIVER # 6

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.7

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B AM CR 7 (north)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                220.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              8.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               13.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       64.5

DESCRIPTION OF RECEIVER #   2

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.3

DESCRIPTION OF RECEIVER #   3

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.0

DESCRIPTION OF RECEIVER #   4

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       56.3

DESCRIPTION OF RECEIVER #   5

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.5

DESCRIPTION OF RECEIVER #   6

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       53.0
```

```
                * * * * CASE INFORMATION * * * *

        * * * * Results calculated with TNM Version 2.5 * * * *

Alt B PM CR 7 (north)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                268.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              9.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               24.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


        * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


           * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       66.0

DESCRIPTION OF RECEIVER #   2

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.9

DESCRIPTION OF RECEIVER #   3

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       60.6

DESCRIPTION OF RECEIVER #   4

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       58.0

DESCRIPTION OF RECEIVER #   5

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       56.2

DESCRIPTION OF RECEIVER #   6

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.7
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B AM CR 7 (south)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                112.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              3.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               5.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.2

DESCRIPTION OF RECEIVER #   2

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.0

DESCRIPTION OF RECEIVER #   3

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.7

DESCRIPTION OF RECEIVER #   4

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       52.9

DESCRIPTION OF RECEIVER #   5

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       51.1

DESCRIPTION OF RECEIVER #   6

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       49.5
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt B PM CR 7 (south)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                108.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              3.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               5.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.1

DESCRIPTION OF RECEIVER #   2

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       58.9

DESCRIPTION OF RECEIVER #   3

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.6

DESCRIPTION OF RECEIVER #   4

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       52.9

DESCRIPTION OF RECEIVER #   5

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       51.0

DESCRIPTION OF RECEIVER #   6

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       49.5
```

Appendix F

Alternative C Traffic Noise Module

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt C AM SR 23 (west)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	931.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	28.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	44.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 70.3

DESCRIPTION OF RECEIVER # 2

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 67.4

DESCRIPTION OF RECEIVER # 3

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.8

DESCRIPTION OF RECEIVER # 4

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 62.0

DESCRIPTION OF RECEIVER # 5

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.1

DESCRIPTION OF RECEIVER # 6

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.6

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt C PM SR 23 (west)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1004.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              35.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               52.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       70.8

DESCRIPTION OF RECEIVER #   2

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       67.9

DESCRIPTION OF RECEIVER #   3

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.3

DESCRIPTION OF RECEIVER #   4

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.5

DESCRIPTION OF RECEIVER #   5

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       60.7

DESCRIPTION OF RECEIVER #   6

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.2
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Alt C AM SR 23 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	872.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	21.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	34.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 69.7

DESCRIPTION OF RECEIVER # 2

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.8

DESCRIPTION OF RECEIVER # 3

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.1

DESCRIPTION OF RECEIVER # 4

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.3

DESCRIPTION OF RECEIVER # 5

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.5

DESCRIPTION OF RECEIVER # 6

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.9

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt C PM SR 23 (east)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                928.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              24.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               35.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       69.9

DESCRIPTION OF RECEIVER #   2

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       67.0

DESCRIPTION OF RECEIVER #   3

SR 23  (east)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       64.4

DESCRIPTION OF RECEIVER #   4

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.6

DESCRIPTION OF RECEIVER #   5

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.7

DESCRIPTION OF RECEIVER #   6

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       58.1
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt C PM Locust

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                380.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              8.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               12.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.8

DESCRIPTION OF RECEIVER #   2

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.9

DESCRIPTION OF RECEIVER #   3

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       60.3

DESCRIPTION OF RECEIVER #   4

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       57.5

DESCRIPTION OF RECEIVER #   5

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.5

DESCRIPTION OF RECEIVER #   6

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.0
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Alt C AM Locust

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                292.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              6.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               9.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       64.7

DESCRIPTION OF RECEIVER #   2

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.8

DESCRIPTION OF RECEIVER #   3

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.1

DESCRIPTION OF RECEIVER #   4

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       56.3

DESCRIPTION OF RECEIVER #   5

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.4

DESCRIPTION OF RECEIVER #   6

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       52.8
```

Appendix F

Alternative D Traffic Noise Module: Elkhart Site

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build AM SR 19 (north)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1281.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              38.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               58.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       71.6

DESCRIPTION OF RECEIVER #   2

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       68.7

DESCRIPTION OF RECEIVER #   3

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       66.1

DESCRIPTION OF RECEIVER #   4

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.3

DESCRIPTION OF RECEIVER #   5

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.4

DESCRIPTION OF RECEIVER #   6

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.9
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build PM SR 19 (north)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1433.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              43.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               65.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       72.1

DESCRIPTION OF RECEIVER #   2

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       69.2

DESCRIPTION OF RECEIVER #   3

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       66.6

DESCRIPTION OF RECEIVER #   4

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.8

DESCRIPTION OF RECEIVER #   5

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.9

DESCRIPTION OF RECEIVER #   6

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       60.4
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build AM SR 19 (south)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                              1026.0
Average automobile speed (mph):                       45.0
Medium truck volume (v/h):                            31.0
Average medium truck speed (mph):                     45.0
Heavy truck volume (v/h):                             46.0
Average heavy truck speed (mph):                      45.0
Bus volume (v/h):                                     1.0
Average bus speed (mph):                              45.0
Motorcycle volume (v/h):                              1.0
Average Motorcycle speed (mph):                       45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       70.6

DESCRIPTION OF RECEIVER #   2

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       67.7

DESCRIPTION OF RECEIVER #   3

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.1

DESCRIPTION OF RECEIVER #   4

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.3

DESCRIPTION OF RECEIVER #   5

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       60.5

DESCRIPTION OF RECEIVER #   6

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       58.9
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build PM SR 19 (south)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1229.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              37.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               56.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       71.4

DESCRIPTION OF RECEIVER #   2

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       68.5

DESCRIPTION OF RECEIVER #   3

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.9

DESCRIPTION OF RECEIVER #   4

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.1

DESCRIPTION OF RECEIVER #   5

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.3

DESCRIPTION OF RECEIVER #   6

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.7
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build AM CR 26 (west)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                181.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              6.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               8.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.2

DESCRIPTION OF RECEIVER #   2

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.1

DESCRIPTION OF RECEIVER #   3

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       57.7

DESCRIPTION OF RECEIVER #   4

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.0

DESCRIPTION OF RECEIVER #   5

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       53.1

DESCRIPTION OF RECEIVER #   6

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       51.6
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build PM CR 26 (west)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	170.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	5.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	8.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.0

DESCRIPTION OF RECEIVER # 2

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.8

DESCRIPTION OF RECEIVER # 3

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.5

DESCRIPTION OF RECEIVER # 4

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.8

DESCRIPTION OF RECEIVER # 5

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.9

DESCRIPTION OF RECEIVER # 6

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 51.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build AM CR 26 (mid)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	316.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	11.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	16.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.8

DESCRIPTION OF RECEIVER # 2

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 62.9

DESCRIPTION OF RECEIVER # 3

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.3

DESCRIPTION OF RECEIVER # 4

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.6

DESCRIPTION OF RECEIVER # 5

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.7

DESCRIPTION OF RECEIVER # 6

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.2

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build PM CR 26 (mid)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	341.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	12.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	18.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.2

DESCRIPTION OF RECEIVER # 2

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.3

DESCRIPTION OF RECEIVER # 3

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.7

DESCRIPTION OF RECEIVER # 4

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.0

DESCRIPTION OF RECEIVER # 5

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 56.1

DESCRIPTION OF RECEIVER # 6

CR 26
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.6

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build AM CR 26 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	313.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	11.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	16.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.8

DESCRIPTION OF RECEIVER # 2

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.6

DESCRIPTION OF RECEIVER # 3

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.3

DESCRIPTION OF RECEIVER # 4

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.5

DESCRIPTION OF RECEIVER # 5

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.7

DESCRIPTION OF RECEIVER # 6

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.2

```
                    * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build PM CR 26 (east)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                408.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              14.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               21.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       66.9

DESCRIPTION OF RECEIVER #   2

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       64.7

DESCRIPTION OF RECEIVER #   3

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.4

DESCRIPTION OF RECEIVER #   4

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       58.7

DESCRIPTION OF RECEIVER #   5

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       56.8

DESCRIPTION OF RECEIVER #   6

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.3
```

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                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build AM CR 7 (north)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                197.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              7.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               10.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.8

DESCRIPTION OF RECEIVER #   2

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.6

DESCRIPTION OF RECEIVER #   3

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       58.3

DESCRIPTION OF RECEIVER #   4

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.6

DESCRIPTION OF RECEIVER #   5

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       53.7

DESCRIPTION OF RECEIVER #   6

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       52.2
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build PM CR 7 (north)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                240.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              8.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               13.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       64.7

DESCRIPTION OF RECEIVER #   2

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.5

DESCRIPTION OF RECEIVER #   3

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.2

DESCRIPTION OF RECEIVER #   4

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       56.5

DESCRIPTION OF RECEIVER #   5

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.6

DESCRIPTION OF RECEIVER #   6

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       53.1
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

No Build AM CR 7 (south)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                111.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              3.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               5.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.2

DESCRIPTION OF RECEIVER #   2

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.0

DESCRIPTION OF RECEIVER #   3

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.7

DESCRIPTION OF RECEIVER #   4

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       52.9

DESCRIPTION OF RECEIVER #   5

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       51.0

DESCRIPTION OF RECEIVER #   6

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       49.5
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build PM CR 7 (south)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	105.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	3.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	5.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.0

DESCRIPTION OF RECEIVER # 2

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.9

DESCRIPTION OF RECEIVER # 3

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.5

DESCRIPTION OF RECEIVER # 4

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.8

DESCRIPTION OF RECEIVER # 5

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 50.9

DESCRIPTION OF RECEIVER # 6

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 49.4

Appendix F

Alternative D Traffic Noise Module: South Bend Site

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build AM SR 23 (west)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	738.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	26.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	39.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 69.5

DESCRIPTION OF RECEIVER # 2

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.6

DESCRIPTION OF RECEIVER # 3

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.0

DESCRIPTION OF RECEIVER # 4

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.3

DESCRIPTION OF RECEIVER # 5

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.4

DESCRIPTION OF RECEIVER # 6

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.9

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

NO Build PM SR 23 (west)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	688.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	24.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	36.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 69.2

DESCRIPTION OF RECEIVER # 2

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.3

DESCRIPTION OF RECEIVER # 3

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.7

DESCRIPTION OF RECEIVER # 4

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.9

DESCRIPTION OF RECEIVER # 5

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.1

DESCRIPTION OF RECEIVER # 6

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.6

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build AM SR 23 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	851.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	30.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	24.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 69.4

DESCRIPTION OF RECEIVER # 2

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.5

DESCRIPTION OF RECEIVER # 3

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.8

DESCRIPTION OF RECEIVER # 4

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.0

DESCRIPTION OF RECEIVER # 5

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.0

DESCRIPTION OF RECEIVER # 6

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build AM SR 23 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	851.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	24.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	30.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 69.5

DESCRIPTION OF RECEIVER # 2

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.6

DESCRIPTION OF RECEIVER # 3

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.0

DESCRIPTION OF RECEIVER # 4

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.2

DESCRIPTION OF RECEIVER # 5

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.2

DESCRIPTION OF RECEIVER # 6

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.7

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build AM Locust

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	271.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	6.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	8.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.3

DESCRIPTION OF RECEIVER # 2

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.4

DESCRIPTION OF RECEIVER # 3

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.8

DESCRIPTION OF RECEIVER # 4

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 56.0

DESCRIPTION OF RECEIVER # 5

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.0

DESCRIPTION OF RECEIVER # 6

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

No Build PM Locust

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	353.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	8.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	11.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.5

DESCRIPTION OF RECEIVER # 2

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 62.6

DESCRIPTION OF RECEIVER # 3

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.0

DESCRIPTION OF RECEIVER # 4

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.2

DESCRIPTION OF RECEIVER # 5

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.2

DESCRIPTION OF RECEIVER # 6

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 53.6

Appendix F

Capacity Analysis

Synchro Reports

St. Joseph County Existing Conditions

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	316	6	3	72	25	1	58	77	57	21	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00	1.00		1.00	1.00		0.97	1.00
Satd. Flow (prot)		1821			1733	1495		1896	1615		1777	1369
Flt Permitted		0.95			0.96	1.00		0.98	1.00		0.74	1.00
Satd. Flow (perm)		1744			1662	1495		1856	1615		1367	1369
Peak-hour factor, PHF	0.83	0.68	0.38	0.38	0.75	0.78	0.25	0.72	0.71	0.84	0.66	0.54
Adj. Flow (vph)	64	465	16	8	96	32	4	81	108	68	32	52
RTOR Reduction (vph)	0	1	0	0	0	14	0	0	90	0	0	43
Lane Group Flow (vph)	0	544	0	0	104	18	0	85	18	0	100	9
Heavy Vehicles (%)	2%	3%	17%	0%	10%	8%	0%	0%	0%	5%	0%	18%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Actuated Green, G (s)		26.4			26.4	26.4		7.9	7.9		7.9	7.9
Effective Green, g (s)		26.4			26.4	26.4		7.9	7.9		7.9	7.9
Actuated g/C Ratio		0.55			0.55	0.55		0.16	0.16		0.16	0.16
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		961			916	824		306	266		225	226
v/s Ratio Prot												
v/s Ratio Perm		c0.31			0.06	0.01		0.05	0.01		c0.07	0.01
v/c Ratio		0.57			0.11	0.02		0.28	0.07		0.44	0.04
Uniform Delay, d1		7.0			5.1	4.9		17.5	16.9		18.0	16.8
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.4			0.1	0.0		0.5	0.1		1.4	0.1
Delay (s)		8.4			5.3	4.9		18.0	17.0		19.4	16.9
Level of Service		A			A	A		B	B		B	B
Approach Delay (s)		8.4			5.2			17.4			18.6	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	47.9	Sum of lost time (s)	13.6
Intersection Capacity Utilization	56.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	53	111	3	52	299	75	10	30	24	67	56	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.99			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.98			0.99	1.00		0.99	1.00		0.97	1.00
Satd. Flow (prot)		1818			1882	1599		1873	1615		1851	1553
Flt Permitted		0.76			0.90	1.00		0.85	1.00		0.80	1.00
Satd. Flow (perm)		1412			1706	1599		1621	1615		1529	1553
Peak-hour factor, PHF	0.74	0.90	0.38	0.68	0.92	0.85	0.62	0.75	0.86	0.88	0.82	0.77
Adj. Flow (vph)	72	123	8	76	325	88	16	40	28	76	68	108
RTOR Reduction (vph)	0	2	0	0	0	42	0	0	23	0	0	52
Lane Group Flow (vph)	0	201	0	0	401	46	0	56	5	0	144	56
Heavy Vehicles (%)	6%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		custom
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		6
Actuated Green, G (s)		24.1			24.1	24.1		8.5	8.5		8.5	24.1
Effective Green, g (s)		24.1			24.1	24.1		8.5	8.5		8.5	24.1
Actuated g/C Ratio		0.52			0.52	0.52		0.18	0.18		0.18	0.52
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	5.5
Lane Grp Cap (vph)		737			890	834		298	297		281	810
v/s Ratio Prot												
v/s Ratio Perm		0.14			c0.23	0.03		0.03	0.00		c0.09	0.04
v/c Ratio		0.27			0.45	0.06		0.19	0.02		0.51	0.07
Uniform Delay, d1		6.2			6.9	5.4		15.9	15.4		17.0	5.5
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5			0.9	0.1		0.3	0.0		1.6	0.1
Delay (s)		6.7			7.8	5.5		16.2	15.5		18.6	5.6
Level of Service		A			A	A		B	B		B	A
Approach Delay (s)		6.7			7.4			16.0			13.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.3	HCM Level of Service	A
HCM Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	46.2	Sum of lost time (s)	13.6
Intersection Capacity Utilization	61.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	452	108	2	84	59	1
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.50	0.88	0.82	0.25
Hourly flow rate (vph)	491	117	4	95	72	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked			0.91		0.91	0.91
vC, conflicting volume			491		595	491
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			391		505	391
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			100		85	99
cM capacity (veh/h)			1005		469	602

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	491	117	99	76
Volume Left	0	0	4	72
Volume Right	0	117	0	4
cSH	1700	1700	1005	475
Volume to Capacity	0.29	0.07	0.00	0.16
Queue Length 95th (ft)	0	0	0	14
Control Delay (s)	0.0	0.0	0.4	14.0
Lane LOS			A	B
Approach Delay (s)	0.0		0.4	14.0
Approach LOS				B

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	33.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	135	125	4	308	187	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.84	0.50	0.91	0.82	0.50
Hourly flow rate (vph)	144	149	8	338	228	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked						
vC, conflicting volume			144		498	144
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			144		498	144
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		57	100
cM capacity (veh/h)			1451		532	909

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	144	149	346	232
Volume Left	0	0	8	228
Volume Right	0	149	0	4
cSH	1700	1700	1451	536
Volume to Capacity	0.08	0.09	0.01	0.43
Queue Length 95th (ft)	0	0	0	54
Control Delay (s)	0.0	0.0	0.2	16.7
Lane LOS			A	C
Approach Delay (s)	0.0		0.2	16.7
Approach LOS				C

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	25	0	3	0	0	0	0	484	58	54	73	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Hourly flow rate (vph)	34	0	6	0	0	0	0	691	92	60	182	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	648	1086	91	909	994	346	182			783		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	648	1086	91	909	994	346	182			783		
tC, single (s)	7.7	6.5	7.4	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.6	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	89	100	99	100	100	100	100			91		
cM capacity (veh/h)	319	198	879	212	221	650	1390			638		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	40	346	346	92	60	91	91
Volume Left	34	0	0	0	60	0	0
Volume Right	6	0	0	92	0	0	0
cSH	353	1700	1700	1700	638	1700	1700
Volume to Capacity	0.11	0.20	0.20	0.05	0.09	0.05	0.05
Queue Length 95th (ft)	9	0	0	0	8	0	0
Control Delay (s)	16.5	0.0	0.0	0.0	11.2	0.0	0.0
Lane LOS	C				B		
Approach Delay (s)	16.5	0.0			2.8		
Approach LOS	C						

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	30.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	92	0	8	0	0	0	0	85	45	102	285	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Hourly flow rate (vph)	106	0	16	0	0	0	0	115	66	146	335	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	684	808	168	590	742	57	335			181		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	684	808	168	590	742	57	335			181		
tC, single (s)	7.5	6.5	7.2	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	65	100	98	100	100	100	100			88		
cM capacity (veh/h)	306	278	808	347	300	997	1221			1171		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	122	57	57	66	146	168	168
Volume Left	106	0	0	0	146	0	0
Volume Right	16	0	0	66	0	0	0
cSH	334	1700	1700	1700	1171	1700	1700
Volume to Capacity	0.37	0.03	0.03	0.04	0.12	0.10	0.10
Queue Length 95th (ft)	41	0	0	0	11	0	0
Control Delay (s)	21.9	0.0	0.0	0.0	8.5	0.0	0.0
Lane LOS	C				A		
Approach Delay (s)	21.9	0.0			2.6		
Approach LOS	C						

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	26	0	89	17	492	0	0	101	66
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Hourly flow rate (vph)	0	0	0	33	0	139	23	683	0	0	123	70
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	649	852	62	790	922	342	193			683		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	649	852	62	790	922	342	193			683		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.4			2.2		
p0 queue free %	100	100	100	87	100	78	98			100		
cM capacity (veh/h)	271	290	991	263	267	621	1274			906		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	172	23	342	342	62	62	70
Volume Left	33	23	0	0	0	0	0
Volume Right	139	0	0	0	0	0	70
cSH	493	1274	1700	1700	1700	1700	1700
Volume to Capacity	0.35	0.02	0.20	0.20	0.04	0.04	0.04
Queue Length 95th (ft)	39	1	0	0	0	0	0
Control Delay (s)	16.2	7.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	16.2	0.3			0.0		
Approach LOS	C						

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	30.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	83	0	88	10	167	0	0	304	136
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Hourly flow rate (vph)	0	0	0	112	0	131	11	249	0	0	353	177
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	631	624	177	448	801	125	530			249		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	631	624	177	448	801	125	530			249		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.5	4.3			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.6	2.3			2.2		
p0 queue free %	100	100	100	77	100	84	99			100		
cM capacity (veh/h)	305	396	836	495	316	826	986			1313		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	244	11	125	125	177	177	177
Volume Left	112	11	0	0	0	0	0
Volume Right	131	0	0	0	0	0	177
cSH	631	986	1700	1700	1700	1700	1700
Volume to Capacity	0.39	0.01	0.07	0.07	0.10	0.10	0.10
Queue Length 95th (ft)	45	1	0	0	0	0	0
Control Delay (s)	14.2	8.7	0.0	0.0	0.0	0.0	0.0
Lane LOS	B	A					
Approach Delay (s)	14.2	0.4			0.0		
Approach LOS	B						

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	19	562	163	3	4	4
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.84	0.78	0.38	0.25	0.50
Hourly flow rate (vph)	24	669	209	8	16	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	217				926	209
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	217				926	209
tC, single (s)	4.4				7.2	6.4
tC, 2 stage (s)						
tF (s)	2.5				4.2	3.5
p0 queue free %	98				93	99
cM capacity (veh/h)	1194				219	777

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1
Volume Total	24	669	209	8	24
Volume Left	24	0	0	0	16
Volume Right	0	0	0	8	8
cSH	1194	1700	1700	1700	288
Volume to Capacity	0.02	0.39	0.12	0.00	0.08
Queue Length 95th (ft)	2	0	0	0	7
Control Delay (s)	8.1	0.0	0.0	0.0	18.6
Lane LOS	A				C
Approach Delay (s)	0.3		0.0		18.6
Approach LOS					C

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	39.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL2	EBL	SEL	SER	SWR	SWR2
Lane Configurations						
Volume (veh/h)	4	252	6	25	416	4
Sign Control		Free	Stop		Free	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.93	0.62	0.75	0.94	0.33
Hourly flow rate (vph)	8	271	10	33	443	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None			None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	455		730	443		
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	455		730	443		
tC, single (s)	4.4		6.5	6.4		
tC, 2 stage (s)						
tF (s)	2.4		3.6	3.5		
p0 queue free %	99		97	94		
cM capacity (veh/h)	995		372	585		

Direction, Lane #	EB 1	EB 2	SE 1	SW 1	SW 2
Volume Total	8	271	43	443	12
Volume Left	8	0	10	0	0
Volume Right	0	0	33	0	12
cSH	995	1700	518	1700	1700
Volume to Capacity	0.01	0.16	0.08	0.26	0.01
Queue Length 95th (ft)	1	0	7	0	0
Control Delay (s)	8.6	0.0	12.6	0.0	0.0
Lane LOS	A		B		
Approach Delay (s)	0.2		12.6	0.0	
Approach LOS			B		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	29.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	5	55	558	5	18	173
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.69	0.82	0.62	0.56	0.90
Hourly flow rate (vph)	8	80	680	8	32	192
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	937	680			689	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	937	680			689	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	82			96	
cM capacity (veh/h)	286	454			915	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	88	680	8	32	192
Volume Left	8	0	0	32	0
Volume Right	80	0	8	0	0
cSH	431	1700	1700	915	1700
Volume to Capacity	0.20	0.40	0.00	0.04	0.11
Queue Length 95th (ft)	19	0	0	3	0
Control Delay (s)	15.5	0.0	0.0	9.1	0.0
Lane LOS	C			A	
Approach Delay (s)	15.5	0.0		1.3	
Approach LOS	C				

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	39.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	3	45	262	1	47	443
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.38	0.75	0.91	0.25	0.62	0.89
Hourly flow rate (vph)	8	60	288	4	76	498
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	937	288			292	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	937	288			292	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	97	92			94	
cM capacity (veh/h)	279	756			1281	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	68	288	4	76	498
Volume Left	8	0	0	76	0
Volume Right	60	0	4	0	0
cSH	630	1700	1700	1281	1700
Volume to Capacity	0.11	0.17	0.00	0.06	0.29
Queue Length 95th (ft)	9	0	0	5	0
Control Delay (s)	11.4	0.0	0.0	8.0	0.0
Lane LOS	B			A	
Approach Delay (s)	11.4	0.0		1.1	
Approach LOS	B				

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	22	88	64	75	73	71	123	518	11	16	123	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1668		1444	1715		1583	1852		1805	1753	
Flt Permitted	0.64	1.00		0.63	1.00		0.66	1.00		0.36	1.00	
Satd. Flow (perm)	1195	1668		958	1715		1093	1852		692	1753	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	32	107	96	121	92	92	150	576	16	24	152	8
RTOR Reduction (vph)	0	56	0	0	62	0	0	1	0	0	3	0
Lane Group Flow (vph)	32	147	0	121	122	0	150	591	0	24	157	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	10.3	10.3		10.3	10.3		26.5	26.5		26.5	26.5	
Effective Green, g (s)	10.3	10.3		10.3	10.3		26.5	26.5		26.5	26.5	
Actuated g/C Ratio	0.21	0.21		0.21	0.21		0.54	0.54		0.54	0.54	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	252	352		202	362		594	1006		376	952	
v/s Ratio Prot		0.09			0.07			c0.32			0.09	
v/s Ratio Perm	0.03			c0.13			0.14			0.03		
v/c Ratio	0.13	0.42		0.60	0.34		0.25	0.59		0.06	0.17	
Uniform Delay, d1	15.6	16.7		17.4	16.3		5.9	7.5		5.3	5.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.9		5.0	0.7		0.6	1.5		0.2	0.2	
Delay (s)	15.9	17.6		22.4	17.0		6.5	9.0		5.5	5.8	
Level of Service	B	B		C	B		A	A		A	A	
Approach Delay (s)		17.4			19.1			8.5			5.8	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	75.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	30	100	27	68	106	109	103	215	23	27	313	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.92		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1788		1583	1655		1410	1746		1410	1782	
Flt Permitted	0.60	1.00		0.66	1.00		0.54	1.00		0.59	1.00	
Satd. Flow (perm)	1057	1788		1101	1655		799	1746		876	1782	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	35	116	36	80	123	143	120	236	40	50	364	12
RTOR Reduction (vph)	0	17	0	0	67	0	0	10	0	0	2	0
Lane Group Flow (vph)	35	135	0	80	199	0	120	266	0	50	374	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	11.5	11.5		11.5	11.5		18.6	18.6		18.6	18.6	
Effective Green, g (s)	11.5	11.5		11.5	11.5		18.6	18.6		18.6	18.6	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.44	0.44		0.44	0.44	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	289	488		301	452		353	771		387	787	
v/s Ratio Prot		0.08			c0.12			0.15			c0.21	
v/s Ratio Perm	0.03			0.07			0.15			0.06		
v/c Ratio	0.12	0.28		0.27	0.44		0.34	0.34		0.13	0.48	
Uniform Delay, d1	11.5	12.0		12.0	12.6		7.7	7.7		7.0	8.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.4		0.6	0.8		1.4	0.7		0.4	1.1	
Delay (s)	11.7	12.4		12.6	13.5		9.1	8.4		7.3	9.4	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		12.3			13.2			8.6			9.2	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	10.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	42.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	1	34	0	48	63	9	0	496	177	6	115	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Hourly flow rate (vph)	4	48	0	52	84	12	0	570	227	12	140	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								745				
pX, platoon unblocked	0.79	0.79		0.79	0.79	0.79				0.79		
vC, conflicting volume	916	975	154	886	876	684	168			797		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	757	833	154	719	706	462	168			606		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	98	80	100	77	70	97	100			98		
cM capacity (veh/h)	190	237	897	227	280	475	1422			659		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	52	148	797	180
Volume Left	4	52	0	12
Volume Right	0	12	227	28
cSH	232	267	1422	659
Volume to Capacity	0.22	0.56	0.00	0.02
Queue Length 95th (ft)	21	77	0	1
Control Delay (s)	24.9	34.1	0.0	0.9
Lane LOS	C	D		A
Approach Delay (s)	24.9	34.1	0.0	0.9
Approach LOS	C	D		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	7	54	0	77	44	11	0	199	132	4	340	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Hourly flow rate (vph)	12	79	0	88	52	16	0	224	155	7	366	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								744				
pX, platoon unblocked												
vC, conflicting volume	732	768	375	730	699	301	384			379		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	732	768	375	730	699	301	384			379		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	96	76	100	68	86	98	100			99		
cM capacity (veh/h)	294	332	676	277	364	722	1186			1191		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	91	155	379	391
Volume Left	12	88	0	7
Volume Right	0	16	155	18
cSH	327	323	1186	1191
Volume to Capacity	0.28	0.48	0.00	0.01
Queue Length 95th (ft)	28	62	0	0
Control Delay (s)	20.2	26.0	0.0	0.2
Lane LOS	C	D		A
Approach Delay (s)	20.2	26.0	0.0	0.2
Approach LOS	C	D		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	140	4	7	66	50	10	83	27	70	15	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.94			0.97			0.99	
Flt Protected		0.99			1.00			0.99			0.96	
Satd. Flow (prot)		1792			1641			1818			1714	
Flt Permitted		0.92			0.97			0.95			0.77	
Satd. Flow (perm)		1663			1602			1735			1373	
Peak-hour factor, PHF	0.50	0.69	0.84	0.58	0.92	0.74	0.62	0.83	0.75	0.73	0.75	0.50
Adj. Flow (vph)	54	203	5	12	72	68	16	100	36	96	20	8
RTOR Reduction (vph)	0	1	0	0	30	0	0	18	0	0	4	0
Lane Group Flow (vph)	0	261	0	0	122	0	0	134	0	0	120	0
Heavy Vehicles (%)	0%	6%	0%	0%	12%	6%	0%	1%	0%	6%	7%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		28.1			28.1			9.9			9.9	
Effective Green, g (s)		28.1			28.1			9.9			9.9	
Actuated g/C Ratio		0.56			0.56			0.20			0.20	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)		935			900			344			272	
v/s Ratio Prot												
v/s Ratio Perm		c0.16			0.08			0.08			c0.09	
v/c Ratio		0.28			0.14			0.39			0.44	
Uniform Delay, d1		5.7			5.2			17.4			17.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.6			0.2			1.5			2.4	
Delay (s)		6.3			5.4			19.0			20.0	
Level of Service		A			A			B			B	
Approach Delay (s)		6.3			5.4			19.0			20.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.32		
Actuated Cycle Length (s)	50.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	132	16	42	199	77	10	25	31	101	71	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.94			0.99	
Flt Protected		1.00			0.99			0.99			0.97	
Satd. Flow (prot)		1802			1778			1778			1827	
Flt Permitted		0.99			0.94			0.92			0.78	
Satd. Flow (perm)		1789			1679			1654			1460	
Peak-hour factor, PHF	0.75	0.89	0.67	0.80	0.90	0.70	0.62	0.62	0.78	0.70	0.74	0.67
Adj. Flow (vph)	4	148	24	52	221	110	16	40	40	144	96	24
RTOR Reduction (vph)	0	10	0	0	25	0	0	27	0	0	5	0
Lane Group Flow (vph)	0	166	0	0	358	0	0	69	0	0	259	0
Heavy Vehicles (%)	0%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.1			25.1			16.9			16.9	
Effective Green, g (s)		25.1			25.1			16.9			16.9	
Actuated g/C Ratio		0.46			0.46			0.31			0.31	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		5.0			5.0			7.0			7.0	
Lane Grp Cap (vph)		832			780			518			457	
v/s Ratio Prot												
v/s Ratio Perm		0.09			c0.21			0.04			c0.18	
v/c Ratio		0.20			0.46			0.13			0.57	
Uniform Delay, d1		8.5			9.8			13.3			15.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.2			0.9			0.4			4.0	
Delay (s)		8.8			10.7			13.7			19.5	
Level of Service		A			B			B			B	
Approach Delay (s)		8.8			10.7			13.7			19.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Elkhart County Existing Conditions

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	92	0	241	267	748	0	0	466	171
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2993		1392	1612	4848			3059	1404
Flt Permitted				0.95		1.00	0.35	1.00			1.00	1.00
Satd. Flow (perm)				2993		1392	595	4848			3059	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.68	0.92	0.71	0.79	0.84	0.92	0.92	0.90	0.93
Adj. Flow (vph)	0	0	0	135	0	339	338	890	0	0	518	184
RTOR Reduction (vph)	0	0	0	0	0	152	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	135	0	187	338	890	0	0	518	184
Heavy Vehicles (%)	2%	2%	2%	17%	0%	16%	12%	7%	0%	0%	18%	15%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				13.5		13.5	38.6	38.6			22.4	63.1
Effective Green, g (s)				13.5		13.5	38.6	38.6			22.4	63.1
Actuated g/C Ratio				0.21		0.21	0.61	0.61			0.35	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				640		298	543	2966			1086	1404
v/s Ratio Prot							c0.11	0.18			0.17	
v/s Ratio Perm				0.05		c0.13	c0.27					0.13
v/c Ratio				0.21		0.63	0.62	0.30			0.48	0.13
Uniform Delay, d1				20.4		22.5	6.6	5.8			15.8	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1		3.6	1.6	0.1			0.7	0.2
Delay (s)				20.5		26.1	8.2	5.9			16.5	0.2
Level of Service				C		C	A	A			B	A
Approach Delay (s)		0.0			24.5			6.6			12.2	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	63.1	Sum of lost time (s)	10.3
Intersection Capacity Utilization	47.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	132	0	169	250	534	0	0	645	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3303		1429	1719	4848			3406	1553
Flt Permitted				0.95		1.00	0.25	1.00			1.00	1.00
Satd. Flow (perm)				3303		1429	453	4848			3406	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.25	0.78	0.83	0.90	0.92	0.25	0.84	0.81
Adj. Flow (vph)	0	0	0	159	0	217	301	593	0	0	768	506
RTOR Reduction (vph)	0	0	0	0	0	184	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	159	0	33	301	593	0	0	768	506
Heavy Vehicles (%)	2%	2%	2%	6%	0%	13%	5%	7%	0%	0%	6%	4%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				8.9		8.9	37.8	37.8			24.3	57.7
Effective Green, g (s)				8.9		8.9	37.8	37.8			24.3	57.7
Actuated g/C Ratio				0.15		0.15	0.66	0.66			0.42	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				509		220	481	3176			1434	1553
v/s Ratio Prot							c0.09	0.12			0.23	
v/s Ratio Perm				0.05		0.02	c0.32					c0.33
v/c Ratio				0.31		0.15	0.63	0.19			0.54	0.33
Uniform Delay, d1				21.7		21.1	5.5	3.9			12.5	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.3		0.3	1.8	0.1			0.7	0.6
Delay (s)				22.0		21.4	7.3	4.0			13.2	0.6
Level of Service				C		C	A	A			B	A
Approach Delay (s)		0.0			21.6			5.1			8.2	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.1	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	57.7	Sum of lost time (s)	5.1
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	593	125	165	393	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.74	0.92	0.92	0.92	0.92	0.85	0.69	0.81	0.87	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	698	181	204	452	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1208	1557	226	1421	1647	439	452			698		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1208	1557	226	1421	1647	439	452			698		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.5		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	100	100	100	100	100	100	100			74		
cM capacity (veh/h)	111	83	759	77	73	565	1105			784		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	465	414	204	226	226
Volume Left	0	0	0	204	0	0
Volume Right	0	0	181	0	0	0
cSH	1700	1700	1700	784	1700	1700
Volume to Capacity	0.00	0.27	0.24	0.26	0.13	0.13
Queue Length 95th (ft)	0	0	0	26	0	0
Control Delay (s)	0.0	0.0	0.0	11.2	0.0	0.0
Lane LOS	A			B		
Approach Delay (s)	0.0	0.0		3.5		
Approach LOS	A					

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	49.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	596	94	240	537	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.84	0.92	0.92	0.92	0.92	0.86	0.81	0.78	0.85	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	693	116	308	632	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1594	1940	316	1682	1998	405	632			693		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1594	1940	316	1682	1998	405	632			693		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	100	100	100	100	100	100			65		
cM capacity (veh/h)	52	42	657	45	38	596	947			872		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	462	347	308	316	316
Volume Left	0	0	0	308	0	0
Volume Right	0	0	116	0	0	0
cSH	1700	1700	1700	872	1700	1700
Volume to Capacity	0.00	0.27	0.20	0.35	0.19	0.19
Queue Length 95th (ft)	0	0	0	40	0	0
Control Delay (s)	0.0	0.0	0.0	11.4	0.0	0.0
Lane LOS	A			B		
Approach Delay (s)	0.0	0.0		3.7		
Approach LOS	A					

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	71	42	26	14	12	116	11	531	12	102	445	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1794		1805	1900	1538	1805	3393		1719	3331	
Flt Permitted	0.55	1.00		0.69	1.00	1.00	0.44	1.00		0.27	1.00	
Satd. Flow (perm)	1037	1794		1306	1900	1538	833	3393		480	3331	
Peak-hour factor, PHF	0.75	0.62	0.65	0.50	0.60	0.73	0.69	0.89	0.50	0.70	0.82	0.75
Adj. Flow (vph)	95	68	40	28	20	159	16	597	24	146	543	25
RTOR Reduction (vph)	0	16	0	0	0	133	0	2	0	0	2	0
Lane Group Flow (vph)	95	92	0	28	20	26	16	619	0	146	566	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	6%	0%	5%	8%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	25.3	18.0		15.7	13.2	13.2	28.5	27.5		44.2	37.7	
Effective Green, g (s)	25.3	18.0		15.7	13.2	13.2	28.5	27.5		44.2	37.7	
Actuated g/C Ratio	0.31	0.22		0.19	0.16	0.16	0.35	0.34		0.54	0.46	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	388	394		265	306	248	301	1138		428	1531	
v/s Ratio Prot	c0.02	0.05		0.00	0.01		0.00	c0.18		c0.05	c0.17	
v/s Ratio Perm	c0.05			0.02		0.02	0.02			0.14		
v/c Ratio	0.24	0.23		0.11	0.07	0.10	0.05	0.54		0.34	0.37	
Uniform Delay, d1	20.8	26.3		27.2	29.2	29.4	17.6	22.2		10.6	14.4	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.6		0.2	0.2	0.4	0.1	0.9		0.5	0.3	
Delay (s)	21.2	27.0		27.4	29.4	29.7	17.7	23.1		11.1	14.7	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		24.3			29.4			23.0			14.0	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	82.0	Sum of lost time (s)	27.7
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	21	22	15	34	34	113	29	556	11	114	588	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1795		1805	1900	1442	1805	3486		1736	3490	
Flt Permitted	0.73	1.00		0.71	1.00	1.00	0.37	1.00		0.27	1.00	
Satd. Flow (perm)	1379	1795		1344	1900	1442	707	3486		487	3490	
Peak-hour factor, PHF	0.50	0.46	0.54	0.65	0.71	0.78	0.65	0.90	0.69	0.81	0.88	0.68
Adj. Flow (vph)	42	48	28	52	48	145	45	618	16	141	668	68
RTOR Reduction (vph)	0	17	0	0	0	123	0	1	0	0	5	0
Lane Group Flow (vph)	42	59	0	52	48	22	45	633	0	141	731	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	3%	9%	4%	2%	2%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	15.2	11.2		15.2	11.2	11.2	28.8	25.2		40.6	31.5	
Effective Green, g (s)	15.2	11.2		15.2	11.2	11.2	28.8	25.2		40.6	31.5	
Actuated g/C Ratio	0.21	0.15		0.21	0.15	0.15	0.39	0.34		0.56	0.43	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	310	275		305	291	221	333	1202		440	1504	
v/s Ratio Prot	0.01	c0.03		c0.01	0.03		0.01	0.18		c0.04	c0.21	
v/s Ratio Perm	0.02			0.03		0.02	0.05			0.13		
v/c Ratio	0.14	0.21		0.17	0.16	0.10	0.14	0.53		0.32	0.49	
Uniform Delay, d1	23.5	27.1		23.6	26.9	26.6	13.8	19.2		8.8	15.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.8		0.3	0.6	0.4	0.2	0.8		0.4	0.5	
Delay (s)	23.7	27.9		23.9	27.4	27.0	14.0	20.0		9.3	15.5	
Level of Service	C	C		C	C	C	B	B		A	B	
Approach Delay (s)		26.4			26.4			19.6			14.5	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	73.1	Sum of lost time (s)	22.8
Intersection Capacity Utilization	45.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	11	28	3	8	22	5	496	7	15	453	6
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.69	0.54	0.75	0.50	0.79	0.62	0.87	0.59	0.54	0.84	0.75
Hourly flow rate (vph)	36	16	52	4	16	28	8	570	12	28	539	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1227	1197	543	1251	1195	576	547			582		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1227	1197	543	1251	1195	576	547			582		
tC, single (s)	7.1	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	73	91	90	97	91	95	99			97		
cM capacity (veh/h)	135	174	543	123	181	521	1032			1002		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	104	48	590	575
Volume Left	36	4	8	28
Volume Right	52	28	12	8
cSH	228	275	1032	1002
Volume to Capacity	0.45	0.17	0.01	0.03
Queue Length 95th (ft)	55	15	1	2
Control Delay (s)	33.3	20.8	0.2	0.8
Lane LOS	D	C	A	A
Approach Delay (s)	33.3	20.8	0.2	0.8
Approach LOS	D	C		

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	6	15	13	2	7	24	22	567	0	29	596	12
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.62	0.65	0.50	0.44	0.75	0.79	0.96	0.25	0.52	0.83	0.75
Hourly flow rate (vph)	12	24	20	4	16	32	28	591	0	56	718	16
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1524	1484	726	1516	1492	591	734			591		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1524	1484	726	1516	1492	591	734			591		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	84	79	95	95	86	94	97			94		
cM capacity (veh/h)	76	115	428	74	114	503	880			995		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	56	52	618	790
Volume Left	12	4	28	56
Volume Right	20	32	0	16
cSH	136	202	880	995
Volume to Capacity	0.41	0.26	0.03	0.06
Queue Length 95th (ft)	45	25	2	4
Control Delay (s)	49.1	28.9	0.8	1.4
Lane LOS	E	D	A	A
Approach Delay (s)	49.1	28.9	0.8	1.4
Approach LOS	E	D		

Intersection Summary			
Average Delay	3.9		
Intersection Capacity Utilization	53.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	24	145	7	2	99	30	12	62	5	33	27	21
Peak Hour Factor	0.60	0.82	0.44	0.50	0.77	0.83	0.75	0.60	0.62	0.55	0.84	0.59
Hourly flow rate (vph)	40	177	16	4	129	36	16	103	8	60	32	36

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	40	193	68	100	127	128
Volume Left (vph)	40	0	4	0	16	60
Volume Right (vph)	0	16	0	36	8	36
Hadj (s)	0.72	0.07	0.19	-0.13	0.03	0.31
Departure Headway (s)	6.1	5.5	5.7	5.4	5.2	5.4
Degree Utilization, x	0.07	0.29	0.11	0.15	0.18	0.19
Capacity (veh/h)	555	627	596	634	646	613
Control Delay (s)	8.4	9.5	8.2	8.1	9.3	9.7
Approach Delay (s)	9.3		8.1		9.3	9.7
Approach LOS	A		A		A	A

Intersection Summary			
Delay	9.1		
HCM Level of Service	A		
Intersection Capacity Utilization	31.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	21	136	6	2	175	49	9	41	3	45	63	22
Peak Hour Factor	0.58	0.97	0.75	0.50	0.81	0.82	0.45	0.73	0.75	0.75	0.79	0.61
Hourly flow rate (vph)	36	140	8	4	216	60	20	56	4	60	80	36

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	36	148	112	168	80	176
Volume Left (vph)	36	0	4	0	20	60
Volume Right (vph)	0	8	0	60	4	36
Hadj (s)	0.99	0.14	0.20	-0.04	0.10	0.02
Departure Headway (s)	6.5	5.7	5.6	5.4	5.4	5.2
Degree Utilization, x	0.07	0.23	0.18	0.25	0.12	0.25
Capacity (veh/h)	518	600	606	636	602	640
Control Delay (s)	8.8	9.2	8.6	9.0	9.2	10.0
Approach Delay (s)	9.1		8.9		9.2	10.0
Approach LOS	A		A		A	A

Intersection Summary			
Delay	9.2		
HCM Level of Service	A		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	1	33	1	1	35	14	0	55	1	8	20	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.75	0.25	0.25	0.67	0.44	0.25	0.69	0.25	0.67	0.83	0.25
Hourly flow rate (vph)	4	44	4	4	52	32	0	80	4	12	24	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	190	134	26	158	134	82	28			84		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	190	134	26	158	134	82	28			84		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	94	100	99	93	97	100			99		
cM capacity (veh/h)	706	749	1055	769	755	984	1598			1526		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	52	88	84	40
Volume Left	4	4	0	12
Volume Right	4	32	4	4
cSH	763	825	1598	1526
Volume to Capacity	0.07	0.11	0.00	0.01
Queue Length 95th (ft)	5	9	0	1
Control Delay (s)	10.1	9.9	0.0	2.2
Lane LOS	B	A		A
Approach Delay (s)	10.1	9.9	0.0	2.2
Approach LOS	B	A		

Intersection Summary			
Average Delay	5.6		
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	31	2	4	47	15	3	39	2	2	46	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.65	0.50	0.50	0.73	0.47	0.38	0.81	0.50	0.50	0.45	0.25
Hourly flow rate (vph)	0	48	4	8	64	32	8	48	4	4	102	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	242	180	104	206	180	50	106			52		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	242	180	104	206	180	50	106			52		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	93	100	99	91	97	99			100		
cM capacity (veh/h)	641	706	956	710	708	1004	1497			1567		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	52	104	60	110
Volume Left	0	8	8	4
Volume Right	4	32	4	4
cSH	721	778	1497	1567
Volume to Capacity	0.07	0.13	0.01	0.00
Queue Length 95th (ft)	6	12	0	0
Control Delay (s)	10.4	10.3	1.0	0.3
Lane LOS	B	B	A	A
Approach Delay (s)	10.4	10.3	1.0	0.3
Approach LOS	B	B		

Intersection Summary			
Average Delay	5.2		
Intersection Capacity Utilization	16.8%	ICU Level of Service	A
Analysis Period (min)	15		

St. Joseph County No Build 2020 Conditions

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	339	7	4	78	27	2	63	83	61	23	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00	1.00		1.00	1.00		0.97	1.00
Satd. Flow (prot)		1821			1734	1495		1892	1615		1778	1369
Flt Permitted		0.95			0.94	1.00		0.96	1.00		0.74	1.00
Satd. Flow (perm)		1740			1637	1495		1819	1615		1358	1369
Peak-hour factor, PHF	0.83	0.68	0.38	0.38	0.75	0.78	0.25	0.72	0.71	0.84	0.66	0.54
Adj. Flow (vph)	69	499	18	11	104	35	8	88	117	73	35	56
RTOR Reduction (vph)	0	1	0	0	0	15	0	0	98	0	0	47
Lane Group Flow (vph)	0	585	0	0	115	20	0	96	19	0	108	9
Heavy Vehicles (%)	2%	3%	17%	0%	10%	8%	0%	0%	0%	5%	0%	18%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Actuated Green, G (s)		28.7			28.7	28.7		8.2	8.2		8.2	8.2
Effective Green, g (s)		28.7			28.7	28.7		8.2	8.2		8.2	8.2
Actuated g/C Ratio		0.57			0.57	0.57		0.16	0.16		0.16	0.16
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		989			930	850		295	262		221	222
v/s Ratio Prot												
v/s Ratio Perm		c0.34			0.07	0.01		0.05	0.01		c0.08	0.01
v/c Ratio		0.59			0.12	0.02		0.33	0.07		0.49	0.04
Uniform Delay, d1		7.1			5.1	4.8		18.7	17.9		19.2	17.8
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.6			0.1	0.0		0.6	0.1		1.7	0.1
Delay (s)		8.7			5.2	4.8		19.4	18.0		20.9	17.9
Level of Service		A			A	A		B	B		C	B
Approach Delay (s)		8.7			5.1			18.6			19.9	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	13.6
Intersection Capacity Utilization	57.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	119	4	56	320	81	11	33	26	72	60	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.99			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.98			0.99	1.00		0.99	1.00		0.97	1.00
Satd. Flow (prot)		1817			1882	1599		1873	1615		1851	1553
Flt Permitted		0.75			0.89	1.00		0.85	1.00		0.80	1.00
Satd. Flow (perm)		1395			1696	1599		1610	1615		1522	1553
Peak-hour factor, PHF	0.74	0.90	0.38	0.68	0.92	0.85	0.62	0.75	0.86	0.88	0.82	0.77
Adj. Flow (vph)	77	132	11	82	348	95	18	44	30	82	73	116
RTOR Reduction (vph)	0	2	0	0	0	44	0	0	24	0	0	54
Lane Group Flow (vph)	0	218	0	0	430	51	0	62	6	0	155	62
Heavy Vehicles (%)	6%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		custom
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		6
Actuated Green, G (s)		26.0			26.0	26.0		8.9	8.9		8.9	26.0
Effective Green, g (s)		26.0			26.0	26.0		8.9	8.9		8.9	26.0
Actuated g/C Ratio		0.54			0.54	0.54		0.18	0.18		0.18	0.54
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	5.5
Lane Grp Cap (vph)		748			909	857		295	296		279	833
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.25	0.03		0.04	0.00		c0.10	0.04
v/c Ratio		0.29			0.47	0.06		0.21	0.02		0.56	0.07
Uniform Delay, d1		6.2			7.0	5.4		16.8	16.2		18.0	5.4
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.5			1.0	0.1		0.4	0.0		2.4	0.1
Delay (s)		6.7			7.9	5.5		17.2	16.2		20.4	5.5
Level of Service		A			A	A		B	B		C	A
Approach Delay (s)		6.7			7.5			16.9			14.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	9.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	48.5	Sum of lost time (s)	13.6
Intersection Capacity Utilization	63.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	484	116	3	90	64	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.50	0.88	0.82	0.25
Hourly flow rate (vph)	526	126	6	102	78	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked			0.89		0.89	0.89
vC, conflicting volume			526		640	526
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			408		536	408
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		82	99
cM capacity (veh/h)			971		440	578

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	526	126	108	86
Volume Left	0	0	6	78
Volume Right	0	126	0	8
cSH	1700	1700	971	450
Volume to Capacity	0.31	0.07	0.01	0.19
Queue Length 95th (ft)	0	0	0	17
Control Delay (s)	0.0	0.0	0.5	14.9
Lane LOS			A	B
Approach Delay (s)	0.0		0.5	14.9
Approach LOS				B

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	35.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	145	134	5	330	201	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.84	0.50	0.91	0.82	0.50
Hourly flow rate (vph)	154	160	10	363	245	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked						
vC, conflicting volume			154		537	154
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			154		537	154
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		51	99
cM capacity (veh/h)			1438		505	897

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	154	160	373	251
Volume Left	0	0	10	245
Volume Right	0	160	0	6
cSH	1700	1700	1438	510
Volume to Capacity	0.09	0.09	0.01	0.49
Queue Length 95th (ft)	0	0	1	67
Control Delay (s)	0.0	0.0	0.3	18.7
Lane LOS			A	C
Approach Delay (s)	0.0		0.3	18.7
Approach LOS				C

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	39.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	27	0	4	0	0	0	0	518	63	58	79	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Hourly flow rate (vph)	36	0	8	0	0	0	0	740	100	64	198	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	696	1166	99	976	1066	370	198			840		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	696	1166	99	976	1066	370	198			840		
tC, single (s)	7.7	6.5	7.4	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.6	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	87	100	99	100	100	100	100			89		
cM capacity (veh/h)	291	175	869	187	197	627	1372			602		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	44	370	370	100	64	99	99
Volume Left	36	0	0	0	64	0	0
Volume Right	8	0	0	100	0	0	0
cSH	330	1700	1700	1700	602	1700	1700
Volume to Capacity	0.13	0.22	0.22	0.06	0.11	0.06	0.06
Queue Length 95th (ft)	12	0	0	0	9	0	0
Control Delay (s)	17.6	0.0	0.0	0.0	11.7	0.0	0.0
Lane LOS	C				B		
Approach Delay (s)	17.6	0.0			2.9		
Approach LOS	C						

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	31.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	99	0	9	0	0	0	0	91	49	110	305	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Hourly flow rate (vph)	114	0	18	0	0	0	0	123	72	157	359	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	735	868	179	635	796	61	359			195		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	735	868	179	635	796	61	359			195		
tC, single (s)	7.5	6.5	7.2	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	59	100	98	100	100	100	100			86		
cM capacity (veh/h)	279	253	793	318	275	991	1196			1154		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	132	61	61	72	157	179	179
Volume Left	114	0	0	0	157	0	0
Volume Right	18	0	0	72	0	0	0
cSH	306	1700	1700	1700	1154	1700	1700
Volume to Capacity	0.43	0.04	0.04	0.04	0.14	0.11	0.11
Queue Length 95th (ft)	52	0	0	0	12	0	0
Control Delay (s)	25.4	0.0	0.0	0.0	8.6	0.0	0.0
Lane LOS	D				A		
Approach Delay (s)	25.4	0.0			2.6		
Approach LOS	D						

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	33.1%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	28	0	96	19	527	0	0	109	71
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Hourly flow rate (vph)	0	0	0	35	0	150	25	732	0	0	133	76
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	700	916	66	849	991	366	208			732		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	700	916	66	849	991	366	208			732		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.4			2.2		
p0 queue free %	100	100	100	85	100	75	98			100		
cM capacity (veh/h)	241	266	983	238	243	598	1257			868		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	185	25	366	366	66	66	76
Volume Left	35	25	0	0	0	0	0
Volume Right	150	0	0	0	0	0	76
cSH	463	1257	1700	1700	1700	1700	1700
Volume to Capacity	0.40	0.02	0.22	0.22	0.04	0.04	0.04
Queue Length 95th (ft)	47	2	0	0	0	0	0
Control Delay (s)	17.9	7.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	17.9	0.3			0.0		
Approach LOS	C						

Intersection Summary				
Average Delay	3.1			
Intersection Capacity Utilization	31.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	89	0	95	11	179	0	0	326	146
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Hourly flow rate (vph)	0	0	0	120	0	142	12	267	0	0	379	190
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	678	670	190	481	860	134	569			267		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	678	670	190	481	860	134	569			267		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.5	4.3			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.6	2.3			2.2		
p0 queue free %	100	100	100	74	100	83	99			100		
cM capacity (veh/h)	276	372	820	469	292	814	953			1294		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	262	12	134	134	190	190	190
Volume Left	120	12	0	0	0	0	0
Volume Right	142	0	0	0	0	0	190
cSH	608	953	1700	1700	1700	1700	1700
Volume to Capacity	0.43	0.01	0.08	0.08	0.11	0.11	0.11
Queue Length 95th (ft)	54	1	0	0	0	0	0
Control Delay (s)	15.3	8.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	15.3	0.4			0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	3.7		
Intersection Capacity Utilization	33.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	21	602	175	4	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.84	0.78	0.38	0.25	0.50
Hourly flow rate (vph)	27	717	224	11	20	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	235				994	224
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	235				994	224
tC, single (s)	4.4				7.2	6.4
tC, 2 stage (s)						
tF (s)	2.5				4.2	3.5
p0 queue free %	98				90	99
cM capacity (veh/h)	1175				197	761

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1
Volume Total	27	717	224	11	30
Volume Left	27	0	0	0	20
Volume Right	0	0	0	11	10
cSH	1175	1700	1700	1700	262
Volume to Capacity	0.02	0.42	0.13	0.01	0.11
Queue Length 95th (ft)	2	0	0	0	10
Control Delay (s)	8.1	0.0	0.0	0.0	20.5
Lane LOS	A				C
Approach Delay (s)	0.3		0.0		20.5
Approach LOS					C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	41.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	5	270	446	5	7	27
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.93	0.94	0.33	0.62	0.75
Hourly flow rate (vph)	10	290	474	15	11	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	490				785	474
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	490				785	474
tC, single (s)	4.4				6.5	6.4
tC, 2 stage (s)						
tF (s)	2.4				3.6	3.5
p0 queue free %	99				97	94
cM capacity (veh/h)	965				344	561

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1
Volume Total	10	290	474	15	47
Volume Left	10	0	0	0	11
Volume Right	0	0	0	15	36
cSH	965	1700	1700	1700	487
Volume to Capacity	0.01	0.17	0.28	0.01	0.10
Queue Length 95th (ft)	1	0	0	0	8
Control Delay (s)	8.8	0.0	0.0	0.0	13.2
Lane LOS	A				B
Approach Delay (s)	0.3		0.0		13.2
Approach LOS					B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	33.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	6	59	598	6	20	186
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.69	0.82	0.62	0.56	0.90
Hourly flow rate (vph)	10	86	729	10	36	207
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1007	729			739	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1007	729			739	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	80			96	
cM capacity (veh/h)	258	426			877	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	95	729	10	36	207
Volume Left	10	0	0	36	0
Volume Right	86	0	10	0	0
cSH	400	1700	1700	877	1700
Volume to Capacity	0.24	0.43	0.01	0.04	0.12
Queue Length 95th (ft)	23	0	0	3	0
Control Delay (s)	16.8	0.0	0.0	9.3	0.0
Lane LOS	C			A	
Approach Delay (s)	16.8	0.0		1.4	
Approach LOS	C				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	42.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	4	49	281	2	51	475
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.38	0.75	0.91	0.25	0.62	0.89
Hourly flow rate (vph)	11	65	309	8	82	534
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1007	309			317	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1007	309			317	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	91			93	
cM capacity (veh/h)	252	736			1255	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	76	309	8	82	534
Volume Left	11	0	0	82	0
Volume Right	65	0	8	0	0
cSH	581	1700	1700	1255	1700
Volume to Capacity	0.13	0.18	0.00	0.07	0.31
Queue Length 95th (ft)	11	0	0	5	0
Control Delay (s)	12.1	0.0	0.0	8.1	0.0
Lane LOS	B			A	
Approach Delay (s)	12.1	0.0		1.1	
Approach LOS	B				

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	24	95	69	81	79	76	132	555	12	18	132	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.93		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1669		1444	1715		1583	1852		1805	1752	
Flt Permitted	0.63	1.00		0.62	1.00		0.65	1.00		0.30	1.00	
Satd. Flow (perm)	1179	1669		944	1715		1080	1852		565	1752	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	35	116	103	131	100	99	161	617	17	27	163	10
RTOR Reduction (vph)	0	51	0	0	57	0	0	1	0	0	3	0
Lane Group Flow (vph)	35	168	0	131	142	0	161	633	0	27	170	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	13.9	13.9		13.9	13.9		26.0	26.0		26.0	26.0	
Effective Green, g (s)	13.9	13.9		13.9	13.9		26.0	26.0		26.0	26.0	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.50	0.50		0.50	0.50	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	316	447		253	459		541	928		283	878	
v/s Ratio Prot		0.10			0.08			c0.34			0.10	
v/s Ratio Perm	0.03			c0.14			0.15			0.05		
v/c Ratio	0.11	0.38		0.52	0.31		0.30	0.68		0.10	0.19	
Uniform Delay, d1	14.3	15.5		16.2	15.2		7.6	9.8		6.8	7.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.6		2.1	0.5		0.8	2.9		0.4	0.3	
Delay (s)	14.5	16.1		18.2	15.6		8.4	12.7		7.1	7.4	
Level of Service	B	B		B	B		A	B		A	A	
Approach Delay (s)		15.9			16.7			11.8			7.4	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	12.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	51.9	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	107	29	73	114	117	111	231	25	29	335	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.92		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1789		1583	1655		1410	1745		1410	1781	
Flt Permitted	0.57	1.00		0.65	1.00		0.50	1.00		0.58	1.00	
Satd. Flow (perm)	1006	1789		1091	1655		747	1745		858	1781	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	39	124	38	86	133	154	129	254	44	54	390	15
RTOR Reduction (vph)	0	17	0	0	66	0	0	10	0	0	2	0
Lane Group Flow (vph)	39	145	0	86	221	0	129	288	0	54	403	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	12.4	12.4		12.4	12.4		20.0	20.0		20.0	20.0	
Effective Green, g (s)	12.4	12.4		12.4	12.4		20.0	20.0		20.0	20.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.45	0.45		0.45	0.45	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	281	500		305	462		336	786		386	802	
v/s Ratio Prot		0.08			c0.13			0.17			c0.23	
v/s Ratio Perm	0.04			0.08			0.17			0.06		
v/c Ratio	0.14	0.29		0.28	0.48		0.38	0.37		0.14	0.50	
Uniform Delay, d1	12.0	12.5		12.5	13.3		8.1	8.0		7.2	8.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.4		0.6	0.9		1.8	0.7		0.4	1.2	
Delay (s)	12.3	12.9		13.1	14.2		9.9	8.7		7.6	9.9	
Level of Service	B	B		B	B		A	A		A	A	
Approach Delay (s)		12.8			14.0			9.1			9.6	
Approach LOS		B			B			A			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	44.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	2	37	0	52	68	10	0	531	190	7	124	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Hourly flow rate (vph)	8	52	0	57	91	13	0	610	244	14	151	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								745				
pX, platoon unblocked	0.72	0.72		0.72	0.72	0.72				0.72		
vC, conflicting volume	985	1048	166	952	941	732	181			854		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	786	874	166	741	726	436	181			605		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	95	75	100	70	64	97	100			98		
cM capacity (veh/h)	154	205	883	191	249	451	1406			605		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	60	161	854	195
Volume Left	8	57	0	14
Volume Right	0	13	244	30
cSH	196	233	1406	605
Volume to Capacity	0.31	0.69	0.00	0.02
Queue Length 95th (ft)	31	112	0	2
Control Delay (s)	31.3	49.0	0.0	1.1
Lane LOS	D	E		A
Approach Delay (s)	31.3	49.0	0.0	1.1
Approach LOS	D	E		

Intersection Summary			
Average Delay	7.8		
Intersection Capacity Utilization	59.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	8	58	0	83	48	12	0	213	142	5	364	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Hourly flow rate (vph)	14	85	0	94	56	17	0	239	167	9	391	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								744				
pX, platoon unblocked												
vC, conflicting volume	788	826	401	785	752	323	411			406		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	788	826	401	785	752	323	411			406		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	95	72	100	61	83	98	100			99		
cM capacity (veh/h)	263	307	653	244	339	702	1158			1163		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	99	168	406	420
Volume Left	14	94	0	9
Volume Right	0	17	167	20
cSH	300	291	1158	1163
Volume to Capacity	0.33	0.58	0.00	0.01
Queue Length 95th (ft)	35	84	0	1
Control Delay (s)	22.8	33.0	0.0	0.3
Lane LOS	C	D		A
Approach Delay (s)	22.8	33.0	0.0	0.3
Approach LOS	C	D		

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	150	5	8	71	54	11	89	29	75	17	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.94			0.97			0.99	
Flt Protected		0.99			1.00			0.99			0.96	
Satd. Flow (prot)		1792			1642			1817			1714	
Flt Permitted		0.91			0.97			0.95			0.76	
Satd. Flow (perm)		1654			1595			1727			1360	
Peak-hour factor, PHF	0.50	0.69	0.84	0.58	0.92	0.74	0.62	0.83	0.75	0.73	0.75	0.50
Adj. Flow (vph)	58	217	6	14	77	73	18	107	39	103	23	10
RTOR Reduction (vph)	0	1	0	0	33	0	0	18	0	0	5	0
Lane Group Flow (vph)	0	280	0	0	131	0	0	146	0	0	131	0
Heavy Vehicles (%)	0%	6%	0%	0%	12%	6%	0%	1%	0%	6%	7%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.0			27.0			10.0			10.0	
Effective Green, g (s)		27.0			27.0			10.0			10.0	
Actuated g/C Ratio		0.55			0.55			0.20			0.20	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)		911			879			352			278	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.08			0.08			c0.10	
v/c Ratio		0.31			0.15			0.42			0.47	
Uniform Delay, d1		5.9			5.4			17.0			17.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.3			1.7			2.6	
Delay (s)		6.6			5.7			18.6			19.8	
Level of Service		A			A			B			B	
Approach Delay (s)		6.6			5.7			18.6			19.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.35		
Actuated Cycle Length (s)	49.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	142	18	45	213	83	11	27	34	109	76	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.94			0.99	
Flt Protected		1.00			0.99			0.99			0.97	
Satd. Flow (prot)		1801			1778			1778			1826	
Flt Permitted		0.99			0.93			0.92			0.77	
Satd. Flow (perm)		1784			1672			1643			1449	
Peak-hour factor, PHF	0.75	0.89	0.67	0.80	0.90	0.70	0.62	0.62	0.78	0.70	0.74	0.67
Adj. Flow (vph)	5	160	27	56	237	119	18	44	44	156	103	27
RTOR Reduction (vph)	0	10	0	0	25	0	0	30	0	0	5	0
Lane Group Flow (vph)	0	182	0	0	387	0	0	76	0	0	281	0
Heavy Vehicles (%)	0%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.4			25.4			17.4			17.4	
Effective Green, g (s)		25.4			25.4			17.4			17.4	
Actuated g/C Ratio		0.46			0.46			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		5.0			5.0			7.0			7.0	
Lane Grp Cap (vph)		827			775			522			460	
v/s Ratio Prot												
v/s Ratio Perm		0.10			c0.23			0.05			c0.19	
v/c Ratio		0.22			0.50			0.15			0.61	
Uniform Delay, d1		8.8			10.3			13.4			15.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			1.1			0.5			4.9	
Delay (s)		9.1			11.3			13.8			20.7	
Level of Service		A			B			B			C	
Approach Delay (s)		9.1			11.3			13.8			20.7	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	54.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	68.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

St. Joseph County No Build 2035 Conditions

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	386	8	4	88	31	2	71	94	70	26	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.99			1.00	1.00		1.00	1.00		0.97	1.00
Satd. Flow (prot)		1820			1733	1495		1893	1615		1777	1369
Flt Permitted		0.95			0.94	1.00		0.96	1.00		0.73	1.00
Satd. Flow (perm)		1735			1638	1495		1827	1615		1343	1369
Peak-hour factor, PHF	0.83	0.68	0.38	0.38	0.75	0.78	0.25	0.72	0.71	0.84	0.66	0.54
Adj. Flow (vph)	78	568	21	11	117	40	8	99	132	83	39	65
RTOR Reduction (vph)	0	1	0	0	0	16	0	0	111	0	0	55
Lane Group Flow (vph)	0	666	0	0	128	24	0	107	21	0	122	10
Heavy Vehicles (%)	2%	3%	17%	0%	10%	8%	0%	0%	0%	5%	0%	18%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Actuated Green, G (s)		32.9			32.9	32.9		8.8	8.8		8.8	8.8
Effective Green, g (s)		32.9			32.9	32.9		8.8	8.8		8.8	8.8
Actuated g/C Ratio		0.59			0.59	0.59		0.16	0.16		0.16	0.16
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1032			975	889		291	257		214	218
v/s Ratio Prot												
v/s Ratio Perm		c0.38			0.08	0.02		0.06	0.01		c0.09	0.01
v/c Ratio		0.65			0.13	0.03		0.37	0.08		0.57	0.05
Uniform Delay, d1		7.4			4.9	4.6		20.8	19.8		21.5	19.7
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		2.1			0.2	0.0		0.8	0.1		3.6	0.1
Delay (s)		9.5			5.1	4.6		21.6	19.9		25.1	19.8
Level of Service		A			A	A		C	B		C	B
Approach Delay (s)		9.5			5.0			20.7			23.3	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	55.3	Sum of lost time (s)	13.6
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	136	4	64	365	92	13	37	30	82	69	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.99			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.98			0.99	1.00		0.99	1.00		0.97	1.00
Satd. Flow (prot)		1818			1882	1599		1872	1615		1851	1553
Flt Permitted		0.72			0.88	1.00		0.86	1.00		0.80	1.00
Satd. Flow (perm)		1337			1674	1599		1627	1615		1516	1553
Peak-hour factor, PHF	0.74	0.90	0.38	0.68	0.92	0.85	0.62	0.75	0.86	0.88	0.82	0.77
Adj. Flow (vph)	88	151	11	94	397	108	21	49	35	93	84	132
RTOR Reduction (vph)	0	2	0	0	0	52	0	0	27	0	0	63
Lane Group Flow (vph)	0	248	0	0	491	56	0	70	8	0	177	69
Heavy Vehicles (%)	6%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		custom
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		6
Actuated Green, G (s)		28.0			28.0	28.0		12.2	12.2		12.2	28.0
Effective Green, g (s)		28.0			28.0	28.0		12.2	12.2		12.2	28.0
Actuated g/C Ratio		0.52			0.52	0.52		0.23	0.23		0.23	0.52
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	5.5
Lane Grp Cap (vph)		696			871	832		369	366		344	808
v/s Ratio Prot												
v/s Ratio Perm		0.19			c0.29	0.04		0.04	0.00		c0.12	0.04
v/c Ratio		0.36			0.56	0.07		0.19	0.02		0.51	0.09
Uniform Delay, d1		7.6			8.8	6.4		16.8	16.2		18.2	6.5
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.8			1.6	0.1		0.3	0.0		1.3	0.1
Delay (s)		8.4			10.3	6.5		17.1	16.2		19.5	6.6
Level of Service		A			B	A		B	B		B	A
Approach Delay (s)		8.4			9.6			16.8			14.0	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	13.6
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	552	132	3	103	72	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.50	0.88	0.82	0.25
Hourly flow rate (vph)	600	143	6	117	88	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked			0.85		0.85	0.85
vC, conflicting volume			600		729	600
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			441		593	441
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		77	98
cM capacity (veh/h)			899		388	527

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	600	143	123	96
Volume Left	0	0	6	88
Volume Right	0	143	0	8
cSH	1700	1700	899	397
Volume to Capacity	0.35	0.08	0.01	0.24
Queue Length 95th (ft)	0	0	1	23
Control Delay (s)	0.0	0.0	0.5	16.9
Lane LOS			A	C
Approach Delay (s)	0.0		0.5	16.9
Approach LOS				C

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	39.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	165	153	5	376	229	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.84	0.50	0.91	0.82	0.50
Hourly flow rate (vph)	176	182	10	413	279	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked						
vC, conflicting volume			176		609	176
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			176		609	176
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		39	99
cM capacity (veh/h)			1413		459	873

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	176	182	423	285
Volume Left	0	0	10	279
Volume Right	0	182	0	6
cSH	1700	1700	1413	463
Volume to Capacity	0.10	0.11	0.01	0.62
Queue Length 95th (ft)	0	0	1	102
Control Delay (s)	0.0	0.0	0.2	24.4
Lane LOS			A	C
Approach Delay (s)	0.0		0.2	24.4
Approach LOS				C

Intersection Summary			
Average Delay	6.6		
Intersection Capacity Utilization	43.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	31	0	4	0	0	0	0	591	71	66	90	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Hourly flow rate (vph)	42	0	8	0	0	0	0	844	113	73	225	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	794	1329	112	1111	1216	422	225			957		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	794	1329	112	1111	1216	422	225			957		
tC, single (s)	7.7	6.5	7.4	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.6	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	83	100	99	100	100	100	100			86		
cM capacity (veh/h)	240	135	850	145	155	580	1341			534		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	50	422	422	113	73	112	112
Volume Left	42	0	0	0	73	0	0
Volume Right	8	0	0	113	0	0	0
cSH	272	1700	1700	1700	534	1700	1700
Volume to Capacity	0.18	0.25	0.25	0.07	0.14	0.07	0.07
Queue Length 95th (ft)	16	0	0	0	12	0	0
Control Delay (s)	21.2	0.0	0.0	0.0	12.8	0.0	0.0
Lane LOS	C				B		
Approach Delay (s)	21.2	0.0			3.1		
Approach LOS	C						

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	33.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	113	0	10	0	0	0	0	104	55	125	348	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Hourly flow rate (vph)	130	0	20	0	0	0	0	141	81	179	409	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	837	988	205	722	907	70	409			221		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	837	988	205	722	907	70	409			221		
tC, single (s)	7.5	6.5	7.2	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	44	100	97	100	100	100	100			84		
cM capacity (veh/h)	231	210	763	269	231	978	1146			1124		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	150	70	70	81	179	205	205
Volume Left	130	0	0	0	179	0	0
Volume Right	20	0	0	81	0	0	0
cSH	255	1700	1700	1700	1124	1700	1700
Volume to Capacity	0.59	0.04	0.04	0.05	0.16	0.12	0.12
Queue Length 95th (ft)	85	0	0	0	14	0	0
Control Delay (s)	37.6	0.0	0.0	0.0	8.8	0.0	0.0
Lane LOS	E				A		
Approach Delay (s)	37.6	0.0			2.7		
Approach LOS	E						

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	32	0	109	21	601	0	0	124	81
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Hourly flow rate (vph)	0	0	0	41	0	170	28	835	0	0	151	86
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	795	1042	76	966	1128	417	237			835		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	795	1042	76	966	1128	417	237			835		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.4			2.2		
p0 queue free %	100	100	100	79	100	69	98			100		
cM capacity (veh/h)	189	223	970	194	201	552	1224			794		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	211	28	417	417	76	76	86
Volume Left	41	28	0	0	0	0	0
Volume Right	170	0	0	0	0	0	86
cSH	408	1224	1700	1700	1700	1700	1700
Volume to Capacity	0.52	0.02	0.25	0.25	0.04	0.04	0.05
Queue Length 95th (ft)	72	2	0	0	0	0	0
Control Delay (s)	22.9	8.0	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	22.9	0.3			0.0		
Approach LOS	C						

Intersection Summary				
Average Delay	3.9			
Intersection Capacity Utilization	33.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	102	0	108	13	204	0	0	371	166
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Hourly flow rate (vph)	0	0	0	138	0	161	14	304	0	0	431	216
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	773	764	216	548	980	152	647			304		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	773	764	216	548	980	152	647			304		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.5	4.3			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.6	2.3			2.2		
p0 queue free %	100	100	100	67	100	80	98			100		
cM capacity (veh/h)	227	327	789	418	248	790	889			1253		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	299	14	152	152	216	216	216
Volume Left	138	14	0	0	0	0	0
Volume Right	161	0	0	0	0	0	216
cSH	560	889	1700	1700	1700	1700	1700
Volume to Capacity	0.53	0.02	0.09	0.09	0.13	0.13	0.13
Queue Length 95th (ft)	78	1	0	0	0	0	0
Control Delay (s)	18.5	9.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	18.5	0.4			0.0		
Approach LOS	C						

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	35.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	24	686	199	4	5	5
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.79	0.84	0.78	0.38	0.25	0.50
Hourly flow rate (vph)	30	817	255	11	20	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	266				1133	255
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	266				1133	255
tC, single (s)	4.4				7.2	6.4
tC, 2 stage (s)						
tF (s)	2.5				4.2	3.5
p0 queue free %	97				87	99
cM capacity (veh/h)	1143				159	731

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1
Volume Total	30	817	255	11	30
Volume Left	30	0	0	0	20
Volume Right	0	0	0	11	10
cSH	1143	1700	1700	1700	215
Volume to Capacity	0.03	0.48	0.15	0.01	0.14
Queue Length 95th (ft)	2	0	0	0	12
Control Delay (s)	8.2	0.0	0.0	0.0	24.4
Lane LOS	A				C
Approach Delay (s)	0.3		0.0		24.4
Approach LOS					C

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	46.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Volume (veh/h)	5	308	508	5	8	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.50	0.93	0.94	0.33	0.62	0.75
Hourly flow rate (vph)	10	331	540	15	13	41
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	556				892	540
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	556				892	540
tC, single (s)	4.4				6.5	6.4
tC, 2 stage (s)						
tF (s)	2.4				3.6	3.5
p0 queue free %	99				96	92
cM capacity (veh/h)	909				297	513

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1
Volume Total	10	331	540	15	54
Volume Left	10	0	0	0	13
Volume Right	0	0	0	15	41
cSH	909	1700	1700	1700	438
Volume to Capacity	0.01	0.19	0.32	0.01	0.12
Queue Length 95th (ft)	1	0	0	0	11
Control Delay (s)	9.0	0.0	0.0	0.0	14.4
Lane LOS	A				B
Approach Delay (s)	0.3		0.0		14.4
Approach LOS					B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	7	68	681	7	22	212
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.69	0.82	0.62	0.56	0.90
Hourly flow rate (vph)	11	99	830	11	39	236
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1145	830			842	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1145	830			842	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	74			95	
cM capacity (veh/h)	212	373			803	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	110	830	11	39	236
Volume Left	11	0	0	39	0
Volume Right	99	0	11	0	0
cSH	346	1700	1700	803	1700
Volume to Capacity	0.32	0.49	0.01	0.05	0.14
Queue Length 95th (ft)	33	0	0	4	0
Control Delay (s)	20.2	0.0	0.0	9.7	0.0
Lane LOS	C			A	
Approach Delay (s)	20.2	0.0		1.4	
Approach LOS	C				

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	4	55	320	2	58	541
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.38	0.75	0.91	0.25	0.62	0.89
Hourly flow rate (vph)	11	73	352	8	94	608
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1147	352			360	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1147	352			360	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	89			92	
cM capacity (veh/h)	205	696			1210	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	84	352	8	94	608
Volume Left	11	0	0	94	0
Volume Right	73	0	8	0	0
cSH	535	1700	1700	1210	1700
Volume to Capacity	0.16	0.21	0.00	0.08	0.36
Queue Length 95th (ft)	14	0	0	6	0
Control Delay (s)	13.0	0.0	0.0	8.2	0.0
Lane LOS	B			A	
Approach Delay (s)	13.0	0.0		1.1	
Approach LOS	B				

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	38.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	108	79	92	90	87	151	632	14	20	151	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.93		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1668		1444	1715		1583	1851		1805	1752	
Flt Permitted	0.61	1.00		0.57	1.00		0.63	1.00		0.23	1.00	
Satd. Flow (perm)	1131	1668		862	1715		1057	1851		434	1752	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	39	132	118	148	114	113	184	702	20	30	186	11
RTOR Reduction (vph)	0	51	0	0	57	0	0	1	0	0	3	0
Lane Group Flow (vph)	39	199	0	148	170	0	184	721	0	30	194	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	15.5	15.5		15.5	15.5		29.2	29.2		29.2	29.2	
Effective Green, g (s)	15.5	15.5		15.5	15.5		29.2	29.2		29.2	29.2	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.51	0.51		0.51	0.51	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	309	456		236	469		544	953		224	902	
v/s Ratio Prot		0.12			0.10			c0.39			0.11	
v/s Ratio Perm	0.03			c0.17			0.17			0.07		
v/c Ratio	0.13	0.44		0.63	0.36		0.34	0.76		0.13	0.22	
Uniform Delay, d1	15.5	17.0		18.1	16.6		8.1	10.9		7.2	7.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.8		5.4	0.6		0.9	4.3		0.7	0.3	
Delay (s)	15.7	17.8		23.4	17.2		9.0	15.3		7.8	7.8	
Level of Service	B	B		C	B		A	B		A	A	
Approach Delay (s)		17.5			19.7			14.0			7.8	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	83.8%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	37	122	33	83	130	133	126	263	29	33	382	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	0.92		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1790		1583	1655		1410	1745		1410	1782	
Flt Permitted	0.49	1.00		0.64	1.00		0.44	1.00		0.56	1.00	
Satd. Flow (perm)	870	1790		1068	1655		657	1745		826	1782	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	44	142	43	98	151	175	147	289	51	61	444	15
RTOR Reduction (vph)	0	17	0	0	65	0	0	10	0	0	2	0
Lane Group Flow (vph)	44	168	0	98	261	0	147	330	0	61	457	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	13.6	13.6		13.6	13.6		21.8	21.8		21.8	21.8	
Effective Green, g (s)	13.6	13.6		13.6	13.6		21.8	21.8		21.8	21.8	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.46	0.46		0.46	0.46	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	250	514		306	475		302	803		380	820	
v/s Ratio Prot		0.09			c0.16			0.19			c0.26	
v/s Ratio Perm	0.05			0.09			0.22			0.07		
v/c Ratio	0.18	0.33		0.32	0.55		0.49	0.41		0.16	0.56	
Uniform Delay, d1	12.7	13.3		13.3	14.3		8.9	8.5		7.5	9.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4		0.7	1.5		3.0	0.8		0.5	1.6	
Delay (s)	13.1	13.7		14.0	15.8		11.9	9.4		8.0	10.9	
Level of Service	B	B		B	B		B	A		A	B	
Approach Delay (s)		13.6			15.4			10.1			10.5	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	2	42	0	59	77	11	0	606	216	8	141	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Hourly flow rate (vph)	8	59	0	64	103	15	0	697	277	16	172	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								745				
pX, platoon unblocked	0.65	0.65		0.65	0.65	0.65				0.65		
vC, conflicting volume	1123	1195	190	1087	1075	835	208			973		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	919	1030	190	862	845	475	208			688		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	91	60	100	47	46	96	100			97		
cM capacity (veh/h)	89	148	857	121	190	385	1375			504		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	67	181	973	224
Volume Left	8	64	0	16
Volume Right	0	15	277	36
cSH	137	163	1375	504
Volume to Capacity	0.49	1.11	0.00	0.03
Queue Length 95th (ft)	57	236	0	2
Control Delay (s)	54.3	159.5	0.0	1.3
Lane LOS	F	F		A
Approach Delay (s)	54.3	159.5	0.0	1.3
Approach LOS	F	F		

Intersection Summary			
Average Delay	22.7		
Intersection Capacity Utilization	66.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	9	66	0	94	54	14	0	243	162	5	415	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Hourly flow rate (vph)	16	97	0	107	64	20	0	273	191	9	446	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								744				
pX, platoon unblocked												
vC, conflicting volume	895	939	457	892	854	368	468			464		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	895	939	457	892	854	368	468			464		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	93	63	100	43	79	97	100			99		
cM capacity (veh/h)	212	264	608	188	296	662	1104			1108		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	113	191	464	477
Volume Left	16	107	0	9
Volume Right	0	20	191	22
cSH	255	234	1104	1108
Volume to Capacity	0.44	0.81	0.00	0.01
Queue Length 95th (ft)	53	154	0	1
Control Delay (s)	29.8	64.4	0.0	0.2
Lane LOS	D	F		A
Approach Delay (s)	29.8	64.4	0.0	0.2
Approach LOS	D	F		

Intersection Summary			
Average Delay	12.6		
Intersection Capacity Utilization	49.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	171	5	9	81	61	13	102	33	86	19	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.94			0.97			0.99	
Flt Protected		0.99			1.00			0.99			0.96	
Satd. Flow (prot)		1792			1643			1818			1714	
Flt Permitted		0.90			0.96			0.94			0.73	
Satd. Flow (perm)		1639			1588			1724			1296	
Peak-hour factor, PHF	0.50	0.69	0.84	0.58	0.92	0.74	0.62	0.83	0.75	0.73	0.75	0.50
Adj. Flow (vph)	66	248	6	16	88	82	21	123	44	118	25	10
RTOR Reduction (vph)	0	1	0	0	38	0	0	17	0	0	4	0
Lane Group Flow (vph)	0	319	0	0	148	0	0	171	0	0	149	0
Heavy Vehicles (%)	0%	6%	0%	0%	12%	6%	0%	1%	0%	6%	7%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.4			26.4			10.7			10.7	
Effective Green, g (s)		26.4			26.4			10.7			10.7	
Actuated g/C Ratio		0.54			0.54			0.22			0.22	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)		881			854			376			282	
v/s Ratio Prot												
v/s Ratio Perm		c0.19			0.09			0.10			c0.12	
v/c Ratio		0.36			0.17			0.45			0.53	
Uniform Delay, d1		6.5			5.8			16.7			17.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.9			0.3			1.8			3.4	
Delay (s)		7.4			6.1			18.5			20.4	
Level of Service		A			A			B			C	
Approach Delay (s)		7.4			6.1			18.5			20.4	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	49.1	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	162	20	52	243	94	13	31	38	124	87	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.94			0.99	
Flt Protected		1.00			0.99			0.99			0.97	
Satd. Flow (prot)		1802			1778			1780			1827	
Flt Permitted		0.99			0.93			0.91			0.77	
Satd. Flow (perm)		1785			1658			1625			1436	
Peak-hour factor, PHF	0.75	0.89	0.67	0.80	0.90	0.70	0.62	0.62	0.78	0.70	0.74	0.67
Adj. Flow (vph)	5	182	30	65	270	134	21	50	49	177	118	30
RTOR Reduction (vph)	0	10	0	0	25	0	0	33	0	0	5	0
Lane Group Flow (vph)	0	207	0	0	444	0	0	87	0	0	320	0
Heavy Vehicles (%)	0%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.2			26.2			18.2			18.2	
Effective Green, g (s)		26.2			26.2			18.2			18.2	
Actuated g/C Ratio		0.46			0.46			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		5.0			5.0			7.0			7.0	
Lane Grp Cap (vph)		829			770			524			463	
v/s Ratio Prot												
v/s Ratio Perm		0.12			c0.27			0.05			c0.22	
v/c Ratio		0.25			0.58			0.17			0.69	
Uniform Delay, d1		9.1			11.0			13.7			16.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			1.7			0.5			7.5	
Delay (s)		9.5			12.7			14.2			24.2	
Level of Service		A			B			B			C	
Approach Delay (s)		9.5			12.7			14.2			24.2	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	15.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	56.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	76.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Elkhart County No Build 2020 Conditions

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	99	0	258	286	801	0	0	499	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2993		1392	1612	4848			3059	1404
Flt Permitted				0.95		1.00	0.32	1.00			1.00	1.00
Satd. Flow (perm)				2993		1392	545	4848			3059	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.68	0.92	0.71	0.79	0.84	0.92	0.92	0.90	0.93
Adj. Flow (vph)	0	0	0	146	0	363	362	954	0	0	554	197
RTOR Reduction (vph)	0	0	0	0	0	129	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	146	0	234	362	954	0	0	554	197
Heavy Vehicles (%)	2%	2%	2%	17%	0%	16%	12%	7%	0%	0%	18%	15%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				16.4		16.4	40.7	40.7			23.5	68.1
Effective Green, g (s)				16.4		16.4	40.7	40.7			23.5	68.1
Actuated g/C Ratio				0.24		0.24	0.60	0.60			0.35	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				721		335	515	2897			1056	1404
v/s Ratio Prot							c0.12	0.20			0.18	
v/s Ratio Perm				0.05		c0.17	c0.29					0.14
v/c Ratio				0.20		0.70	0.70	0.33			0.52	0.14
Uniform Delay, d1				20.6		23.6	8.0	6.9			17.8	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1		5.8	3.5	0.1			0.9	0.2
Delay (s)				20.7		29.4	11.5	7.0			18.7	0.2
Level of Service				C		C	B	A			B	A
Approach Delay (s)		0.0			26.9			8.3			13.9	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	10.3
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	142	0	181	268	572	0	0	691	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3303		1429	1719	4848			3406	1553
Flt Permitted				0.95		1.00	0.23	1.00			1.00	1.00
Satd. Flow (perm)				3303		1429	415	4848			3406	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.25	0.78	0.83	0.90	0.92	0.25	0.84	0.81
Adj. Flow (vph)	0	0	0	171	0	232	323	636	0	0	823	542
RTOR Reduction (vph)	0	0	0	0	0	196	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	171	0	36	323	636	0	0	823	542
Heavy Vehicles (%)	2%	2%	2%	6%	0%	13%	5%	7%	0%	0%	6%	4%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				9.2		9.2	39.7	39.7			25.7	59.9
Effective Green, g (s)				9.2		9.2	39.7	39.7			25.7	59.9
Actuated g/C Ratio				0.15		0.15	0.66	0.66			0.43	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				507		219	469	3213			1461	1553
v/s Ratio Prot							c0.10	0.13			0.24	
v/s Ratio Perm				0.05		0.02	c0.35					c0.35
v/c Ratio				0.34		0.16	0.69	0.20			0.56	0.35
Uniform Delay, d1				22.6		22.0	6.0	3.9			12.9	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.3		0.3	3.4	0.1			0.8	0.6
Delay (s)				22.9		22.3	9.3	4.0			13.7	0.6
Level of Service				C		C	A	A			B	A
Approach Delay (s)		0.0			22.6			5.8			8.5	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	59.9	Sum of lost time (s)	5.1
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	635	134	177	421	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.74	0.92	0.92	0.92	0.92	0.85	0.69	0.81	0.87	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	747	194	219	484	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1294	1668	242	1523	1765	471	484			747		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1294	1668	242	1523	1765	471	484			747		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.5		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	100	100	100	100	100	100	100			71		
cM capacity (veh/h)	93	68	741	63	59	539	1075			749		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	498	443	219	242	242
Volume Left	0	0	0	219	0	0
Volume Right	0	0	194	0	0	0
cSH	1700	1700	1700	749	1700	1700
Volume to Capacity	0.00	0.29	0.26	0.29	0.14	0.14
Queue Length 95th (ft)	0	0	0	30	0	0
Control Delay (s)	0.0	0.0	0.0	11.8	0.0	0.0
Lane LOS	A			B		
Approach Delay (s)	0.0	0.0		3.7		
Approach LOS	A					

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	638	101	257	575	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.84	0.92	0.92	0.92	0.92	0.86	0.81	0.78	0.85	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	742	125	329	676	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1706	2077	338	1801	2140	433	676			742		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1706	2077	338	1801	2140	433	676			742		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	100	100	100	100	100	100			61		
cM capacity (veh/h)	41	32	635	35	29	571	911			835		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	495	372	329	338	338
Volume Left	0	0	0	329	0	0
Volume Right	0	0	125	0	0	0
cSH	1700	1700	1700	835	1700	1700
Volume to Capacity	0.00	0.29	0.22	0.39	0.20	0.20
Queue Length 95th (ft)	0	0	0	47	0	0
Control Delay (s)	0.0	0.0	0.0	12.1	0.0	0.0
Lane LOS	A			B		
Approach Delay (s)	0.0	0.0		4.0		
Approach LOS	A					

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	41.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	45	28	15	13	125	12	569	13	110	477	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1794		1805	1900	1538	1805	3393		1719	3331	
Flt Permitted	0.54	1.00		0.68	1.00	1.00	0.42	1.00		0.25	1.00	
Satd. Flow (perm)	1018	1794		1296	1900	1538	800	3393		446	3331	
Peak-hour factor, PHF	0.75	0.62	0.65	0.50	0.60	0.73	0.69	0.89	0.50	0.70	0.82	0.75
Adj. Flow (vph)	101	73	43	30	22	171	17	639	26	157	582	28
RTOR Reduction (vph)	0	16	0	0	0	144	0	2	0	0	2	0
Lane Group Flow (vph)	101	100	0	30	22	27	17	663	0	157	608	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	6%	0%	5%	8%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	25.9	18.3		15.7	13.2	13.2	30.3	29.2		46.4	39.8	
Effective Green, g (s)	25.9	18.3		15.7	13.2	13.2	30.3	29.2		46.4	39.8	
Actuated g/C Ratio	0.31	0.22		0.19	0.16	0.16	0.36	0.35		0.55	0.47	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	383	389		256	297	240	300	1172		421	1569	
v/s Ratio Prot	c0.02	0.06		0.00	0.01		0.00	c0.20		c0.05	c0.18	
v/s Ratio Perm	c0.06			0.02		0.02	0.02			0.15		
v/c Ratio	0.26	0.26		0.12	0.07	0.11	0.06	0.57		0.37	0.39	
Uniform Delay, d1	21.7	27.5		28.5	30.4	30.6	17.5	22.5		10.8	14.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.7		0.2	0.2	0.4	0.1	1.0		0.6	0.3	
Delay (s)	22.1	28.2		28.7	30.7	31.0	17.6	23.5		11.3	14.8	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		25.3			30.7			23.4			14.1	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	84.5	Sum of lost time (s)	27.7
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	24	17	37	37	121	32	595	12	122	630	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1794		1805	1900	1442	1805	3487		1736	3489	
Flt Permitted	0.72	1.00		0.63	1.00	1.00	0.33	1.00		0.24	1.00	
Satd. Flow (perm)	1374	1794		1202	1900	1442	635	3487		433	3489	
Peak-hour factor, PHF	0.50	0.46	0.54	0.65	0.71	0.78	0.65	0.90	0.69	0.81	0.88	0.68
Adj. Flow (vph)	46	52	31	57	52	155	49	661	17	151	716	74
RTOR Reduction (vph)	0	17	0	0	0	127	0	1	0	0	5	0
Lane Group Flow (vph)	46	66	0	57	52	28	49	677	0	151	785	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	3%	9%	4%	2%	2%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	16.9	12.6		19.7	14.0	14.0	30.0	26.2		42.0	32.7	
Effective Green, g (s)	16.9	12.6		19.7	14.0	14.0	30.0	26.2		42.0	32.7	
Actuated g/C Ratio	0.22	0.16		0.25	0.18	0.18	0.39	0.34		0.54	0.42	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	323	291		349	343	260	303	1177		407	1470	
v/s Ratio Prot	0.01	c0.04		c0.01	0.03		0.01	0.19		c0.05	c0.22	
v/s Ratio Perm	0.02			0.03		0.02	0.05			0.15		
v/c Ratio	0.14	0.23		0.16	0.15	0.11	0.16	0.57		0.37	0.53	
Uniform Delay, d1	24.4	28.3		22.3	26.8	26.6	15.0	21.1		10.2	16.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.8		0.2	0.4	0.4	0.3	1.1		0.6	0.7	
Delay (s)	24.6	29.1		22.5	27.2	27.0	15.3	22.2		10.8	17.4	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		27.5			26.1			21.7			16.4	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	77.6	Sum of lost time (s)	22.8
Intersection Capacity Utilization	47.1%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	20	12	30	4	9	24	6	531	8	17	485	7
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.69	0.54	0.75	0.50	0.79	0.62	0.87	0.59	0.54	0.84	0.75
Hourly flow rate (vph)	40	17	56	5	18	30	10	610	14	31	577	9
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1321	1288	582	1346	1286	617	587			624		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1321	1288	582	1346	1286	617	587			624		
tC, single (s)	7.1	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	64	89	89	95	89	94	99			97		
cM capacity (veh/h)	112	152	517	102	159	493	998			967		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	113	54	634	618
Volume Left	40	5	10	31
Volume Right	56	30	14	9
cSH	195	237	998	967
Volume to Capacity	0.58	0.23	0.01	0.03
Queue Length 95th (ft)	79	21	1	3
Control Delay (s)	46.1	24.6	0.3	0.9
Lane LOS	E	C	A	A
Approach Delay (s)	46.1	24.6	0.3	0.9
Approach LOS	E	C		

Intersection Summary			
Average Delay	5.1		
Intersection Capacity Utilization	51.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	7	17	14	3	8	26	24	607	0	32	638	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.62	0.65	0.50	0.44	0.75	0.79	0.96	0.25	0.52	0.83	0.75
Hourly flow rate (vph)	14	27	22	6	18	35	30	632	0	62	769	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1637	1593	777	1629	1602	632	786			632		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1637	1593	777	1629	1602	632	786			632		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	77	72	95	89	81	93	96			94		
cM capacity (veh/h)	60	98	400	57	96	477	842			960		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	63	59	663	848
Volume Left	14	6	30	62
Volume Right	22	35	0	17
cSH	111	160	842	960
Volume to Capacity	0.57	0.37	0.04	0.06
Queue Length 95th (ft)	68	39	3	5
Control Delay (s)	73.7	39.9	0.9	1.6
Lane LOS	F	E	A	A
Approach Delay (s)	73.7	39.9	0.9	1.6
Approach LOS	F	E		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	26	156	8	3	106	33	13	67	6	36	29	23
Peak Hour Factor	0.60	0.82	0.44	0.50	0.77	0.83	0.75	0.60	0.62	0.55	0.84	0.59
Hourly flow rate (vph)	43	190	18	6	138	40	17	112	10	65	35	39

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	43	208	75	109	139	139
Volume Left (vph)	43	0	6	0	17	65
Volume Right (vph)	0	18	0	40	10	39
Hadj (s)	0.72	0.07	0.22	-0.14	0.03	0.31
Departure Headway (s)	6.2	5.6	5.8	5.5	5.3	5.5
Degree Utilization, x	0.08	0.32	0.12	0.16	0.20	0.21
Capacity (veh/h)	544	615	581	619	629	598
Control Delay (s)	8.5	10.0	8.4	8.3	9.6	10.0
Approach Delay (s)	9.8		8.4		9.6	10.0
Approach LOS	A		A		A	B

Intersection Summary			
Delay	9.4		
HCM Level of Service	A		
Intersection Capacity Utilization	33.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	23	146	7	3	188	53	10	44	4	49	68	24
Peak Hour Factor	0.58	0.97	0.75	0.50	0.81	0.82	0.45	0.73	0.75	0.75	0.79	0.61
Hourly flow rate (vph)	40	151	9	6	232	65	22	60	5	65	86	39

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	40	160	122	181	88	191
Volume Left (vph)	40	0	6	0	22	65
Volume Right (vph)	0	9	0	65	5	39
Hadj (s)	0.99	0.14	0.20	-0.05	0.10	0.02
Departure Headway (s)	6.7	5.8	5.8	5.5	5.6	5.3
Degree Utilization, x	0.07	0.26	0.20	0.28	0.14	0.28
Capacity (veh/h)	507	585	593	622	585	624
Control Delay (s)	9.0	9.6	9.0	9.4	9.5	10.4
Approach Delay (s)	9.5		9.3		9.5	10.4
Approach LOS	A		A		A	B

Intersection Summary			
Delay	9.6		
HCM Level of Service	A		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	36	2	2	38	15	0	59	2	9	22	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.75	0.25	0.25	0.67	0.44	0.25	0.69	0.25	0.67	0.83	0.25
Hourly flow rate (vph)	8	48	8	8	57	34	0	86	8	13	27	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	209	151	31	179	151	90	35			94		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	209	151	31	179	151	90	35			94		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	93	99	99	92	96	100			99		
cM capacity (veh/h)	679	732	1050	737	738	974	1590			1513		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	99	94	48
Volume Left	8	8	0	13
Volume Right	8	34	8	8
cSH	753	805	1590	1513
Volume to Capacity	0.08	0.12	0.00	0.01
Queue Length 95th (ft)	7	10	0	1
Control Delay (s)	10.2	10.1	0.0	2.1
Lane LOS	B	B		A
Approach Delay (s)	10.2	10.1	0.0	2.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	18.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	34	3	5	51	17	4	42	3	3	50	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.65	0.50	0.50	0.73	0.47	0.38	0.81	0.50	0.50	0.45	0.25
Hourly flow rate (vph)	0	52	6	10	70	36	11	52	6	6	111	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	274	206	115	235	207	55	119			58		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	274	206	115	235	207	55	119			58		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	92	99	99	90	96	99			100		
cM capacity (veh/h)	601	681	943	671	682	998	1481			1559		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	58	116	68	125
Volume Left	0	10	11	6
Volume Right	6	36	6	8
cSH	701	756	1481	1559
Volume to Capacity	0.08	0.15	0.01	0.00
Queue Length 95th (ft)	7	14	1	0
Control Delay (s)	10.6	10.6	1.2	0.4
Lane LOS	B	B	A	A
Approach Delay (s)	10.6	10.6	1.2	0.4
Approach LOS	B	B		

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	18.4%	ICU Level of Service	A
Analysis Period (min)	15		

Elkhart County No Build 2035 Conditions

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	113	0	295	329	913	0	0	569	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2993		1392	1612	4848			3059	1404
Flt Permitted				0.95		1.00	0.25	1.00			1.00	1.00
Satd. Flow (perm)				2993		1392	427	4848			3059	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.68	0.92	0.71	0.79	0.84	0.92	0.92	0.90	0.93
Adj. Flow (vph)	0	0	0	166	0	415	416	1087	0	0	632	225
RTOR Reduction (vph)	0	0	0	0	0	90	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	166	0	325	416	1087	0	0	632	225
Heavy Vehicles (%)	2%	2%	2%	17%	0%	16%	12%	7%	0%	0%	18%	15%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				24.9		24.9	44.6	44.6			25.3	80.5
Effective Green, g (s)				24.9		24.9	44.6	44.6			25.3	80.5
Actuated g/C Ratio				0.31		0.31	0.55	0.55			0.31	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				926		431	446	2686			961	1404
v/s Ratio Prot							c0.16	0.22			0.21	
v/s Ratio Perm				0.06		c0.23	c0.35					0.16
v/c Ratio				0.18		0.75	0.93	0.40			0.66	0.16
Uniform Delay, d1				20.3		25.0	12.9	10.3			23.9	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.1		7.1	26.2	0.2			2.2	0.2
Delay (s)				20.4		32.1	39.1	10.5			26.1	0.2
Level of Service				C		C	D	B			C	A
Approach Delay (s)		0.0			28.8			18.4			19.3	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	10.3
Intersection Capacity Utilization	50.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	162	0	207	305	652	0	0	787	501
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3303		1429	1719	4848			3406	1553
Flt Permitted				0.95		1.00	0.18	1.00			1.00	1.00
Satd. Flow (perm)				3303		1429	334	4848			3406	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.25	0.78	0.83	0.90	0.92	0.25	0.84	0.81
Adj. Flow (vph)	0	0	0	195	0	265	367	724	0	0	937	619
RTOR Reduction (vph)	0	0	0	0	0	226	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	195	0	39	367	724	0	0	937	619
Heavy Vehicles (%)	2%	2%	2%	6%	0%	13%	5%	7%	0%	0%	6%	4%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				9.8		9.8	46.2	46.2			29.2	67.0
Effective Green, g (s)				9.8		9.8	46.2	46.2			29.2	67.0
Actuated g/C Ratio				0.15		0.15	0.69	0.69			0.44	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				483		209	476	3343			1484	1553
v/s Ratio Prot							c0.14	0.15			0.28	
v/s Ratio Perm				0.06		0.03	c0.39					c0.40
v/c Ratio				0.40		0.19	0.77	0.22			0.63	0.40
Uniform Delay, d1				25.9		25.1	9.3	3.8			14.7	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.4		0.3	6.9	0.1			1.2	0.8
Delay (s)				26.4		25.4	16.2	3.9			15.9	0.8
Level of Service				C		C	B	A			B	A
Approach Delay (s)		0.0			25.8			8.0			9.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	5.1
Intersection Capacity Utilization	55.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	724	153	202	480	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.74	0.92	0.92	0.92	0.92	0.85	0.69	0.81	0.87	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	852	222	249	552	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1476	1902	276	1737	2013	537	552			852		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1476	1902	276	1737	2013	537	552			852		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.5		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	100	100	100	100	100	100	100			63		
cM capacity (veh/h)	63	43	704	40	37	488	1014			678		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	568	506	249	276	276
Volume Left	0	0	0	249	0	0
Volume Right	0	0	222	0	0	0
cSH	1700	1700	1700	678	1700	1700
Volume to Capacity	0.00	0.33	0.30	0.37	0.16	0.16
Queue Length 95th (ft)	0	0	0	42	0	0
Control Delay (s)	0.0	0.0	0.0	13.4	0.0	0.0
Lane LOS	A			B		
Approach Delay (s)	0.0	0.0		4.2		
Approach LOS	A					

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	58.6%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	728	115	293	656	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.84	0.92	0.92	0.92	0.92	0.86	0.81	0.78	0.85	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	847	142	376	772	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1946	2370	386	2055	2441	494	772			847		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1946	2370	386	2055	2441	494	772			847		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	100	100	100	100	100	100			51		
cM capacity (veh/h)	24	17	590	20	16	521	839			761		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	564	424	376	386	386
Volume Left	0	0	0	376	0	0
Volume Right	0	0	142	0	0	0
cSH	1700	1700	1700	761	1700	1700
Volume to Capacity	0.00	0.33	0.25	0.49	0.23	0.23
Queue Length 95th (ft)	0	0	0	69	0	0
Control Delay (s)	0.0	0.0	0.0	14.2	0.0	0.0
Lane LOS	A			B		
Approach Delay (s)	0.0	0.0		4.7		
Approach LOS	A					

Intersection Summary			
Average Delay	2.5		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	52	32	18	15	142	14	648	15	125	543	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1795		1805	1900	1538	1805	3393		1719	3331	
Flt Permitted	0.53	1.00		0.67	1.00	1.00	0.39	1.00		0.20	1.00	
Satd. Flow (perm)	1005	1795		1277	1900	1538	737	3393		362	3331	
Peak-hour factor, PHF	0.75	0.62	0.65	0.50	0.60	0.73	0.69	0.89	0.50	0.70	0.82	0.75
Adj. Flow (vph)	116	84	49	36	25	195	20	728	30	179	662	32
RTOR Reduction (vph)	0	16	0	0	0	166	0	2	0	0	2	0
Lane Group Flow (vph)	116	117	0	36	25	29	20	756	0	179	692	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	6%	0%	5%	8%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	29.5	19.9		17.8	13.7	13.7	33.9	31.6		49.4	41.6	
Effective Green, g (s)	29.5	19.9		17.8	13.7	13.7	33.9	31.6		49.4	41.6	
Actuated g/C Ratio	0.33	0.22		0.20	0.15	0.15	0.37	0.35		0.54	0.46	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	418	394		274	287	232	303	1182		381	1528	
v/s Ratio Prot	c0.03	c0.07		0.01	0.01		0.00	c0.22		c0.06	0.21	
v/s Ratio Perm	0.06			0.02		0.02	0.02			0.19		
v/c Ratio	0.28	0.30		0.13	0.09	0.13	0.07	0.64		0.47	0.45	
Uniform Delay, d1	22.2	29.6		29.9	33.1	33.3	18.0	24.8		12.6	16.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.9		0.2	0.3	0.5	0.1	1.6		0.9	0.4	
Delay (s)	22.6	30.5		30.1	33.4	33.8	18.1	26.4		13.5	17.2	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		26.8			33.3			26.2			16.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	23.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	90.7	Sum of lost time (s)	16.6
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	27	19	42	42	138	36	679	14	140	718	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1794		1805	1900	1442	1805	3486		1736	3490	
Flt Permitted	0.72	1.00		0.70	1.00	1.00	0.26	1.00		0.20	1.00	
Satd. Flow (perm)	1365	1794		1323	1900	1442	496	3486		367	3490	
Peak-hour factor, PHF	0.50	0.46	0.54	0.65	0.71	0.78	0.65	0.90	0.69	0.81	0.88	0.68
Adj. Flow (vph)	52	59	35	65	59	177	55	754	20	173	816	84
RTOR Reduction (vph)	0	17	0	0	0	151	0	1	0	0	5	0
Lane Group Flow (vph)	52	77	0	65	59	26	55	773	0	173	895	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	3%	9%	4%	2%	2%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	18.0	12.0		18.0	12.0	12.0	33.9	28.7		45.2	34.5	
Effective Green, g (s)	18.0	12.0		18.0	12.0	12.0	33.9	28.7		45.2	34.5	
Actuated g/C Ratio	0.22	0.15		0.22	0.15	0.15	0.42	0.36		0.56	0.43	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	338	267		332	283	215	293	1243		393	1496	
v/s Ratio Prot	0.01	c0.04		c0.01	0.03		0.01	0.22		c0.06	c0.26	
v/s Ratio Perm	0.02			0.03		0.02	0.07			0.19		
v/c Ratio	0.15	0.29		0.20	0.21	0.12	0.19	0.62		0.44	0.60	
Uniform Delay, d1	25.0	30.5		25.2	30.1	29.7	14.1	21.4		10.5	17.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.3		0.3	0.8	0.5	0.3	1.4		0.8	1.0	
Delay (s)	25.2	31.7		25.5	30.8	30.2	14.4	22.8		11.3	18.7	
Level of Service	C	C		C	C	C	B	C		B	B	
Approach Delay (s)		29.4			29.3			22.2			17.5	
Approach LOS		C			C			C			B	

Intersection Summary			
HCM Average Control Delay	21.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	80.5	Sum of lost time (s)	22.8
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	22	14	35	4	10	27	7	606	9	19	553	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.69	0.54	0.75	0.50	0.79	0.62	0.87	0.59	0.54	0.84	0.75
Hourly flow rate (vph)	44	20	65	5	20	34	11	697	15	35	658	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1507	1470	666	1538	1470	704	673			712		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1507	1470	666	1538	1470	704	673			712		
tC, single (s)	7.1	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	43	83	86	92	84	92	99			96		
cM capacity (veh/h)	78	117	463	68	122	440	927			897		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	129	60	723	708
Volume Left	44	5	11	35
Volume Right	65	34	15	15
cSH	147	186	927	897
Volume to Capacity	0.88	0.32	0.01	0.04
Queue Length 95th (ft)	148	33	1	3
Control Delay (s)	104.5	33.1	0.3	1.0
Lane LOS	F	D	A	A
Approach Delay (s)	104.5	33.1	0.3	1.0
Approach LOS	F	D		

Intersection Summary			
Average Delay	10.1		
Intersection Capacity Utilization	57.3%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	19	16	3	9	30	27	692	0	36	728	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.62	0.65	0.50	0.44	0.75	0.79	0.96	0.25	0.52	0.83	0.75
Hourly flow rate (vph)	16	31	25	6	20	40	34	721	0	69	877	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1865	1815	887	1855	1825	721	897			721		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1865	1815	887	1855	1825	721	897			721		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	55	56	93	81	70	91	96			92		
cM capacity (veh/h)	36	70	346	32	69	424	765			890		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	71	66	755	966
Volume Left	16	6	34	69
Volume Right	25	40	0	20
cSH	74	115	765	890
Volume to Capacity	0.96	0.58	0.04	0.08
Queue Length 95th (ft)	124	71	4	6
Control Delay (s)	188.5	72.8	1.2	2.1
Lane LOS	F	F	A	A
Approach Delay (s)	188.5	72.8	1.2	2.1
Approach LOS	F	F		

Intersection Summary			
Average Delay	11.4		
Intersection Capacity Utilization	64.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	30	177	9	3	121	37	15	76	7	41	33	26
Peak Hour Factor	0.60	0.82	0.44	0.50	0.77	0.83	0.75	0.60	0.62	0.55	0.84	0.59
Hourly flow rate (vph)	50	216	20	6	157	45	20	127	11	75	39	44

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	50	236	85	123	158	158
Volume Left (vph)	50	0	6	0	20	75
Volume Right (vph)	0	20	0	45	11	44
Hadj (s)	0.72	0.07	0.21	-0.13	0.03	0.31
Departure Headway (s)	6.5	5.8	6.1	5.7	5.5	5.8
Degree Utilization, x	0.09	0.38	0.14	0.20	0.24	0.25
Capacity (veh/h)	527	594	557	591	600	572
Control Delay (s)	8.9	11.1	8.9	8.9	10.3	10.8
Approach Delay (s)	10.7		8.9		10.3	10.8
Approach LOS	B		A		B	B

Intersection Summary			
Delay	10.2		
HCM Level of Service	B		
Intersection Capacity Utilization	36.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	26	166	6	3	214	60	12	51	4	55	77	27
Peak Hour Factor	0.58	0.97	0.75	0.50	0.81	0.82	0.45	0.73	0.75	0.75	0.79	0.61
Hourly flow rate (vph)	45	171	8	6	264	73	27	70	5	73	97	44

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	45	179	138	205	102	215
Volume Left (vph)	45	0	6	0	27	73
Volume Right (vph)	0	8	0	73	5	44
Hadj (s)	0.99	0.15	0.20	-0.04	0.10	0.02
Departure Headway (s)	6.9	6.1	6.0	5.7	5.9	5.6
Degree Utilization, x	0.09	0.30	0.23	0.33	0.17	0.33
Capacity (veh/h)	488	559	572	598	545	599
Control Delay (s)	9.4	10.5	9.6	10.3	10.1	11.3
Approach Delay (s)	10.3		10.0		10.1	11.3
Approach LOS	B		B		B	B

Intersection Summary			
Delay	10.4		
HCM Level of Service	B		
Intersection Capacity Utilization	42.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	41	2	2	43	18	0	68	2	10	25	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.75	0.25	0.25	0.67	0.44	0.25	0.69	0.25	0.67	0.83	0.25
Hourly flow rate (vph)	8	55	8	8	64	41	0	99	8	15	30	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	240	171	34	202	171	103	38			107		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	240	171	34	202	171	103	38			107		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	92	99	99	91	96	100			99		
cM capacity (veh/h)	636	714	1045	705	719	958	1585			1497		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	71	113	107	53
Volume Left	8	8	0	15
Volume Right	8	41	8	8
cSH	730	789	1585	1497
Volume to Capacity	0.10	0.14	0.00	0.01
Queue Length 95th (ft)	8	12	0	1
Control Delay (s)	10.5	10.3	0.0	2.1
Lane LOS	B	B		A
Approach Delay (s)	10.5	10.3	0.0	2.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	5.9		
Intersection Capacity Utilization	19.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	38	3	5	58	19	4	48	3	3	57	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.65	0.50	0.50	0.73	0.47	0.38	0.81	0.50	0.50	0.45	0.25
Hourly flow rate (vph)	0	58	6	10	79	40	11	59	6	6	127	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	306	229	131	261	230	62	135			65		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	306	229	131	261	230	62	135			65		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	91	99	98	88	96	99			100		
cM capacity (veh/h)	562	662	924	639	662	989	1462			1550		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	64	130	76	141
Volume Left	0	10	11	6
Volume Right	6	40	6	8
cSH	680	736	1462	1550
Volume to Capacity	0.09	0.18	0.01	0.00
Queue Length 95th (ft)	8	16	1	0
Control Delay (s)	10.9	10.9	1.1	0.3
Lane LOS	B	B	A	A
Approach Delay (s)	10.9	10.9	1.1	0.3
Approach LOS	B	B		

Intersection Summary			
Average Delay	5.5		
Intersection Capacity Utilization	19.2%	ICU Level of Service	A
Analysis Period (min)	15		

Alternative A 2020

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	370	7	7	84	33	2	63	96	70	23	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.99			0.99	1.00		1.00	1.00		0.97	1.00
Satd. Flow (prot)		1822			1737	1495		1892	1615		1773	1369
Flt Permitted		0.95			0.90	1.00		0.96	1.00		0.73	1.00
Satd. Flow (perm)		1744			1576	1495		1820	1615		1342	1369
Peak-hour factor, PHF	0.83	0.68	0.38	0.38	0.75	0.78	0.25	0.72	0.71	0.84	0.66	0.54
Adj. Flow (vph)	69	544	18	18	112	42	8	88	135	83	35	56
RTOR Reduction (vph)	0	1	0	0	0	18	0	0	113	0	0	47
Lane Group Flow (vph)	0	630	0	0	130	24	0	96	22	0	118	9
Heavy Vehicles (%)	2%	3%	17%	0%	10%	8%	0%	0%	0%	5%	0%	18%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Actuated Green, G (s)		30.5			30.5	30.5		8.7	8.7		8.7	8.7
Effective Green, g (s)		30.5			30.5	30.5		8.7	8.7		8.7	8.7
Actuated g/C Ratio		0.58			0.58	0.58		0.16	0.16		0.16	0.16
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		1007			910	864		300	266		221	226
v/s Ratio Prot												
v/s Ratio Perm		c0.36			0.08	0.02		0.05	0.01		c0.09	0.01
v/c Ratio		0.63			0.14	0.03		0.32	0.08		0.53	0.04
Uniform Delay, d1		7.4			5.1	4.8		19.4	18.7		20.2	18.5
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.9			0.2	0.0		0.6	0.1		2.5	0.1
Delay (s)		9.3			5.3	4.8		20.1	18.8		22.7	18.6
Level of Service		A			A	A		C	B		C	B
Approach Delay (s)		9.3			5.2			19.3			21.4	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	52.8	Sum of lost time (s)	13.6
Intersection Capacity Utilization	59.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	132	4	64	362	95	11	33	33	94	60	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.99			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.98			0.99	1.00		0.99	1.00		0.97	1.00
Satd. Flow (prot)		1822			1882	1599		1873	1615		1845	1553
Flt Permitted		0.75			0.88	1.00		0.86	1.00		0.78	1.00
Satd. Flow (perm)		1381			1678	1599		1643	1615		1485	1553
Peak-hour factor, PHF	0.74	0.90	0.38	0.68	0.92	0.85	0.62	0.75	0.86	0.88	0.82	0.77
Adj. Flow (vph)	77	147	11	94	393	112	18	44	38	107	73	116
RTOR Reduction (vph)	0	2	0	0	0	54	0	0	29	0	0	56
Lane Group Flow (vph)	0	233	0	0	487	58	0	62	9	0	180	60
Heavy Vehicles (%)	6%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		custom
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		6
Actuated Green, G (s)		27.8			27.8	27.8		12.4	12.4		12.4	27.8
Effective Green, g (s)		27.8			27.8	27.8		12.4	12.4		12.4	27.8
Actuated g/C Ratio		0.52			0.52	0.52		0.23	0.23		0.23	0.52
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	5.5
Lane Grp Cap (vph)		714			867	826		379	372		342	802
v/s Ratio Prot												
v/s Ratio Perm		0.17			c0.29	0.04		0.04	0.01		c0.12	0.04
v/c Ratio		0.33			0.56	0.07		0.16	0.02		0.53	0.07
Uniform Delay, d1		7.6			8.9	6.5		16.6	16.0		18.1	6.5
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7			1.6	0.1		0.2	0.0		1.5	0.1
Delay (s)		8.2			10.4	6.6		16.8	16.0		19.6	6.6
Level of Service		A			B	A		B	B		B	A
Approach Delay (s)		8.2			9.7			16.5			14.5	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	53.8	Sum of lost time (s)	13.6
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	537	116	3	105	64	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.50	0.88	0.82	0.25
Hourly flow rate (vph)	584	126	6	119	78	8
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked			0.86		0.86	0.86
vC, conflicting volume			584		717	584
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			435		590	435
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		80	99
cM capacity (veh/h)			915		394	538

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	584	126	125	86
Volume Left	0	0	6	78
Volume Right	0	126	0	8
cSH	1700	1700	915	404
Volume to Capacity	0.34	0.07	0.01	0.21
Queue Length 95th (ft)	0	0	0	20
Control Delay (s)	0.0	0.0	0.5	16.3
Lane LOS			A	C
Approach Delay (s)	0.0		0.5	16.3
Approach LOS				C

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	38.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	187	134	5	394	201	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.84	0.50	0.91	0.82	0.50
Hourly flow rate (vph)	199	160	10	433	245	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked						
vC, conflicting volume			199		652	199
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			199		652	199
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		43	99
cM capacity (veh/h)			1386		433	847

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	199	160	443	251
Volume Left	0	0	10	245
Volume Right	0	160	0	6
cSH	1700	1700	1386	438
Volume to Capacity	0.12	0.09	0.01	0.57
Queue Length 95th (ft)	0	0	1	88
Control Delay (s)	0.0	0.0	0.2	23.7
Lane LOS			A	C
Approach Delay (s)	0.0		0.2	23.7
Approach LOS				C

Intersection Summary			
Average Delay	5.8		
Intersection Capacity Utilization	42.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	209	0	4	0	0	0	0	571	63	168	94	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Hourly flow rate (vph)	282	0	8	0	0	0	0	816	100	187	235	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1016	1524	118	1315	1424	408	235			916		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1016	1524	118	1315	1424	408	235			916		
tC, single (s)	7.7	6.5	7.4	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.6	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	0	100	99	100	100	100	100			66		
cM capacity (veh/h)	136	79	844	85	89	593	1329			557		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	290	408	408	100	187	118	118
Volume Left	282	0	0	0	187	0	0
Volume Right	8	0	0	100	0	0	0
cSH	139	1700	1700	1700	557	1700	1700
Volume to Capacity	2.09	0.24	0.24	0.06	0.34	0.07	0.07
Queue Length 95th (ft)	588	0	0	0	37	0	0
Control Delay (s)	564.6	0.0	0.0	0.0	14.7	0.0	0.0
Lane LOS	F				B		
Approach Delay (s)	564.6	0.0			6.5		
Approach LOS	F						

Intersection Summary			
Average Delay	102.4		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	374	0	9	0	0	0	0	133	49	364	369	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Hourly flow rate (vph)	430	0	18	0	0	0	0	180	72	520	434	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1564	1726	217	1455	1654	90	434			252		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1564	1726	217	1455	1654	90	434			252		
tC, single (s)	7.5	6.5	7.2	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	0	100	98	100	100	100	100			52		
cM capacity (veh/h)	48	47	749	56	51	950	1122			1091		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	448	90	90	72	520	217	217
Volume Left	430	0	0	0	520	0	0
Volume Right	18	0	0	72	0	0	0
cSH	50	1700	1700	1700	1091	1700	1700
Volume to Capacity	8.95	0.05	0.05	0.04	0.48	0.13	0.13
Queue Length 95th (ft)	Err	0	0	0	66	0	0
Control Delay (s)	Err	0.0	0.0	0.0	11.3	0.0	0.0
Lane LOS	F				B		
Approach Delay (s)	Err	0.0			6.1		
Approach LOS	F						

Intersection Summary			
Average Delay	2711.5		
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	209	0	4	0	0	0	0	571	63	168	94	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9						5.9	5.9	5.9	5.9	
Lane Util. Factor	0.95	0.95						0.95	1.00	1.00	0.95	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.95						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1588	1569						3539	1538	1318	3610	
Flt Permitted	0.95	0.95						1.00	1.00	0.24	1.00	
Satd. Flow (perm)	1588	1569						3539	1538	330	3610	
Peak-hour factor, PHF	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Adj. Flow (vph)	282	0	8	0	0	0	0	816	100	187	235	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	53	0	0	0
Lane Group Flow (vph)	147	141	0	0	0	0	0	816	48	187	235	0
Heavy Vehicles (%)	8%	0%	25%	2%	2%	2%	2%	2%	5%	37%	0%	2%
Turn Type	Perm								Perm	pm+pt		
Protected Phases		6						4		3	8	
Permitted Phases	6								4	8		
Actuated Green, G (s)	23.1	23.1						47.5	47.5	65.1	65.1	
Effective Green, g (s)	23.1	23.1						47.5	47.5	65.1	65.1	
Actuated g/C Ratio	0.23	0.23						0.48	0.48	0.65	0.65	
Clearance Time (s)	5.9	5.9						5.9	5.9	5.9	5.9	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	367	362						1681	731	330	2350	
v/s Ratio Prot								0.23		c0.07	0.07	
v/s Ratio Perm	c0.09	0.09							0.03	c0.30		
v/c Ratio	0.40	0.39						0.49	0.06	0.57	0.10	
Uniform Delay, d1	32.6	32.5						17.9	14.2	9.3	6.5	
Progression Factor	1.00	1.00						1.00	1.00	2.75	0.65	
Incremental Delay, d2	3.2	3.1						1.0	0.2	2.2	0.1	
Delay (s)	35.8	35.6						18.9	14.4	27.8	4.3	
Level of Service	D	D						B	B	C	A	
Approach Delay (s)		35.7			0.0			18.4			14.7	
Approach LOS		D			A			B			B	

Intersection Summary			
HCM Average Control Delay	20.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	374	0	9	0	0	0	0	133	49	364	369	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.9	5.9						5.9	5.9	5.9	5.9	
Lane Util. Factor	0.95	0.95						0.95	1.00	1.00	0.95	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.96						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1715	1685						3539	1615	1249	3610	
Flt Permitted	0.95	0.96						1.00	1.00	0.53	1.00	
Satd. Flow (perm)	1715	1685						3539	1615	699	3610	
Peak-hour factor, PHF	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Adj. Flow (vph)	430	0	18	0	0	0	0	180	72	520	434	0
RTOR Reduction (vph)	0	3	0	0	0	0	0	0	48	0	0	0
Lane Group Flow (vph)	224	221	0	0	0	0	0	180	24	520	434	0
Heavy Vehicles (%)	0%	0%	15%	2%	2%	2%	2%	2%	0%	37%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	13	0	0
Turn Type	Perm								Perm	pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4								2	6		
Actuated Green, G (s)	15.6	15.6						29.4	29.4	62.6	62.6	
Effective Green, g (s)	15.6	15.6						29.4	29.4	62.6	62.6	
Actuated g/C Ratio	0.17	0.17						0.33	0.33	0.70	0.70	
Clearance Time (s)	5.9	5.9						5.9	5.9	5.9	5.9	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	297	292						1156	528	653	2511	
v/s Ratio Prot								0.05		c0.24	0.12	
v/s Ratio Perm	0.13	0.13							0.01	c0.31		
v/c Ratio	0.75	0.76						0.16	0.04	0.80	0.17	
Uniform Delay, d1	35.4	35.4						21.5	20.7	7.7	4.7	
Progression Factor	1.00	1.00						1.00	1.00	1.55	1.09	
Incremental Delay, d2	10.4	10.6						0.3	0.2	6.3	0.1	
Delay (s)	45.7	46.0						21.8	20.9	18.1	5.3	
Level of Service	D	D						C	C	B	A	
Approach Delay (s)		45.9			0.0			21.5			12.3	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM Average Control Delay	22.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	28	0	259	19	762	0	0	234	181
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Hourly flow rate (vph)	0	0	0	35	0	405	25	1058	0	0	285	193
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1270	1394	143	1252	1587	529	478			1058		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1270	1394	143	1252	1587	529	478			1058		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.4			2.2		
p0 queue free %	100	100	100	70	100	13	97			100		
cM capacity (veh/h)	16	137	879	118	106	464	982			654		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	440	25	529	529	143	143	193
Volume Left	35	25	0	0	0	0	0
Volume Right	405	0	0	0	0	0	193
cSH	376	982	1700	1700	1700	1700	1700
Volume to Capacity	1.17	0.03	0.31	0.31	0.08	0.08	0.11
Queue Length 95th (ft)	438	2	0	0	0	0	0
Control Delay (s)	134.2	8.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	A					
Approach Delay (s)	134.2	0.2			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	29.6		
Intersection Capacity Utilization	46.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	89	0	369	11	496	0	0	636	429
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Hourly flow rate (vph)	0	0	0	120	0	551	12	740	0	0	740	557
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1684	1504	370	1134	2061	370	1297			740		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1684	1504	370	1134	2061	370	1297			740		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.5	4.3			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.6	2.3			2.2		
p0 queue free %	100	100	100	23	100	1	98			100		
cM capacity (veh/h)	1	117	627	157	54	558	494			862		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	671	12	370	370	370	370	557
Volume Left	120	12	0	0	0	0	0
Volume Right	551	0	0	0	0	0	557
cSH	383	494	1700	1700	1700	1700	1700
Volume to Capacity	1.75	0.02	0.22	0.22	0.22	0.22	0.33
Queue Length 95th (ft)	1050	2	0	0	0	0	0
Control Delay (s)	373.9	12.5	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B					
Approach Delay (s)	373.9	0.2			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	92.3		
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	28	0	259	19	762	0	0	234	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9	5.9	5.9	5.9			5.9	5.9
Lane Util. Factor					0.95	0.95	1.00	0.95			0.95	1.00
Frt					0.87	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1380	1346	1543	3574			3471	1324
Flt Permitted					0.99	1.00	0.51	1.00			1.00	1.00
Satd. Flow (perm)					1380	1346	827	3574			3471	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Adj. Flow (vph)	0	0	0	35	0	405	25	1058	0	0	285	193
RTOR Reduction (vph)	0	0	0	0	50	50	0	0	0	0	0	108
Lane Group Flow (vph)	0	0	0	0	171	169	25	1058	0	0	285	85
Heavy Vehicles (%)	2%	2%	2%	10%	0%	14%	17%	1%	2%	2%	4%	22%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					2		7	4			8	
Permitted Phases				2		2	4					8
Actuated Green, G (s)					35.1	35.1	53.1	53.1			44.3	44.3
Effective Green, g (s)					35.1	35.1	53.1	53.1			44.3	44.3
Actuated g/C Ratio					0.35	0.35	0.53	0.53			0.44	0.44
Clearance Time (s)					5.9	5.9	5.9	5.9			5.9	5.9
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					484	472	460	1898			1538	587
v/s Ratio Prot							0.00	c0.30			0.08	
v/s Ratio Perm					0.12	c0.13	0.03					0.06
v/c Ratio					0.35	0.36	0.05	0.56			0.19	0.15
Uniform Delay, d1					24.0	24.1	11.4	15.6			16.9	16.6
Progression Factor					1.00	1.00	0.39	0.52			0.79	1.48
Incremental Delay, d2					2.0	2.1	0.0	1.1			0.2	0.5
Delay (s)					26.1	26.2	4.4	9.1			13.7	25.0
Level of Service					C	C	A	A			B	C
Approach Delay (s)		0.0			26.1			9.0			18.3	
Approach LOS		A			C			A			B	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	45.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	89	0	369	11	496	0	0	636	429
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9	5.9	5.9	5.9			5.9	5.9
Lane Util. Factor					0.95	0.95	1.00	0.95			0.95	1.00
Frt					0.90	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1356	1199	1656	2888			3574	1380
Flt Permitted					0.98	1.00	0.27	1.00			1.00	1.00
Satd. Flow (perm)					1356	1199	473	2888			3574	1380
Peak-hour factor, PHF	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Adj. Flow (vph)	0	0	0	120	0	551	12	740	0	0	740	557
RTOR Reduction (vph)	0	0	0	0	74	131	0	0	0	0	0	292
Lane Group Flow (vph)	0	0	0	0	266	200	12	740	0	0	740	265
Heavy Vehicles (%)	2%	2%	2%	0%	0%	28%	9%	25%	2%	2%	1%	17%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					2		7	4			8	
Permitted Phases				2		2	4					8
Actuated Green, G (s)					28.1	28.1	50.1	50.1			42.8	42.8
Effective Green, g (s)					28.1	28.1	50.1	50.1			42.8	42.8
Actuated g/C Ratio					0.31	0.31	0.56	0.56			0.48	0.48
Clearance Time (s)					5.9	5.9	5.9	5.9			5.9	5.9
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					423	374	282	1608			1700	656
v/s Ratio Prot							0.00	c0.26			0.21	
v/s Ratio Perm					0.20	0.17	0.02					0.19
v/c Ratio					0.63	0.53	0.04	0.46			0.44	0.40
Uniform Delay, d1					26.5	25.5	9.9	11.9			15.6	15.3
Progression Factor					1.00	1.00	0.32	0.50			0.31	0.95
Incremental Delay, d2					6.9	5.4	0.1	0.9			0.6	1.3
Delay (s)					33.4	30.9	3.2	6.9			5.4	15.8
Level of Service					C	C	A	A			A	B
Approach Delay (s)		0.0			32.2			6.8			9.9	
Approach LOS		A			C			A			A	

Intersection Summary			
HCM Average Control Delay	14.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	59.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	21	597	404	38	173	4	5	0	5	235	0	75
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.84	0.92	0.92	0.78	0.38	0.25	0.92	0.50	0.92	0.92	0.92
Hourly flow rate (vph)	27	711	439	41	222	11	20	0	10	255	0	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	232			1150			1150	1507	222	1298	1298	930
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	232			1150			1150	1507	222	1298	1298	930
tC, single (s)	4.4			4.1			7.8	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.2			4.2	4.0	3.5	3.5	4.0	3.3
p0 queue free %	98			93			77	100	99	0	100	75
cM capacity (veh/h)	1178			608			89	110	764	128	147	324

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	NW 1	NW 2
Volume Total	27	1150	263	11	30	255	82
Volume Left	27	0	41	0	20	255	0
Volume Right	0	439	0	11	10	0	82
cSH	1178	1700	608	1700	126	128	324
Volume to Capacity	0.02	0.68	0.07	0.01	0.24	2.00	0.25
Queue Length 95th (ft)	2	0	5	0	22	516	24
Control Delay (s)	8.1	0.0	2.5	0.0	42.4	535.4	19.8
Lane LOS	A		A		E	F	C
Approach Delay (s)	0.2		2.4		42.4	410.6	
Approach LOS					E	F	

Intersection Summary			
Average Delay	77.3		
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	45	261	600	81	441	5	7	6	27	616	7	93
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.93	0.92	0.92	0.94	0.33	0.62	0.92	0.75	0.92	0.92	0.92
Hourly flow rate (vph)	90	281	652	88	469	15	11	7	36	670	8	101
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	484			933			1211	1758	469	1471	1447	607
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	484			933			1211	1758	469	1471	1447	607
tC, single (s)	4.4			4.1			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	91			88			88	90	94	0	93	80
cM capacity (veh/h)	969			734			97	68	564	77	105	497

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	NW 1	NW 2
Volume Total	90	933	557	15	54	670	109
Volume Left	90	0	88	0	11	670	0
Volume Right	0	652	0	15	36	0	101
cSH	969	1700	734	1700	194	77	394
Volume to Capacity	0.09	0.55	0.12	0.01	0.28	8.67	0.28
Queue Length 95th (ft)	8	0	10	0	27	Err	28
Control Delay (s)	9.1	0.0	3.1	0.0	30.5	Err	17.6
Lane LOS	A		A		D	F	C
Approach Delay (s)	0.8		3.1		30.5	8604.9	
Approach LOS					D	F	

Intersection Summary			
Average Delay	2760.8		
Intersection Capacity Utilization	129.1%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	0	5	235	0	75	21	597	404	38	173	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.3	6.3	6.0	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00		0.97		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1031	1292		3433		1583	1367	1845	1583	1770	1696	1615
Flt Permitted	0.76	1.00		0.95		1.00	0.61	1.00	1.00	0.20	1.00	1.00
Satd. Flow (perm)	822	1292		3433		1583	882	1845	1583	367	1696	1615
Peak-hour factor, PHF	0.25	0.92	0.50	0.92	0.92	0.92	0.79	0.84	0.92	0.92	0.78	0.38
Adj. Flow (vph)	20	0	10	255	0	82	27	711	439	41	222	11
RTOR Reduction (vph)	0	9	0	0	0	61	0	0	165	0	0	5
Lane Group Flow (vph)	20	1	0	255	0	21	27	711	274	41	222	6
Heavy Vehicles (%)	75%	2%	25%	2%	2%	2%	32%	3%	2%	2%	12%	0%
Turn Type	Perm			Prot		Perm	pm+pt		pm+ov	pm+pt		Perm
Protected Phases		6		5	2		7	4	5	3	8	
Permitted Phases	6					2	4		4	8		8
Actuated Green, G (s)	8.7	8.7		11.3		26.0	55.4	51.1	62.4	55.4	51.1	51.1
Effective Green, g (s)	8.7	8.7		11.3		26.0	55.4	51.1	62.4	55.4	51.1	51.1
Actuated g/C Ratio	0.09	0.09		0.11		0.26	0.55	0.51	0.62	0.55	0.51	0.51
Clearance Time (s)	6.0	6.0		6.0		6.0	6.3	6.3	6.0	6.3	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	72	112		388		412	509	943	988	264	867	825
v/s Ratio Prot		0.00		c0.07			0.00	c0.39	0.03	c0.01	0.13	
v/s Ratio Perm	c0.02					0.01	0.03		0.14	0.08		0.00
v/c Ratio	0.28	0.01		0.66		0.05	0.05	0.75	0.28	0.16	0.26	0.01
Uniform Delay, d1	42.7	41.7		42.5		27.8	10.1	19.4	8.5	13.7	13.8	12.0
Progression Factor	1.00	1.00		1.00		1.00	0.69	0.63	1.20	1.03	1.06	1.17
Incremental Delay, d2	9.3	0.1		4.0		0.2	0.0	4.9	0.1	0.3	0.7	0.0
Delay (s)	52.1	41.8		46.5		28.0	7.0	17.1	10.3	14.3	15.3	14.0
Level of Service	D	D		D		C	A	B	B	B	B	B
Approach Delay (s)		48.6			42.0			14.4			15.1	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	20.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.6
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL2	WBL	WBR	SEL	SET	SER	NWL	NWT	NWR	NEL	NER	NER2
Lane Configurations												
Volume (vph)	81	441	5	7	6	27	606	7	93	45	261	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.0	6.0		6.0	6.0	6.0	6.3	6.3	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00		0.97	1.00	1.00	1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.87		1.00	1.00	0.85	1.00	0.85	0.85
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1703	923	1612	1450		3433	1863	1583	1444	1380	1583
Flt Permitted	0.50	0.95	1.00	0.75	1.00		0.95	1.00	1.00	0.27	1.00	1.00
Satd. Flow (perm)	940	1703	923	1276	1450		3433	1863	1583	415	1380	1583
Peak-hour factor, PHF	0.92	0.94	0.33	0.62	0.92	0.75	0.92	0.92	0.92	0.50	0.93	0.92
Adj. Flow (vph)	88	469	15	11	7	36	659	8	101	90	281	652
RTOR Reduction (vph)	0	0	10	0	33	0	0	0	63	0	0	274
Lane Group Flow (vph)	88	469	5	11	10	0	659	8	38	90	281	378
Heavy Vehicles (%)	2%	6%	75%	12%	2%	17%	2%	2%	2%	25%	17%	2%
Turn Type	pm+pt		Perm	Perm			Prot		Perm		custom	custom
Protected Phases	3	8			6		5	2		7	4	5
Permitted Phases	8		8	6					2	4		4
Actuated Green, G (s)	37.4	31.8	31.8	7.6	7.6		20.4	34.0	34.0	37.4	31.8	52.2
Effective Green, g (s)	37.4	31.8	31.8	7.6	7.6		20.4	34.0	34.0	37.4	31.8	52.2
Actuated g/C Ratio	0.42	0.35	0.35	0.08	0.08		0.23	0.38	0.38	0.42	0.35	0.58
Clearance Time (s)	6.3	6.3	6.3	6.0	6.0		6.0	6.0	6.0	6.3	6.3	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	442	602	326	108	122		778	704	598	236	488	918
v/s Ratio Prot	0.01	c0.28			0.01		c0.19	0.00		c0.02	0.20	0.09
v/s Ratio Perm	0.07		0.01	c0.01					0.02	0.13		0.15
v/c Ratio	0.20	0.78	0.02	0.10	0.08		0.85	0.01	0.06	0.38	0.58	0.41
Uniform Delay, d1	16.3	26.0	18.9	38.0	38.0		33.3	17.5	17.9	17.7	23.6	10.4
Progression Factor	0.89	0.96	0.85	1.00	1.00		1.00	1.00	1.00	0.85	0.95	5.03
Incremental Delay, d2	0.2	9.0	0.1	1.9	1.3		8.5	0.0	0.2	0.9	4.1	0.3
Delay (s)	14.7	34.0	16.2	39.9	39.3		41.8	17.5	18.1	15.9	26.6	52.8
Level of Service	B	C	B	D	D		D	B	B	B	C	D
Approach Delay (s)		30.5			39.4			38.4		42.3		
Approach LOS		C			D			D		D		

Intersection Summary			
HCM Average Control Delay	38.2	HCM Level of Service	D
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	24.6
Intersection Capacity Utilization	69.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	6	59	669	6	20	222
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.69	0.82	0.62	0.56	0.90
Hourly flow rate (vph)	10	86	816	10	36	247
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1134	816			826	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1134	816			826	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	78			96	
cM capacity (veh/h)	216	380			814	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	95	816	10	36	247
Volume Left	10	0	0	36	0
Volume Right	86	0	10	0	0
cSH	353	1700	1700	814	1700
Volume to Capacity	0.27	0.48	0.01	0.04	0.15
Queue Length 95th (ft)	27	0	0	3	0
Control Delay (s)	18.9	0.0	0.0	9.6	0.0
Lane LOS	C			A	
Approach Delay (s)	18.9	0.0		1.2	
Approach LOS	C				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	45.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	4	49	366	2	51	551
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.38	0.75	0.91	0.25	0.62	0.89
Hourly flow rate (vph)	11	65	402	8	82	619
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1186	402			410	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1186	402			410	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	90			93	
cM capacity (veh/h)	196	652			1160	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	76	402	8	82	619
Volume Left	11	0	0	82	0
Volume Right	65	0	8	0	0
cSH	493	1700	1700	1160	1700
Volume to Capacity	0.15	0.24	0.00	0.07	0.36
Queue Length 95th (ft)	14	0	0	6	0
Control Delay (s)	13.6	0.0	0.0	8.3	0.0
Lane LOS	B			A	
Approach Delay (s)	13.6	0.0		1.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	39.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	24	101	75	81	80	88	167	591	12	20	156	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1667		1444	1708		1583	1852		1805	1753	
Flt Permitted	0.62	1.00		0.60	1.00		0.63	1.00		0.27	1.00	
Satd. Flow (perm)	1162	1667		915	1708		1051	1852		509	1753	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	35	123	112	131	101	114	204	657	17	30	193	10
RTOR Reduction (vph)	0	53	0	0	65	0	0	1	0	0	2	0
Lane Group Flow (vph)	35	182	0	131	150	0	204	673	0	30	201	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	14.4	14.4		14.4	14.4		27.6	27.6		27.6	27.6	
Effective Green, g (s)	14.4	14.4		14.4	14.4		27.6	27.6		27.6	27.6	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.51	0.51		0.51	0.51	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	310	445		244	455		537	947		260	896	
v/s Ratio Prot		0.11			0.09			c0.36			0.11	
v/s Ratio Perm	0.03			c0.14			0.19			0.06		
v/c Ratio	0.11	0.41		0.54	0.33		0.38	0.71		0.12	0.22	
Uniform Delay, d1	15.0	16.3		16.9	15.9		8.0	10.1		6.9	7.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.7		2.6	0.5		1.1	3.4		0.5	0.3	
Delay (s)	15.2	17.0		19.5	16.4		9.1	13.5		7.3	7.6	
Level of Service	B	B		B	B		A	B		A	A	
Approach Delay (s)		16.8			17.6			12.5			7.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	54.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	109	32	73	117	148	150	277	25	34	360	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.91		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1785		1583	1640		1410	1752		1410	1781	
Flt Permitted	0.48	1.00		0.65	1.00		0.47	1.00		0.55	1.00	
Satd. Flow (perm)	850	1785		1084	1640		697	1752		820	1781	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	39	127	42	86	136	195	174	304	44	63	419	15
RTOR Reduction (vph)	0	19	0	0	81	0	0	8	0	0	2	0
Lane Group Flow (vph)	39	150	0	86	250	0	174	340	0	63	432	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	13.4	13.4		13.4	13.4		22.0	22.0		22.0	22.0	
Effective Green, g (s)	13.4	13.4		13.4	13.4		22.0	22.0		22.0	22.0	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.46	0.46		0.46	0.46	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	240	505		306	464		324	813		381	827	
v/s Ratio Prot		0.08			c0.15			0.19			0.24	
v/s Ratio Perm	0.05			0.08			c0.25			0.08		
v/c Ratio	0.16	0.30		0.28	0.54		0.54	0.42		0.17	0.52	
Uniform Delay, d1	12.8	13.3		13.2	14.4		9.1	8.4		7.4	9.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	0.4		0.6	1.4		3.6	0.9		0.5	1.3	
Delay (s)	13.2	13.7		13.8	15.7		12.6	9.3		7.9	10.3	
Level of Service	B	B		B	B		B	A		A	B	
Approach Delay (s)		13.6			15.4			10.4			10.0	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	47.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	24	101	75	81	80	88	167	591	12	20	156	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1667		1444	1708		1583	1852		1805	1753	
Flt Permitted	0.46	1.00		0.41	1.00		0.63	1.00		0.28	1.00	
Satd. Flow (perm)	862	1667		622	1708		1051	1852		532	1753	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	35	123	112	131	101	114	204	657	17	30	193	10
RTOR Reduction (vph)	0	32	0	0	42	0	0	1	0	0	1	0
Lane Group Flow (vph)	35	203	0	131	173	0	204	673	0	30	202	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		8		7	4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	18.5	18.5		32.8	32.8		65.2	65.2		65.2	65.2	
Effective Green, g (s)	18.5	18.5		32.8	32.8		65.2	65.2		65.2	65.2	
Actuated g/C Ratio	0.17	0.17		0.30	0.30		0.59	0.59		0.59	0.59	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.0	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	145	280		250	509		623	1098		315	1039	
v/s Ratio Prot		c0.12		c0.04	0.10			c0.36			0.12	
v/s Ratio Perm	0.04			0.12			0.19			0.06		
v/c Ratio	0.24	0.73		0.52	0.34		0.33	0.61		0.10	0.19	
Uniform Delay, d1	39.7	43.4		38.4	30.1		11.3	14.3		9.7	10.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.0	9.3		2.0	0.5		1.4	2.6		0.6	0.4	
Delay (s)	40.7	52.7		40.4	30.6		12.7	16.9		10.3	10.7	
Level of Service	D	D		D	C		B	B		B	B	
Approach Delay (s)		51.1			34.3			15.9			10.7	
Approach LOS		D			C			B			B	

Intersection Summary			
HCM Average Control Delay	24.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	109	32	73	117	148	150	277	25	33	360	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.91		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1785		1583	1640		1410	1752		1410	1781	
Flt Permitted	0.56	1.00		0.39	1.00		0.45	1.00		0.52	1.00	
Satd. Flow (perm)	996	1785		642	1640		669	1752		772	1781	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	39	127	42	86	136	195	174	304	44	61	419	15
RTOR Reduction (vph)	0	14	0	0	60	0	0	6	0	0	1	0
Lane Group Flow (vph)	39	155	0	86	271	0	174	342	0	61	433	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		8		7	4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	13.7	13.7		26.7	26.7		51.3	51.3		51.3	51.3	
Effective Green, g (s)	13.7	13.7		26.7	26.7		51.3	51.3		51.3	51.3	
Actuated g/C Ratio	0.15	0.15		0.30	0.30		0.57	0.57		0.57	0.57	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.0	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	152	272		267	487		381	999		440	1015	
v/s Ratio Prot		0.09		0.03	c0.17			0.20			0.24	
v/s Ratio Perm	0.04			0.07			c0.26			0.08		
v/c Ratio	0.26	0.57		0.32	0.56		0.46	0.34		0.14	0.43	
Uniform Delay, d1	33.7	35.4		23.9	26.7		11.2	10.3		9.0	11.0	
Progression Factor	1.00	1.00		1.00	1.00		0.47	0.45		0.73	0.69	
Incremental Delay, d2	1.1	3.1		0.7	1.5		3.8	0.9		0.6	1.2	
Delay (s)	34.7	38.5		24.6	28.2		9.0	5.6		7.2	8.8	
Level of Service	C	D		C	C		A	A		A	A	
Approach Delay (s)		37.8			27.5			6.7			8.6	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	16.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	2	37	4	61	68	10	0	560	203	7	137	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Hourly flow rate (vph)	8	52	16	66	91	13	0	644	260	14	167	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								745				
pX, platoon unblocked	0.69	0.69		0.69	0.69	0.69				0.69		
vC, conflicting volume	1043	1114	182	1026	999	774	197			904		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	837	941	182	813	774	448	197			637		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	94	71	98	57	59	97	100			98		
cM capacity (veh/h)	129	179	866	154	223	424	1388			562		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	76	170	904	211
Volume Left	8	66	0	14
Volume Right	16	13	260	30
cSH	205	196	1388	562
Volume to Capacity	0.37	0.87	0.00	0.02
Queue Length 95th (ft)	40	163	0	2
Control Delay (s)	32.7	83.2	0.0	1.1
Lane LOS	D	F		A
Approach Delay (s)	32.7	83.2	0.0	1.1
Approach LOS	D	F		

Intersection Summary			
Average Delay	12.4		
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	8	58	0	99	48	12	0	240	164	5	398	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Hourly flow rate (vph)	14	85	0	112	56	17	0	270	193	9	428	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								744				
pX, platoon unblocked	0.99	0.99		0.99	0.99	0.99				0.99		
vC, conflicting volume	868	918	438	865	832	366	448			463		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	860	911	438	857	824	352	448			450		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	94	68	100	46	81	97	100			99		
cM capacity (veh/h)	228	271	623	208	304	668	1123			1108		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	99	186	463	457
Volume Left	14	112	0	9
Volume Right	0	17	193	20
cSH	264	247	1123	1108
Volume to Capacity	0.38	0.75	0.00	0.01
Queue Length 95th (ft)	42	134	0	1
Control Delay (s)	26.6	53.6	0.0	0.3
Lane LOS	D	F		A
Approach Delay (s)	26.6	53.6	0.0	0.3
Approach LOS	D	F		

Intersection Summary			
Average Delay	10.6		
Intersection Capacity Utilization	48.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	2	37	4	61	68	10	0	560	203	7	137	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7			6.1			6.1	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.96			0.98	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1836			1845			1790			1699	
Flt Permitted		0.96			0.87			1.00			0.94	
Satd. Flow (perm)		1780			1627			1790			1597	
Peak-hour factor, PHF	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Adj. Flow (vph)	8	52	16	66	91	13	0	644	260	14	167	30
RTOR Reduction (vph)	0	10	0	0	3	0	0	13	0	0	5	0
Lane Group Flow (vph)	0	66	0	0	167	0	0	891	0	0	206	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	2%	33%	9%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.0			15.0			73.2			73.2	
Effective Green, g (s)		15.0			15.0			73.2			73.2	
Actuated g/C Ratio		0.15			0.15			0.73			0.73	
Clearance Time (s)		5.7			5.7			6.1			6.1	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		267			244			1310			1169	
v/s Ratio Prot								c0.50				
v/s Ratio Perm		0.04			c0.10						0.13	
v/c Ratio		0.25			0.68			0.68			0.18	
Uniform Delay, d1		37.5			40.2			7.2			4.1	
Progression Factor		1.00			1.00			0.65			1.00	
Incremental Delay, d2		0.5			7.7			2.5			0.3	
Delay (s)		38.0			47.9			7.1			4.5	
Level of Service		D			D			A			A	
Approach Delay (s)		38.0			47.9			7.1			4.5	
Approach LOS		D			D			A			A	

Intersection Summary			
HCM Average Control Delay	13.5	HCM Level of Service	B
HCM Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	8	58	0	99	48	12	0	240	164	5	398	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7			6.1			6.1	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.94			0.99	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1887			1806			1752			1869	
Flt Permitted		0.95			0.78			1.00			0.99	
Satd. Flow (perm)		1803			1455			1752			1854	
Peak-hour factor, PHF	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Adj. Flow (vph)	14	85	0	112	56	17	0	270	193	9	428	20
RTOR Reduction (vph)	0	0	0	0	5	0	0	20	0	0	1	0
Lane Group Flow (vph)	0	99	0	0	180	0	0	443	0	0	456	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	4%	0%	0%	1%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		16.4			16.4			61.8			61.8	
Effective Green, g (s)		16.4			16.4			61.8			61.8	
Actuated g/C Ratio		0.18			0.18			0.69			0.69	
Clearance Time (s)		5.7			5.7			6.1			6.1	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		329			265			1203			1273	
v/s Ratio Prot								c0.25				
v/s Ratio Perm		0.05			c0.12						0.25	
v/c Ratio		0.30			0.68			0.37			0.36	
Uniform Delay, d1		31.8			34.3			5.9			5.9	
Progression Factor		1.00			1.00			0.63			1.00	
Incremental Delay, d2		0.5			6.8			0.8			0.8	
Delay (s)		32.4			41.1			4.6			6.6	
Level of Service		C			D			A			A	
Approach Delay (s)		32.4			41.1			4.6			6.6	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	150	5	8	71	63	11	98	29	88	20	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.93			0.97			0.99	
Flt Protected		0.99			1.00			0.99			0.96	
Satd. Flow (prot)		1792			1636			1821			1715	
Flt Permitted		0.91			0.97			0.95			0.75	
Satd. Flow (perm)		1648			1592			1735			1332	
Peak-hour factor, PHF	0.50	0.69	0.84	0.58	0.92	0.74	0.62	0.83	0.75	0.73	0.75	0.50
Adj. Flow (vph)	58	217	6	14	77	85	18	118	39	121	27	10
RTOR Reduction (vph)	0	1	0	0	40	0	0	16	0	0	4	0
Lane Group Flow (vph)	0	280	0	0	136	0	0	159	0	0	154	0
Heavy Vehicles (%)	0%	6%	0%	0%	12%	6%	0%	1%	0%	6%	7%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.1			26.1			10.7			10.7	
Effective Green, g (s)		26.1			26.1			10.7			10.7	
Actuated g/C Ratio		0.53			0.53			0.22			0.22	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)		881			851			380			292	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.09			0.09			c0.12	
v/c Ratio		0.32			0.16			0.42			0.53	
Uniform Delay, d1		6.4			5.8			16.4			16.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.3			1.6			3.3	
Delay (s)		7.1			6.1			17.9			20.1	
Level of Service		A			A			B			C	
Approach Delay (s)		7.1			6.1			17.9			20.1	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	11.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	142	18	45	213	112	11	35	34	136	84	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.95			0.95			0.99	
Flt Protected		1.00			0.99			0.99			0.97	
Satd. Flow (prot)		1801			1761			1791			1826	
Flt Permitted		0.99			0.94			0.92			0.76	
Satd. Flow (perm)		1783			1665			1657			1420	
Peak-hour factor, PHF	0.75	0.89	0.67	0.80	0.90	0.70	0.62	0.62	0.78	0.70	0.74	0.67
Adj. Flow (vph)	5	160	27	56	237	160	18	56	44	194	114	27
RTOR Reduction (vph)	0	10	0	0	34	0	0	28	0	0	4	0
Lane Group Flow (vph)	0	182	0	0	419	0	0	90	0	0	331	0
Heavy Vehicles (%)	0%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.9			25.9			18.4			18.4	
Effective Green, g (s)		25.9			25.9			18.4			18.4	
Actuated g/C Ratio		0.46			0.46			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		5.0			5.0			7.0			7.0	
Lane Grp Cap (vph)		820			766			542			464	
v/s Ratio Prot												
v/s Ratio Perm		0.10			c0.25			0.05			c0.23	
v/c Ratio		0.22			0.55			0.17			0.71	
Uniform Delay, d1		9.1			11.0			13.5			16.6	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			1.4			0.5			8.3	
Delay (s)		9.4			12.4			14.0			24.9	
Level of Service		A			B			B			C	
Approach Delay (s)		9.4			12.4			14.0			24.9	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	56.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	1	3	179	102	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	1	3	195	111	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	314	112	114			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	314	112	114			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	678	940	1475			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	14	198	114
Volume Left	13	3	0
Volume Right	1	0	3
cSH	693	1475	1700
Volume to Capacity	0.02	0.00	0.07
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.3	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	10.3	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	21.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	3	7	141	186	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	3	8	153	202	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	374	206	210			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	374	206	210			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	99			
cM capacity (veh/h)	623	835	1361			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	9	161	210
Volume Left	5	8	0
Volume Right	3	0	8
cSH	689	1361	1700
Volume to Capacity	0.01	0.01	0.12
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.3	0.4	0.0
Lane LOS	B	A	
Approach Delay (s)	10.3	0.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	15	15	182	103	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	16	16	198	112	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	342	112	112			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	342	112	112			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	99			
cM capacity (veh/h)	647	941	1478			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	214	112
Volume Left	0	16	0
Volume Right	16	0	0
cSH	941	1478	1700
Volume to Capacity	0.02	0.01	0.07
Queue Length 95th (ft)	1	1	0
Control Delay (s)	8.9	0.7	0.0
Lane LOS	A	A	
Approach Delay (s)	8.9	0.7	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	32	30	148	188	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	35	33	161	204	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	431	205	205			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	431	205	205			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	98			
cM capacity (veh/h)	568	836	1366			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	35	193	205
Volume Left	0	33	0
Volume Right	35	0	1
cSH	836	1366	1700
Volume to Capacity	0.04	0.02	0.12
Queue Length 95th (ft)	3	2	0
Control Delay (s)	9.5	1.5	0.0
Lane LOS	A	A	
Approach Delay (s)	9.5	1.5	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	32.7%	ICU Level of Service	A
Analysis Period (min)	15		

Alternative A 2035

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	417	8	7	94	37	2	71	107	79	26	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.99			0.99	1.00		1.00	1.00		0.97	1.00
Satd. Flow (prot)		1822			1736	1495		1893	1615		1773	1369
Flt Permitted		0.95			0.90	1.00		0.97	1.00		0.72	1.00
Satd. Flow (perm)		1736			1568	1495		1839	1615		1327	1369
Peak-hour factor, PHF	0.83	0.68	0.38	0.38	0.75	0.78	0.25	0.72	0.71	0.84	0.66	0.54
Adj. Flow (vph)	78	613	21	18	125	47	8	99	151	94	39	65
RTOR Reduction (vph)	0	1	0	0	0	21	0	0	120	0	0	52
Lane Group Flow (vph)	0	711	0	0	143	26	0	107	31	0	133	13
Heavy Vehicles (%)	2%	3%	17%	0%	10%	8%	0%	0%	0%	5%	0%	18%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Actuated Green, G (s)		31.5			31.5	31.5		11.6	11.6		11.6	11.6
Effective Green, g (s)		31.5			31.5	31.5		11.6	11.6		11.6	11.6
Actuated g/C Ratio		0.56			0.56	0.56		0.20	0.20		0.20	0.20
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		964			871	831		376	330		271	280
v/s Ratio Prot												
v/s Ratio Perm		c0.41			0.09	0.02		0.06	0.02		c0.10	0.01
v/c Ratio		0.74			0.16	0.03		0.28	0.09		0.49	0.05
Uniform Delay, d1		9.5			6.2	5.7		19.0	18.3		19.9	18.1
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		3.8			0.2	0.0		0.4	0.1		1.4	0.1
Delay (s)		13.3			6.4	5.7		19.5	18.4		21.3	18.2
Level of Service		B			A	A		B	B		C	B
Approach Delay (s)		13.3			6.2			18.8			20.3	
Approach LOS		B			A			B			C	

Intersection Summary			
HCM Average Control Delay	14.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	56.7	Sum of lost time (s)	13.6
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	149	4	72	407	106	13	37	37	104	69	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.99			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.98			0.99	1.00		0.99	1.00		0.97	1.00
Satd. Flow (prot)		1822			1882	1599		1872	1615		1846	1553
Flt Permitted		0.68			0.87	1.00		0.86	1.00		0.78	1.00
Satd. Flow (perm)		1251			1657	1599		1626	1615		1483	1553
Peak-hour factor, PHF	0.74	0.90	0.38	0.68	0.92	0.85	0.62	0.75	0.86	0.88	0.82	0.77
Adj. Flow (vph)	88	166	11	106	442	125	21	49	43	118	84	132
RTOR Reduction (vph)	0	2	0	0	0	60	0	0	33	0	0	64
Lane Group Flow (vph)	0	263	0	0	548	65	0	70	10	0	202	68
Heavy Vehicles (%)	6%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		custom
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		6
Actuated Green, G (s)		29.1			29.1	29.1		13.5	13.5		13.5	29.1
Effective Green, g (s)		29.1			29.1	29.1		13.5	13.5		13.5	29.1
Actuated g/C Ratio		0.52			0.52	0.52		0.24	0.24		0.24	0.52
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	5.5
Lane Grp Cap (vph)		648			858	828		391	388		356	804
v/s Ratio Prot												
v/s Ratio Perm		0.21			c0.33	0.04		0.04	0.01		c0.14	0.04
v/c Ratio		0.41			0.64	0.08		0.18	0.03		0.57	0.09
Uniform Delay, d1		8.3			9.8	6.8		17.0	16.3		18.8	6.8
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.0			2.4	0.1		0.2	0.0		2.1	0.1
Delay (s)		9.3			12.2	6.9		17.2	16.4		20.9	6.9
Level of Service		A			B	A		B	B		C	A
Approach Delay (s)		9.3			11.2			16.9			15.4	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	56.2	Sum of lost time (s)	13.6
Intersection Capacity Utilization	71.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	605	132	3	118	72	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.50	0.88	0.82	0.25
Hourly flow rate (vph)	658	143	6	134	88	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked			0.79		0.79	0.79
vC, conflicting volume			658		804	658
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			435		620	435
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		75	98
cM capacity (veh/h)			841		349	495

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	658	143	140	96
Volume Left	0	0	6	88
Volume Right	0	143	0	8
cSH	1700	1700	841	357
Volume to Capacity	0.39	0.08	0.01	0.27
Queue Length 95th (ft)	0	0	1	27
Control Delay (s)	0.0	0.0	0.5	18.7
Lane LOS			A	C
Approach Delay (s)	0.0		0.5	18.7
Approach LOS				C

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	42.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	207	153	5	440	229	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.84	0.50	0.91	0.82	0.50
Hourly flow rate (vph)	220	182	10	484	279	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked						
vC, conflicting volume			220		724	220
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			220		724	220
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		29	99
cM capacity (veh/h)			1361		393	824

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	220	182	494	285
Volume Left	0	0	10	279
Volume Right	0	182	0	6
cSH	1700	1700	1361	397
Volume to Capacity	0.13	0.11	0.01	0.72
Queue Length 95th (ft)	0	0	1	137
Control Delay (s)	0.0	0.0	0.2	34.0
Lane LOS			A	D
Approach Delay (s)	0.0		0.2	34.0
Approach LOS				D

Intersection Summary			
Average Delay	8.3		
Intersection Capacity Utilization	46.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	213	0	4	0	0	0	0	644	71	176	105	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Hourly flow rate (vph)	288	0	8	0	0	0	0	920	113	196	262	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1114	1686	131	1450	1574	460	262			1033		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1114	1686	131	1450	1574	460	262			1033		
tC, single (s)	7.7	6.5	7.4	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.6	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	0	100	99	100	100	100	100			60		
cM capacity (veh/h)	108	57	825	63	66	548	1299			494		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	296	460	460	113	196	131	131
Volume Left	288	0	0	0	196	0	0
Volume Right	8	0	0	113	0	0	0
cSH	110	1700	1700	1700	494	1700	1700
Volume to Capacity	2.69	0.27	0.27	0.07	0.40	0.08	0.08
Queue Length 95th (ft)	682	0	0	0	47	0	0
Control Delay (s)	845.4	0.0	0.0	0.0	17.0	0.0	0.0
Lane LOS	F				C		
Approach Delay (s)	845.4	0.0			7.3		
Approach LOS	F						

Intersection Summary			
Average Delay	141.8		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	388	0	10	0	0	0	0	146	55	379	412	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Hourly flow rate (vph)	446	0	20	0	0	0	0	197	81	541	485	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1666	1846	242	1543	1765	99	485			278		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1666	1846	242	1543	1765	99	485			278		
tC, single (s)	7.5	6.5	7.2	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	0	100	97	100	100	100	100			49		
cM capacity (veh/h)	39	37	720	46	41	938	1074			1063		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	466	99	99	81	541	242	242
Volume Left	446	0	0	0	541	0	0
Volume Right	20	0	0	81	0	0	0
cSH	40	1700	1700	1700	1063	1700	1700
Volume to Capacity	11.57	0.06	0.06	0.05	0.51	0.14	0.14
Queue Length 95th (ft)	Err	0	0	0	75	0	0
Control Delay (s)	Err	0.0	0.0	0.0	11.9	0.0	0.0
Lane LOS	F				B		
Approach Delay (s)	Err	0.0			6.3		
Approach LOS	F						

Intersection Summary			
Average Delay	2635.6		
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	213	0	4	0	0	0	0	605	132	3	118	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0						5.9	5.9	5.9	5.9	
Lane Util. Factor	0.95	0.95						0.95	1.00	1.00	0.95	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.95						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1588	1569						3539	1538	1318	3610	
Flt Permitted	0.95	0.95						1.00	1.00	0.25	1.00	
Satd. Flow (perm)	1588	1569						3539	1538	345	3610	
Peak-hour factor, PHF	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Adj. Flow (vph)	288	0	8	0	0	0	0	864	210	3	295	0
RTOR Reduction (vph)	0	2	0	0	0	0	0	0	93	0	0	0
Lane Group Flow (vph)	150	144	0	0	0	0	0	864	117	3	295	0
Heavy Vehicles (%)	8%	0%	25%	2%	2%	2%	2%	2%	5%	37%	0%	2%
Turn Type	Perm								Perm	pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4								2	6		
Actuated Green, G (s)	25.0	25.0						55.8	55.8	63.1	63.1	
Effective Green, g (s)	25.0	25.0						55.8	55.8	63.1	63.1	
Actuated g/C Ratio	0.25	0.25						0.56	0.56	0.63	0.63	
Clearance Time (s)	6.0	6.0						5.9	5.9	5.9	5.9	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	397	392						1975	858	231	2278	
v/s Ratio Prot								c0.24		0.00	c0.08	
v/s Ratio Perm	c0.09	0.09							0.08	0.01		
v/c Ratio	0.38	0.37						0.44	0.14	0.01	0.13	
Uniform Delay, d1	31.1	31.0						12.9	10.6	7.9	7.4	
Progression Factor	1.00	1.00						1.00	1.00	1.22	0.96	
Incremental Delay, d2	2.7	2.6						0.7	0.3	0.0	0.1	
Delay (s)	33.8	33.6						13.6	10.9	9.7	7.3	
Level of Service	C	C						B	B	A	A	
Approach Delay (s)		33.7			0.0			13.1			7.3	
Approach LOS		C			A			B			A	

Intersection Summary			
HCM Average Control Delay	15.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	17.8
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	388	0	10	0	0	0	0	146	55	379	412	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1						5.9	5.9	5.9	5.9	
Lane Util. Factor	0.95	0.95						0.95	1.00	1.00	0.95	
Frt	1.00	0.99						1.00	0.85	1.00	1.00	
Flt Protected	0.95	0.96						1.00	1.00	0.95	1.00	
Satd. Flow (prot)	1715	1682						3539	1615	1249	3610	
Flt Permitted	0.95	0.96						1.00	1.00	0.52	1.00	
Satd. Flow (perm)	1715	1682						3539	1615	690	3610	
Peak-hour factor, PHF	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Adj. Flow (vph)	446	0	20	0	0	0	0	197	81	541	485	0
RTOR Reduction (vph)	0	4	0	0	0	0	0	0	54	0	0	0
Lane Group Flow (vph)	236	226	0	0	0	0	0	197	27	541	485	0
Heavy Vehicles (%)	0%	0%	15%	2%	2%	2%	2%	2%	0%	37%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	13	0	0
Turn Type	Perm								Perm	pm+pt		
Protected Phases		4						2		1	6	
Permitted Phases	4								2	6		
Actuated Green, G (s)	15.6	15.6						29.9	29.9	63.4	63.4	
Effective Green, g (s)	15.6	15.6						29.9	29.9	63.4	63.4	
Actuated g/C Ratio	0.17	0.17						0.33	0.33	0.70	0.70	
Clearance Time (s)	5.1	5.1						5.9	5.9	5.9	5.9	
Vehicle Extension (s)	3.0	3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	297	292						1176	537	657	2543	
v/s Ratio Prot								0.06		c0.25	0.13	
v/s Ratio Perm	c0.14	0.13							0.02	c0.33		
v/c Ratio	0.79	0.77						0.17	0.05	0.82	0.19	
Uniform Delay, d1	35.7	35.5						21.2	20.4	7.5	4.5	
Progression Factor	1.00	1.00						1.00	1.00	1.34	0.91	
Incremental Delay, d2	13.6	12.0						0.3	0.2	7.8	0.2	
Delay (s)	49.3	47.5						21.6	20.6	17.8	4.3	
Level of Service	D	D						C	C	B	A	
Approach Delay (s)		48.4			0.0			21.3			11.4	
Approach LOS		D			A			C			B	

Intersection Summary			
HCM Average Control Delay	22.7	HCM Level of Service	C
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	32	0	272	21	838	0	0	249	191
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Hourly flow rate (vph)	0	0	0	41	0	425	28	1164	0	0	304	203
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1367	1524	152	1372	1727	582	507			1164		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1367	1524	152	1372	1727	582	507			1164		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.4			2.2		
p0 queue free %	100	100	100	58	100	1	97			100		
cM capacity (veh/h)	1	114	867	96	87	427	956			596		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	466	28	582	582	152	152	203
Volume Left	41	28	0	0	0	0	0
Volume Right	425	0	0	0	0	0	203
cSH	328	956	1700	1700	1700	1700	1700
Volume to Capacity	1.42	0.03	0.34	0.34	0.09	0.09	0.12
Queue Length 95th (ft)	608	2	0	0	0	0	0
Control Delay (s)	236.0	8.9	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	A					
Approach Delay (s)	236.0	0.2			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	50.9		
Intersection Capacity Utilization	49.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	102	0	382	13	521	0	0	681	449
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Hourly flow rate (vph)	0	0	0	138	0	570	14	778	0	0	792	583
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1779	1598	396	1202	2181	389	1375			778		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1779	1598	396	1202	2181	389	1375			778		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.5	4.3			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.6	2.3			2.2		
p0 queue free %	0	100	100	1	100	0	97			100		
cM capacity (veh/h)	0	102	603	139	45	542	460			835		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	708	14	389	389	396	396	583
Volume Left	138	14	0	0	0	0	0
Volume Right	570	0	0	0	0	0	583
cSH	347	460	1700	1700	1700	1700	1700
Volume to Capacity	2.04	0.03	0.23	0.23	0.23	0.23	0.34
Queue Length 95th (ft)	1261	2	0	0	0	0	0
Control Delay (s)	503.9	13.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B					
Approach Delay (s)	503.9	0.2			0.0		
Approach LOS	F						

Intersection Summary			
Average Delay	124.2		
Intersection Capacity Utilization	70.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	32	0	272	21	836	0	0	249	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9	5.9	5.9	5.9			5.9	5.9
Lane Util. Factor					0.95	0.95	1.00	0.95			0.95	1.00
Frt					0.88	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.99	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1383	1346	1543	3574			3471	1324
Flt Permitted					0.99	1.00	0.52	1.00			1.00	1.00
Satd. Flow (perm)					1383	1346	837	3574			3471	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Adj. Flow (vph)	0	0	0	41	0	425	28	1161	0	0	304	203
RTOR Reduction (vph)	0	0	0	0	56	56	0	0	0	0	0	83
Lane Group Flow (vph)	0	0	0	0	181	173	28	1161	0	0	304	120
Heavy Vehicles (%)	2%	2%	2%	10%	0%	14%	17%	1%	2%	2%	4%	22%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					18.8	18.8	69.4	69.4			59.2	59.2
Effective Green, g (s)					18.8	18.8	69.4	69.4			59.2	59.2
Actuated g/C Ratio					0.19	0.19	0.69	0.69			0.59	0.59
Clearance Time (s)					5.9	5.9	5.9	5.9			5.9	5.9
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					260	253	611	2480			2055	784
v/s Ratio Prot							0.00	c0.32			0.09	
v/s Ratio Perm					0.13	0.13	0.03					0.09
v/c Ratio					0.70	0.68	0.05	0.47			0.15	0.15
Uniform Delay, d1					37.9	37.8	4.9	6.9			9.1	9.2
Progression Factor					1.00	1.00	0.86	0.79			0.67	1.09
Incremental Delay, d2					7.9	7.4	0.0	0.6			0.1	0.4
Delay (s)					45.8	45.3	4.3	6.1			6.2	10.3
Level of Service					D	D	A	A			A	B
Approach Delay (s)		0.0			45.5			6.1			7.9	
Approach LOS		A			D			A			A	

Intersection Summary			
HCM Average Control Delay	15.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	44.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	102	0	382	13	521	0	0	681	449
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9	5.9	3.6	5.9			5.9	5.9
Lane Util. Factor					0.95	0.95	1.00	0.95			0.95	1.00
Frt					0.91	0.85	1.00	1.00			1.00	0.85
Flt Protected					0.98	1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)					1371	1199	1656	2888			3574	1380
Flt Permitted					0.98	1.00	0.28	1.00			1.00	1.00
Satd. Flow (perm)					1371	1199	495	2888			3574	1380
Peak-hour factor, PHF	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Adj. Flow (vph)	0	0	0	138	0	570	14	778	0	0	792	583
RTOR Reduction (vph)	0	0	0	0	75	101	0	0	0	0	0	267
Lane Group Flow (vph)	0	0	0	0	285	247	14	778	0	0	792	316
Heavy Vehicles (%)	2%	2%	2%	0%	0%	28%	9%	25%	2%	2%	1%	17%
Turn Type				Perm		Perm	pm+pt					Perm
Protected Phases					8		5	2			6	
Permitted Phases				8		8	2					6
Actuated Green, G (s)					24.4	24.4	53.8	53.8			48.8	48.8
Effective Green, g (s)					24.4	24.4	53.8	53.8			48.8	48.8
Actuated g/C Ratio					0.27	0.27	0.60	0.60			0.54	0.54
Clearance Time (s)					5.9	5.9	3.6	5.9			5.9	5.9
Vehicle Extension (s)					3.0	3.0	3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					372	325	314	1726			1938	748
v/s Ratio Prot							0.00	c0.27			0.22	
v/s Ratio Perm					0.21	0.21	0.03					0.23
v/c Ratio					0.77	0.76	0.04	0.45			0.41	0.42
Uniform Delay, d1					30.2	30.1	7.9	10.0			12.1	12.2
Progression Factor					1.00	1.00	0.59	0.69			0.62	1.06
Incremental Delay, d2					9.1	10.1	0.1	0.8			0.5	1.5
Delay (s)					39.3	40.2	4.7	7.7			8.0	14.4
Level of Service					D	D	A	A			A	B
Approach Delay (s)		0.0			39.7			7.6			10.7	
Approach LOS		A			D			A			B	

Intersection Summary			
HCM Average Control Delay	17.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	24	681	404	38	197	4	5	0	5	235	0	75
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.84	0.92	0.92	0.78	0.38	0.25	0.92	0.50	0.92	0.92	0.92
Hourly flow rate (vph)	30	811	439	41	253	11	20	0	10	255	0	82
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	263			1250			1288	1646	253	1436	1437	1030
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	263			1250			1288	1646	253	1436	1437	1030
tC, single (s)	4.4			4.1			7.8	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.2			4.2	4.0	3.5	3.5	4.0	3.3
p0 queue free %	97			93			70	100	99	0	100	71
cM capacity (veh/h)	1146			557			66	90	733	101	120	283

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	NW 1	NW 2
Volume Total	30	1250	294	11	30	255	82
Volume Left	30	0	41	0	20	255	0
Volume Right	0	439	0	11	10	0	82
cSH	1146	1700	557	1700	95	101	283
Volume to Capacity	0.03	0.74	0.07	0.01	0.32	2.52	0.29
Queue Length 95th (ft)	2	0	6	0	30	584	29
Control Delay (s)	8.2	0.0	2.6	0.0	59.8	778.8	22.8
Lane LOS	A		A		F	F	C
Approach Delay (s)	0.2		2.5		59.8	595.9	
Approach LOS					F	F	

Intersection Summary			
Average Delay	104.3		
Intersection Capacity Utilization	86.8%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	5	299	600	81	503	5	8	6	31	606	7	93
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.93	0.92	0.92	0.94	0.33	0.62	0.92	0.75	0.92	0.92	0.92
Hourly flow rate (vph)	10	322	652	88	535	15	13	7	41	659	8	101
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	550			974			1158	1705	535	1423	1394	648
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	550			974			1158	1705	535	1423	1394	648
tC, single (s)	4.4			4.1			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	99			88			88	92	92	0	94	79
cM capacity (veh/h)	914			708			111	79	517	88	123	471

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	NW 1	NW 2
Volume Total	10	974	623	15	61	659	109
Volume Left	10	0	88	0	13	659	0
Volume Right	0	652	0	15	41	0	101
cSH	914	1700	708	1700	218	88	393
Volume to Capacity	0.01	0.57	0.12	0.01	0.28	7.49	0.28
Queue Length 95th (ft)	1	0	11	0	27	Err	28
Control Delay (s)	9.0	0.0	3.2	0.0	27.7	Err	17.6
Lane LOS	A		A		D	F	C
Approach Delay (s)	0.1		3.1		27.7	8585.2	
Approach LOS					D	F	

Intersection Summary			
Average Delay	2690.5		
Intersection Capacity Utilization	133.8%	ICU Level of Service	H
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	5	0	5	235	0	75	24	681	404	38	197	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.3	6.0	6.0
Lane Util. Factor	1.00	1.00		0.97		1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85		1.00		0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95		1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1031	1292		3433		1583	1367	1845	1583	1770	1696	1615
Flt Permitted	0.95	1.00		0.95		1.00	0.60	1.00	1.00	0.18	1.00	1.00
Satd. Flow (perm)	1034	1292		3433		1583	858	1845	1583	331	1696	1615
Peak-hour factor, PHF	0.25	0.92	0.50	0.92	0.92	0.92	0.79	0.84	0.92	0.92	0.78	0.38
Adj. Flow (vph)	20	0	10	255	0	82	30	811	439	41	253	11
RTOR Reduction (vph)	0	10	0	0	0	66	0	0	144	0	0	5
Lane Group Flow (vph)	20	0	0	255	0	16	30	811	295	41	253	6
Heavy Vehicles (%)	75%	2%	25%	2%	2%	2%	32%	3%	2%	2%	12%	0%
Turn Type	Perm			Prot		Perm	pm+pt		pm+ov	pm+pt		Perm
Protected Phases		4		3	8		5	2	3	1	6	
Permitted Phases	4					8	2		2	6		6
Actuated Green, G (s)	4.2	4.2		9.9		20.1	61.6	57.4	67.3	61.9	57.7	57.7
Effective Green, g (s)	4.2	4.2		9.9		20.1	61.6	57.4	67.3	61.9	57.7	57.7
Actuated g/C Ratio	0.04	0.04		0.10		0.20	0.62	0.57	0.67	0.62	0.58	0.58
Clearance Time (s)	6.0	6.0		6.0		6.0	6.0	6.0	6.0	6.3	6.0	6.0
Vehicle Extension (s)	3.0	3.0		3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	43	54		340		318	550	1059	1160	265	979	932
v/s Ratio Prot		0.00		c0.07			0.00	c0.44	0.03	c0.01	0.15	
v/s Ratio Perm	c0.02					0.01	0.03		0.16	0.09		0.00
v/c Ratio	0.47	0.01		0.75		0.05	0.05	0.77	0.25	0.15	0.26	0.01
Uniform Delay, d1	46.8	45.9		43.8		32.3	7.5	16.2	6.5	12.0	10.5	9.0
Progression Factor	1.00	1.00		1.00		1.00	0.62	0.62	0.66	1.37	1.21	1.64
Incremental Delay, d2	7.8	0.1		9.0		0.1	0.0	4.8	0.1	0.3	0.6	0.0
Delay (s)	54.6	46.0		52.8		32.3	4.7	14.8	4.3	16.6	13.4	14.7
Level of Service	D	D		D		C	A	B	A	B	B	B
Approach Delay (s)		51.7			47.8			11.0			13.9	
Approach LOS		D			D			B			B	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	24.3
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	8	6	31	606	7	93	5	299	600	81	503	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7	5.7	6.3	6.3	5.7	6.3	6.3	6.3
Lane Util. Factor	1.00	1.00		0.97	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.87		1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1612	1443		3433	1863	1583	1444	1624	1583	1770	1792	923
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.46	1.00	1.00	0.39	1.00	1.00
Satd. Flow (perm)	1616	1443		3433	1863	1583	695	1624	1583	730	1792	923
Peak-hour factor, PHF	0.62	0.92	0.75	0.92	0.92	0.92	0.50	0.93	0.92	0.92	0.94	0.33
Adj. Flow (vph)	13	7	41	659	8	101	10	322	652	88	535	15
RTOR Reduction (vph)	0	39	0	0	0	65	0	0	245	0	0	7
Lane Group Flow (vph)	13	9	0	659	8	36	10	322	407	88	535	8
Heavy Vehicles (%)	12%	2%	17%	2%	2%	2%	25%	17%	2%	2%	6%	75%
Turn Type	Perm			Prot		Perm	Perm		pm+ov	pm+pt		Perm
Protected Phases		4		3	8			2	3	1	6	
Permitted Phases	4					8	2		2	6		6
Actuated Green, G (s)	4.2	4.2		22.5	32.4	32.4	33.7	33.7	56.2	45.6	45.6	45.6
Effective Green, g (s)	4.2	4.2		22.5	32.4	32.4	33.7	33.7	56.2	45.6	45.6	45.6
Actuated g/C Ratio	0.05	0.05		0.25	0.36	0.36	0.37	0.37	0.62	0.51	0.51	0.51
Clearance Time (s)	5.7	5.7		5.7	5.7	5.7	6.3	6.3	5.7	6.3	6.3	6.3
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	75	67		858	671	570	260	608	988	435	908	468
v/s Ratio Prot		0.01		c0.19	0.00			0.20	0.10	0.01	c0.30	
v/s Ratio Perm	c0.01					0.02	0.01		0.15	0.09		0.01
v/c Ratio	0.17	0.13		0.77	0.01	0.06	0.04	0.53	0.41	0.20	0.59	0.02
Uniform Delay, d1	41.2	41.2		31.3	18.5	18.9	17.9	22.0	8.5	12.4	15.6	11.0
Progression Factor	1.00	1.00		1.00	1.00	1.00	0.84	0.97	5.45	0.69	0.70	0.42
Incremental Delay, d2	1.1	0.9		4.2	0.0	0.0	0.2	2.8	0.2	0.2	2.5	0.1
Delay (s)	42.3	42.1		35.5	18.5	18.9	15.3	24.1	46.8	8.8	13.5	4.7
Level of Service	D	D		D	B	B	B	C	D	A	B	A
Approach Delay (s)		42.1			33.1			39.1			12.7	
Approach LOS		D			C			D			B	

Intersection Summary			
HCM Average Control Delay	30.4	HCM Level of Service	C
HCM Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	17.7
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	7	68	752	7	22	248
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.69	0.82	0.62	0.56	0.90
Hourly flow rate (vph)	11	99	917	11	39	276
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1271	917			928	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1271	917			928	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	70			95	
cM capacity (veh/h)	177	332			745	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	110	917	11	39	276
Volume Left	11	0	0	39	0
Volume Right	99	0	11	0	0
cSH	305	1700	1700	745	1700
Volume to Capacity	0.36	0.54	0.01	0.05	0.16
Queue Length 95th (ft)	40	0	0	4	0
Control Delay (s)	23.3	0.0	0.0	10.1	0.0
Lane LOS	C			B	
Approach Delay (s)	23.3	0.0		1.3	
Approach LOS	C				

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	4	55	405	2	58	617
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.38	0.75	0.91	0.25	0.62	0.89
Hourly flow rate (vph)	11	73	445	8	94	693
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1325	445			453	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1325	445			453	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	93	88			92	
cM capacity (veh/h)	159	617			1118	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	84	445	8	94	693
Volume Left	11	0	0	94	0
Volume Right	73	0	8	0	0
cSH	453	1700	1700	1118	1700
Volume to Capacity	0.19	0.26	0.00	0.08	0.41
Queue Length 95th (ft)	17	0	0	7	0
Control Delay (s)	14.7	0.0	0.0	8.5	0.0
Lane LOS	B			A	
Approach Delay (s)	14.7	0.0		1.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	114	85	92	91	99	186	668	14	22	175	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1666		1444	1708		1583	1852		1805	1753	
Flt Permitted	0.57	1.00		0.53	1.00		0.62	1.00		0.20	1.00	
Satd. Flow (perm)	1063	1666		810	1708		1028	1852		383	1753	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	39	139	127	148	115	129	227	742	20	33	216	11
RTOR Reduction (vph)	0	52	0	0	64	0	0	1	0	0	2	0
Lane Group Flow (vph)	39	214	0	148	180	0	227	761	0	33	225	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	15.8	15.8		15.8	15.8		30.4	30.4		30.4	30.4	
Effective Green, g (s)	15.8	15.8		15.8	15.8		30.4	30.4		30.4	30.4	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.52	0.52		0.52	0.52	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	289	452		220	464		537	967		200	916	
v/s Ratio Prot		0.13			0.11			c0.41			0.13	
v/s Ratio Perm	0.04			c0.18			0.22			0.09		
v/c Ratio	0.13	0.47		0.67	0.39		0.42	0.79		0.16	0.25	
Uniform Delay, d1	16.0	17.7		18.9	17.3		8.5	11.3		7.3	7.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.9		8.2	0.6		1.3	5.1		1.0	0.3	
Delay (s)	16.3	18.6		27.1	17.9		9.8	16.4		8.2	8.0	
Level of Service	B	B		C	B		A	B		A	A	
Approach Delay (s)		18.3			21.4			14.9			8.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	15.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	37	124	36	83	133	164	165	309	29	38	407	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.91		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1679	1785		1583	1642		1410	1751		1410	1783	
Flt Permitted	0.40	1.00		0.64	1.00		0.41	1.00		0.50	1.00	
Satd. Flow (perm)	705	1785		1062	1642		611	1751		748	1783	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	44	144	47	98	155	216	192	340	51	70	473	15
RTOR Reduction (vph)	0	18	0	0	78	0	0	8	0	0	2	0
Lane Group Flow (vph)	44	173	0	98	293	0	192	383	0	70	486	0
Confl. Peds. (#/hr)	5											
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	15.3	15.3		15.3	15.3		25.4	25.4		25.4	25.4	
Effective Green, g (s)	15.3	15.3		15.3	15.3		25.4	25.4		25.4	25.4	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.48	0.48		0.48	0.48	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	205	518		308	477		294	844		361	859	
v/s Ratio Prot		0.10			c0.18			0.22			0.27	
v/s Ratio Perm	0.06			0.09			c0.31			0.09		
v/c Ratio	0.21	0.33		0.32	0.61		0.65	0.45		0.19	0.57	
Uniform Delay, d1	14.2	14.7		14.6	16.2		10.3	9.0		7.8	9.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.6	0.5		0.7	2.5		7.5	1.0		0.6	1.6	
Delay (s)	14.8	15.1		15.3	18.6		17.8	10.0		8.4	11.3	
Level of Service	B	B		B	B		B	B		A	B	
Approach Delay (s)		15.1			17.9			12.6			11.0	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	52.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	114	85	92	91	99	186	668	14	22	175	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1666		1444	1708		1583	1852		1805	1753	
Flt Permitted	0.44	1.00		0.38	1.00		0.62	1.00		0.20	1.00	
Satd. Flow (perm)	815	1666		575	1708		1027	1852		385	1753	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	39	139	127	148	115	129	227	742	20	33	216	11
RTOR Reduction (vph)	0	34	0	0	43	0	0	1	0	0	2	0
Lane Group Flow (vph)	39	232	0	148	201	0	227	761	0	33	225	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		8		7	4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	17.8	17.8		31.9	31.9		56.1	56.1		56.1	56.1	
Effective Green, g (s)	17.8	17.8		31.9	31.9		56.1	56.1		56.1	56.1	
Actuated g/C Ratio	0.18	0.18		0.32	0.32		0.56	0.56		0.56	0.56	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.0	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	145	297		256	545		576	1039		216	983	
v/s Ratio Prot		c0.14		c0.05	0.12			c0.41			0.13	
v/s Ratio Perm	0.05			0.14			0.22			0.09		
v/c Ratio	0.27	0.78		0.58	0.37		0.39	0.73		0.15	0.23	
Uniform Delay, d1	35.5	39.2		35.2	26.3		12.4	16.4		10.5	11.1	
Progression Factor	1.00	1.00		1.00	1.00		0.57	0.76		0.65	0.68	
Incremental Delay, d2	1.2	12.9		3.1	0.5		1.7	3.8		1.4	0.5	
Delay (s)	36.7	52.2		38.3	26.8		8.8	16.3		8.2	8.1	
Level of Service	D	D		D	C		A	B		A	A	
Approach Delay (s)		50.2			31.1			14.5			8.1	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM Average Control Delay	22.6	HCM Level of Service	C
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	86.0%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	37	124	36	83	133	164	165	309	29	38	407	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	0.99	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.91		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1671	1785		1583	1642		1410	1751		1410	1783	
Flt Permitted	0.54	1.00		0.36	1.00		0.41	1.00		0.48	1.00	
Satd. Flow (perm)	951	1785		594	1642		602	1751		716	1783	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	44	144	47	98	155	216	192	340	51	70	473	15
RTOR Reduction (vph)	0	13	0	0	56	0	0	6	0	0	1	0
Lane Group Flow (vph)	44	178	0	98	315	0	192	385	0	70	487	0
Confl. Peds. (#/hr)	5											
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			pm+pt			Perm			Perm		
Protected Phases		8		7	4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	14.6	14.6		27.3	27.3		50.7	50.7		50.7	50.7	
Effective Green, g (s)	14.6	14.6		27.3	27.3		50.7	50.7		50.7	50.7	
Actuated g/C Ratio	0.16	0.16		0.30	0.30		0.56	0.56		0.56	0.56	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.0	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	154	290		257	498		339	986		403	1004	
v/s Ratio Prot		0.10		0.03	c0.19			0.22			0.27	
v/s Ratio Perm	0.05			0.09			c0.32			0.10		
v/c Ratio	0.29	0.61		0.38	0.63		0.57	0.39		0.17	0.48	
Uniform Delay, d1	33.1	35.1		23.8	27.0		12.6	11.0		9.5	11.8	
Progression Factor	1.00	1.00		1.00	1.00		0.76	0.62		0.67	0.68	
Incremental Delay, d2	1.2	4.0		0.9	2.7		6.5	1.1		0.9	1.5	
Delay (s)	34.3	39.1		24.7	29.8		16.1	7.9		7.2	9.6	
Level of Service	C	D		C	C		B	A		A	A	
Approach Delay (s)		38.2			28.7			10.6			9.3	
Approach LOS		D			C			B			A	

Intersection Summary			
HCM Average Control Delay	18.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	2	42	4	68	77	11	0	635	229	8	154	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Hourly flow rate (vph)	8	59	16	74	103	15	0	730	294	16	188	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								745				
pX, platoon unblocked	0.61	0.61		0.61	0.61	0.61				0.61		
vC, conflicting volume	1180	1261	206	1160	1132	877	224			1023		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	979	1110	206	945	900	483	224			722		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	88	53	98	18	38	96	100			97		
cM capacity (veh/h)	67	125	840	90	166	360	1357			462		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	83	191	1023	240
Volume Left	8	74	0	16
Volume Right	16	15	294	36
cSH	136	129	1357	462
Volume to Capacity	0.61	1.48	0.00	0.03
Queue Length 95th (ft)	80	330	0	3
Control Delay (s)	66.4	316.1	0.0	1.4
Lane LOS	F	F		A
Approach Delay (s)	66.4	316.1	0.0	1.4
Approach LOS	F	F		

Intersection Summary			
Average Delay	43.1		
Intersection Capacity Utilization	69.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	9	66	0	110	54	14	0	270	184	5	449	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Hourly flow rate (vph)	16	97	0	125	64	20	0	303	216	9	483	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								744				
pX, platoon unblocked	0.94	0.94		0.94	0.94	0.94				0.94		
vC, conflicting volume	975	1031	494	972	934	412	505			520		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	944	1004	494	941	901	347	505			462		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	91	57	100	19	76	97	100			99		
cM capacity (veh/h)	180	228	579	154	262	642	1070			1048		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	113	209	520	514
Volume Left	16	125	0	9
Volume Right	0	20	216	22
cSH	220	192	1070	1048
Volume to Capacity	0.51	1.09	0.00	0.01
Queue Length 95th (ft)	66	249	0	1
Control Delay (s)	37.3	140.8	0.0	0.2
Lane LOS	E	F		A
Approach Delay (s)	37.3	140.8	0.0	0.2
Approach LOS	E	F		

Intersection Summary			
Average Delay	24.9		
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	2	42	4	68	77	11	0	635	229	8	154	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7			6.1			6.1	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.97			0.99			0.96			0.98	
Flt Protected		1.00			0.98			1.00			1.00	
Satd. Flow (prot)		1842			1844			1791			1698	
Flt Permitted		0.96			0.86			1.00			0.92	
Satd. Flow (perm)		1779			1611			1791			1573	
Peak-hour factor, PHF	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Adj. Flow (vph)	8	59	16	74	103	15	0	730	294	16	188	36
RTOR Reduction (vph)	0	8	0	0	3	0	0	14	0	0	6	0
Lane Group Flow (vph)	0	75	0	0	189	0	0	1010	0	0	234	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	2%	33%	9%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		15.3			15.3			72.9			72.9	
Effective Green, g (s)		15.3			15.3			72.9			72.9	
Actuated g/C Ratio		0.15			0.15			0.73			0.73	
Clearance Time (s)		5.7			5.7			6.1			6.1	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		272			246			1306			1147	
v/s Ratio Prot								c0.56				
v/s Ratio Perm		0.04			c0.12						0.15	
v/c Ratio		0.27			0.77			0.77			0.20	
Uniform Delay, d1		37.4			40.6			8.4			4.3	
Progression Factor		1.00			1.00			1.16			1.00	
Incremental Delay, d2		0.5			13.3			3.5			0.4	
Delay (s)		38.0			54.0			13.3			4.7	
Level of Service		D			D			B			A	
Approach Delay (s)		38.0			54.0			13.3			4.7	
Approach LOS		D			D			B			A	

Intersection Summary			
HCM Average Control Delay	18.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	100.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	9	66	0	110	54	14	0	270	184	5	449	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7			6.1			6.1	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.94			0.99	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1887			1805			1752			1870	
Flt Permitted		0.95			0.76			1.00			0.99	
Satd. Flow (perm)		1797			1414			1752			1855	
Peak-hour factor, PHF	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Adj. Flow (vph)	16	97	0	125	64	20	0	303	216	9	483	22
RTOR Reduction (vph)	0	0	0	0	5	0	0	22	0	0	1	0
Lane Group Flow (vph)	0	113	0	0	204	0	0	497	0	0	513	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	4%	0%	0%	1%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		18.0			18.0			60.2			60.2	
Effective Green, g (s)		18.0			18.0			60.2			60.2	
Actuated g/C Ratio		0.20			0.20			0.67			0.67	
Clearance Time (s)		5.7			5.7			6.1			6.1	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		359			283			1172			1241	
v/s Ratio Prot								c0.28				
v/s Ratio Perm		0.06			c0.14						0.28	
v/c Ratio		0.31			0.72			0.42			0.41	
Uniform Delay, d1		30.7			33.7			6.9			6.8	
Progression Factor		1.00			1.00			0.49			1.00	
Incremental Delay, d2		0.5			8.8			1.1			1.0	
Delay (s)		31.2			42.4			4.4			7.8	
Level of Service		C			D			A			A	
Approach Delay (s)		31.2			42.4			4.4			7.8	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	13.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	171	5	9	81	70	13	111	33	99	22	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.94			0.97			0.99	
Flt Protected		0.99			1.00			0.99			0.96	
Satd. Flow (prot)		1792			1637			1821			1715	
Flt Permitted		0.90			0.96			0.95			0.70	
Satd. Flow (perm)		1629			1584			1741			1253	
Peak-hour factor, PHF	0.50	0.69	0.84	0.58	0.92	0.74	0.62	0.83	0.75	0.73	0.75	0.50
Adj. Flow (vph)	66	248	6	16	88	95	21	134	44	136	29	10
RTOR Reduction (vph)	0	1	0	0	48	0	0	15	0	0	3	0
Lane Group Flow (vph)	0	319	0	0	151	0	0	184	0	0	172	0
Heavy Vehicles (%)	0%	6%	0%	0%	12%	6%	0%	1%	0%	6%	7%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.4			25.4			14.1			14.1	
Effective Green, g (s)		25.4			25.4			14.1			14.1	
Actuated g/C Ratio		0.49			0.49			0.27			0.27	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)		803			781			477			343	
v/s Ratio Prot												
v/s Ratio Perm		c0.20			0.10			0.11			c0.14	
v/c Ratio		0.40			0.19			0.39			0.50	
Uniform Delay, d1		8.2			7.3			15.2			15.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.1			0.4			1.1			2.4	
Delay (s)		9.4			7.7			16.3			18.1	
Level of Service		A			A			B			B	
Approach Delay (s)		9.4			7.7			16.3			18.1	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	51.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	3	162	20	52	243	123	13	39	38	151	95	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.95			0.95			0.99	
Flt Protected		1.00			0.99			0.99			0.97	
Satd. Flow (prot)		1802			1763			1791			1827	
Flt Permitted		0.99			0.93			0.91			0.75	
Satd. Flow (perm)		1788			1653			1648			1406	
Peak-hour factor, PHF	0.75	0.89	0.67	0.80	0.90	0.70	0.62	0.62	0.78	0.70	0.74	0.67
Adj. Flow (vph)	4	182	30	65	270	176	21	63	49	216	128	30
RTOR Reduction (vph)	0	10	0	0	33	0	0	28	0	0	4	0
Lane Group Flow (vph)	0	206	0	0	478	0	0	105	0	0	370	0
Heavy Vehicles (%)	0%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		27.1			27.1			19.1			19.1	
Effective Green, g (s)		27.1			27.1			19.1			19.1	
Actuated g/C Ratio		0.47			0.47			0.33			0.33	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		5.0			5.0			7.0			7.0	
Lane Grp Cap (vph)		833			770			541			461	
v/s Ratio Prot												
v/s Ratio Perm		0.12			c0.29			0.06			c0.26	
v/c Ratio		0.25			0.62			0.19			0.80	
Uniform Delay, d1		9.4			11.7			14.0			17.8	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			2.2			0.6			12.0	
Delay (s)		9.7			13.9			14.7			29.9	
Level of Service		A			B			B			C	
Approach Delay (s)		9.7			13.9			14.7			29.9	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	18.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	12.0
Intersection Capacity Utilization	80.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	12	1	3	204	116	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	13	1	3	222	126	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	356	128	129			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	356	128	129			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	641	922	1456			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	14	225	129
Volume Left	13	3	0
Volume Right	1	0	3
cSH	656	1456	1700
Volume to Capacity	0.02	0.00	0.08
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.6	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	10.6	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	23.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	5	3	7	160	211	7
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	5	3	8	174	229	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	422	233	237			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	422	233	237			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	99			
cM capacity (veh/h)	585	806	1330			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	9	182	237
Volume Left	5	8	0
Volume Right	3	0	8
cSH	652	1330	1700
Volume to Capacity	0.01	0.01	0.14
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.6	0.4	0.0
Lane LOS	B	A	
Approach Delay (s)	10.6	0.4	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.4		
Intersection Capacity Utilization	24.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	15	15	207	117	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	16	16	225	127	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	385	127	127			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	385	127	127			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	98	99			
cM capacity (veh/h)	611	923	1459			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	241	127
Volume Left	0	16	0
Volume Right	16	0	0
cSH	923	1459	1700
Volume to Capacity	0.02	0.01	0.07
Queue Length 95th (ft)	1	1	0
Control Delay (s)	9.0	0.6	0.0
Lane LOS	A	A	
Approach Delay (s)	9.0	0.6	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	28.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	0	32	30	167	213	1
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	35	33	182	232	1
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	479	232	233			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	479	232	233			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	96	98			
cM capacity (veh/h)	532	807	1335			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	35	214	233
Volume Left	0	33	0
Volume Right	35	0	1
cSH	807	1335	1700
Volume to Capacity	0.04	0.02	0.14
Queue Length 95th (ft)	3	2	0
Control Delay (s)	9.7	1.4	0.0
Lane LOS	A	A	
Approach Delay (s)	9.7	1.4	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.3		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Alternative B 2020

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	220	0	258	385	859	0	0	567	183
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2993		1392	1612	4848			3059	1404
Flt Permitted				0.95		1.00	0.27	1.00			1.00	1.00
Satd. Flow (perm)				2993		1392	456	4848			3059	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.68	0.92	0.71	0.79	0.84	0.92	0.92	0.90	0.93
Adj. Flow (vph)	0	0	0	324	0	363	487	1023	0	0	630	197
RTOR Reduction (vph)	0	0	0	0	0	111	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	324	0	252	487	1023	0	0	630	197
Heavy Vehicles (%)	2%	2%	2%	17%	0%	16%	12%	7%	0%	0%	18%	15%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				18.6		18.6	45.3	45.3			25.1	74.9
Effective Green, g (s)				18.6		18.6	45.3	45.3			25.1	74.9
Actuated g/C Ratio				0.25		0.25	0.60	0.60			0.34	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				743		346	509	2932			1025	1404
v/s Ratio Prot							c0.19	0.21			0.21	
v/s Ratio Perm				0.11		c0.18	c0.39					0.14
v/c Ratio				0.44		0.73	0.96	0.35			0.61	0.14
Uniform Delay, d1				23.7		25.8	11.9	7.4			20.9	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.3		7.1	28.7	0.2			1.6	0.2
Delay (s)				24.1		32.9	40.6	7.6			22.4	0.2
Level of Service				C		C	D	A			C	A
Approach Delay (s)		0.0			28.7			18.2			17.1	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	20.3	HCM Level of Service	C
HCM Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	74.9	Sum of lost time (s)	10.3
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	303	0	181	500	653	0	0	829	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3303		1429	1719	4848			3406	1553
Flt Permitted				0.95		1.00	0.16	1.00			1.00	1.00
Satd. Flow (perm)				3303		1429	283	4848			3406	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.25	0.78	0.83	0.90	0.92	0.25	0.84	0.81
Adj. Flow (vph)	0	0	0	365	0	232	602	726	0	0	987	542
RTOR Reduction (vph)	0	0	0	0	0	191	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	365	0	41	602	726	0	0	987	542
Heavy Vehicles (%)	2%	2%	2%	6%	0%	13%	5%	7%	0%	0%	6%	4%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				13.9		13.9	53.2	53.2			33.0	78.1
Effective Green, g (s)				13.9		13.9	53.2	53.2			33.0	78.1
Actuated g/C Ratio				0.18		0.18	0.68	0.68			0.42	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				588		254	470	3302			1439	1553
v/s Ratio Prot							c0.25	0.15			0.29	
v/s Ratio Perm				c0.11		0.03	c0.62					0.35
v/c Ratio				0.62		0.16	1.28	0.22			0.69	0.35
Uniform Delay, d1				29.7		27.2	19.0	4.7			18.3	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				1.8		0.2	141.9	0.1			1.8	0.6
Delay (s)				31.5		27.4	160.9	4.7			20.1	0.6
Level of Service				C		C	F	A			C	A
Approach Delay (s)		0.0			29.9			75.5			13.2	
Approach LOS		A			C			E			B	

Intersection Summary			
HCM Average Control Delay	40.1	HCM Level of Service	D
HCM Volume to Capacity ratio	1.09		
Actuated Cycle Length (s)	78.1	Sum of lost time (s)	10.3
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	303	0	181	500	653	0	0	829	439
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3303		1429	1719	4848			3406	1553
Flt Permitted				0.95		1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)				3303		1429	203	4848			3406	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.25	0.78	0.83	0.90	0.92	0.25	0.84	0.81
Adj. Flow (vph)	0	0	0	365	0	232	602	726	0	0	987	542
RTOR Reduction (vph)	0	0	0	0	0	199	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	365	0	33	602	726	0	0	987	542
Heavy Vehicles (%)	2%	2%	2%	6%	0%	13%	5%	7%	0%	0%	6%	4%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				14.0		14.0	73.1	73.1			35.3	98.1
Effective Green, g (s)				14.0		14.0	73.1	73.1			35.3	98.1
Actuated g/C Ratio				0.14		0.14	0.75	0.75			0.36	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				471		204	657	3613			1226	1553
v/s Ratio Prot							c0.31	0.15			0.29	
v/s Ratio Perm				c0.11		0.02	c0.38					0.35
v/c Ratio				0.77		0.16	0.92	0.20			0.81	0.35
Uniform Delay, d1				40.5		36.9	24.6	3.7			28.3	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				7.6		0.3	17.2	0.1			4.5	0.6
Delay (s)				48.1		37.2	41.8	3.8			32.8	0.6
Level of Service				D		D	D	A			C	A
Approach Delay (s)		0.0			43.9			21.0			21.4	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM Average Control Delay	25.1	HCM Level of Service	C
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	98.1	Sum of lost time (s)	10.3
Intersection Capacity Utilization	71.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	792	200	177	596	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.74	0.92	0.92	0.92	0.92	0.85	0.69	0.81	0.87	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	932	290	219	685	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1588	2054	343	1856	2199	611	685			932		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1588	2054	343	1856	2199	611	685			932		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.5		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	100	100	100	100	100	100	100			65		
cM capacity (veh/h)	53	36	636	33	29	437	904			628		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	621	600	219	343	343
Volume Left	0	0	0	219	0	0
Volume Right	0	0	290	0	0	0
cSH	1700	1700	1700	628	1700	1700
Volume to Capacity	0.00	0.37	0.35	0.35	0.20	0.20
Queue Length 95th (ft)	0	0	0	39	0	0
Control Delay (s)	0.0	0.0	0.0	13.8	0.0	0.0
Lane LOS	A			B		
Approach Delay (s)	0.0	0.0		3.3		
Approach LOS	A					

Intersection Summary			
Average Delay	1.4		
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	951	268	257	874	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.84	0.92	0.92	0.92	0.92	0.86	0.81	0.78	0.85	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	1106	331	329	1028	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2240	2793	514	2444	2958	718	1028			1106		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2240	2793	514	2444	2958	718	1028			1106		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	100	100	100	100	100	100			45		
cM capacity (veh/h)	13	8	485	9	6	371	671			604		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	737	699	329	514	514
Volume Left	0	0	0	329	0	0
Volume Right	0	0	331	0	0	0
cSH	1700	1700	1700	604	1700	1700
Volume to Capacity	0.00	0.43	0.41	0.55	0.30	0.30
Queue Length 95th (ft)	0	0	0	82	0	0
Control Delay (s)	0.0	0.0	0.0	17.9	0.0	0.0
Lane LOS	A			C		
Approach Delay (s)	0.0	0.0		4.3		
Approach LOS	A					

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	76	46	43	49	13	158	15	759	41	131	750	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1766		1805	1900	1538	1805	3378		1719	3335	
Flt Permitted	0.71	1.00		0.65	1.00	1.00	0.29	1.00		0.15	1.00	
Satd. Flow (perm)	1352	1766		1239	1900	1538	542	3378		279	3335	
Peak-hour factor, PHF	0.75	0.62	0.65	0.50	0.60	0.73	0.69	0.89	0.50	0.70	0.82	0.75
Adj. Flow (vph)	101	74	66	98	22	216	22	853	82	187	915	28
RTOR Reduction (vph)	0	26	0	0	0	186	0	5	0	0	1	0
Lane Group Flow (vph)	101	114	0	98	22	30	22	930	0	187	942	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	6%	0%	5%	8%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	24.2	14.2		23.0	13.6	13.6	41.6	39.3		57.7	49.9	
Effective Green, g (s)	24.2	14.2		23.0	13.6	13.6	41.6	39.3		57.7	49.9	
Actuated g/C Ratio	0.25	0.14		0.23	0.14	0.14	0.42	0.40		0.59	0.51	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	378	254		343	262	212	258	1346		352	1688	
v/s Ratio Prot	0.03	c0.06		c0.03	0.01		0.00	c0.28		c0.07	c0.28	
v/s Ratio Perm	0.04			0.04		0.02	0.03			0.24		
v/c Ratio	0.27	0.45		0.29	0.08	0.14	0.09	0.69		0.53	0.56	
Uniform Delay, d1	29.7	38.6		30.6	37.1	37.4	16.7	24.6		13.3	16.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	2.6		0.5	0.3	0.6	0.1	2.0		1.5	0.7	
Delay (s)	30.1	41.3		31.1	37.4	38.0	16.9	26.6		14.8	17.4	
Level of Service	C	D		C	D	D	B	C		B	B	
Approach Delay (s)		36.6			35.9			26.4			17.0	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	24.5	HCM Level of Service	C
HCM Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	22.2
Intersection Capacity Utilization	54.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	23	25	22	88	38	148	50	1048	62	163	1069	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1777		1805	1900	1442	1805	3453		1736	3509	
Flt Permitted	0.72	1.00		0.50	1.00	1.00	0.13	1.00		0.08	1.00	
Satd. Flow (perm)	1371	1777		958	1900	1442	250	3453		142	3509	
Peak-hour factor, PHF	0.50	0.46	0.54	0.65	0.71	0.78	0.65	0.90	0.69	0.81	0.88	0.68
Adj. Flow (vph)	46	54	41	135	54	190	77	1164	90	201	1215	74
RTOR Reduction (vph)	0	23	0	0	0	158	0	4	0	0	2	0
Lane Group Flow (vph)	46	72	0	135	54	32	77	1250	0	201	1287	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	3%	9%	4%	2%	2%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	20.0	13.7		30.4	18.9	18.9	55.7	49.6		69.1	57.5	
Effective Green, g (s)	20.0	13.7		30.4	18.9	18.9	55.7	49.6		69.1	57.5	
Actuated g/C Ratio	0.18	0.12		0.27	0.17	0.17	0.50	0.44		0.62	0.52	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	270	218		348	322	244	210	1535		288	1808	
v/s Ratio Prot	0.01	0.04		c0.04	0.03		0.02	c0.36		c0.09	c0.37	
v/s Ratio Perm	0.02			c0.07		0.02	0.16			0.34		
v/c Ratio	0.17	0.33		0.39	0.17	0.13	0.37	0.81		0.70	0.71	
Uniform Delay, d1	38.6	44.8		32.1	39.6	39.4	16.7	27.0		26.5	20.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	1.9		0.7	0.5	0.5	1.1	3.9		7.2	1.7	
Delay (s)	38.9	46.6		32.8	40.1	39.9	17.8	30.9		33.6	22.4	
Level of Service	D	D		C	D	D	B	C		C	C	
Approach Delay (s)		44.1			37.4			30.1			23.9	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	28.8	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	111.6	Sum of lost time (s)	27.7
Intersection Capacity Utilization	65.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	28	12	30	4	9	35	6	595	8	21	535	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.69	0.54	0.75	0.50	0.79	0.62	0.87	0.59	0.54	0.84	0.75
Hourly flow rate (vph)	56	17	56	5	18	44	10	684	14	39	637	13
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1485	1438	644	1496	1438	691	650			697		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1485	1438	644	1496	1438	691	650			697		
tC, single (s)	7.1	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	30	86	88	93	86	90	99			96		
cM capacity (veh/h)	80	122	477	77	127	448	946			908		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	129	68	707	689
Volume Left	56	5	10	39
Volume Right	56	44	14	13
cSH	135	219	946	908
Volume to Capacity	0.96	0.31	0.01	0.04
Queue Length 95th (ft)	165	31	1	3
Control Delay (s)	129.8	28.7	0.3	1.1
Lane LOS	F	D	A	A
Approach Delay (s)	129.8	28.7	0.3	1.1
Approach LOS	F	D		

Intersection Summary			
Average Delay	12.3		
Intersection Capacity Utilization	59.4%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	13	17	14	3	8	43	24	691	0	44	738	19
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.62	0.65	0.50	0.44	0.75	0.79	0.96	0.25	0.52	0.83	0.75
Hourly flow rate (vph)	26	27	22	6	18	57	30	720	0	85	889	25
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1918	1852	902	1887	1864	720	914			720		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1918	1852	902	1887	1864	720	914			720		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	18	58	94	81	72	86	96			91		
cM capacity (veh/h)	32	65	339	31	64	425	754			891		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	75	82	750	999
Volume Left	26	6	30	85
Volume Right	22	57	0	25
cSH	57	133	754	891
Volume to Capacity	1.31	0.61	0.04	0.09
Queue Length 95th (ft)	163	79	3	8
Control Delay (s)	342.1	67.7	1.1	2.6
Lane LOS	F	F	A	A
Approach Delay (s)	342.1	67.7	1.1	2.6
Approach LOS	F	F		

Intersection Summary			
Average Delay	18.1		
Intersection Capacity Utilization	72.2%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	28	12	30	4	9	35	6	595	8	21	535	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2			6.2			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.94			0.91			1.00			1.00	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1730			1725			1875			1701	
Flt Permitted		0.83			0.97			0.99			0.94	
Satd. Flow (perm)		1464			1682			1859			1605	
Peak-hour factor, PHF	0.50	0.69	0.54	0.75	0.50	0.79	0.62	0.87	0.59	0.54	0.84	0.75
Adj. Flow (vph)	56	17	56	5	18	44	10	684	14	39	637	13
RTOR Reduction (vph)	0	48	0	0	39	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	81	0	0	28	0	0	707	0	0	688	0
Heavy Vehicles (%)	0%	9%	0%	0%	0%	0%	0%	1%	0%	0%	12%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		6.6			6.6			41.8			41.8	
Effective Green, g (s)		6.6			6.6			41.8			41.8	
Actuated g/C Ratio		0.11			0.11			0.69			0.69	
Clearance Time (s)		6.2			6.2			6.2			6.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		159			183			1278			1103	
v/s Ratio Prot												
v/s Ratio Perm		c0.06			0.02			0.38			c0.43	
v/c Ratio		0.51			0.15			0.55			0.62	
Uniform Delay, d1		25.6			24.6			4.8			5.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.5			0.4			1.7			2.7	
Delay (s)		28.1			24.9			6.5			7.9	
Level of Service		C			C			A			A	
Approach Delay (s)		28.1			24.9			6.5			7.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.8	Sum of lost time (s)	12.4
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	13	17	14	3	8	43	24	691	0	44	738	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2			6.2			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			0.90			1.00			1.00	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1794			1666			1809			1821	
Flt Permitted		0.85			0.96			0.94			0.89	
Satd. Flow (perm)		1555			1614			1710			1619	
Peak-hour factor, PHF	0.50	0.62	0.65	0.50	0.44	0.75	0.79	0.96	0.25	0.52	0.83	0.75
Adj. Flow (vph)	26	27	22	6	18	57	30	720	0	85	889	25
RTOR Reduction (vph)	0	20	0	0	52	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	55	0	0	29	0	0	750	0	0	998	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	5%	0%	0%	4%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		5.6			5.6			48.5			48.5	
Effective Green, g (s)		5.6			5.6			48.5			48.5	
Actuated g/C Ratio		0.08			0.08			0.73			0.73	
Clearance Time (s)		6.2			6.2			6.2			6.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		131			136			1247			1181	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.02			0.44			c0.62	
v/c Ratio		0.42			0.21			0.60			0.84	
Uniform Delay, d1		28.9			28.4			4.3			6.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		2.2			0.8			2.2			7.5	
Delay (s)		31.1			29.2			6.5			13.8	
Level of Service		C			C			A			B	
Approach Delay (s)		31.1			29.2			6.5			13.8	
Approach LOS		C			C			A			B	

Intersection Summary			
HCM Average Control Delay	12.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	66.5	Sum of lost time (s)	12.4
Intersection Capacity Utilization	75.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	39	171	8	3	122	33	14	67	6	36	29	35
Peak Hour Factor	0.60	0.82	0.44	0.50	0.77	0.83	0.75	0.60	0.62	0.55	0.84	0.59
Hourly flow rate (vph)	65	209	18	6	158	40	19	112	10	65	35	59

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	65	227	85	119	140	159
Volume Left (vph)	65	0	6	0	19	65
Volume Right (vph)	0	18	0	40	10	59
Hadj (s)	0.72	0.07	0.21	-0.11	0.03	0.25
Departure Headway (s)	6.4	5.7	6.0	5.7	5.5	5.7
Degree Utilization, x	0.12	0.36	0.14	0.19	0.21	0.25
Capacity (veh/h)	534	601	564	596	601	585
Control Delay (s)	9.0	10.7	8.8	8.8	10.0	10.6
Approach Delay (s)	10.4		8.8		10.0	10.6
Approach LOS	B		A		B	B

Intersection Summary			
Delay	9.9		
HCM Level of Service	A		
Intersection Capacity Utilization	35.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	35	177	9	3	218	53	10	44	4	49	68	43
Peak Hour Factor	0.58	0.97	0.75	0.50	0.81	0.82	0.45	0.73	0.75	0.75	0.79	0.61
Hourly flow rate (vph)	60	182	12	6	269	65	22	60	5	65	86	70

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	60	194	141	199	88	222
Volume Left (vph)	60	0	6	0	22	65
Volume Right (vph)	0	12	0	65	5	70
Hadj (s)	0.99	0.13	0.20	-0.02	0.10	-0.06
Departure Headway (s)	6.9	6.0	6.0	5.8	6.0	5.5
Degree Utilization, x	0.12	0.33	0.23	0.32	0.15	0.34
Capacity (veh/h)	492	566	571	594	535	603
Control Delay (s)	9.6	10.7	9.6	10.3	10.0	11.4
Approach Delay (s)	10.5		10.0		10.0	11.4
Approach LOS	B		B		A	B

Intersection Summary			
Delay	10.5		
HCM Level of Service	B		
Intersection Capacity Utilization	42.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	38	4	2	42	15	7	60	2	9	22	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.75	0.25	0.25	0.67	0.44	0.25	0.69	0.25	0.67	0.83	0.25
Hourly flow rate (vph)	8	51	16	8	63	34	28	87	8	13	27	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	270	208	31	246	208	91	35			95		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	270	208	31	246	208	91	35			95		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	92	98	99	91	96	98			99		
cM capacity (veh/h)	603	669	1050	648	674	972	1590			1512		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	75	105	123	48
Volume Left	8	8	28	13
Volume Right	16	34	8	8
cSH	716	746	1590	1512
Volume to Capacity	0.10	0.14	0.02	0.01
Queue Length 95th (ft)	9	12	1	1
Control Delay (s)	10.6	10.6	1.8	2.1
Lane LOS	B	B	A	A
Approach Delay (s)	10.6	10.6	1.8	2.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	14.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	40	9	5	62	21	10	42	3	4	51	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.65	0.50	0.50	0.73	0.47	0.38	0.81	0.50	0.50	0.45	0.25
Hourly flow rate (vph)	0	62	18	10	85	45	26	52	6	8	113	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	328	244	117	290	245	55	121			58		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	328	244	117	290	245	55	121			58		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	90	98	98	87	96	98			99		
cM capacity (veh/h)	531	641	940	595	642	998	1479			1559		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	80	140	84	129
Volume Left	0	10	26	8
Volume Right	18	45	6	8
cSH	691	720	1479	1559
Volume to Capacity	0.12	0.19	0.02	0.01
Queue Length 95th (ft)	10	18	1	0
Control Delay (s)	10.9	11.2	2.4	0.5
Lane LOS	B	B	A	A
Approach Delay (s)	10.9	11.2	2.4	0.5
Approach LOS	B	B		

Intersection Summary			
Average Delay	6.2		
Intersection Capacity Utilization	21.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	48	217	598	80	315	527
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	236	650	87	342	573
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						845
pX, platoon unblocked	0.81					
vC, conflicting volume	1951	368			737	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2059	368			737	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	62			60	
cM capacity (veh/h)	23	629			865	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	52	236	433	304	342	573
Volume Left	52	0	0	0	342	0
Volume Right	0	236	0	87	0	0
cSH	23	629	1700	1700	865	1700
Volume to Capacity	2.26	0.38	0.25	0.18	0.40	0.34
Queue Length 95th (ft)	165	44	0	0	48	0
Control Delay (s)	930.5	14.1	0.0	0.0	11.9	0.0
Lane LOS	F	B			B	
Approach Delay (s)	180.1		0.0		4.4	
Approach LOS	F					

Intersection Summary			
Average Delay	28.8		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	116	519	641	106	493	686
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	126	564	697	115	536	746
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						845
pX, platoon unblocked	0.70					
vC, conflicting volume	2572	406			812	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3022	406			812	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	5			34	
cM capacity (veh/h)	2	594			810	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	126	564	464	347	536	746
Volume Left	126	0	0	0	536	0
Volume Right	0	564	0	115	0	0
cSH	2	594	1700	1700	810	1700
Volume to Capacity	51.74	0.95	0.27	0.20	0.66	0.44
Queue Length 95th (ft)	Err	319	0	0	128	0
Control Delay (s)	Err	51.8	0.0	0.0	17.7	0.0
Lane LOS	F	F			C	
Approach Delay (s)	1868.9		0.0		7.4	
Approach LOS	F					

Intersection Summary			
Average Delay	466.8		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	48	217	598	80	315	527
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.4	6.4	6.4	6.4
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	2787	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.32	1.00
Satd. Flow (perm)	1770	2787	3539	1583	589	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	236	650	87	342	573
RTOR Reduction (vph)	0	119	0	46	0	0
Lane Group Flow (vph)	52	117	650	41	342	573
Turn Type		pt+ov		Perm	pm+pt	
Protected Phases	8	8 1	2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	7.5	24.1	33.1	33.1	50.1	50.1
Effective Green, g (s)	7.5	24.1	33.1	33.1	50.1	50.1
Actuated g/C Ratio	0.11	0.34	0.47	0.47	0.72	0.72
Clearance Time (s)	6.0		6.4	6.4	6.4	6.4
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	190	960	1673	749	600	1333
v/s Ratio Prot	c0.03	0.04	0.18		c0.09	0.31
v/s Ratio Perm				0.03	c0.32	
v/c Ratio	0.27	0.12	0.39	0.05	0.57	0.43
Uniform Delay, d1	28.7	15.7	11.9	10.0	4.5	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.8	0.1	0.7	0.1	1.2	1.0
Delay (s)	29.5	15.8	12.6	10.1	5.7	5.1
Level of Service	C	B	B	B	A	A
Approach Delay (s)	18.2		12.3			5.3
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	9.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	116	519	641	106	493	686
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.4	6.4	6.4	6.4
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	2787	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.24	1.00
Satd. Flow (perm)	1770	2787	3539	1583	453	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	564	697	115	536	746
RTOR Reduction (vph)	0	42	0	74	0	0
Lane Group Flow (vph)	126	522	697	41	536	746
Turn Type		pt+ov		Perm	pm+pt	
Protected Phases	8	8 1	2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	8.0	32.4	24.8	24.8	49.6	49.6
Effective Green, g (s)	8.0	32.4	24.8	24.8	49.6	49.6
Actuated g/C Ratio	0.11	0.46	0.35	0.35	0.71	0.71
Clearance Time (s)	6.0		6.4	6.4	6.4	6.4
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	202	1290	1254	561	667	1320
v/s Ratio Prot	c0.07	0.19	0.20		c0.21	0.40
v/s Ratio Perm				0.03	c0.36	
v/c Ratio	0.62	0.40	0.56	0.07	0.80	0.57
Uniform Delay, d1	29.6	12.4	18.2	15.0	9.6	5.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.9	0.2	1.8	0.3	7.0	1.8
Delay (s)	35.4	12.6	20.0	15.2	16.6	6.7
Level of Service	D	B	B	B	B	A
Approach Delay (s)	16.8		19.3			10.8
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.4
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	198	28	3	165	41	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	215	30	3	179	45	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			246		327	123
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			246		327	123
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		93	99
cM capacity (veh/h)			1317		641	905

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	143	102	63	120	51
Volume Left	0	0	3	0	45
Volume Right	0	30	0	0	7
cSH	1700	1700	1317	1700	666
Volume to Capacity	0.08	0.06	0.00	0.07	0.08
Queue Length 95th (ft)	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.4	0.0	10.9
Lane LOS			A		B
Approach Delay (s)	0.0		0.1		10.9
Approach LOS					B

Intersection Summary			
Average Delay	1.2		
Intersection Capacity Utilization	16.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	207	51	6	261	35	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	225	55	7	284	38	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			280		408	140
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			280		408	140
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	100
cM capacity (veh/h)			1279		569	882

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	150	130	101	189	42
Volume Left	0	0	7	0	38
Volume Right	0	55	0	0	4
cSH	1700	1700	1279	1700	590
Volume to Capacity	0.09	0.08	0.01	0.11	0.07
Queue Length 95th (ft)	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.5	0.0	11.6
Lane LOS			A		B
Approach Delay (s)	0.0		0.2		11.6
Approach LOS					B

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	21.5%	ICU Level of Service	A
Analysis Period (min)	15		

Alternative B 2035

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	234	0	295	425	971	0	0	637	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2993		1392	1612	4848			3059	1404
Flt Permitted				0.95		1.00	0.22	1.00			1.00	1.00
Satd. Flow (perm)				2993		1392	375	4848			3059	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.68	0.92	0.71	0.79	0.84	0.92	0.92	0.90	0.93
Adj. Flow (vph)	0	0	0	344	0	415	538	1156	0	0	708	225
RTOR Reduction (vph)	0	0	0	0	0	79	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	344	0	336	538	1156	0	0	708	225
Heavy Vehicles (%)	2%	2%	2%	17%	0%	16%	12%	7%	0%	0%	18%	15%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				24.9		24.9	47.8	47.8			27.8	83.7
Effective Green, g (s)				24.9		24.9	47.8	47.8			27.8	83.7
Actuated g/C Ratio				0.30		0.30	0.57	0.57			0.33	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				890		414	434	2769			1016	1404
v/s Ratio Prot							c0.22	0.24			0.23	
v/s Ratio Perm				0.11		c0.24	c0.49					0.16
v/c Ratio				0.39		0.81	1.24	0.42			0.70	0.16
Uniform Delay, d1				23.3		27.2	16.5	10.1			24.3	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				0.2		11.2	126.2	0.2			2.7	0.2
Delay (s)				23.6		38.4	142.6	10.3			27.0	0.2
Level of Service				C		D	F	B			C	A
Approach Delay (s)		0.0			31.7			52.3			20.5	
Approach LOS		A			C			D			C	

Intersection Summary			
HCM Average Control Delay	38.9	HCM Level of Service	D
HCM Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	10.3
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	323	0	207	537	733	0	0	925	501
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		1.00	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3303		1429	1719	4848			3406	1553
Flt Permitted				0.95		1.00	0.13	1.00			1.00	1.00
Satd. Flow (perm)				3303		1429	232	4848			3406	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.25	0.78	0.83	0.90	0.92	0.25	0.84	0.81
Adj. Flow (vph)	0	0	0	389	0	265	647	814	0	0	1101	619
RTOR Reduction (vph)	0	0	0	0	0	185	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	389	0	80	647	814	0	0	1101	619
Heavy Vehicles (%)	2%	2%	2%	6%	0%	13%	5%	7%	0%	0%	6%	4%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				15.2		15.2	57.5	57.5			37.2	83.7
Effective Green, g (s)				15.2		15.2	57.5	57.5			37.2	83.7
Actuated g/C Ratio				0.18		0.18	0.69	0.69			0.44	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				600		260	429	3330			1514	1553
v/s Ratio Prot							c0.27	0.17			0.32	
v/s Ratio Perm				c0.12		0.06	c0.76					0.40
v/c Ratio				0.65		0.31	1.51	0.24			0.73	0.40
Uniform Delay, d1				31.8		29.7	22.1	4.9			19.1	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				2.2		0.5	240.5	0.1			2.2	0.8
Delay (s)				34.0		30.2	262.7	5.0			21.3	0.8
Level of Service				C		C	F	A			C	A
Approach Delay (s)		0.0			32.4			119.1			13.9	
Approach LOS		A			C			F			B	

Intersection Summary			
HCM Average Control Delay	57.1	HCM Level of Service	E
HCM Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	10.3
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	234	0	295	425	971	0	0	637	209
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		0.88	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				2993		2450	1612	4848			3059	1404
Flt Permitted				0.95		1.00	0.22	1.00			1.00	1.00
Satd. Flow (perm)				2993		2450	367	4848			3059	1404
Peak-hour factor, PHF	0.92	0.92	0.92	0.68	0.92	0.71	0.79	0.84	0.92	0.92	0.90	0.93
Adj. Flow (vph)	0	0	0	344	0	415	538	1156	0	0	708	225
RTOR Reduction (vph)	0	0	0	0	0	153	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	344	0	262	538	1156	0	0	708	225
Heavy Vehicles (%)	2%	2%	2%	17%	0%	16%	12%	7%	0%	0%	18%	15%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				12.4		12.4	46.3	46.3			22.0	69.7
Effective Green, g (s)				12.4		12.4	46.3	46.3			22.0	69.7
Actuated g/C Ratio				0.18		0.18	0.66	0.66			0.32	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				532		436	587	3220			966	1404
v/s Ratio Prot							c0.25	0.24			0.23	
v/s Ratio Perm				c0.11		0.11	c0.36					0.16
v/c Ratio				0.65		0.60	0.92	0.36			0.73	0.16
Uniform Delay, d1				26.6		26.4	13.7	5.2			21.2	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				2.5		2.0	18.8	0.1			3.5	0.2
Delay (s)				29.1		28.4	32.5	5.3			24.8	0.2
Level of Service				C		C	C	A			C	A
Approach Delay (s)		0.0			28.7			13.9			18.8	
Approach LOS		A			C			B			B	

Intersection Summary			
HCM Average Control Delay	18.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	69.7	Sum of lost time (s)	10.3
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	0	0	323	0	207	537	733	0	0	925	501
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)				5.2		5.2	5.1	5.8			5.8	4.0
Lane Util. Factor				0.97		0.88	1.00	0.91			0.95	1.00
Frt				1.00		0.85	1.00	1.00			1.00	0.85
Flt Protected				0.95		1.00	0.95	1.00			1.00	1.00
Satd. Flow (prot)				3303		2515	1719	4848			3406	1553
Flt Permitted				0.95		1.00	0.11	1.00			1.00	1.00
Satd. Flow (perm)				3303		2515	199	4848			3406	1553
Peak-hour factor, PHF	0.92	0.92	0.92	0.83	0.25	0.78	0.83	0.90	0.92	0.25	0.84	0.81
Adj. Flow (vph)	0	0	0	389	0	265	647	814	0	0	1101	619
RTOR Reduction (vph)	0	0	0	0	0	225	0	0	0	0	0	0
Lane Group Flow (vph)	0	0	0	389	0	40	647	814	0	0	1101	619
Heavy Vehicles (%)	2%	2%	2%	6%	0%	13%	5%	7%	0%	0%	6%	4%
Turn Type				custom		custom	pm+pt					Free
Protected Phases							1	6			2	
Permitted Phases				8		8	6					Free
Actuated Green, G (s)				13.9		13.9	68.1	68.1			31.3	93.0
Effective Green, g (s)				13.9		13.9	68.1	68.1			31.3	93.0
Actuated g/C Ratio				0.15		0.15	0.73	0.73			0.34	1.00
Clearance Time (s)				5.2		5.2	5.1	5.8			5.8	
Vehicle Extension (s)				2.6		2.6	1.5	5.0			5.0	
Lane Grp Cap (vph)				494		376	664	3550			1146	1553
v/s Ratio Prot							c0.33	0.17			0.32	
v/s Ratio Perm				c0.12		0.02	c0.38					0.40
v/c Ratio				0.79		0.11	0.97	0.23			0.96	0.40
Uniform Delay, d1				38.1		34.2	24.9	4.0			30.2	0.0
Progression Factor				1.00		1.00	1.00	1.00			1.00	1.00
Incremental Delay, d2				7.9		0.1	28.3	0.1			18.2	0.8
Delay (s)				46.0		34.3	53.1	4.1			48.4	0.8
Level of Service				D		C	D	A			D	A
Approach Delay (s)		0.0			41.3			25.8			31.3	
Approach LOS		A			D			C			C	

Intersection Summary			
HCM Average Control Delay	30.9	HCM Level of Service	C
HCM Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	10.3
Intersection Capacity Utilization	77.0%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	881	219	202	655	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.74	0.92	0.92	0.92	0.92	0.85	0.69	0.81	0.87	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	1036	317	249	753	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1770	2288	376	2070	2447	677	753			1036		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1770	2288	376	2070	2447	677	753			1036		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.5		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.4		
p0 queue free %	100	100	100	100	100	100	100			56		
cM capacity (veh/h)	35	22	604	21	17	395	853			569		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	691	663	249	376	376
Volume Left	0	0	0	249	0	0
Volume Right	0	0	317	0	0	0
cSH	1700	1700	1700	569	1700	1700
Volume to Capacity	0.00	0.41	0.39	0.44	0.22	0.22
Queue Length 95th (ft)	0	0	0	55	0	0
Control Delay (s)	0.0	0.0	0.0	16.2	0.0	0.0
Lane LOS	A			C		
Approach Delay (s)	0.0	0.0		4.0		
Approach LOS	A					

Intersection Summary			
Average Delay	1.7		
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	0	0	0	0	0	0	1041	282	293	955	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.84	0.92	0.92	0.92	0.92	0.86	0.81	0.78	0.85	0.92
Hourly flow rate (vph)	0	0	0	0	0	0	0	1210	348	376	1124	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2480	3085	562	2698	3259	779	1124			1210		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2480	3085	562	2698	3259	779	1124			1210		
tC, single (s)	7.5	6.5	7.1	7.5	6.5	6.9	4.1			4.2		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.3		
p0 queue free %	100	100	100	100	100	100	100			32		
cM capacity (veh/h)	7	4	451	5	3	338	617			550		

Direction, Lane #	EB 1	NB 1	NB 2	SB 1	SB 2	SB 3
Volume Total	0	807	752	376	562	562
Volume Left	0	0	0	376	0	0
Volume Right	0	0	348	0	0	0
cSH	1700	1700	1700	550	1700	1700
Volume to Capacity	0.00	0.47	0.44	0.68	0.33	0.33
Queue Length 95th (ft)	0	0	0	130	0	0
Control Delay (s)	0.0	0.0	0.0	24.4	0.0	0.0
Lane LOS	A			C		
Approach Delay (s)	0.0	0.0		6.1		
Approach LOS	A					

Intersection Summary			
Average Delay	3.0		
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	87	53	47	52	15	175	17	838	43	146	816	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.93		1.00	1.00	0.85	1.00	0.99		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1769		1805	1900	1538	1805	3379		1719	3335	
Flt Permitted	0.69	1.00		0.60	1.00	1.00	0.24	1.00		0.13	1.00	
Satd. Flow (perm)	1318	1769		1134	1900	1538	451	3379		226	3335	
Peak-hour factor, PHF	0.75	0.62	0.65	0.50	0.60	0.73	0.69	0.89	0.50	0.70	0.82	0.75
Adj. Flow (vph)	116	85	72	104	25	240	25	942	86	209	995	32
RTOR Reduction (vph)	0	25	0	0	0	206	0	5	0	0	1	0
Lane Group Flow (vph)	116	132	0	104	25	34	25	1023	0	209	1026	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	5%	0%	6%	0%	5%	8%	0%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	26.6	15.7		24.6	14.7	14.7	46.5	42.9		62.3	53.2	
Effective Green, g (s)	26.6	15.7		24.6	14.7	14.7	46.5	42.9		62.3	53.2	
Actuated g/C Ratio	0.25	0.15		0.23	0.14	0.14	0.44	0.41		0.59	0.51	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	384	264		328	265	215	246	1378		331	1687	
v/s Ratio Prot	c0.03	c0.07		0.03	0.01		0.00	c0.30		c0.08	0.31	
v/s Ratio Perm	0.05			0.04		0.02	0.04			0.29		
v/c Ratio	0.30	0.50		0.32	0.09	0.16	0.10	0.74		0.63	0.61	
Uniform Delay, d1	31.4	41.1		32.8	39.4	39.8	16.8	26.5		15.7	18.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	3.1		0.6	0.3	0.7	0.2	2.7		3.9	0.9	
Delay (s)	31.8	44.3		33.3	39.8	40.5	17.0	29.1		19.6	19.5	
Level of Service	C	D		C	D	D	B	C		B	B	
Approach Delay (s)		39.0			38.4			28.8			19.5	
Approach LOS		D			D			C			B	

Intersection Summary			
HCM Average Control Delay	27.0	HCM Level of Service	C
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	105.2	Sum of lost time (s)	16.6
Intersection Capacity Utilization	58.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	26	28	24	93	43	165	54	1132	64	181	1157	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	0.95		1.00	0.95	
Frt	1.00	0.94		1.00	1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1805	1781		1805	1900	1442	1805	3455		1736	3507	
Flt Permitted	0.72	1.00		0.49	1.00	1.00	0.10	1.00		0.07	1.00	
Satd. Flow (perm)	1363	1781		934	1900	1442	183	3455		122	3507	
Peak-hour factor, PHF	0.50	0.46	0.54	0.65	0.71	0.78	0.65	0.90	0.69	0.81	0.88	0.68
Adj. Flow (vph)	52	61	44	143	61	212	83	1258	93	223	1315	84
RTOR Reduction (vph)	0	21	0	0	0	177	0	3	0	0	2	0
Lane Group Flow (vph)	52	84	0	143	61	35	83	1348	0	223	1397	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	12%	0%	3%	9%	4%	2%	2%
Turn Type	pm+pt			pm+pt		Perm	pm+pt			pm+pt		
Protected Phases	7	4		3	8		1	6		5	2	
Permitted Phases	4			8		8	6			2		
Actuated Green, G (s)	21.1	14.3		31.9	19.7	19.7	62.3	54.5		74.5	61.2	
Effective Green, g (s)	21.1	14.3		31.9	19.7	19.7	62.3	54.5		74.5	61.2	
Actuated g/C Ratio	0.18	0.12		0.27	0.17	0.17	0.53	0.46		0.63	0.52	
Clearance Time (s)	5.5	6.2		5.5	6.2	6.2	5.5	5.6		5.5	5.6	
Vehicle Extension (s)	3.0	5.0		3.0	5.0	5.0	3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	269	215		342	316	240	203	1592		275	1814	
v/s Ratio Prot	0.01	0.05		c0.04	0.03		0.03	0.39		c0.10	c0.40	
v/s Ratio Perm	0.02			c0.07		0.02	0.19			c0.41		
v/c Ratio	0.19	0.39		0.42	0.19	0.15	0.41	0.85		0.81	0.77	
Uniform Delay, d1	41.1	48.0		34.4	42.5	42.1	17.9	28.2		34.0	22.9	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.4	2.4		0.8	0.6	0.6	1.3	4.8		16.4	2.4	
Delay (s)	41.5	50.4		35.2	43.1	42.7	19.3	33.0		50.4	25.3	
Level of Service	D	D		D	D	D	B	C		D	C	
Approach Delay (s)		47.5			40.2			32.2			28.8	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM Average Control Delay	32.2	HCM Level of Service	C
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	118.3	Sum of lost time (s)	22.1
Intersection Capacity Utilization	69.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	30	14	35	4	10	38	7	670	9	23	600	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.69	0.54	0.75	0.50	0.79	0.62	0.87	0.59	0.54	0.84	0.75
Hourly flow rate (vph)	60	20	65	5	20	48	11	770	15	43	714	15
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1665	1615	722	1682	1614	778	729			785		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1665	1615	722	1682	1614	778	729			785		
tC, single (s)	7.1	6.6	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.1	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	78	85	90	80	88	99			95		
cM capacity (veh/h)	55	94	430	51	98	400	884			842		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	145	73	797	772
Volume Left	60	5	11	43
Volume Right	65	48	15	15
cSH	100	172	884	842
Volume to Capacity	1.46	0.43	0.01	0.05
Queue Length 95th (ft)	269	48	1	4
Control Delay (s)	328.8	40.8	0.3	1.3
Lane LOS	F	E	A	A
Approach Delay (s)	328.8	40.8	0.3	1.3
Approach LOS	F	E		

Intersection Summary			
Average Delay	29.1		
Intersection Capacity Utilization	64.5%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	14	19	16	3	9	47	27	776	0	48	828	21
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.62	0.65	0.50	0.44	0.75	0.79	0.96	0.25	0.52	0.83	0.75
Hourly flow rate (vph)	28	31	25	6	20	63	34	808	0	92	998	28
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	2146	2073	1012	2113	2087	808	1026			808		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	2146	2073	1012	2113	2087	808	1026			808		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	33	92	58	55	83	95			89		
cM capacity (veh/h)	17	46	293	14	45	378	685			826		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	83	89	843	1118
Volume Left	28	6	34	92
Volume Right	25	63	0	28
cSH	35	86	685	826
Volume to Capacity	2.39	1.04	0.05	0.11
Queue Length 95th (ft)	235	150	4	9
Control Delay (s)	879.7	195.8	1.4	3.4
Lane LOS	F	F	A	A
Approach Delay (s)	879.7	195.8	1.4	3.4
Approach LOS	F	F		

Intersection Summary			
Average Delay	44.8		
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	30	14	35	4	10	38	7	670	9	23	600	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2			6.2			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.94			0.91			1.00			1.00	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1727			1725			1876			1701	
Flt Permitted		0.83			0.97			0.99			0.93	
Satd. Flow (perm)		1468			1681			1857			1591	
Peak-hour factor, PHF	0.50	0.69	0.54	0.75	0.50	0.79	0.62	0.87	0.59	0.54	0.84	0.75
Adj. Flow (vph)	60	20	65	5	20	48	11	770	15	43	714	15
RTOR Reduction (vph)	0	50	0	0	43	0	0	1	0	0	1	0
Lane Group Flow (vph)	0	95	0	0	30	0	0	795	0	0	771	0
Heavy Vehicles (%)	0%	9%	0%	0%	0%	0%	0%	1%	0%	0%	12%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		6.2			6.2			42.8			42.8	
Effective Green, g (s)		6.2			6.2			42.8			42.8	
Actuated g/C Ratio		0.10			0.10			0.70			0.70	
Clearance Time (s)		6.2			6.2			6.2			6.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		148			170			1294			1109	
v/s Ratio Prot												
v/s Ratio Perm		c0.06			0.02			0.43			c0.48	
v/c Ratio		0.64			0.18			0.61			0.70	
Uniform Delay, d1		26.5			25.3			4.9			5.5	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		8.8			0.5			2.2			3.6	
Delay (s)		35.3			25.8			7.1			9.1	
Level of Service		D			C			A			A	
Approach Delay (s)		35.3			25.8			7.1			9.1	
Approach LOS		D			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	61.4	Sum of lost time (s)	12.4
Intersection Capacity Utilization	68.2%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	14	19	16	3	9	47	27	776	0	48	828	21
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.2			6.2			6.2			6.2	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.96			0.90			1.00			1.00	
Flt Protected		0.98			1.00			1.00			1.00	
Satd. Flow (prot)		1794			1666			1809			1821	
Flt Permitted		0.89			0.98			0.93			0.87	
Satd. Flow (perm)		1624			1632			1684			1588	
Peak-hour factor, PHF	0.50	0.62	0.65	0.50	0.44	0.75	0.79	0.96	0.25	0.52	0.83	0.75
Adj. Flow (vph)	28	31	25	6	20	63	34	808	0	92	998	28
RTOR Reduction (vph)	0	17	0	0	58	0	0	0	0	0	1	0
Lane Group Flow (vph)	0	67	0	0	31	0	0	842	0	0	1117	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	4%	0%	5%	0%	0%	4%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		7.2			7.2			70.8			70.8	
Effective Green, g (s)		7.2			7.2			70.8			70.8	
Actuated g/C Ratio		0.08			0.08			0.78			0.78	
Clearance Time (s)		6.2			6.2			6.2			6.2	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		129			130			1319			1244	
v/s Ratio Prot												
v/s Ratio Perm		c0.04			0.02			0.50			c0.70	
v/c Ratio		0.52			0.24			0.64			0.90	
Uniform Delay, d1		39.9			39.0			4.2			7.2	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		3.5			1.0			2.4			10.4	
Delay (s)		43.4			40.0			6.6			17.6	
Level of Service		D			D			A			B	
Approach Delay (s)		43.4			40.0			6.6			17.6	
Approach LOS		D			D			A			B	

Intersection Summary			
HCM Average Control Delay	15.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	90.4	Sum of lost time (s)	12.4
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	43	192	9	3	137	37	16	76	7	41	33	38
Peak Hour Factor	0.60	0.82	0.44	0.50	0.77	0.83	0.75	0.60	0.62	0.55	0.84	0.59
Hourly flow rate (vph)	72	234	20	6	178	45	21	127	11	75	39	64

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	72	255	95	134	159	178
Volume Left (vph)	72	0	6	0	21	75
Volume Right (vph)	0	20	0	45	11	64
Hadj (s)	0.72	0.07	0.20	-0.11	0.03	0.25
Departure Headway (s)	6.6	5.9	6.2	5.9	5.8	5.9
Degree Utilization, x	0.13	0.42	0.16	0.22	0.25	0.29
Capacity (veh/h)	517	578	540	570	565	559
Control Delay (s)	9.4	12.0	9.2	9.4	10.7	11.4
Approach Delay (s)	11.4		9.3		10.7	11.4
Approach LOS	B		A		B	B

Intersection Summary			
Delay	10.7		
HCM Level of Service	B		
Intersection Capacity Utilization	38.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	38	197	10	3	244	60	12	51	4	55	77	46
Peak Hour Factor	0.58	0.97	0.75	0.50	0.81	0.82	0.45	0.73	0.75	0.75	0.79	0.61
Hourly flow rate (vph)	66	203	13	6	301	73	27	70	5	73	97	75

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total (vph)	66	216	157	224	102	246
Volume Left (vph)	66	0	6	0	27	73
Volume Right (vph)	0	13	0	73	5	75
Hadj (s)	0.99	0.13	0.20	-0.03	0.10	-0.05
Departure Headway (s)	7.2	6.3	6.2	6.0	6.3	5.8
Degree Utilization, x	0.13	0.38	0.27	0.37	0.18	0.40
Capacity (veh/h)	473	542	547	570	505	578
Control Delay (s)	10.0	11.9	10.3	11.4	10.6	12.5
Approach Delay (s)	11.4		10.9		10.6	12.5
Approach LOS	B		B		B	B

Intersection Summary			
Delay	11.4		
HCM Level of Service	B		
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	2	43	4	2	47	18	7	69	2	10	25	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.75	0.25	0.25	0.67	0.44	0.25	0.69	0.25	0.67	0.83	0.25
Hourly flow rate (vph)	8	57	16	8	70	41	28	100	8	15	30	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	300	228	34	269	228	104	38			108		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	300	228	34	269	228	104	38			108		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	91	98	99	89	96	98			99		
cM capacity (veh/h)	565	651	1045	619	656	956	1585			1495		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	81	119	136	53
Volume Left	8	8	28	15
Volume Right	16	41	8	8
cSH	692	732	1585	1495
Volume to Capacity	0.12	0.16	0.02	0.01
Queue Length 95th (ft)	10	14	1	1
Control Delay (s)	10.9	10.9	1.6	2.1
Lane LOS	B	B	A	A
Approach Delay (s)	10.9	10.9	1.6	2.1
Approach LOS	B	B		

Intersection Summary			
Average Delay	6.5		
Intersection Capacity Utilization	15.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	0	44	9	5	69	23	10	48	3	4	58	2
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.65	0.50	0.50	0.73	0.47	0.38	0.81	0.50	0.50	0.45	0.25
Hourly flow rate (vph)	0	68	18	10	95	49	26	59	6	8	129	8
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	360	267	133	316	268	62	137			65		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	360	267	133	316	268	62	137			65		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	100	89	98	98	85	95	98			99		
cM capacity (veh/h)	495	623	922	566	623	989	1460			1550		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	86	153	92	145
Volume Left	0	10	26	8
Volume Right	18	49	6	8
cSH	668	701	1460	1550
Volume to Capacity	0.13	0.22	0.02	0.01
Queue Length 95th (ft)	11	21	1	0
Control Delay (s)	11.2	11.6	2.3	0.4
Lane LOS	B	B	A	A
Approach Delay (s)	11.2	11.6	2.3	0.4
Approach LOS	B	B		

Intersection Summary			
Average Delay	6.3		
Intersection Capacity Utilization	21.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	48	217	681	80	315	600
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	236	740	87	342	652
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						845
pX, platoon unblocked	0.77					
vC, conflicting volume	2121	414			827	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2305	414			827	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	60			57	
cM capacity (veh/h)	14	588			800	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	52	236	493	334	342	652
Volume Left	52	0	0	0	342	0
Volume Right	0	236	0	87	0	0
cSH	14	588	1700	1700	800	1700
Volume to Capacity	3.67	0.40	0.29	0.20	0.43	0.38
Queue Length 95th (ft)	Err	48	0	0	54	0
Control Delay (s)	Err	15.2	0.0	0.0	12.8	0.0
Lane LOS	F	C			B	
Approach Delay (s)	1823.6		0.0		4.4	
Approach LOS	F					

Intersection Summary			
Average Delay	251.0		
Intersection Capacity Utilization	52.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	116	519	731	106	493	793
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	126	564	795	115	536	862
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						845
pX, platoon unblocked	0.65					
vC, conflicting volume	2786	455			910	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	3483	455			910	
tC, single (s)	6.8	6.9			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	0			28	
cM capacity (veh/h)	1	552			744	

Direction, Lane #	WB 1	WB 2	NB 1	NB 2	SB 1	SB 2
Volume Total	126	564	530	380	536	862
Volume Left	126	0	0	0	536	0
Volume Right	0	564	0	115	0	0
cSH	1	552	1700	1700	744	1700
Volume to Capacity	144.37	1.02	0.31	0.22	0.72	0.51
Queue Length 95th (ft)	Err	382	0	0	156	0
Control Delay (s)	Err	71.2	0.0	0.0	21.2	0.0
Lane LOS	F	F			C	
Approach Delay (s)	1884.8		0.0		8.1	
Approach LOS	F					

Intersection Summary			
Average Delay	437.8		
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	48	217	681	80	315	600
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.2	6.2	6.2	6.2
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	2787	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.28	1.00
Satd. Flow (perm)	1770	2787	3539	1583	518	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	52	236	740	87	342	652
RTOR Reduction (vph)	0	97	0	45	0	0
Lane Group Flow (vph)	52	139	740	42	342	652
Turn Type		pt+ov		Perm	pm+pt	
Protected Phases	8	8 1	2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	7.0	23.8	33.8	33.8	50.8	50.8
Effective Green, g (s)	7.0	23.8	33.8	33.8	50.8	50.8
Actuated g/C Ratio	0.10	0.34	0.48	0.48	0.73	0.73
Clearance Time (s)	6.0		6.2	6.2	6.2	6.2
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	948	1709	764	569	1352
v/s Ratio Prot	c0.03	0.05	0.21		c0.09	0.35
v/s Ratio Perm				0.03	c0.34	
v/c Ratio	0.29	0.15	0.43	0.05	0.60	0.48
Uniform Delay, d1	29.2	16.0	11.8	9.6	4.7	4.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	0.9	0.1	0.8	0.1	1.8	1.2
Delay (s)	30.1	16.1	12.6	9.8	6.5	5.3
Level of Service	C	B	B	A	A	A
Approach Delay (s)	18.6		12.3			5.7
Approach LOS	B		B			A

Intersection Summary			
HCM Average Control Delay	10.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	116	519	731	106	493	793
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.2	6.2	6.2	6.2
Lane Util. Factor	1.00	0.88	0.95	1.00	1.00	1.00
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	2787	3539	1583	1770	1863
Flt Permitted	0.95	1.00	1.00	1.00	0.21	1.00
Satd. Flow (perm)	1770	2787	3539	1583	383	1863
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	126	564	795	115	536	862
RTOR Reduction (vph)	0	39	0	66	0	0
Lane Group Flow (vph)	126	525	795	49	536	862
Turn Type		pt+ov		Perm	pm+pt	
Protected Phases	8	8 1	2		1	6
Permitted Phases				2	6	
Actuated Green, G (s)	7.0	31.6	26.0	26.0	50.8	50.8
Effective Green, g (s)	7.0	31.6	26.0	26.0	50.8	50.8
Actuated g/C Ratio	0.10	0.45	0.37	0.37	0.73	0.73
Clearance Time (s)	6.0		6.2	6.2	6.2	6.2
Vehicle Extension (s)	3.0		3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	177	1258	1314	588	646	1352
v/s Ratio Prot	c0.07	0.19	0.22		c0.22	0.46
v/s Ratio Perm				0.03	c0.38	
v/c Ratio	0.71	0.42	0.61	0.08	0.83	0.64
Uniform Delay, d1	30.5	13.0	17.8	14.3	11.9	4.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	12.7	0.2	2.1	0.3	8.7	2.3
Delay (s)	43.2	13.2	19.9	14.5	20.6	7.2
Level of Service	D	B	B	B	C	A
Approach Delay (s)	18.7		19.2			12.4
Approach LOS	B		B			B

Intersection Summary			
HCM Average Control Delay	15.9	HCM Level of Service	B
HCM Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	12.2
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	223	28	3	184	41	6
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	242	30	3	200	45	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			273		364	136
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			273		364	136
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		93	99
cM capacity (veh/h)			1287		607	887

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	162	111	70	133	51
Volume Left	0	0	3	0	45
Volume Right	0	30	0	0	7
cSH	1700	1700	1287	1700	633
Volume to Capacity	0.10	0.07	0.00	0.08	0.08
Queue Length 95th (ft)	0	0	0	0	7
Control Delay (s)	0.0	0.0	0.4	0.0	11.2
Lane LOS			A		B
Approach Delay (s)	0.0		0.1		11.2
Approach LOS					B

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	17.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Volume (veh/h)	231	51	6	291	35	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	251	55	7	316	38	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			307		450	153
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			307		450	153
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		93	99
cM capacity (veh/h)			1251		535	865

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	167	139	112	211	42
Volume Left	0	0	7	0	38
Volume Right	0	55	0	0	4
cSH	1700	1700	1251	1700	557
Volume to Capacity	0.10	0.08	0.01	0.12	0.08
Queue Length 95th (ft)	0	0	0	0	6
Control Delay (s)	0.0	0.0	0.5	0.0	12.0
Lane LOS			A		B
Approach Delay (s)	0.0		0.2		12.0
Approach LOS					B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	22.3%	ICU Level of Service	A
Analysis Period (min)	15		

Alternative C 2020

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	348	7	6	80	30	2	63	86	63	23	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.99			0.99	1.00		1.00	1.00		0.97	1.00
Satd. Flow (prot)		1821			1737	1495		1892	1615		1777	1369
Flt Permitted		0.95			0.91	1.00		0.96	1.00		0.74	1.00
Satd. Flow (perm)		1740			1593	1495		1818	1615		1354	1369
Peak-hour factor, PHF	0.83	0.68	0.38	0.38	0.75	0.78	0.25	0.72	0.71	0.84	0.66	0.54
Adj. Flow (vph)	69	512	18	16	107	38	8	88	121	75	35	56
RTOR Reduction (vph)	0	1	0	0	0	16	0	0	101	0	0	47
Lane Group Flow (vph)	0	598	0	0	123	22	0	96	20	0	110	9
Heavy Vehicles (%)	2%	3%	17%	0%	10%	8%	0%	0%	0%	5%	0%	18%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Actuated Green, G (s)		29.0			29.0	29.0		8.2	8.2		8.2	8.2
Effective Green, g (s)		29.0			29.0	29.0		8.2	8.2		8.2	8.2
Actuated g/C Ratio		0.57			0.57	0.57		0.16	0.16		0.16	0.16
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		993			909	853		293	261		219	221
v/s Ratio Prot												
v/s Ratio Perm		c0.34			0.08	0.01		0.05	0.01		c0.08	0.01
v/c Ratio		0.60			0.14	0.03		0.33	0.07		0.50	0.04
Uniform Delay, d1		7.1			5.1	4.7		18.9	18.1		19.4	18.0
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		1.7			0.2	0.0		0.7	0.1		1.8	0.1
Delay (s)		8.8			5.2	4.8		19.5	18.2		21.2	18.1
Level of Service		A			A	A		B	B		C	B
Approach Delay (s)		8.8			5.1			18.8			20.2	
Approach LOS		A			A			B			C	

Intersection Summary			
HCM Average Control Delay	11.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	50.8	Sum of lost time (s)	13.6
Intersection Capacity Utilization	58.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	57	126	4	61	341	89	11	33	30	84	60	89
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.99			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.98			0.99	1.00		0.99	1.00		0.97	1.00
Satd. Flow (prot)		1819			1882	1599		1873	1615		1848	1553
Flt Permitted		0.75			0.89	1.00		0.86	1.00		0.79	1.00
Satd. Flow (perm)		1385			1682	1599		1643	1615		1501	1553
Peak-hour factor, PHF	0.74	0.90	0.38	0.68	0.92	0.85	0.62	0.75	0.86	0.88	0.82	0.77
Adj. Flow (vph)	77	140	11	90	371	105	18	44	35	95	73	116
RTOR Reduction (vph)	0	2	0	0	0	51	0	0	27	0	0	56
Lane Group Flow (vph)	0	226	0	0	461	54	0	62	8	0	168	60
Heavy Vehicles (%)	6%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		custom
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		6
Actuated Green, G (s)		27.0			27.0	27.0		11.8	11.8		11.8	27.0
Effective Green, g (s)		27.0			27.0	27.0		11.8	11.8		11.8	27.0
Actuated g/C Ratio		0.52			0.52	0.52		0.23	0.23		0.23	0.52
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	5.5
Lane Grp Cap (vph)		714			867	824		370	364		338	800
v/s Ratio Prot												
v/s Ratio Perm		0.16			c0.27	0.03		0.04	0.00		c0.11	0.04
v/c Ratio		0.32			0.53	0.07		0.17	0.02		0.50	0.07
Uniform Delay, d1		7.4			8.5	6.4		16.3	15.8		17.7	6.4
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.6			1.3	0.1		0.2	0.0		1.2	0.1
Delay (s)		8.0			9.8	6.5		16.6	15.8		18.9	6.5
Level of Service		A			A	A		B	B		B	A
Approach Delay (s)		8.0			9.2			16.3			13.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	10.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	52.4	Sum of lost time (s)	13.6
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	498	116	3	97	64	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.50	0.88	0.82	0.25
Hourly flow rate (vph)	541	126	6	110	78	8
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked			0.88		0.88	0.88
vC, conflicting volume			541		666	541
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			414		555	414
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		82	99
cM capacity (veh/h)			956		424	567

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	541	126	116	86
Volume Left	0	0	6	78
Volume Right	0	126	0	8
cSH	1700	1700	956	434
Volume to Capacity	0.32	0.07	0.01	0.20
Queue Length 95th (ft)	0	0	0	18
Control Delay (s)	0.0	0.0	0.5	15.3
Lane LOS			A	C
Approach Delay (s)	0.0		0.5	15.3
Approach LOS				C

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	36.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	168	134	5	364	201	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.84	0.50	0.91	0.82	0.50
Hourly flow rate (vph)	179	160	10	400	245	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked						
vC, conflicting volume			179		599	179
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			179		599	179
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		47	99
cM capacity (veh/h)			1409		465	869

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	179	160	410	251
Volume Left	0	0	10	245
Volume Right	0	160	0	6
cSH	1700	1700	1409	470
Volume to Capacity	0.11	0.09	0.01	0.53
Queue Length 95th (ft)	0	0	1	77
Control Delay (s)	0.0	0.0	0.3	21.1
Lane LOS			A	C
Approach Delay (s)	0.0		0.3	21.1
Approach LOS				C

Intersection Summary			
Average Delay	5.4		
Intersection Capacity Utilization	41.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	57	0	4	0	0	0	0	532	63	86	86	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Hourly flow rate (vph)	77	0	8	0	0	0	0	760	100	96	215	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	786	1266	108	1067	1166	380	215			860		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	786	1266	108	1067	1166	380	215			860		
tC, single (s)	7.7	6.5	7.4	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.6	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	68	100	99	100	100	100	100			84		
cM capacity (veh/h)	238	143	857	153	161	618	1352			590		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	85	380	380	100	96	108	108
Volume Left	77	0	0	0	96	0	0
Volume Right	8	0	0	100	0	0	0
cSH	256	1700	1700	1700	590	1700	1700
Volume to Capacity	0.33	0.22	0.22	0.06	0.16	0.06	0.06
Queue Length 95th (ft)	35	0	0	0	14	0	0
Control Delay (s)	25.9	0.0	0.0	0.0	12.3	0.0	0.0
Lane LOS	D				B		
Approach Delay (s)	25.9	0.0			3.8		
Approach LOS	D						

Intersection Summary				
Average Delay	2.7			
Intersection Capacity Utilization	32.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	190	0	9	0	0	0	0	114	49	191	339	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Hourly flow rate (vph)	218	0	18	0	0	0	0	154	72	273	399	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1022	1171	199	917	1099	77	399			226		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1022	1171	199	917	1099	77	399			226		
tC, single (s)	7.5	6.5	7.2	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	0	100	98	100	100	100	100			76		
cM capacity (veh/h)	157	147	769	180	160	968	1156			1119		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	236	77	77	72	273	199	199
Volume Left	218	0	0	0	273	0	0
Volume Right	18	0	0	72	0	0	0
cSH	167	1700	1700	1700	1119	1700	1700
Volume to Capacity	1.42	0.05	0.05	0.04	0.24	0.12	0.12
Queue Length 95th (ft)	368	0	0	0	24	0	0
Control Delay (s)	270.1	0.0	0.0	0.0	9.3	0.0	0.0
Lane LOS	F				A		
Approach Delay (s)	270.1	0.0			3.8		
Approach LOS	F						

Intersection Summary			
Average Delay	58.5		
Intersection Capacity Utilization	43.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	57	0	4	0	0	0	0	532	63	86	86	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9						5.9	5.9	5.9	5.9	
Lane Util. Factor		1.00						0.95	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		0.96						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1637						3539	1538	1318	3610	
Flt Permitted		0.96						1.00	1.00	0.36	1.00	
Satd. Flow (perm)		1637						3539	1538	503	3610	
Peak-hour factor, PHF	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Adj. Flow (vph)	77	0	8	0	0	0	0	760	100	96	215	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	35	0	0	0
Lane Group Flow (vph)	0	79	0	0	0	0	0	760	65	96	215	0
Heavy Vehicles (%)	8%	0%	25%	2%	2%	2%	2%	2%	5%	37%	0%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		6						4			8	
Permitted Phases	6								4	8		
Actuated Green, G (s)		9.1						39.1	39.1	39.1	39.1	
Effective Green, g (s)		9.1						39.1	39.1	39.1	39.1	
Actuated g/C Ratio		0.15						0.65	0.65	0.65	0.65	
Clearance Time (s)		5.9						5.9	5.9	5.9	5.9	
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		248						2306	1002	328	2353	
v/s Ratio Prot								c0.21			0.06	
v/s Ratio Perm		0.05							0.04	0.19		
v/c Ratio		0.32						0.33	0.07	0.29	0.09	
Uniform Delay, d1		22.7						4.6	3.8	4.5	3.9	
Progression Factor		1.00						1.00	1.00	0.63	0.54	
Incremental Delay, d2		3.4						0.4	0.1	2.3	0.1	
Delay (s)		26.0						5.0	3.9	5.1	2.2	
Level of Service		C						A	A	A	A	
Approach Delay (s)		26.0			0.0			4.9			3.1	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	5.9	HCM Level of Service	A
HCM Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	190	0	9	0	0	0	0	114	49	191	339	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9						5.9	5.9	5.9	5.9	
Lane Util. Factor		1.00						0.95	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		0.96						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1777						3539	1615	1249	3610	
Flt Permitted		0.96						1.00	1.00	0.65	1.00	
Satd. Flow (perm)		1777						3539	1615	860	3610	
Peak-hour factor, PHF	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Adj. Flow (vph)	218	0	18	0	0	0	0	154	72	273	399	0
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	28	0	0	0
Lane Group Flow (vph)	0	231	0	0	0	0	0	154	44	273	399	0
Heavy Vehicles (%)	0%	0%	15%	2%	2%	2%	2%	2%	0%	37%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	13	0	0
Turn Type	Perm								Perm	Perm		
Protected Phases		4						2			6	
Permitted Phases	4								2	6		
Actuated Green, G (s)		11.6						36.6	36.6	36.6	36.6	
Effective Green, g (s)		11.6						36.6	36.6	36.6	36.6	
Actuated g/C Ratio		0.19						0.61	0.61	0.61	0.61	
Clearance Time (s)		5.9						5.9	5.9	5.9	5.9	
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		344						2159	985	525	2202	
v/s Ratio Prot								0.04			0.11	
v/s Ratio Perm		0.13							0.03	c0.32		
v/c Ratio		0.67						0.07	0.04	0.52	0.18	
Uniform Delay, d1		22.4						4.8	4.7	6.7	5.1	
Progression Factor		1.00						1.00	1.00	0.67	0.28	
Incremental Delay, d2		5.1						0.1	0.1	3.4	0.2	
Delay (s)		27.5						4.8	4.8	7.9	1.6	
Level of Service		C						A	A	A	A	
Approach Delay (s)		27.5			0.0			4.8			4.2	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	28	0	124	19	571	0	0	144	99
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Hourly flow rate (vph)	0	0	0	35	0	194	25	793	0	0	176	105
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	817	1019	88	932	1125	397	281			793		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	817	1019	88	932	1125	397	281			793		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.4			2.2		
p0 queue free %	100	100	100	83	100	66	98			100		
cM capacity (veh/h)	174	230	953	206	202	570	1177			824		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	229	25	397	397	88	88	105
Volume Left	35	25	0	0	0	0	0
Volume Right	194	0	0	0	0	0	105
cSH	448	1177	1700	1700	1700	1700	1700
Volume to Capacity	0.51	0.02	0.23	0.23	0.05	0.05	0.06
Queue Length 95th (ft)	71	2	0	0	0	0	0
Control Delay (s)	21.2	8.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	C	A					
Approach Delay (s)	21.2	0.3			0.0		
Approach LOS	C						

Intersection Summary				
Average Delay	3.8			
Intersection Capacity Utilization	32.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	89	0	188	11	293	0	0	441	227
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Hourly flow rate (vph)	0	0	0	120	0	281	12	437	0	0	513	295
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1036	974	256	718	1269	219	808			437		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1036	974	256	718	1269	219	808			437		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.5	4.3			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.6	2.3			2.2		
p0 queue free %	100	100	100	62	100	61	98			100		
cM capacity (veh/h)	111	246	743	317	167	711	770			1119		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	401	12	219	219	256	256	295
Volume Left	120	12	0	0	0	0	0
Volume Right	281	0	0	0	0	0	295
cSH	518	770	1700	1700	1700	1700	1700
Volume to Capacity	0.77	0.02	0.13	0.13	0.15	0.15	0.17
Queue Length 95th (ft)	174	1	0	0	0	0	0
Control Delay (s)	31.9	9.8	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	A					
Approach Delay (s)	31.9	0.3			0.0		
Approach LOS	D						

Intersection Summary				
Average Delay	7.8			
Intersection Capacity Utilization	43.9%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	28	0	124	19	571	0	0	144	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9		5.9	5.9			5.9	5.9
Lane Util. Factor					1.00		1.00	0.95			0.95	1.00
Frt					0.89		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					1473		1543	3574			3471	1324
Flt Permitted					0.99		0.64	1.00			1.00	1.00
Satd. Flow (perm)					1473		1040	3574			3471	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Adj. Flow (vph)	0	0	0	35	0	194	25	793	0	0	176	105
RTOR Reduction (vph)	0	0	0	0	61	0	0	0	0	0	0	59
Lane Group Flow (vph)	0	0	0	0	168	0	25	793	0	0	176	46
Heavy Vehicles (%)	2%	2%	2%	10%	0%	14%	17%	1%	2%	2%	4%	22%
Turn Type				Perm			Perm					Perm
Protected Phases					2			4			8	
Permitted Phases				2			4					8
Actuated Green, G (s)					22.1		26.1	26.1			26.1	26.1
Effective Green, g (s)					22.1		26.1	26.1			26.1	26.1
Actuated g/C Ratio					0.37		0.44	0.44			0.44	0.44
Clearance Time (s)					5.9		5.9	5.9			5.9	5.9
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					543		452	1555			1510	576
v/s Ratio Prot								c0.22			0.05	
v/s Ratio Perm					0.11		0.02					0.03
v/c Ratio					0.31		0.06	0.51			0.12	0.08
Uniform Delay, d1					13.5		9.8	12.3			10.1	9.9
Progression Factor					1.00		0.76	0.69			0.96	1.64
Incremental Delay, d2					1.5		0.2	1.2			0.2	0.3
Delay (s)					15.0		7.7	9.6			9.8	16.5
Level of Service					B		A	A			A	B
Approach Delay (s)		0.0			15.0			9.6			12.3	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	89	0	188	11	293	0	0	441	227
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9		5.9	5.9			5.9	5.9
Lane Util. Factor					1.00		1.00	0.95			0.95	1.00
Frt					0.91		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					1417		1656	2888			3574	1380
Flt Permitted					0.99		0.45	1.00			1.00	1.00
Satd. Flow (perm)					1417		785	2888			3574	1380
Peak-hour factor, PHF	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Adj. Flow (vph)	0	0	0	120	0	281	12	437	0	0	513	295
RTOR Reduction (vph)	0	0	0	0	141	0	0	0	0	0	0	181
Lane Group Flow (vph)	0	0	0	0	260	0	12	437	0	0	513	114
Heavy Vehicles (%)	2%	2%	2%	0%	0%	28%	9%	25%	2%	2%	1%	17%
Turn Type				Perm			Perm					Perm
Protected Phases					2			4			8	
Permitted Phases				2			4					8
Actuated Green, G (s)					25.1		23.1	23.1			23.1	23.1
Effective Green, g (s)					25.1		23.1	23.1			23.1	23.1
Actuated g/C Ratio					0.42		0.38	0.38			0.38	0.38
Clearance Time (s)					5.9		5.9	5.9			5.9	5.9
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					593		302	1112			1376	531
v/s Ratio Prot								c0.15			0.14	
v/s Ratio Perm					0.18		0.02					0.08
v/c Ratio					0.44		0.04	0.39			0.37	0.21
Uniform Delay, d1					12.4		11.5	13.4			13.2	12.4
Progression Factor					1.00		0.51	0.58			0.86	1.70
Incremental Delay, d2					2.4		0.2	1.0			0.7	0.8
Delay (s)					14.8		6.1	8.7			12.1	21.9
Level of Service					B		A	A			B	C
Approach Delay (s)		0.0			14.8			8.6			15.7	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	21	618	21	0	181	4	5	0	5	23	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.84	0.92	0.92	0.78	0.38	0.25	0.92	0.50	0.92	0.92	0.92
Hourly flow rate (vph)	27	736	23	0	232	11	20	0	10	25	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	243			759			1021	1044	232	1042	1043	747
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	243			759			1021	1044	232	1042	1043	747
tC, single (s)	4.4			4.1			7.8	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.2			4.2	4.0	3.5	3.5	4.0	3.3
p0 queue free %	98			100			87	100	99	88	100	100
cM capacity (veh/h)	1167			853			156	224	753	201	224	413

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	NW 1
Volume Total	27	759	232	11	30	25
Volume Left	27	0	0	0	20	25
Volume Right	0	23	0	11	10	0
cSH	1167	1700	853	1700	212	201
Volume to Capacity	0.02	0.45	0.00	0.01	0.14	0.12
Queue Length 95th (ft)	2	0	0	0	12	10
Control Delay (s)	8.2	0.0	0.0	0.0	24.8	25.4
Lane LOS	A				C	D
Approach Delay (s)	0.3		0.0		24.8	25.4
Approach LOS					C	D

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	50.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	6	281	136	34	461	5	7	2	28	133	3	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.93	0.92	0.92	0.94	0.33	0.62	0.92	0.75	0.92	0.92	0.92
Hourly flow rate (vph)	12	302	148	37	490	15	11	2	37	145	3	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	506			450			918	1038	490	1003	980	376
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	506			450			918	1038	490	1003	980	376
tC, single (s)	4.4			4.1			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	99			97			95	99	93	27	99	96
cM capacity (veh/h)	951			1110			222	220	549	197	239	670

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	NW 1
Volume Total	12	450	527	15	51	174
Volume Left	12	0	37	0	11	145
Volume Right	0	148	0	15	37	26
cSH	951	1700	1110	1700	395	221
Volume to Capacity	0.01	0.26	0.03	0.01	0.13	0.79
Queue Length 95th (ft)	1	0	3	0	11	141
Control Delay (s)	8.8	0.0	0.9	0.0	15.5	62.9
Lane LOS	A		A		C	F
Approach Delay (s)	0.2		0.9		15.5	62.9
Approach LOS					C	F

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	74.6%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	21	618	21	0	181	4	5	0	5	23	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3		6.3	6.3		6.0		6.0		
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00		1.00		1.00		
Frt	1.00	1.00	0.85		1.00	0.85		0.96		1.00		
Flt Protected	0.95	1.00	1.00		1.00	1.00		0.97		0.95		
Satd. Flow (prot)	1367	1845	1583		1696	1615		1109		1770		
Flt Permitted	0.61	1.00	1.00		1.00	1.00		0.80		0.74		
Satd. Flow (perm)	884	1845	1583		1696	1615		916		1374		
Peak-hour factor, PHF	0.79	0.84	0.92	0.92	0.78	0.38	0.25	0.92	0.50	0.92	0.92	0.92
Adj. Flow (vph)	27	736	23	0	232	11	20	0	10	25	0	0
RTOR Reduction (vph)	0	0	7	0	0	4	0	9	0	0	0	0
Lane Group Flow (vph)	27	736	16	0	232	7	0	21	0	25	0	0
Heavy Vehicles (%)	32%	3%	2%	2%	12%	0%	75%	2%	25%	2%	2%	2%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6			2		
Actuated Green, G (s)	40.7	40.7	40.7		40.7	40.7		7.0		7.0		
Effective Green, g (s)	40.7	40.7	40.7		40.7	40.7		7.0		7.0		
Actuated g/C Ratio	0.68	0.68	0.68		0.68	0.68		0.12		0.12		
Clearance Time (s)	6.3	6.3	6.3		6.3	6.3		6.0		6.0		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0		3.0		
Lane Grp Cap (vph)	600	1252	1074		1150	1096		107		160		
v/s Ratio Prot		c0.40			0.14							
v/s Ratio Perm	0.03		0.01			0.00		c0.02		0.02		
v/c Ratio	0.04	0.59	0.01		0.20	0.01		0.20		0.16		
Uniform Delay, d1	3.2	5.2	3.1		3.6	3.1		24.0		23.8		
Progression Factor	0.24	0.15	0.06		0.70	0.54		1.00		1.00		
Incremental Delay, d2	0.1	1.8	0.0		0.4	0.0		4.1		2.1		
Delay (s)	0.9	2.6	0.2		2.9	1.7		28.1		25.9		
Level of Service	A	A	A		A	A		C		C		
Approach Delay (s)		2.4			2.8			28.1			25.9	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM Average Control Delay	3.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	6	281	136	34	461	5	7	2	28	133	3	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3		6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85		0.90		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.99		0.95	1.00	
Satd. Flow (prot)	1444	1624	1583	1770	1792	923		1467		1770	1612	
Flt Permitted	0.42	1.00	1.00	0.58	1.00	1.00		0.95		0.72	1.00	
Satd. Flow (perm)	637	1624	1583	1073	1792	923		1404		1349	1612	
Peak-hour factor, PHF	0.50	0.93	0.92	0.92	0.94	0.33	0.62	0.92	0.75	0.92	0.92	0.92
Adj. Flow (vph)	12	302	148	37	490	15	11	2	37	145	3	26
RTOR Reduction (vph)	0	0	70	0	0	7	0	27	0	0	19	0
Lane Group Flow (vph)	12	302	78	37	490	8	0	23	0	145	10	0
Heavy Vehicles (%)	25%	17%	2%	2%	6%	75%	12%	2%	17%	2%	2%	2%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6			2		
Actuated Green, G (s)	31.7	31.7	31.7	31.7	31.7	31.7		16.0		16.0	16.0	
Effective Green, g (s)	31.7	31.7	31.7	31.7	31.7	31.7		16.0		16.0	16.0	
Actuated g/C Ratio	0.53	0.53	0.53	0.53	0.53	0.53		0.27		0.27	0.27	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3		6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0		3.0	3.0	
Lane Grp Cap (vph)	337	858	836	567	947	488		374		360	430	
v/s Ratio Prot		0.19			c0.27						0.01	
v/s Ratio Perm	0.02		0.05	0.03		0.01		0.02		c0.11		
v/c Ratio	0.04	0.35	0.09	0.07	0.52	0.02		0.06		0.40	0.02	
Uniform Delay, d1	6.8	8.2	7.0	6.9	9.2	6.7		16.4		18.1	16.2	
Progression Factor	0.42	0.36	0.06	1.06	0.93	1.24		1.00		1.00	1.00	
Incremental Delay, d2	0.2	1.1	0.2	0.2	1.9	0.1		0.3		3.3	0.1	
Delay (s)	3.0	4.0	0.6	7.5	10.4	8.4		16.7		21.4	16.3	
Level of Service	A	A	A	A	B	A		B		C	B	
Approach Delay (s)		2.9			10.1			16.7			20.6	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	9.2	HCM Level of Service	A
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	6	59	614	6	20	192
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.69	0.82	0.62	0.56	0.90
Hourly flow rate (vph)	10	86	749	10	36	213
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1034	749			758	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1034	749			758	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	96	79			96	
cM capacity (veh/h)	249	415			862	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	95	749	10	36	213
Volume Left	10	0	0	36	0
Volume Right	86	0	10	0	0
cSH	389	1700	1700	862	1700
Volume to Capacity	0.24	0.44	0.01	0.04	0.13
Queue Length 95th (ft)	24	0	0	3	0
Control Delay (s)	17.2	0.0	0.0	9.4	0.0
Lane LOS	C			A	
Approach Delay (s)	17.2	0.0		1.3	
Approach LOS	C				

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	43.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	4	49	316	2	51	524
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.38	0.75	0.91	0.25	0.62	0.89
Hourly flow rate (vph)	11	65	347	8	82	589
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1101	347			355	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1101	347			355	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	95	91			93	
cM capacity (veh/h)	221	700			1215	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	76	347	8	82	589
Volume Left	11	0	0	82	0
Volume Right	65	0	8	0	0
cSH	538	1700	1700	1215	1700
Volume to Capacity	0.14	0.20	0.00	0.07	0.35
Queue Length 95th (ft)	12	0	0	5	0
Control Delay (s)	12.8	0.0	0.0	8.2	0.0
Lane LOS	B			A	
Approach Delay (s)	12.8	0.0		1.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	37.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	24	103	76	81	80	78	139	564	12	20	136	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1668		1444	1715		1583	1852		1805	1752	
Flt Permitted	0.63	1.00		0.60	1.00		0.64	1.00		0.29	1.00	
Satd. Flow (perm)	1175	1668		914	1715		1075	1852		546	1752	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	35	126	113	131	101	101	170	627	17	30	168	10
RTOR Reduction (vph)	0	52	0	0	58	0	0	1	0	0	3	0
Lane Group Flow (vph)	35	187	0	131	144	0	170	643	0	30	175	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	14.4	14.4		14.4	14.4		26.6	26.6		26.6	26.6	
Effective Green, g (s)	14.4	14.4		14.4	14.4		26.6	26.6		26.6	26.6	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.50	0.50		0.50	0.50	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	319	453		248	466		540	929		274	879	
v/s Ratio Prot		0.11			0.08			c0.35			0.10	
v/s Ratio Perm	0.03			c0.14			0.16			0.05		
v/c Ratio	0.11	0.41		0.53	0.31		0.31	0.69		0.11	0.20	
Uniform Delay, d1	14.5	15.8		16.4	15.3		7.8	10.1		7.0	7.3	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.7		2.3	0.5		0.8	3.1		0.4	0.3	
Delay (s)	14.7	16.6		18.7	15.8		8.6	13.2		7.4	7.6	
Level of Service	B	B		B	B		A	B		A	A	
Approach Delay (s)		16.3			17.0			12.2			7.6	
Approach LOS		B			B			B			A	

Intersection Summary			
HCM Average Control Delay	13.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	110	33	73	118	132	126	251	25	35	369	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.92		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1784		1583	1649		1410	1749		1410	1782	
Flt Permitted	0.52	1.00		0.65	1.00		0.46	1.00		0.57	1.00	
Satd. Flow (perm)	916	1784		1082	1649		684	1749		841	1782	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	39	128	43	86	137	174	147	276	44	65	429	15
RTOR Reduction (vph)	0	19	0	0	72	0	0	9	0	0	2	0
Lane Group Flow (vph)	39	152	0	86	239	0	147	311	0	65	442	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	13.0	13.0		13.0	13.0		21.3	21.3		21.3	21.3	
Effective Green, g (s)	13.0	13.0		13.0	13.0		21.3	21.3		21.3	21.3	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.46	0.46		0.46	0.46	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	257	501		304	463		315	805		387	820	
v/s Ratio Prot		0.09			c0.14			0.18			c0.25	
v/s Ratio Perm	0.04			0.08			0.21			0.08		
v/c Ratio	0.15	0.30		0.28	0.52		0.47	0.39		0.17	0.54	
Uniform Delay, d1	12.5	13.1		13.0	14.0		8.6	8.2		7.3	9.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.3	0.4		0.6	1.1		2.7	0.8		0.5	1.4	
Delay (s)	12.8	13.5		13.6	15.1		11.3	9.0		7.8	10.4	
Level of Service	B	B		B	B		B	A		A	B	
Approach Delay (s)		13.4			14.8			9.7			10.1	
Approach LOS		B			B			A			B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	46.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	24	103	76	81	80	78	139	564	12	20	136	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1668		1444	1715		1583	1852		1805	1752	
Flt Permitted	0.62	1.00		0.55	1.00		0.64	1.00		0.32	1.00	
Satd. Flow (perm)	1162	1668		833	1715		1075	1852		612	1752	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	35	126	113	131	101	101	170	627	17	30	168	10
RTOR Reduction (vph)	0	59	0	0	65	0	0	1	0	0	3	0
Lane Group Flow (vph)	35	180	0	131	137	0	170	643	0	30	175	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	13.7	13.7		13.7	13.7		34.3	34.3		34.3	34.3	
Effective Green, g (s)	13.7	13.7		13.7	13.7		34.3	34.3		34.3	34.3	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.57	0.57		0.57	0.57	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	265	381		190	392		615	1059		350	1002	
v/s Ratio Prot		0.11			0.08			c0.35			0.10	
v/s Ratio Perm	0.03			c0.16			0.16			0.05		
v/c Ratio	0.13	0.47		0.69	0.35		0.28	0.61		0.09	0.17	
Uniform Delay, d1	18.4	20.0		21.2	19.4		6.5	8.4		5.8	6.1	
Progression Factor	1.00	1.00		1.00	1.00		0.31	0.38		0.69	0.67	
Incremental Delay, d2	0.3	1.1		10.3	0.6		1.0	2.2		0.5	0.4	
Delay (s)	18.7	21.1		31.5	20.1		3.0	5.4		4.5	4.5	
Level of Service	B	C		C	C		A	A		A	A	
Approach Delay (s)		20.8			24.6			4.9			4.5	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	79.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	33	110	33	73	118	132	126	251	25	35	369	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.92		1.00	0.98		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1784		1583	1649		1410	1749		1410	1782	
Flt Permitted	0.40	1.00		0.65	1.00		0.48	1.00		0.57	1.00	
Satd. Flow (perm)	713	1784		1082	1649		706	1749		841	1782	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	39	128	43	86	137	174	147	276	44	65	429	15
RTOR Reduction (vph)	0	22	0	0	85	0	0	8	0	0	2	0
Lane Group Flow (vph)	39	149	0	86	226	0	147	312	0	65	442	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	13.5	13.5		13.5	13.5		34.5	34.5		34.5	34.5	
Effective Green, g (s)	13.5	13.5		13.5	13.5		34.5	34.5		34.5	34.5	
Actuated g/C Ratio	0.22	0.22		0.22	0.22		0.57	0.57		0.57	0.57	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	160	401		243	371		406	1006		484	1025	
v/s Ratio Prot		0.08			c0.14			0.18			c0.25	
v/s Ratio Perm	0.05			0.08			0.21			0.08		
v/c Ratio	0.24	0.37		0.35	0.61		0.36	0.31		0.13	0.43	
Uniform Delay, d1	19.1	19.7		19.6	20.9		6.8	6.6		5.9	7.2	
Progression Factor	1.00	1.00		1.00	1.00		0.52	0.52		0.67	0.63	
Incremental Delay, d2	0.9	0.7		1.1	3.0		2.5	0.8		0.5	1.2	
Delay (s)	20.0	20.3		20.6	23.8		6.0	4.2		4.5	5.7	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		20.3			23.1			4.8			5.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	73.2%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	2	37	0	55	68	10	0	542	195	7	127	15
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Hourly flow rate (vph)	8	52	0	60	91	13	0	623	250	14	155	30
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								745				
pX, platoon unblocked	0.71	0.71		0.71	0.71	0.71				0.71		
vC, conflicting volume	1005	1071	170	972	961	748	185			873		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	805	898	170	759	744	445	185			620		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	95	73	100	67	62	97	100			98		
cM capacity (veh/h)	146	196	879	181	240	440	1402			589		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	60	164	873	199
Volume Left	8	60	0	14
Volume Right	0	13	250	30
cSH	187	222	1402	589
Volume to Capacity	0.32	0.74	0.00	0.02
Queue Length 95th (ft)	33	125	0	2
Control Delay (s)	33.1	56.4	0.0	1.1
Lane LOS	D	F		A
Approach Delay (s)	33.1	56.4	0.0	1.1
Approach LOS	D	F		

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	61.0%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	8	58	3	101	48	12	0	276	153	5	383	20
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Hourly flow rate (vph)	14	85	12	115	56	17	0	310	180	9	412	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								744				
pX, platoon unblocked												
vC, conflicting volume	885	930	422	894	850	400	432			490		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	885	930	422	894	850	400	432			490		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	94	68	98	41	81	97	100			99		
cM capacity (veh/h)	221	267	636	194	297	635	1139			1084		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	111	189	490	441
Volume Left	14	115	0	9
Volume Right	12	17	180	20
cSH	277	233	1139	1084
Volume to Capacity	0.40	0.81	0.00	0.01
Queue Length 95th (ft)	46	152	0	1
Control Delay (s)	26.4	64.1	0.0	0.3
Lane LOS	D	F		A
Approach Delay (s)	26.4	64.1	0.0	0.3
Approach LOS	D	F		

Intersection Summary			
Average Delay	12.3		
Intersection Capacity Utilization	47.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	2	37	0	55	68	10	0	542	195	7	127	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7			6.1			6.1	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.96			0.98	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1887			1846			1791			1696	
Flt Permitted		0.95			0.85			1.00			0.94	
Satd. Flow (perm)		1811			1606			1791			1596	
Peak-hour factor, PHF	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Adj. Flow (vph)	8	52	0	60	91	13	0	623	250	14	155	30
RTOR Reduction (vph)	0	0	0	0	6	0	0	20	0	0	9	0
Lane Group Flow (vph)	0	60	0	0	158	0	0	853	0	0	190	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	2%	33%	9%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		9.5			9.5			38.7			38.7	
Effective Green, g (s)		9.5			9.5			38.7			38.7	
Actuated g/C Ratio		0.16			0.16			0.64			0.64	
Clearance Time (s)		5.7			5.7			6.1			6.1	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		287			254			1155			1029	
v/s Ratio Prot								c0.48				
v/s Ratio Perm		0.03			c0.10						0.12	
v/c Ratio		0.21			0.62			0.74			0.19	
Uniform Delay, d1		22.0			23.6			7.2			4.3	
Progression Factor		1.00			1.00			0.56			1.00	
Incremental Delay, d2		0.4			4.7			3.5			0.4	
Delay (s)		22.3			28.3			7.6			4.7	
Level of Service		C			C			A			A	
Approach Delay (s)		22.3			28.3			7.6			4.7	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	10.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	8	58	3	101	48	12	0	276	153	5	383	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7			6.1			6.1	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.95			0.99	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1861			1806			1761			1869	
Flt Permitted		0.94			0.79			1.00			0.99	
Satd. Flow (perm)		1768			1468			1761			1852	
Peak-hour factor, PHF	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Adj. Flow (vph)	14	85	12	115	56	17	0	310	180	9	412	20
RTOR Reduction (vph)	0	8	0	0	6	0	0	29	0	0	2	0
Lane Group Flow (vph)	0	103	0	0	182	0	0	461	0	0	439	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	4%	0%	0%	1%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		12.7			12.7			35.5			35.5	
Effective Green, g (s)		12.7			12.7			35.5			35.5	
Actuated g/C Ratio		0.21			0.21			0.59			0.59	
Clearance Time (s)		5.7			5.7			6.1			6.1	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		374			311			1042			1096	
v/s Ratio Prot								c0.26				
v/s Ratio Perm		0.06			c0.12						0.24	
v/c Ratio		0.28			0.58			0.44			0.40	
Uniform Delay, d1		19.8			21.3			6.8			6.6	
Progression Factor		1.00			1.00			0.93			1.00	
Incremental Delay, d2		0.4			2.8			1.3			1.1	
Delay (s)		20.2			24.1			7.6			7.6	
Level of Service		C			C			A			A	
Approach Delay (s)		20.2			24.1			7.6			7.6	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.3	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	50.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	29	150	5	8	71	57	11	92	29	80	19	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.94			0.97			0.99	
Flt Protected		0.99			1.00			0.99			0.96	
Satd. Flow (prot)		1792			1640			1819			1715	
Flt Permitted		0.91			0.97			0.95			0.76	
Satd. Flow (perm)		1652			1594			1731			1350	
Peak-hour factor, PHF	0.50	0.69	0.84	0.58	0.92	0.74	0.62	0.83	0.75	0.73	0.75	0.50
Adj. Flow (vph)	58	217	6	14	77	77	18	111	39	110	25	10
RTOR Reduction (vph)	0	1	0	0	35	0	0	17	0	0	4	0
Lane Group Flow (vph)	0	280	0	0	133	0	0	151	0	0	141	0
Heavy Vehicles (%)	0%	6%	0%	0%	12%	6%	0%	1%	0%	6%	7%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.5			26.5			10.3			10.3	
Effective Green, g (s)		26.5			26.5			10.3			10.3	
Actuated g/C Ratio		0.54			0.54			0.21			0.21	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)		897			866			365			285	
v/s Ratio Prot												
v/s Ratio Perm		c0.17			0.08			0.09			c0.10	
v/c Ratio		0.31			0.15			0.41			0.49	
Uniform Delay, d1		6.1			5.6			16.6			17.0	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.7			0.3			1.6			2.8	
Delay (s)		6.8			5.9			18.2			19.8	
Level of Service		A			A			B			B	
Approach Delay (s)		6.8			5.9			18.2			19.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	11.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.36		
Actuated Cycle Length (s)	48.8	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	142	18	45	213	101	11	33	34	122	81	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.95			0.99	
Flt Protected		1.00			0.99			0.99			0.97	
Satd. Flow (prot)		1801			1767			1788			1826	
Flt Permitted		0.99			0.94			0.92			0.76	
Satd. Flow (perm)		1783			1667			1656			1432	
Peak-hour factor, PHF	0.75	0.89	0.67	0.80	0.90	0.70	0.62	0.62	0.78	0.70	0.74	0.67
Adj. Flow (vph)	5	160	27	56	237	144	18	53	44	174	109	27
RTOR Reduction (vph)	0	10	0	0	31	0	0	30	0	0	5	0
Lane Group Flow (vph)	0	182	0	0	406	0	0	85	0	0	305	0
Heavy Vehicles (%)	0%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.8			25.8			17.9			17.9	
Effective Green, g (s)		25.8			25.8			17.9			17.9	
Actuated g/C Ratio		0.46			0.46			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		5.0			5.0			7.0			7.0	
Lane Grp Cap (vph)		826			772			532			460	
v/s Ratio Prot												
v/s Ratio Perm		0.10			c0.24			0.05			c0.21	
v/c Ratio		0.22			0.53			0.16			0.66	
Uniform Delay, d1		8.9			10.6			13.5			16.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			1.2			0.5			6.5	
Delay (s)		9.2			11.9			14.0			22.8	
Level of Service		A			B			B			C	
Approach Delay (s)		9.2			11.9			14.0			22.8	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	14.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	55.7	Sum of lost time (s)	12.0
Intersection Capacity Utilization	70.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	590	125	22	166	94	49
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	641	136	24	180	102	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			777		938	709
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			777		938	709
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		64	88
cM capacity (veh/h)			839		285	434

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	777	204	155
Volume Left	0	24	102
Volume Right	136	0	53
cSH	1700	839	323
Volume to Capacity	0.46	0.03	0.48
Queue Length 95th (ft)	0	2	62
Control Delay (s)	0.0	1.4	26.0
Lane LOS		A	D
Approach Delay (s)	0.0	1.4	26.0
Approach LOS			D

Intersection Summary			
Average Delay	3.8		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	365	141	41	558	133	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	397	153	45	607	145	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			550		1169	473
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			550		1169	473
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			96		29	94
cM capacity (veh/h)			1020		204	591

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	550	651	180
Volume Left	0	45	145
Volume Right	153	0	36
cSH	1700	1020	235
Volume to Capacity	0.32	0.04	0.77
Queue Length 95th (ft)	0	3	138
Control Delay (s)	0.0	1.1	57.9
Lane LOS		A	F
Approach Delay (s)	0.0	1.1	57.9
Approach LOS			F

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	590	125	22	166	94	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.32	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	593	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	641	136	24	180	102	53
RTOR Reduction (vph)	0	60	0	0	0	41
Lane Group Flow (vph)	641	76	24	180	102	12
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	33.7	33.7	33.7	33.7	14.0	14.0
Effective Green, g (s)	33.7	33.7	33.7	33.7	14.0	14.0
Actuated g/C Ratio	0.56	0.56	0.56	0.56	0.23	0.23
Clearance Time (s)	6.3	6.3	6.3	6.3	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1046	889	333	1046	413	369
v/s Ratio Prot	c0.34			0.10	c0.06	
v/s Ratio Perm		0.05	0.04			0.01
v/c Ratio	0.61	0.09	0.07	0.17	0.25	0.03
Uniform Delay, d1	8.8	6.1	6.0	6.4	18.7	17.8
Progression Factor	0.38	0.10	0.67	0.69	1.00	1.00
Incremental Delay, d2	2.4	0.2	0.4	0.4	1.4	0.2
Delay (s)	5.7	0.8	4.4	4.7	20.1	17.9
Level of Service	A	A	A	A	C	B
Approach Delay (s)	4.8			4.7	19.4	
Approach LOS	A			A	B	

Intersection Summary			
HCM Average Control Delay	6.8	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	365	141	41	558	133	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.52	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	968	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	397	153	45	607	145	36
RTOR Reduction (vph)	0	62	0	0	0	29
Lane Group Flow (vph)	397	91	45	607	145	7
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	35.7	35.7	35.7	35.7	12.0	12.0
Effective Green, g (s)	35.7	35.7	35.7	35.7	12.0	12.0
Actuated g/C Ratio	0.60	0.60	0.60	0.60	0.20	0.20
Clearance Time (s)	6.3	6.3	6.3	6.3	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1108	942	576	1108	354	317
v/s Ratio Prot	0.21			c0.33	c0.08	
v/s Ratio Perm		0.06	0.05			0.00
v/c Ratio	0.36	0.10	0.08	0.55	0.41	0.02
Uniform Delay, d1	6.3	5.2	5.2	7.3	20.9	19.3
Progression Factor	0.55	0.35	0.86	0.81	1.00	1.00
Incremental Delay, d2	0.8	0.2	0.2	1.7	3.5	0.1
Delay (s)	4.2	2.0	4.7	7.6	24.4	19.4
Level of Service	A	A	A	A	C	B
Approach Delay (s)	3.6			7.4	23.4	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	8.0	HCM Level of Service	A
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	50.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	13	2	2	181	102	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	2	2	197	111	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	314	112	114			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	314	112	114			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	678	940	1475			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	199	114
Volume Left	14	2	0
Volume Right	2	0	3
cSH	704	1475	1700
Volume to Capacity	0.02	0.00	0.07
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.2	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	10.2	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	21.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	2	5	145	187	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	2	5	158	203	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	376	208	212			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	376	208	212			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	623	833	1358			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	5	163	212
Volume Left	3	5	0
Volume Right	2	0	9
cSH	693	1358	1700
Volume to Capacity	0.01	0.00	0.12
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.2	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	10.2	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	21.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	5	4	181	104	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	5	4	197	113	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	318	113	113			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	318	113	113			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	673	940	1476			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	8	201	113
Volume Left	2	4	0
Volume Right	5	0	0
cSH	844	1476	1700
Volume to Capacity	0.01	0.00	0.07
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.3	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.3	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	18	19	146	187	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	20	21	159	203	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	404	204	205			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	404	204	205			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	98			
cM capacity (veh/h)	593	836	1366			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	24	179	205
Volume Left	4	21	0
Volume Right	20	0	2
cSH	778	1366	1700
Volume to Capacity	0.03	0.02	0.12
Queue Length 95th (ft)	2	1	0
Control Delay (s)	9.8	1.0	0.0
Lane LOS	A	A	
Approach Delay (s)	9.8	1.0	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	32.0%	ICU Level of Service	A
Analysis Period (min)	15		

Alternative C 2035

Synchro Reports

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	395	8	6	90	34	2	71	97	72	26	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		1.00			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.99			0.99	1.00		1.00	1.00		0.97	1.00
Satd. Flow (prot)		1821			1736	1495		1893	1615		1776	1369
Flt Permitted		0.95			0.91	1.00		0.97	1.00		0.73	1.00
Satd. Flow (perm)		1733			1588	1495		1838	1615		1338	1369
Peak-hour factor, PHF	0.83	0.68	0.38	0.38	0.75	0.78	0.25	0.72	0.71	0.84	0.66	0.54
Adj. Flow (vph)	78	581	21	16	120	44	8	99	137	86	39	65
RTOR Reduction (vph)	0	1	0	0	0	20	0	0	110	0	0	52
Lane Group Flow (vph)	0	679	0	0	136	24	0	107	27	0	125	13
Heavy Vehicles (%)	2%	3%	17%	0%	10%	8%	0%	0%	0%	5%	0%	18%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		Perm
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		8
Actuated Green, G (s)		30.8			30.8	30.8		11.1	11.1		11.1	11.1
Effective Green, g (s)		30.8			30.8	30.8		11.1	11.1		11.1	11.1
Actuated g/C Ratio		0.55			0.55	0.55		0.20	0.20		0.20	0.20
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	6.5
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	3.0
Lane Grp Cap (vph)		962			881	830		368	323		268	274
v/s Ratio Prot												
v/s Ratio Perm		c0.39			0.09	0.02		0.06	0.02		c0.09	0.01
v/c Ratio		0.71			0.15	0.03		0.29	0.08		0.47	0.05
Uniform Delay, d1		9.0			6.0	5.6		18.9	18.1		19.6	17.9
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		3.2			0.2	0.0		0.4	0.1		1.3	0.1
Delay (s)		12.3			6.2	5.6		19.3	18.2		20.9	18.0
Level of Service		B			A	A		B	B		C	B
Approach Delay (s)		12.3			6.1			18.7			19.9	
Approach LOS		B			A			B			B	

Intersection Summary			
HCM Average Control Delay	13.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	55.5	Sum of lost time (s)	13.6
Intersection Capacity Utilization	61.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	143	4	69	386	100	13	37	34	94	69	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Lane Util. Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Frt		0.99			1.00	0.85		1.00	0.85		1.00	0.85
Flt Protected		0.98			0.99	1.00		0.99	1.00		0.97	1.00
Satd. Flow (prot)		1820			1882	1599		1872	1615		1848	1553
Flt Permitted		0.71			0.88	1.00		0.86	1.00		0.79	1.00
Satd. Flow (perm)		1305			1664	1599		1626	1615		1496	1553
Peak-hour factor, PHF	0.74	0.90	0.38	0.68	0.92	0.85	0.62	0.75	0.86	0.88	0.82	0.77
Adj. Flow (vph)	88	159	11	101	420	118	21	49	40	107	84	132
RTOR Reduction (vph)	0	2	0	0	0	56	0	0	31	0	0	63
Lane Group Flow (vph)	0	256	0	0	521	62	0	70	9	0	191	69
Heavy Vehicles (%)	6%	0%	0%	0%	0%	1%	0%	0%	0%	0%	0%	4%
Turn Type	Perm			Perm		Perm	Perm		Perm	Perm		custom
Protected Phases		2			6			4			8	
Permitted Phases	2			6		6	4		4	8		6
Actuated Green, G (s)		28.9			28.9	28.9		12.9	12.9		12.9	28.9
Effective Green, g (s)		28.9			28.9	28.9		12.9	12.9		12.9	28.9
Actuated g/C Ratio		0.52			0.52	0.52		0.23	0.23		0.23	0.52
Clearance Time (s)		7.1			7.1	7.1		6.5	6.5		6.5	7.1
Vehicle Extension (s)		5.5			5.5	5.5		3.0	3.0		3.0	5.5
Lane Grp Cap (vph)		681			868	834		379	376		348	810
v/s Ratio Prot												
v/s Ratio Perm		0.20			c0.31	0.04		0.04	0.01		c0.13	0.04
v/c Ratio		0.38			0.60	0.07		0.18	0.02		0.55	0.09
Uniform Delay, d1		7.9			9.2	6.6		17.0	16.4		18.7	6.6
Progression Factor		1.00			1.00	1.00		1.00	1.00		1.00	1.00
Incremental Delay, d2		0.9			1.9	0.1		0.2	0.0		1.8	0.1
Delay (s)		8.7			11.1	6.7		17.3	16.4		20.5	6.7
Level of Service		A			B	A		B	B		C	A
Approach Delay (s)		8.7			10.3			17.0			14.9	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	11.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	55.4	Sum of lost time (s)	13.6
Intersection Capacity Utilization	69.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	566	132	3	110	72	2
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.50	0.88	0.82	0.25
Hourly flow rate (vph)	615	143	6	125	88	8
Pedestrians	2					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	4.0					
Percent Blockage	0					
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked			0.82		0.82	0.82
vC, conflicting volume			615		754	615
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			418		588	418
tC, single (s)			4.2		6.5	6.2
tC, 2 stage (s)						
tF (s)			2.3		3.6	3.3
p0 queue free %			99		77	98
cM capacity (veh/h)			883		376	523

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	615	143	131	96
Volume Left	0	0	6	88
Volume Right	0	143	0	8
cSH	1700	1700	883	385
Volume to Capacity	0.36	0.08	0.01	0.25
Queue Length 95th (ft)	0	0	1	24
Control Delay (s)	0.0	0.0	0.5	17.4
Lane LOS			A	C
Approach Delay (s)	0.0		0.5	17.4
Approach LOS				C

Intersection Summary			
Average Delay	1.8		
Intersection Capacity Utilization	40.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	188	153	5	410	229	3
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.94	0.84	0.50	0.91	0.82	0.50
Hourly flow rate (vph)	200	182	10	451	279	6
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	459					
pX, platoon unblocked						
vC, conflicting volume			200		671	200
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			200		671	200
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		34	99
cM capacity (veh/h)			1384		422	846

Direction, Lane #	EB 1	EB 2	WB 1	NW 1
Volume Total	200	182	461	285
Volume Left	0	0	10	279
Volume Right	0	182	0	6
cSH	1700	1700	1384	426
Volume to Capacity	0.12	0.11	0.01	0.67
Queue Length 95th (ft)	0	0	1	119
Control Delay (s)	0.0	0.0	0.2	28.9
Lane LOS			A	D
Approach Delay (s)	0.0		0.2	28.9
Approach LOS				D

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	45.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	61	0	4	0	0	0	0	605	71	94	97	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Hourly flow rate (vph)	82	0	8	0	0	0	0	864	113	104	242	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	884	1428	121	1202	1316	432	242			977		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	884	1428	121	1202	1316	432	242			977		
tC, single (s)	7.7	6.5	7.4	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.6	4.0	3.6	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	58	100	99	100	100	100	100			80		
cM capacity (veh/h)	195	109	839	117	125	572	1321			523		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	90	432	432	113	104	121	121
Volume Left	82	0	0	0	104	0	0
Volume Right	8	0	0	113	0	0	0
cSH	209	1700	1700	1700	523	1700	1700
Volume to Capacity	0.43	0.25	0.25	0.07	0.20	0.07	0.07
Queue Length 95th (ft)	50	0	0	0	18	0	0
Control Delay (s)	34.7	0.0	0.0	0.0	13.6	0.0	0.0
Lane LOS	D				B		
Approach Delay (s)	34.7	0.0			4.1		
Approach LOS	D						

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	35.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	204	0	10	0	0	0	0	127	55	206	382	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Hourly flow rate (vph)	234	0	20	0	0	0	0	172	81	294	449	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1124	1290	225	1005	1210	86	449			253		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1124	1290	225	1005	1210	86	449			253		
tC, single (s)	7.5	6.5	7.2	7.5	6.5	6.9	4.1			4.8		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.4	3.5	4.0	3.3	2.2			2.6		
p0 queue free %	0	100	97	100	100	100	100			73		
cM capacity (veh/h)	129	120	740	151	132	956	1107			1090		

Direction, Lane #	SE 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	254	86	86	81	294	225	225
Volume Left	234	0	0	0	294	0	0
Volume Right	20	0	0	81	0	0	0
cSH	138	1700	1700	1700	1090	1700	1700
Volume to Capacity	1.85	0.05	0.05	0.05	0.27	0.13	0.13
Queue Length 95th (ft)	487	0	0	0	27	0	0
Control Delay (s)	463.2	0.0	0.0	0.0	9.5	0.0	0.0
Lane LOS	F				A		
Approach Delay (s)	463.2	0.0			3.8		
Approach LOS	F						

Intersection Summary			
Average Delay	96.5		
Intersection Capacity Utilization	46.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	61	0	4	0	0	0	0	605	71	94	97	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9						5.9	5.9	5.9	5.9	
Lane Util. Factor		1.00						0.95	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		0.96						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1639						3539	1538	1318	3610	
Flt Permitted		0.96						1.00	1.00	0.32	1.00	
Satd. Flow (perm)		1639						3539	1538	437	3610	
Peak-hour factor, PHF	0.74	0.25	0.50	0.92	0.92	0.92	0.92	0.70	0.63	0.90	0.40	0.92
Adj. Flow (vph)	82	0	8	0	0	0	0	864	113	104	242	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	41	0	0	0
Lane Group Flow (vph)	0	84	0	0	0	0	0	864	72	104	242	0
Heavy Vehicles (%)	8%	0%	25%	2%	2%	2%	2%	2%	5%	37%	0%	2%
Turn Type	Perm								Perm	Perm		
Protected Phases		6						4			8	
Permitted Phases	6								4	8		
Actuated Green, G (s)		10.1						38.1	38.1	38.1	38.1	
Effective Green, g (s)		10.1						38.1	38.1	38.1	38.1	
Actuated g/C Ratio		0.17						0.64	0.64	0.64	0.64	
Clearance Time (s)		5.9						5.9	5.9	5.9	5.9	
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		276						2247	977	277	2292	
v/s Ratio Prot								c0.24			0.07	
v/s Ratio Perm		0.05							0.05	0.24		
v/c Ratio		0.30						0.38	0.07	0.38	0.11	
Uniform Delay, d1		21.9						5.3	4.2	5.2	4.3	
Progression Factor		1.00						1.00	1.00	0.61	0.53	
Incremental Delay, d2		2.8						0.5	0.1	3.8	0.1	
Delay (s)		24.7						5.8	4.3	7.1	2.4	
Level of Service		C						A	A	A	A	
Approach Delay (s)		24.7			0.0			5.6			3.8	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	6.4	HCM Level of Service	A
HCM Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	204	0	10	0	0	0	0	127	55	206	382	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.9						5.9	5.9	5.9	5.9	
Lane Util. Factor		1.00						0.95	1.00	1.00	0.95	
Frt		0.99						1.00	0.85	1.00	1.00	
Flt Protected		0.96						1.00	1.00	0.95	1.00	
Satd. Flow (prot)		1776						3539	1615	1249	3610	
Flt Permitted		0.96						1.00	1.00	0.64	1.00	
Satd. Flow (perm)		1776						3539	1615	846	3610	
Peak-hour factor, PHF	0.87	0.25	0.50	0.92	0.92	0.92	0.92	0.74	0.68	0.70	0.85	0.92
Adj. Flow (vph)	234	0	20	0	0	0	0	172	81	294	449	0
RTOR Reduction (vph)	0	6	0	0	0	0	0	0	32	0	0	0
Lane Group Flow (vph)	0	248	0	0	0	0	0	172	49	294	449	0
Heavy Vehicles (%)	0%	0%	15%	2%	2%	2%	2%	2%	0%	37%	0%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	13	0	0
Turn Type	Perm								Perm	Perm		
Protected Phases		4						2			6	
Permitted Phases	4								2	6		
Actuated Green, G (s)		11.9						36.3	36.3	36.3	36.3	
Effective Green, g (s)		11.9						36.3	36.3	36.3	36.3	
Actuated g/C Ratio		0.20						0.60	0.60	0.60	0.60	
Clearance Time (s)		5.9						5.9	5.9	5.9	5.9	
Vehicle Extension (s)		3.0						3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)		352						2141	977	512	2184	
v/s Ratio Prot								0.05			0.12	
v/s Ratio Perm		0.14							0.03	c0.35		
v/c Ratio		0.71						0.08	0.05	0.57	0.21	
Uniform Delay, d1		22.4						4.9	4.8	7.2	5.3	
Progression Factor		1.00						1.00	1.00	0.70	0.28	
Incremental Delay, d2		6.3						0.1	0.1	4.2	0.2	
Delay (s)		28.7						5.0	4.9	9.2	1.7	
Level of Service		C						A	A	A	A	
Approach Delay (s)		28.7			0.0			5.0			4.6	
Approach LOS		C			A			A			A	

Intersection Summary			
HCM Average Control Delay	9.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	32	0	137	21	645	0	0	159	109
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Hourly flow rate (vph)	0	0	0	41	0	214	28	896	0	0	194	116
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	912	1146	97	1049	1262	448	310			896		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	912	1146	97	1049	1262	448	310			896		
tC, single (s)	7.5	6.5	6.9	7.7	6.5	7.2	4.4			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.6	4.0	3.4	2.4			2.2		
p0 queue free %	100	100	100	76	100	59	98			100		
cM capacity (veh/h)	133	193	940	168	167	527	1146			753		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	255	28	448	448	97	97	116
Volume Left	41	28	0	0	0	0	0
Volume Right	214	0	0	0	0	0	116
cSH	393	1146	1700	1700	1700	1700	1700
Volume to Capacity	0.65	0.02	0.26	0.26	0.06	0.06	0.07
Queue Length 95th (ft)	110	2	0	0	0	0	0
Control Delay (s)	29.5	8.2	0.0	0.0	0.0	0.0	0.0
Lane LOS	D	A					
Approach Delay (s)	29.5	0.2			0.0		
Approach LOS	D						

Intersection Summary				
Average Delay	5.2			
Intersection Capacity Utilization	35.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	0	0	0	102	0	201	13	318	0	0	486	247
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Hourly flow rate (vph)	0	0	0	138	0	300	14	475	0	0	565	321
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1131	1068	283	785	1389	237	886			475		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1131	1068	283	785	1389	237	886			475		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	7.5	4.3			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.6	2.3			2.2		
p0 queue free %	100	100	100	51	100	57	98			100		
cM capacity (veh/h)	88	216	714	282	141	690	717			1084		

Direction, Lane #	NW 1	NE 1	NE 2	NE 3	SW 1	SW 2	SW 3
Volume Total	438	14	237	237	283	283	321
Volume Left	138	14	0	0	0	0	0
Volume Right	300	0	0	0	0	0	321
cSH	474	717	1700	1700	1700	1700	1700
Volume to Capacity	0.92	0.02	0.14	0.14	0.17	0.17	0.19
Queue Length 95th (ft)	268	2	0	0	0	0	0
Control Delay (s)	54.1	10.1	0.0	0.0	0.0	0.0	0.0
Lane LOS	F	B					
Approach Delay (s)	54.1	0.3			0.0		
Approach LOS	F						

Intersection Summary				
Average Delay	13.1			
Intersection Capacity Utilization	46.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	32	0	137	21	645	0	0	159	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9		5.9	5.9			5.9	5.9
Lane Util. Factor					1.00		1.00	0.95			0.95	1.00
Frt					0.89		1.00	1.00			1.00	0.85
Flt Protected					0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)					1474		1543	3574			3471	1324
Flt Permitted					0.99		0.63	1.00			1.00	1.00
Satd. Flow (perm)					1474		1023	3574			3471	1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.79	0.25	0.64	0.75	0.72	0.92	0.92	0.82	0.94
Adj. Flow (vph)	0	0	0	41	0	214	28	896	0	0	194	116
RTOR Reduction (vph)	0	0	0	0	57	0	0	0	0	0	0	62
Lane Group Flow (vph)	0	0	0	0	198	0	28	896	0	0	194	54
Heavy Vehicles (%)	2%	2%	2%	10%	0%	14%	17%	1%	2%	2%	4%	22%
Turn Type				Perm			Perm					Perm
Protected Phases					2			4			8	
Permitted Phases				2			4					8
Actuated Green, G (s)					20.1		28.1	28.1			28.1	28.1
Effective Green, g (s)					20.1		28.1	28.1			28.1	28.1
Actuated g/C Ratio					0.34		0.47	0.47			0.47	0.47
Clearance Time (s)					5.9		5.9	5.9			5.9	5.9
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					494		479	1674			1626	620
v/s Ratio Prot								c0.25			0.06	
v/s Ratio Perm					0.13		0.03					0.04
v/c Ratio					0.40		0.06	0.54			0.12	0.09
Uniform Delay, d1					15.3		8.7	11.3			9.0	8.8
Progression Factor					1.00		0.72	0.63			0.99	1.90
Incremental Delay, d2					2.4		0.2	1.2			0.1	0.3
Delay (s)					17.7		6.5	8.2			9.1	17.1
Level of Service					B		A	A			A	B
Approach Delay (s)		0.0			17.7			8.2			12.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM Average Control Delay	10.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	45.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SEL	SET	SER	NWL	NWT	NWR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	0	0	0	102	0	201	13	318	0	0	486	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)					5.9		5.9	5.9			5.9	5.9
Lane Util. Factor					1.00		1.00	0.95			0.95	1.00
Frt					0.91		1.00	1.00			1.00	0.85
Flt Protected					0.98		0.95	1.00			1.00	1.00
Satd. Flow (prot)					1424		1656	2888			3574	1380
Flt Permitted					0.98		0.40	1.00			1.00	1.00
Satd. Flow (perm)					1424		691	2888			3574	1380
Peak-hour factor, PHF	0.92	0.92	0.92	0.74	0.25	0.67	0.92	0.67	0.92	0.92	0.86	0.77
Adj. Flow (vph)	0	0	0	138	0	300	14	475	0	0	565	321
RTOR Reduction (vph)	0	0	0	0	90	0	0	0	0	0	0	213
Lane Group Flow (vph)	0	0	0	0	348	0	14	475	0	0	565	108
Heavy Vehicles (%)	2%	2%	2%	0%	0%	28%	9%	25%	2%	2%	1%	17%
Turn Type				Perm			Perm					Perm
Protected Phases					2			4			8	
Permitted Phases				2			4					8
Actuated Green, G (s)					28.1		20.1	20.1			20.1	20.1
Effective Green, g (s)					28.1		20.1	20.1			20.1	20.1
Actuated g/C Ratio					0.47		0.34	0.34			0.34	0.34
Clearance Time (s)					5.9		5.9	5.9			5.9	5.9
Vehicle Extension (s)					3.0		3.0	3.0			3.0	3.0
Lane Grp Cap (vph)					667		231	967			1197	462
v/s Ratio Prot								c0.16			0.16	
v/s Ratio Perm					0.24		0.02					0.08
v/c Ratio					0.52		0.06	0.49			0.47	0.23
Uniform Delay, d1					11.2		13.5	15.9			15.8	14.4
Progression Factor					1.00		0.51	0.57			0.68	0.89
Incremental Delay, d2					2.9		0.5	1.7			1.1	1.0
Delay (s)					14.1		7.4	10.8			11.8	13.8
Level of Service					B		A	B			B	B
Approach Delay (s)		0.0			14.1			10.7			12.5	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	56.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	24	702	21	0	205	4	5	0	5	23	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.79	0.84	0.92	0.92	0.78	0.38	0.25	0.92	0.50	0.92	0.92	0.92
Hourly flow rate (vph)	30	836	23	0	263	11	20	0	10	25	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	273			859			1159	1182	263	1181	1181	847
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	273			859			1159	1182	263	1181	1181	847
tC, single (s)	4.4			4.1			7.8	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.5			2.2			4.2	4.0	3.5	3.5	4.0	3.3
p0 queue free %	97			100			84	100	99	84	100	100
cM capacity (veh/h)	1135			782			123	185	723	161	185	362

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	NW 1
Volume Total	30	859	263	11	30	25
Volume Left	30	0	0	0	20	25
Volume Right	0	23	0	11	10	0
cSH	1135	1700	782	1700	170	161
Volume to Capacity	0.03	0.51	0.00	0.01	0.18	0.16
Queue Length 95th (ft)	2	0	0	0	16	13
Control Delay (s)	8.3	0.0	0.0	0.0	30.7	31.4
Lane LOS	A				D	D
Approach Delay (s)	0.3		0.0		30.7	31.4
Approach LOS					D	D

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (veh/h)	6	319	136	34	523	5	8	2	32	133	3	24
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.50	0.93	0.92	0.92	0.94	0.33	0.62	0.92	0.75	0.92	0.92	0.92
Hourly flow rate (vph)	12	343	148	37	556	15	13	2	43	145	3	26
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	572			491			1025	1145	556	1115	1086	417
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	572			491			1025	1145	556	1115	1086	417
tC, single (s)	4.4			4.1			7.2	6.5	6.4	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.4			2.2			3.6	4.0	3.5	3.5	4.0	3.3
p0 queue free %	99			97			93	99	92	11	98	96
cM capacity (veh/h)	897			1072			187	190	503	162	206	636

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	NW 1
Volume Total	12	491	593	15	58	174
Volume Left	12	0	37	0	13	145
Volume Right	0	148	0	15	43	26
cSH	897	1700	1072	1700	349	183
Volume to Capacity	0.01	0.29	0.03	0.01	0.17	0.95
Queue Length 95th (ft)	1	0	3	0	15	188
Control Delay (s)	9.1	0.0	0.9	0.0	17.3	105.7
Lane LOS	A		A		C	F
Approach Delay (s)	0.2		0.9		17.3	105.7
Approach LOS					C	F

Intersection Summary			
Average Delay	14.9		
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	24	702	21	0	205	4	5	0	5	23	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3		6.3	6.3		6.0		6.0		
Lane Util. Factor	1.00	1.00	1.00		1.00	1.00		1.00		1.00		
Frt	1.00	1.00	0.85		1.00	0.85		0.96		1.00		
Flt Protected	0.95	1.00	1.00		1.00	1.00		0.97		0.95		
Satd. Flow (prot)	1367	1845	1583		1696	1615		1109		1770		
Flt Permitted	0.60	1.00	1.00		1.00	1.00		0.83		0.74		
Satd. Flow (perm)	859	1845	1583		1696	1615		957		1374		
Peak-hour factor, PHF	0.79	0.84	0.92	0.92	0.78	0.38	0.25	0.92	0.50	0.92	0.92	0.92
Adj. Flow (vph)	30	836	23	0	263	11	20	0	10	25	0	0
RTOR Reduction (vph)	0	0	10	0	0	5	0	8	0	0	0	0
Lane Group Flow (vph)	30	836	13	0	263	6	0	22	0	25	0	0
Heavy Vehicles (%)	32%	3%	2%	2%	12%	0%	75%	2%	25%	2%	2%	2%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6			2		
Actuated Green, G (s)	35.0	35.0	35.0		35.0	35.0		12.7		12.7		
Effective Green, g (s)	35.0	35.0	35.0		35.0	35.0		12.7		12.7		
Actuated g/C Ratio	0.58	0.58	0.58		0.58	0.58		0.21		0.21		
Clearance Time (s)	6.3	6.3	6.3		6.3	6.3		6.0		6.0		
Vehicle Extension (s)	3.0	3.0	3.0		3.0	3.0		3.0		3.0		
Lane Grp Cap (vph)	501	1076	923		989	942		203		291		
v/s Ratio Prot		c0.45			0.16							
v/s Ratio Perm	0.03		0.01			0.00		c0.02		0.02		
v/c Ratio	0.06	0.78	0.01		0.27	0.01		0.11		0.09		
Uniform Delay, d1	5.4	9.5	5.3		6.2	5.2		19.1		19.0		
Progression Factor	0.30	0.32	0.08		1.00	1.03		1.00		1.00		
Incremental Delay, d2	0.0	3.3	0.0		0.1	0.0		1.1		0.6		
Delay (s)	1.7	6.3	0.4		6.3	5.4		20.2		19.6		
Level of Service	A	A	A		A	A		C		B		
Approach Delay (s)		6.0			6.3			20.2			19.6	
Approach LOS		A			A			C			B	

Intersection Summary			
HCM Average Control Delay	6.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.60		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	55.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Volume (vph)	6	319	136	34	523	5	8	2	32	133	3	24
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.0	6.0		6.0	6.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.86		1.00	0.87	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1444	1624	1583	1770	1792	923	1612	1399		1770	1612	
Flt Permitted	0.28	1.00	1.00	0.51	1.00	1.00	0.74	1.00		0.73	1.00	
Satd. Flow (perm)	427	1624	1583	949	1792	923	1252	1399		1356	1612	
Peak-hour factor, PHF	0.50	0.93	0.92	0.92	0.94	0.33	0.62	0.92	0.75	0.92	0.92	0.92
Adj. Flow (vph)	12	343	148	37	556	15	13	2	43	145	3	26
RTOR Reduction (vph)	0	0	87	0	0	9	0	27	0	0	16	0
Lane Group Flow (vph)	12	343	61	37	556	6	13	18	0	145	13	0
Heavy Vehicles (%)	25%	17%	2%	2%	6%	75%	12%	2%	17%	2%	2%	2%
Turn Type	Perm		Perm	Perm		Perm	Perm			Perm		
Protected Phases		4			8			6			2	
Permitted Phases	4		4	8		8	6			2		
Actuated Green, G (s)	24.7	24.7	24.7	24.7	24.7	24.7	23.0	23.0		23.0	23.0	
Effective Green, g (s)	24.7	24.7	24.7	24.7	24.7	24.7	23.0	23.0		23.0	23.0	
Actuated g/C Ratio	0.41	0.41	0.41	0.41	0.41	0.41	0.38	0.38		0.38	0.38	
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.3	6.0	6.0		6.0	6.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	176	669	652	391	738	380	480	536		520	618	
v/s Ratio Prot		0.21			c0.31			0.01			0.01	
v/s Ratio Perm	0.03		0.04	0.04		0.01	0.01			c0.11		
v/c Ratio	0.07	0.51	0.09	0.09	0.75	0.02	0.03	0.03		0.28	0.02	
Uniform Delay, d1	10.7	13.2	10.8	10.8	15.1	10.5	11.5	11.6		12.8	11.5	
Progression Factor	0.71	0.61	0.33	0.95	0.92	1.13	1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.7	0.1	0.1	3.9	0.0	0.1	0.1		1.3	0.1	
Delay (s)	7.7	8.7	3.6	10.4	17.7	11.8	11.6	11.7		14.1	11.6	
Level of Service	A	A	A	B	B	B	B	B		B	B	
Approach Delay (s)		7.2			17.1			11.7			13.7	
Approach LOS		A			B			B			B	

Intersection Summary			
HCM Average Control Delay	12.7	HCM Level of Service	B
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	52.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	7	68	697	7	22	218
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.62	0.69	0.82	0.62	0.56	0.90
Hourly flow rate (vph)	11	99	850	11	39	242
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1171	850			861	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1171	850			861	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	73			95	
cM capacity (veh/h)	204	363			789	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	110	850	11	39	242
Volume Left	11	0	0	39	0
Volume Right	99	0	11	0	0
cSH	336	1700	1700	789	1700
Volume to Capacity	0.33	0.50	0.01	0.05	0.14
Queue Length 95th (ft)	35	0	0	4	0
Control Delay (s)	20.8	0.0	0.0	9.8	0.0
Lane LOS	C			A	
Approach Delay (s)	20.8	0.0		1.4	
Approach LOS	C				

Intersection Summary			
Average Delay	2.1		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NWL	NWR	NET	NER	SWL	SWT
Lane Configurations						
Volume (veh/h)	4	55	355	2	58	590
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.38	0.75	0.91	0.25	0.62	0.89
Hourly flow rate (vph)	11	73	390	8	94	663
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1240	390			398	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1240	390			398	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	94	89			92	
cM capacity (veh/h)	180	663			1171	

Direction, Lane #	NW 1	NE 1	NE 2	SW 1	SW 2
Volume Total	84	390	8	94	663
Volume Left	11	0	0	94	0
Volume Right	73	0	8	0	0
cSH	495	1700	1700	1171	1700
Volume to Capacity	0.17	0.23	0.00	0.08	0.39
Queue Length 95th (ft)	15	0	0	6	0
Control Delay (s)	13.7	0.0	0.0	8.3	0.0
Lane LOS	B			A	
Approach Delay (s)	13.7	0.0		1.0	
Approach LOS	B				

Intersection Summary			
Average Delay	1.6		
Intersection Capacity Utilization	41.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	116	86	92	91	89	158	641	14	22	155	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1667		1444	1714		1583	1852		1805	1752	
Flt Permitted	0.60	1.00		0.53	1.00		0.63	1.00		0.22	1.00	
Satd. Flow (perm)	1115	1667		812	1714		1052	1852		416	1752	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	39	141	128	148	115	116	193	712	20	33	191	11
RTOR Reduction (vph)	0	52	0	0	57	0	0	1	0	0	3	0
Lane Group Flow (vph)	39	217	0	148	174	0	193	731	0	33	199	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	15.9	15.9		15.9	15.9		29.5	29.5		29.5	29.5	
Effective Green, g (s)	15.9	15.9		15.9	15.9		29.5	29.5		29.5	29.5	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.51	0.51		0.51	0.51	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	309	462		225	475		541	952		214	900	
v/s Ratio Prot		0.13			0.10			c0.39			0.11	
v/s Ratio Perm	0.03			c0.18			0.18			0.08		
v/c Ratio	0.13	0.47		0.66	0.37		0.36	0.77		0.15	0.22	
Uniform Delay, d1	15.5	17.2		18.3	16.7		8.3	11.2		7.4	7.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.2	0.9		7.1	0.6		1.0	4.6		0.8	0.3	
Delay (s)	15.8	18.1		25.4	17.3		9.3	15.8		8.2	8.0	
Level of Service	B	B		C	B		A	B		A	A	
Approach Delay (s)		17.8			20.4			14.5			8.0	
Approach LOS		B			C			B			A	

Intersection Summary			
HCM Average Control Delay	15.4	HCM Level of Service	B
HCM Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	57.4	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	37	125	37	83	134	148	141	283	29	39	416	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.92		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1783		1583	1650		1410	1748		1410	1783	
Flt Permitted	0.44	1.00		0.64	1.00		0.40	1.00		0.54	1.00	
Satd. Flow (perm)	777	1783		1059	1650		597	1748		796	1783	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	44	145	49	98	156	195	164	311	51	72	484	15
RTOR Reduction (vph)	0	19	0	0	70	0	0	9	0	0	2	0
Lane Group Flow (vph)	44	175	0	98	281	0	164	353	0	72	497	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	14.6	14.6		14.6	14.6		23.9	23.9		23.9	23.9	
Effective Green, g (s)	14.6	14.6		14.6	14.6		23.9	23.9		23.9	23.9	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.47	0.47		0.47	0.47	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	225	515		306	477		283	827		377	844	
v/s Ratio Prot		0.10			c0.17			0.20			c0.28	
v/s Ratio Perm	0.06			0.09			0.27			0.09		
v/c Ratio	0.20	0.34		0.32	0.59		0.58	0.43		0.19	0.59	
Uniform Delay, d1	13.5	14.1		14.1	15.4		9.7	8.8		7.7	9.7	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.5	0.5		0.7	2.0		5.1	0.9		0.6	1.8	
Delay (s)	14.0	14.6		14.8	17.4		14.7	9.7		8.3	11.5	
Level of Service	B	B		B	B		B	A		A	B	
Approach Delay (s)		14.5			16.8			11.2			11.1	
Approach LOS		B			B			B			B	

Intersection Summary			
HCM Average Control Delay	13.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	50.5	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	27	116	86	92	91	89	158	641	14	22	155	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.93		1.00	0.92		1.00	1.00		1.00	0.99	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1667		1444	1714		1583	1852		1805	1752	
Flt Permitted	0.57	1.00		0.50	1.00		0.63	1.00		0.25	1.00	
Satd. Flow (perm)	1069	1667		764	1714		1052	1852		471	1752	
Peak-hour factor, PHF	0.69	0.82	0.67	0.62	0.79	0.77	0.82	0.90	0.69	0.67	0.81	0.62
Adj. Flow (vph)	39	141	128	148	115	116	193	712	20	33	191	11
RTOR Reduction (vph)	0	58	0	0	64	0	0	1	0	0	3	0
Lane Group Flow (vph)	39	211	0	148	167	0	193	731	0	33	199	0
Heavy Vehicles (%)	2%	3%	9%	25%	4%	1%	14%	2%	9%	0%	8%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	14.7	14.7		14.7	14.7		33.3	33.3		33.3	33.3	
Effective Green, g (s)	14.7	14.7		14.7	14.7		33.3	33.3		33.3	33.3	
Actuated g/C Ratio	0.24	0.24		0.24	0.24		0.55	0.55		0.55	0.55	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	262	408		187	420		584	1028		261	972	
v/s Ratio Prot		0.13			0.10			c0.39			0.11	
v/s Ratio Perm	0.04			c0.19			0.18			0.07		
v/c Ratio	0.15	0.52		0.79	0.40		0.33	0.71		0.13	0.20	
Uniform Delay, d1	17.7	19.6		21.2	18.9		7.3	9.8		6.4	6.7	
Progression Factor	1.00	1.00		1.00	1.00		0.50	0.47		0.69	0.70	
Incremental Delay, d2	0.3	1.3		20.6	0.7		1.2	3.4		0.9	0.5	
Delay (s)	18.1	20.9		41.8	19.7		4.9	8.0		5.4	5.2	
Level of Service	B	C		D	B		A	A		A	A	
Approach Delay (s)		20.5			28.3			7.3			5.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	13.6	HCM Level of Service	B
HCM Volume to Capacity ratio	0.74		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	85.1%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	37	125	37	83	134	148	141	283	29	39	416	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.96		1.00	0.92		1.00	0.98		1.00	1.00	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1687	1783		1583	1650		1410	1748		1410	1783	
Flt Permitted	0.33	1.00		0.64	1.00		0.43	1.00		0.54	1.00	
Satd. Flow (perm)	593	1783		1059	1650		637	1748		804	1783	
Peak-hour factor, PHF	0.85	0.86	0.76	0.85	0.86	0.76	0.86	0.91	0.57	0.54	0.86	0.33
Adj. Flow (vph)	44	145	49	98	156	195	164	311	51	72	484	15
RTOR Reduction (vph)	0	22	0	0	79	0	0	9	0	0	2	0
Lane Group Flow (vph)	44	172	0	98	272	0	164	353	0	72	497	0
Heavy Vehicles (%)	7%	2%	4%	14%	5%	6%	28%	6%	9%	28%	6%	9%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		8			4			2			6	
Permitted Phases	8			4			2			6		
Actuated Green, G (s)	13.9	13.9		13.9	13.9		34.1	34.1		34.1	34.1	
Effective Green, g (s)	13.9	13.9		13.9	13.9		34.1	34.1		34.1	34.1	
Actuated g/C Ratio	0.23	0.23		0.23	0.23		0.57	0.57		0.57	0.57	
Clearance Time (s)	5.7	5.7		5.7	5.7		6.3	6.3		6.3	6.3	
Vehicle Extension (s)	3.5	3.5		3.5	3.5		5.5	5.5		5.5	5.5	
Lane Grp Cap (vph)	137	413		245	382		362	993		457	1013	
v/s Ratio Prot		0.10			c0.16			0.20			c0.28	
v/s Ratio Perm	0.07			0.09			0.26			0.09		
v/c Ratio	0.32	0.42		0.40	0.71		0.45	0.36		0.16	0.49	
Uniform Delay, d1	19.1	19.6		19.5	21.2		7.5	7.0		6.1	7.8	
Progression Factor	1.00	1.00		1.00	1.00		0.50	0.41		0.67	0.63	
Incremental Delay, d2	1.6	0.8		1.3	6.4		4.0	1.0		0.7	1.5	
Delay (s)	20.7	20.4		20.8	27.6		7.7	3.8		4.8	6.4	
Level of Service	C	C		C	C		A	A		A	A	
Approach Delay (s)		20.5			26.1			5.0			6.2	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM Average Control Delay	12.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	77.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	2	42	0	62	77	11	0	617	221	8	144	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Hourly flow rate (vph)	8	59	0	67	103	15	0	709	283	16	176	36
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								745				
pX, platoon unblocked	0.64	0.64		0.64	0.64	0.64				0.64		
vC, conflicting volume	1142	1218	194	1106	1094	851	212			993		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	939	1058	194	882	864	482	212			704		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.4		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.5		
p0 queue free %	90	58	100	40	43	96	100			97		
cM capacity (veh/h)	81	140	853	112	181	375	1371			489		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	67	185	993	228
Volume Left	8	67	0	16
Volume Right	0	15	283	36
cSH	129	153	1371	489
Volume to Capacity	0.52	1.21	0.00	0.03
Queue Length 95th (ft)	62	263	0	3
Control Delay (s)	60.1	196.9	0.0	1.3
Lane LOS	F	F		A
Approach Delay (s)	60.1	196.9	0.0	1.3
Approach LOS	F	F		

Intersection Summary			
Average Delay	27.7		
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (veh/h)	9	66	3	112	54	14	0	256	173	5	434	22
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Hourly flow rate (vph)	16	97	12	127	64	20	0	288	204	9	467	22
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)								744				
pX, platoon unblocked	0.97	0.97		0.97	0.97	0.97				0.97		
vC, conflicting volume	937	987	478	945	896	389	489			491		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	922	973	478	931	880	361	489			465		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.3	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.4	2.2			2.2		
p0 queue free %	92	60	98	22	77	97	100			99		
cM capacity (veh/h)	195	246	592	164	278	652	1085			1079		

Direction, Lane #	EB 1	WB 1	NE 1	SW 1
Volume Total	125	211	491	498
Volume Left	16	127	0	9
Volume Right	12	20	204	22
cSH	252	204	1085	1079
Volume to Capacity	0.49	1.04	0.00	0.01
Queue Length 95th (ft)	63	234	0	1
Control Delay (s)	32.6	122.2	0.0	0.2
Lane LOS	D	F		A
Approach Delay (s)	32.6	122.2	0.0	0.2
Approach LOS	D	F		

Intersection Summary			
Average Delay	22.6		
Intersection Capacity Utilization	51.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	2	42	0	62	77	11	0	617	221	8	144	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7			6.1			6.1	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.99			0.96			0.98	
Flt Protected		0.99			0.98			1.00			1.00	
Satd. Flow (prot)		1889			1846			1791			1696	
Flt Permitted		0.95			0.85			1.00			0.93	
Satd. Flow (perm)		1805			1602			1791			1575	
Peak-hour factor, PHF	0.25	0.71	0.25	0.92	0.75	0.75	0.25	0.87	0.78	0.50	0.82	0.50
Adj. Flow (vph)	8	59	0	67	103	15	0	709	283	16	176	36
RTOR Reduction (vph)	0	0	0	0	5	0	0	24	0	0	11	0
Lane Group Flow (vph)	0	67	0	0	180	0	0	968	0	0	217	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	2%	2%	33%	9%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		9.0			9.0			39.2			39.2	
Effective Green, g (s)		9.0			9.0			39.2			39.2	
Actuated g/C Ratio		0.15			0.15			0.65			0.65	
Clearance Time (s)		5.7			5.7			6.1			6.1	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		271			240			1170			1029	
v/s Ratio Prot								c0.54				
v/s Ratio Perm		0.04			c0.11						0.14	
v/c Ratio		0.25			0.75			0.83			0.21	
Uniform Delay, d1		22.5			24.4			7.9			4.2	
Progression Factor		1.00			1.00			0.44			1.00	
Incremental Delay, d2		0.5			12.1			5.0			0.5	
Delay (s)		23.0			36.5			8.5			4.6	
Level of Service		C			D			A			A	
Approach Delay (s)		23.0			36.5			8.5			4.6	
Approach LOS		C			D			A			A	

Intersection Summary			
HCM Average Control Delay	12.1	HCM Level of Service	B
HCM Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	70.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations												
Volume (vph)	9	66	3	112	54	14	0	253	175	5	434	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.7			5.7			6.1			6.1	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.99			0.99			0.94			0.99	
Flt Protected		0.99			0.97			1.00			1.00	
Satd. Flow (prot)		1863			1805			1752			1869	
Flt Permitted		0.95			0.79			1.00			0.99	
Satd. Flow (perm)		1775			1477			1752			1854	
Peak-hour factor, PHF	0.58	0.68	0.25	0.88	0.85	0.69	0.25	0.89	0.85	0.56	0.93	1.00
Adj. Flow (vph)	16	97	12	127	64	20	0	284	206	9	467	22
RTOR Reduction (vph)	0	7	0	0	7	0	0	38	0	0	3	0
Lane Group Flow (vph)	0	118	0	0	204	0	0	453	0	0	496	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	9%	0%	4%	0%	0%	1%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		13.2			13.2			35.0			35.0	
Effective Green, g (s)		13.2			13.2			35.0			35.0	
Actuated g/C Ratio		0.22			0.22			0.58			0.58	
Clearance Time (s)		5.7			5.7			6.1			6.1	
Vehicle Extension (s)		3.0			3.0			3.0			3.0	
Lane Grp Cap (vph)		391			325			1022			1082	
v/s Ratio Prot								0.26				
v/s Ratio Perm		0.07			c0.14						c0.27	
v/c Ratio		0.30			0.63			0.44			0.46	
Uniform Delay, d1		19.5			21.2			7.0			7.1	
Progression Factor		1.00			1.00			0.62			1.00	
Incremental Delay, d2		0.4			3.8			1.3			1.4	
Delay (s)		20.0			24.9			5.7			8.5	
Level of Service		B			C			A			A	
Approach Delay (s)		20.0			24.9			5.7			8.5	
Approach LOS		B			C			A			A	

Intersection Summary			
HCM Average Control Delay	11.2	HCM Level of Service	B
HCM Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.8
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	33	171	5	9	81	64	13	105	33	91	21	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		1.00			0.94			0.97			0.99	
Flt Protected		0.99			1.00			0.99			0.96	
Satd. Flow (prot)		1792			1641			1819			1715	
Flt Permitted		0.90			0.96			0.95			0.72	
Satd. Flow (perm)		1633			1586			1738			1275	
Peak-hour factor, PHF	0.50	0.69	0.84	0.58	0.92	0.74	0.62	0.83	0.75	0.73	0.75	0.50
Adj. Flow (vph)	66	248	6	16	88	86	21	127	44	125	28	10
RTOR Reduction (vph)	0	1	0	0	43	0	0	15	0	0	4	0
Lane Group Flow (vph)	0	319	0	0	147	0	0	177	0	0	159	0
Heavy Vehicles (%)	0%	6%	0%	0%	12%	6%	0%	1%	0%	6%	7%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		25.4			25.4			13.6			13.6	
Effective Green, g (s)		25.4			25.4			13.6			13.6	
Actuated g/C Ratio		0.50			0.50			0.27			0.27	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		7.0			7.0			5.0			5.0	
Lane Grp Cap (vph)		813			790			463			340	
v/s Ratio Prot												
v/s Ratio Perm		c0.20			0.09			0.10			c0.12	
v/c Ratio		0.39			0.19			0.38			0.47	
Uniform Delay, d1		8.0			7.1			15.3			15.7	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		1.1			0.4			1.1			2.1	
Delay (s)		9.1			7.5			16.4			17.8	
Level of Service		A			A			B			B	
Approach Delay (s)		9.1			7.5			16.4			17.8	
Approach LOS		A			A			B			B	

Intersection Summary			
HCM Average Control Delay	12.0	HCM Level of Service	B
HCM Volume to Capacity ratio	0.42		
Actuated Cycle Length (s)	51.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	50.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	4	162	20	52	243	112	13	37	38	137	92	20
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0			6.0			6.0			6.0	
Lane Util. Factor		1.00			1.00			1.00			1.00	
Frt		0.98			0.96			0.95			0.99	
Flt Protected		1.00			0.99			0.99			0.97	
Satd. Flow (prot)		1802			1769			1789			1827	
Flt Permitted		0.99			0.93			0.91			0.76	
Satd. Flow (perm)		1784			1655			1638			1418	
Peak-hour factor, PHF	0.75	0.89	0.67	0.80	0.90	0.70	0.62	0.62	0.78	0.70	0.74	0.67
Adj. Flow (vph)	5	182	30	65	270	160	21	60	49	196	124	30
RTOR Reduction (vph)	0	10	0	0	29	0	0	29	0	0	5	0
Lane Group Flow (vph)	0	207	0	0	466	0	0	101	0	0	345	0
Heavy Vehicles (%)	0%	4%	0%	0%	2%	3%	0%	0%	0%	0%	0%	0%
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		26.7			26.7			18.6			18.6	
Effective Green, g (s)		26.7			26.7			18.6			18.6	
Actuated g/C Ratio		0.47			0.47			0.32			0.32	
Clearance Time (s)		6.0			6.0			6.0			6.0	
Vehicle Extension (s)		5.0			5.0			7.0			7.0	
Lane Grp Cap (vph)		831			771			532			460	
v/s Ratio Prot												
v/s Ratio Perm		0.12			c0.28			0.06			c0.24	
v/c Ratio		0.25			0.60			0.19			0.75	
Uniform Delay, d1		9.2			11.4			13.9			17.3	
Progression Factor		1.00			1.00			1.00			1.00	
Incremental Delay, d2		0.3			2.0			0.6			9.7	
Delay (s)		9.6			13.3			14.5			26.9	
Level of Service		A			B			B			C	
Approach Delay (s)		9.6			13.3			14.5			26.9	
Approach LOS		A			B			B			C	

Intersection Summary			
HCM Average Control Delay	16.8	HCM Level of Service	B
HCM Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	57.3	Sum of lost time (s)	12.0
Intersection Capacity Utilization	78.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	677	125	22	193	94	49
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	736	136	24	210	102	53
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			872		1061	804
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			872		1061	804
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		57	86
cM capacity (veh/h)			774		240	383

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	872	234	155
Volume Left	0	24	102
Volume Right	136	0	53
cSH	1700	774	275
Volume to Capacity	0.51	0.03	0.56
Queue Length 95th (ft)	0	2	80
Control Delay (s)	0.0	1.3	33.8
Lane LOS		A	D
Approach Delay (s)	0.0	1.3	33.8
Approach LOS			D

Intersection Summary			
Average Delay	4.4		
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (veh/h)	403	141	41	623	133	33
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	438	153	45	677	145	36
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			591		1281	515
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			591		1281	515
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		17	94
cM capacity (veh/h)			984		174	560

Direction, Lane #	EB 1	WB 1	NW 1
Volume Total	591	722	180
Volume Left	0	45	145
Volume Right	153	0	36
cSH	1700	984	202
Volume to Capacity	0.35	0.05	0.89
Queue Length 95th (ft)	0	4	175
Control Delay (s)	0.0	1.2	86.7
Lane LOS		A	F
Approach Delay (s)	0.0	1.2	86.7
Approach LOS			F

Intersection Summary			
Average Delay	11.0		
Intersection Capacity Utilization	82.5%	ICU Level of Service	E
Analysis Period (min)	15		

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	612	125	22	211	94	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.33	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	614	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	665	136	24	229	102	53
RTOR Reduction (vph)	0	53	0	0	0	43
Lane Group Flow (vph)	665	83	24	229	102	10
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	36.7	36.7	36.7	36.7	11.0	11.0
Effective Green, g (s)	36.7	36.7	36.7	36.7	11.0	11.0
Actuated g/C Ratio	0.61	0.61	0.61	0.61	0.18	0.18
Clearance Time (s)	6.3	6.3	6.3	6.3	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1140	968	376	1140	325	290
v/s Ratio Prot	c0.36			0.12	c0.06	
v/s Ratio Perm		0.05	0.04			0.01
v/c Ratio	0.58	0.09	0.06	0.20	0.31	0.03
Uniform Delay, d1	7.0	4.8	4.7	5.2	21.2	20.1
Progression Factor	0.40	0.12	0.98	0.90	1.00	1.00
Incremental Delay, d2	1.9	0.2	0.3	0.4	2.5	0.2
Delay (s)	4.7	0.7	4.9	5.0	23.7	20.3
Level of Service	A	A	A	A	C	C
Approach Delay (s)	4.0			5.0	22.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	6.6	HCM Level of Service	A
HCM Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBT	EBR	WBL	WBT	NWL	NWR
Lane Configurations						
Volume (vph)	331	141	41	645	133	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.3	6.3	6.3	6.0	6.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	1.00	0.85	1.00	1.00	1.00	0.85
Flt Protected	1.00	1.00	0.95	1.00	0.95	1.00
Satd. Flow (prot)	1863	1583	1770	1863	1770	1583
Flt Permitted	1.00	1.00	0.55	1.00	0.95	1.00
Satd. Flow (perm)	1863	1583	1017	1863	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	360	153	45	701	145	36
RTOR Reduction (vph)	0	57	0	0	0	30
Lane Group Flow (vph)	360	96	45	701	145	6
Turn Type		Perm	Perm			Perm
Protected Phases	4			8	2	
Permitted Phases		4	8			2
Actuated Green, G (s)	37.7	37.7	37.7	37.7	10.0	10.0
Effective Green, g (s)	37.7	37.7	37.7	37.7	10.0	10.0
Actuated g/C Ratio	0.63	0.63	0.63	0.63	0.17	0.17
Clearance Time (s)	6.3	6.3	6.3	6.3	6.0	6.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	1171	995	639	1171	295	264
v/s Ratio Prot	0.19			c0.38	c0.08	
v/s Ratio Perm		0.06	0.04			0.00
v/c Ratio	0.31	0.10	0.07	0.60	0.49	0.02
Uniform Delay, d1	5.1	4.4	4.3	6.6	22.7	20.9
Progression Factor	0.69	0.42	0.81	0.62	1.00	1.00
Incremental Delay, d2	0.6	0.2	0.2	2.0	5.8	0.2
Delay (s)	4.1	2.0	3.7	6.1	28.4	21.1
Level of Service	A	A	A	A	C	C
Approach Delay (s)	3.5			6.0	27.0	
Approach LOS	A			A	C	

Intersection Summary			
HCM Average Control Delay	7.7	HCM Level of Service	A
HCM Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.3
Intersection Capacity Utilization	51.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	13	2	2	206	116	3
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	14	2	2	224	126	3
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	356	128	129			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	356	128	129			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	98	100	100			
cM capacity (veh/h)	641	922	1456			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	16	226	129
Volume Left	14	2	0
Volume Right	2	0	3
cSH	668	1456	1700
Volume to Capacity	0.02	0.00	0.08
Queue Length 95th (ft)	2	0	0
Control Delay (s)	10.5	0.1	0.0
Lane LOS	B	A	
Approach Delay (s)	10.5	0.1	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	22.4%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	3	2	5	164	212	8
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	2	5	178	230	9
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	424	235	239			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	424	235	239			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	100	100			
cM capacity (veh/h)	584	804	1328			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	5	184	239
Volume Left	3	5	0
Volume Right	2	0	9
cSH	656	1328	1700
Volume to Capacity	0.01	0.00	0.14
Queue Length 95th (ft)	1	0	0
Control Delay (s)	10.5	0.3	0.0
Lane LOS	B	A	
Approach Delay (s)	10.5	0.3	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	2	5	4	206	118	0
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	5	4	224	128	0
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	361	128	128			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	361	128	128			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	100	99	100			
cM capacity (veh/h)	636	922	1458			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	8	228	128
Volume Left	2	4	0
Volume Right	5	0	0
cSH	817	1458	1700
Volume to Capacity	0.01	0.00	0.08
Queue Length 95th (ft)	1	0	0
Control Delay (s)	9.4	0.2	0.0
Lane LOS	A	A	
Approach Delay (s)	9.4	0.2	0.0
Approach LOS	A		

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	24.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Volume (veh/h)	4	16	19	165	212	2
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	17	21	179	230	2
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	452	232	233			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	452	232	233			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	99	98	98			
cM capacity (veh/h)	556	808	1335			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	22	200	233
Volume Left	4	21	0
Volume Right	17	0	2
cSH	741	1335	1700
Volume to Capacity	0.03	0.02	0.14
Queue Length 95th (ft)	2	1	0
Control Delay (s)	10.0	0.9	0.0
Lane LOS	B	A	
Approach Delay (s)	10.0	0.9	0.0
Approach LOS	B		

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	34.3%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix F

Existing Condition Traffic and Noise Module: Elkhart Site

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM SR 19 (north)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1194.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	36.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	54.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 71.3

DESCRIPTION OF RECEIVER # 2

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 68.4

DESCRIPTION OF RECEIVER # 3

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.8

DESCRIPTION OF RECEIVER # 4

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.0

DESCRIPTION OF RECEIVER # 5

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.1

DESCRIPTION OF RECEIVER # 6

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.6

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing PM SR 19 (north)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	1338.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	40.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	60.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 71.8

DESCRIPTION OF RECEIVER # 2

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 68.9

DESCRIPTION OF RECEIVER # 3

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.3

DESCRIPTION OF RECEIVER # 4

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.5

DESCRIPTION OF RECEIVER # 5

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.6

DESCRIPTION OF RECEIVER # 6

SR 19 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.1

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM SR 19 (south)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	956.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	29.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	43.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 70.3

DESCRIPTION OF RECEIVER # 2

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 67.4

DESCRIPTION OF RECEIVER # 3

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.8

DESCRIPTION OF RECEIVER # 4

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 62.0

DESCRIPTION OF RECEIVER # 5

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.2

DESCRIPTION OF RECEIVER # 6

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.6

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Existing PM SR 19 (south)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                1147.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              34.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               52.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       71.1

DESCRIPTION OF RECEIVER #   2

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       68.2

DESCRIPTION OF RECEIVER #   3

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.6

DESCRIPTION OF RECEIVER #   4

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.8

DESCRIPTION OF RECEIVER #   5

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       61.0

DESCRIPTION OF RECEIVER #   6

SR 19 (south)
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.4
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM CR 26 (west)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	169.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	5.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	7.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 62.8

DESCRIPTION OF RECEIVER # 2

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.7

DESCRIPTION OF RECEIVER # 3

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.3

DESCRIPTION OF RECEIVER # 4

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.5

DESCRIPTION OF RECEIVER # 5

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.7

DESCRIPTION OF RECEIVER # 6

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 51.1

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing PM CR 26 (west)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	155.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	5.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	7.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 62.6

DESCRIPTION OF RECEIVER # 2

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.4

DESCRIPTION OF RECEIVER # 3

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.1

DESCRIPTION OF RECEIVER # 4

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.3

DESCRIPTION OF RECEIVER # 5

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.5

DESCRIPTION OF RECEIVER # 6

CR 26 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 50.9

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Existing AM CR 26 (mid)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                296.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              9.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               13.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.3

DESCRIPTION OF RECEIVER #   2

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.4

DESCRIPTION OF RECEIVER #   3

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.8

DESCRIPTION OF RECEIVER #   4

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       57.0

DESCRIPTION OF RECEIVER #   5

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.1

DESCRIPTION OF RECEIVER #   6

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       53.6
```

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Existing PM CR 26 (mid)

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                316.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              11.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               17.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.9

DESCRIPTION OF RECEIVER #   2

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       63.0

DESCRIPTION OF RECEIVER #   3

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       60.4

DESCRIPTION OF RECEIVER #   4

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       57.7

DESCRIPTION OF RECEIVER #   5

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       55.8

DESCRIPTION OF RECEIVER #   6

CR 26
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.3
```

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM CR 26 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	289.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	10.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	15.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.4

DESCRIPTION OF RECEIVER # 2

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.3

DESCRIPTION OF RECEIVER # 3

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.0

DESCRIPTION OF RECEIVER # 4

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.2

DESCRIPTION OF RECEIVER # 5

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.4

DESCRIPTION OF RECEIVER # 6

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 53.8

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing PM CR 26 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	377.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	13.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	20.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.6

DESCRIPTION OF RECEIVER # 2

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.4

DESCRIPTION OF RECEIVER # 3

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.1

DESCRIPTION OF RECEIVER # 4

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.4

DESCRIPTION OF RECEIVER # 5

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 56.5

DESCRIPTION OF RECEIVER # 6

CR 26 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.0

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM CR 7 (north)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	181.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	6.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	10.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.5

DESCRIPTION OF RECEIVER # 2

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.4

DESCRIPTION OF RECEIVER # 3

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.1

DESCRIPTION OF RECEIVER # 4

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.3

DESCRIPTION OF RECEIVER # 5

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 53.5

DESCRIPTION OF RECEIVER # 6

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.0

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing PM CR 7 (north)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	222.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	8.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	11.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.3

DESCRIPTION OF RECEIVER # 2

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 62.1

DESCRIPTION OF RECEIVER # 3

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.8

DESCRIPTION OF RECEIVER # 4

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 56.0

DESCRIPTION OF RECEIVER # 5

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 54.2

DESCRIPTION OF RECEIVER # 6

CR 7 (north)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.7

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM CR 7 (south)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	101.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	3.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	4.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.7

DESCRIPTION OF RECEIVER # 2

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.5

DESCRIPTION OF RECEIVER # 3

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.2

DESCRIPTION OF RECEIVER # 4

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.4

DESCRIPTION OF RECEIVER # 5

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 50.5

DESCRIPTION OF RECEIVER # 6

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 48.9

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing PM CR 7 (south)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	95.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	3.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	4.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.5

DESCRIPTION OF RECEIVER # 2

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 50.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.3

DESCRIPTION OF RECEIVER # 3

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.0

DESCRIPTION OF RECEIVER # 4

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.2

DESCRIPTION OF RECEIVER # 5

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 50.4

DESCRIPTION OF RECEIVER # 6

CR 7 (south)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 48.8

Appendix F

Existing Condition Traffic and Noise Module: South Bend Site

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM SR 23 (west)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	688.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	24.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	36.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 69.2

DESCRIPTION OF RECEIVER # 2

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.3

DESCRIPTION OF RECEIVER # 3

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.7

DESCRIPTION OF RECEIVER # 4

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.9

DESCRIPTION OF RECEIVER # 5

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.1

DESCRIPTION OF RECEIVER # 6

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.6

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing PM SR 23 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	781.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	20.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	30.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 69.2

DESCRIPTION OF RECEIVER # 2

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.3

DESCRIPTION OF RECEIVER # 3

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.7

DESCRIPTION OF RECEIVER # 4

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.9

DESCRIPTION OF RECEIVER # 5

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.0

DESCRIPTION OF RECEIVER # 6

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM SR 23 (east)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	793.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	20.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	30.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 69.2

DESCRIPTION OF RECEIVER # 2

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 66.3

DESCRIPTION OF RECEIVER # 3

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.7

DESCRIPTION OF RECEIVER # 4

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.9

DESCRIPTION OF RECEIVER # 5

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 59.0

DESCRIPTION OF RECEIVER # 6

SR 23 (east)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.4

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing PM SR 23 (west)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	641.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	22.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	33.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 68.8

DESCRIPTION OF RECEIVER # 2

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 65.9

DESCRIPTION OF RECEIVER # 3

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 63.4

DESCRIPTION OF RECEIVER # 4

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 60.6

DESCRIPTION OF RECEIVER # 5

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.7

DESCRIPTION OF RECEIVER # 6

SR 23 (west)
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 57.2

* * * * CASE INFORMATION * * * *

* * * * Results calculated with TNM Version 2.5 * * * *

Existing AM (Locust)

* * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):	250.0
Average automobile speed (mph):	45.0
Medium truck volume (v/h):	5.0
Average medium truck speed (mph):	45.0
Heavy truck volume (v/h):	8.0
Average heavy truck speed (mph):	45.0
Bus volume (v/h):	1.0
Average bus speed (mph):	45.0
Motorcycle volume (v/h):	1.0
Average Motorcycle speed (mph):	45.0

* * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface: soft

* * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER # 1

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 64.0

DESCRIPTION OF RECEIVER # 2

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 61.1

DESCRIPTION OF RECEIVER # 3

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 58.5

DESCRIPTION OF RECEIVER # 4

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 55.7

DESCRIPTION OF RECEIVER # 5

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 53.8

DESCRIPTION OF RECEIVER # 6

Locust
Distance from center of 12-ft wide, single lane roadway (ft): 150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA): 52.2

```
                * * * * CASE INFORMATION * * * *

       * * * * Results calculated with TNM Version 2.5 * * * *

Existing PM Locust

    * * * * TRAFFIC VOLUME/SPEED INFORMATION * * * *

Automobile volume (v/h):                                328.0
Average automobile speed (mph):                         45.0
Medium truck volume (v/h):                              7.0
Average medium truck speed (mph):                       45.0
Heavy truck volume (v/h):                               10.0
Average heavy truck speed (mph):                        45.0
Bus volume (v/h):                                       1.0
Average bus speed (mph):                                45.0
Motorcycle volume (v/h):                                1.0
Average Motorcycle speed (mph):                         45.0


       * * * * TERRAIN SURFACE INFORMATION * * * *

Terrain surface:                      soft


          * * * * RECEIVER INFORMATION * * * *

DESCRIPTION OF RECEIVER #   1

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         35.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       65.2

DESCRIPTION OF RECEIVER #   2

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         55.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       62.3

DESCRIPTION OF RECEIVER #   3

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         75.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       59.6

DESCRIPTION OF RECEIVER #   4

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         100.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       56.8

DESCRIPTION OF RECEIVER #   5

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         125.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       54.9

DESCRIPTION OF RECEIVER #   6

Locust
Distance from center of 12-ft wide, single lane roadway (ft):         150.0
A-weighted Hourly Equivalent Sound Level without Barrier (dBA):       53.3
```

Appendix F

Existing Signal Timings

Signal Timing Permits

St. Joseph Site

Signal Timing Permits

INDOT TIMINGS SR 23 @ MAYFLOWER RD 2/5/2013 11:14

By-Phase Timing Data

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Direction	EB		SB		WB		NB					
Minimum Green	0	15	0	8	0	15	0	8	0	0	0	0
Bike Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Cond Serv Min Grn	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clearance	0	0	0	0	0	0	0	0	0	0	0	0
Veh Extension	0.0	5.5	0.0	3.0	0.0	5.5	0.0	3.0	0.0	0.0	0.0	0.0
Alt Veh Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Extension	0	0	0	0	0	0	0	0	0	0	0	0
Max 1	0	45	0	35	0	45	0	35	0	0	0	0
Max 2	0	45	0	35	0	45	0	35	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0
Det. Fail Max	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.0	5.1	3.0	4.5	3.0	5.1	3.0	4.5	3.0	3.0	3.0	3.0
Red Clearance	0.0	2.0	0.0	2.0	0.0	2.0	0.0	2.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act. B4 Init	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Actuation	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0	30	0	0	0	30	0	0	0	0	0	0
Time B4 Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Cars Waiting	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

COUNTY TIMMING SHEET

INTERSECTION : **Ireland & Locust** **COM #** **425**

org.

ASC 3-1000

PHASE	1	2	3	4	5	6	7	8	9	10	11	12
MIN GRN		25		8		25		8				
BK MGRN												
CS MGRN												
DLY GRN												
WALK												
WALK2												
WLK MAX												
PED CLR												
PD CLR2												
PC MAX												
PED CO												
VEH EXT		7.0		5.0		7.0		5.0				
VH EXT2												
MAX 1		45		25		45		25				
MAX 2		45		35		45		35				
MAX 3												
DYM MAX												
DYM STP												
YELLOW		4.5		4.5		4.5		4.5				
RED CLR		1.5		1.5		1.5		1.5				
RED MAX												
RED RVT												
ACT B4												
SEC/ACT												
MAX INT												
TIME B4												
CARS WT												
STPTDUC												
TTREDUC												
MIN GAP												

F-373

INDOT TIMINGS SR 23 @ LOCUST RD 2/5/2013 11:22

By-Phase Timing Data

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Direction	EB		SB		WB		NB					
Minimum Green	0	15	0	8	0	15	0	8	0	0	0	0
Bike Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Cond Serv Min Grn	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clearance	7	7	7	7	7	7	0	7	0	0	0	0
Veh Extension	0.0	5.5	0.0	3.5	0.0	5.5	0.0	3.5	0.0	0.0	0.0	0.0
Alt Veh Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Extension	0	0	0	0	0	0	0	0	0	0	0	0
Max 1	0	28	0	40	0	28	0	40	0	0	0	0
Max 2	0	18	0	30	0	18	0	30	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0
Det. Fail Max	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.0	4.2	3.0	4.5	3.0	4.2	3.0	4.5	3.0	3.0	3.0	3.0
Red Clearance	1.8	1.8	0.0	1.5	1.8	1.8	0.0	1.5	0.0	0.0	0.0	0.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0
Act. B4 Init	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Actuation	0.0	0.0	0.0	1.5	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.0
Max Initial	0	0	0	30	0	0	0	30	0	0	0	0
Time B4 Reduction	0	0	0	0	0	0	0	0	0	0	0	0
Cars Waiting	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Elkhart Site

Signal Timing Permits

By-Phase Timing Data

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Direction	NBLT	SB		WB		NB						
Minimum Green	6	20	0	8	0	20	0	0	0	0	0	0
Bike Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Cond Serv Min Grn	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clearance	0	0	0	0	0	0	0	0	0	0	0	0
Veh Extension	1.5	5.0	0.0	2.6	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0
Alt Veh Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Extension	0	0	0	0	0	0	0	0	0	0	0	0
Max 1	20	60	0	30	0	60	0	0	0	0	0	0
Max 2	20	60	0	30	0	60	0	0	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0
Det. Fail Max	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.2	4.3	3.0	3.2	3.0	4.3	3.0	3.0	3.0	3.0	3.0	3.0
Red Clearance	1.9	1.5	0.0	2.0	0.0	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act. B4 Init	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Actuation	0.0	1.2	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0
Max Initial	0	31	0	0	0	31	0	0	0	0	0	0
Time B4 Reduction	0	20	0	0	0	20	0	0	0	0	0	0
Cars Waiting	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	28	0	0	0	28	0	0	0	0	0	0
Minimum Gap	0.0	3.0	0.0	0.0	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0

By-Phase Timing Data

	Phase											
	1	2	3	4	5	6	7	8	9	10	11	12
Direction	NBLT	SB	WBLT	EB	SBLT	NB	EBLT	WB				
Minimum Green	6	15	6	10	6	15	6	10	0	0	0	0
Bike Min Green	0	0	0	0	0	0	0	0	0	0	0	0
Cond Serv Min Grn	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clearance	0	10	0	10	0	10	0	10	0	0	0	0
Veh Extension	3.0	5.0	3.0	5.0	3.0	5.0	3.0	5.0	0.0	0.0	0.0	0.0
Alt Veh Exten	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Extension	0	0	0	0	0	0	0	0	0	0	0	0
Max 1	20	60	20	40	20	60	20	40	0	0	0	0
Max 2	20	60	20	40	20	60	20	40	0	0	0	0
Max 3	0	0	0	0	0	0	0	0	0	0	0	0
Det. Fail Max	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Change	3.2	4.3	3.2	4.3	3.2	4.3	3.2	4.3	3.0	3.0	3.0	3.0
Red Clearance	2.3	1.3	2.3	1.9	2.3	1.3	2.3	1.9	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act. B4 Init	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Actuation	0.0	1.2	0.0	2.4	0.0	1.2	0.0	2.4	0.0	0.0	0.0	0.0
Max Initial	0	31	0	31	0	31	0	31	0	0	0	0
Time B4 Reduction	0	20	0	13	0	20	0	13	0	0	0	0
Cars Waiting	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	28	0	19	0	28	0	19	0	0	0	0
Minimum Gap	0.0	3.0	0.0	3.0	0.0	3.0	0.0	3.0	0.0	0.0	0.0	0.0

Appendix F

Intersection Counts

Traffic Analysis

St. Joseph Site

Intersection Counts

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
T: (574) 236-4400
F: (574) 236-4471

File Name : SR 23 & Mayflower AM
Site Code : 00000000
Start Date : 1/22/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	MAYFLOWER RD From North					SR 23 From East					MAYFLOWER RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	4	1	6	1	12	4	12	0	0	16	7	9	0	0	16	2	20	9	0	31	75
06:15 AM	8	0	10	0	18	8	14	1	0	23	5	7	0	0	12	4	43	21	0	68	121
06:30 AM	7	4	11	0	22	3	20	3	0	26	11	16	1	0	28	0	51	20	0	71	147
06:45 AM	19	2	10	0	31	4	26	1	0	31	8	12	0	0	20	1	83	15	0	99	181
Total	38	7	37	1	83	19	72	5	0	96	31	44	1	0	76	7	197	65	0	269	524
07:00 AM	13	2	17	0	32	8	24	0	0	32	15	13	0	0	28	1	55	11	0	67	159
07:15 AM	5	6	13	0	24	6	20	1	0	27	17	6	1	0	24	4	54	14	0	72	147
07:30 AM	2	8	14	0	24	7	15	0	0	22	18	19	0	0	37	1	116	16	0	133	216
07:45 AM	8	5	13	0	26	4	13	2	0	19	27	20	0	0	47	0	91	12	0	103	195
Total	28	21	57	0	106	25	72	3	0	100	77	58	1	0	136	6	316	53	0	375	717
08:00 AM	4	5	15	0	24	7	14	3	0	24	12	7	0	0	19	0	59	5	0	64	131
08:15 AM	8	4	12	0	24	7	11	1	0	19	12	9	0	0	21	0	70	8	0	78	142
08:30 AM	8	2	18	0	28	11	15	2	0	28	13	5	2	0	20	0	44	7	0	51	127
08:45 AM	2	3	19	0	24	7	12	2	0	21	10	11	0	0	21	0	41	6	0	47	113
Total	22	14	64	0	100	32	52	8	0	92	47	32	2	0	81	0	214	26	0	240	513
Grand Total	88	42	158	1	289	76	196	16	0	288	155	134	4	0	293	13	727	144	0	884	1754
Apprch %	30.4	14.5	54.7	0.3		26.4	68.1	5.6	0		52.9	45.7	1.4	0		1.5	82.2	16.3	0		
Total %	5	2.4	9	0.1	16.5	4.3	11.2	0.9	0	16.4	8.8	7.6	0.2	0	16.7	0.7	41.4	8.2	0	50.4	
Unshifted	78	42	151	1	272	70	176	15	0	261	154	133	4	0	291	11	700	138	0	849	1673
% Unshifted	88.6	100	95.6	100	94.1	92.1	89.8	93.8	0	90.6	99.4	99.3	100	0	99.3	84.6	96.3	95.8	0	96	95.4
Bank 1	10	0	7	0	17	6	20	1	0	27	1	1	0	0	2	2	27	6	0	35	81
% Bank 1	11.4	0	4.4	0	5.9	7.9	10.2	6.2	0	9.4	0.6	0.7	0	0	0.7	15.4	3.7	4.2	0	4	4.6

	MAYFLOWER RD From North					SR 23 From East					MAYFLOWER RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**13**	2	**17**	0	**32**	**8**	**24**	0	0	**32**	15	13	0	0	28	1	55	11	0	67	159
07:15 AM	5	6	13	0	24	6	20	1	0	27	17	6	**1**	0	24	**4**	54	14	0	72	147
07:30 AM	2	**8**	14	0	24	7	15	0	0	22	18	19	0	0	37	1	**116**	**16**	0	**133**	**216**
07:45 AM	8	5	13	0	26	4	13	**2**	0	19	**27**	**20**	0	0	**47**	0	91	12	0	103	195
Total Volume	28	21	57	0	106	25	72	3	0	100	77	58	1	0	136	6	316	53	0	375	717
% App. Total	26.4	19.8	53.8	0		25	72	3	0		56.6	42.6	0.7	0		1.6	84.3	14.1	0		
PHF	.538	.656	.838	.000	.828	.781	.750	.375	.000	.781	.713	.725	.250	.000	.723	.375	.681	.828	.000	.705	.830
Unshifted	23	21	54	0	98	23	65	3	0	91	77	58	1	0	136	5	307	52	0	364	689
% Unshifted																					
Bank 1	5	0	3	0	8	2	7	0	0	9	0	0	0	0	0	1	9	1	0	11	28
% Bank 1	17.9	0	5.3	0	7.5	8.0	9.7	0	0	9.0	0	0	0	0	0	16.7	2.8	1.9	0	2.9	3.9

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
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File Name : SR 23 & Mayflower PM
Site Code : 00000000
Start Date : 1/22/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	MAYFLOWER RD From North					SR 23 From East					MAYFLOWER RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	8	6	10	0	24	21	38	6	0	65	6	6	1	0	13	0	33	16	0	49	151
03:15 PM	14	5	17	0	36	19	44	8	0	71	7	5	1	0	13	1	36	12	0	49	169
03:30 PM	12	9	13	0	34	19	47	13	0	79	3	6	0	0	9	0	48	24	0	72	194
03:45 PM	14	12	11	1	38	12	47	7	0	66	4	6	1	0	11	6	37	13	0	56	171
Total	48	32	51	1	132	71	176	34	0	281	20	23	3	0	46	7	154	65	0	226	685
04:00 PM	13	13	11	0	37	15	48	10	0	73	5	6	2	0	13	0	28	8	0	36	159
04:15 PM	13	17	14	0	44	18	66	12	0	96	10	7	1	0	18	0	32	13	0	45	203
04:30 PM	16	15	12	0	43	23	61	9	0	93	8	5	5	0	18	1	30	3	0	34	188
04:45 PM	16	16	18	0	50	19	80	10	0	109	6	10	4	0	20	2	28	12	0	42	221
Total	58	61	55	0	174	75	255	41	0	371	29	28	12	0	69	3	118	36	0	157	771
05:00 PM	15	9	17	0	41	15	65	6	0	86	5	8	3	0	16	1	31	12	0	44	187
05:15 PM	25	14	19	0	58	22	81	17	0	120	6	10	1	0	17	0	23	11	0	34	229
05:30 PM	27	17	13	0	57	19	73	19	0	111	7	2	2	0	11	0	29	18	0	47	226
05:45 PM	18	19	18	0	55	18	80	16	0	114	4	0	3	0	7	1	22	14	0	37	213
Total	85	59	67	0	211	74	299	58	0	431	22	20	9	0	51	2	105	55	0	162	855
Grand Total	191	152	173	1	517	220	730	133	0	1083	71	71	24	0	166	12	377	156	0	545	2311
Apprch %	36.9	29.4	33.5	0.2		20.3	67.4	12.3	0		42.8	42.8	14.5	0		2.2	69.2	28.6	0		
Total %	8.3	6.6	7.5	0	22.4	9.5	31.6	5.8	0	46.9	3.1	3.1	1	0	7.2	0.5	16.3	6.8	0	23.6	
Unshifted	184	151	167	0	502	217	721	133	0	1071	71	71	24	0	166	12	365	149	0	526	2265
% Unshifted	96.3	99.3	96.5	0	97.1	98.6	98.8	100	0	98.9	100	100	100	0	100	100	96.8	95.5	0	96.5	98
Bank 1	7	1	6	1	15	3	9	0	0	12	0	0	0	0	0	0	12	7	0	19	46
% Bank 1	3.7	0.7	3.5	100	2.9	1.4	1.2	0	0	1.1	0	0	0	0	0	0	3.2	4.5	0	3.5	2

	MAYFLOWER RD From North					SR 23 From East					MAYFLOWER RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	16	16	18	0	50	19	80	10	0	109	6	**10**	**4**	0	**20**	**2**	28	12	0	42	221
05:00 PM	15	9	17	0	41	15	65	6	0	86	5	8	3	0	16	1	**31**	12	0	44	187
05:15 PM	25	14	**19**	0	**58**	**22**	**81**	17	0	**120**	6	10	1	0	17	0	23	11	0	34	**229**
05:30 PM	**27**	**17**	13	0	57	19	73	**19**	0	111	**7**	2	2	0	11	0	29	**18**	0	**47**	226
Total Volume	83	56	67	0	206	75	299	52	0	426	24	30	10	0	64	3	111	53	0	167	863
% App. Total	40.3	27.2	32.5	0		17.6	70.2	12.2	0		37.5	46.9	15.6	0		1.8	66.5	31.7	0		
PHF	.769	.824	.882	.000	.888	.852	.923	.684	.000	.888	.857	.750	.625	.000	.800	.375	.895	.736	.000	.888	.942
Unshifted	80	56	67	0	203	74	298	52	0	424	24	30	10	0	64	3	111	50	0	164	855
% Unshifted																					
Bank 1	3	0	0	0	3	1	1	0	0	2	0	0	0	0	0	0	0	3	0	3	8
% Bank 1	3.6	0	0	0	1.5	1.3	0.3	0	0	0.5	0	0	0	0	0	0	0	5.7	0	1.8	0.9

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : SR 23 & Ireland AM
Site Code : 00000000
Start Date : 1/23/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	IRELAND RD From North					SR 23 From East					IRELAND RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
05:45 AM	1	0	0	0	1	0	11	0	0	11	1	0	5	0	6	12	32	0	0	44	62
Total	1	0	0	0	1	0	11	0	0	11	1	0	5	0	6	12	32	0	0	44	62
06:00 AM	0	0	0	0	0	0	13	0	0	13	1	0	6	0	7	9	22	0	0	31	51
06:15 AM	0	0	0	0	0	0	12	0	0	12	1	0	6	0	7	9	51	0	0	60	79
06:30 AM	0	0	0	0	0	0	16	0	0	16	0	0	14	0	14	16	74	0	0	90	120
06:45 AM	0	0	0	0	0	0	34	0	0	34	1	0	11	0	12	29	68	0	0	97	143
Total	0	0	0	0	0	0	75	0	0	75	3	0	37	0	40	63	215	0	0	278	393
07:00 AM	0	0	0	0	0	0	27	0	0	27	0	0	8	0	8	33	81	0	0	114	149
07:15 AM	0	0	0	0	0	0	13	1	0	14	0	0	15	0	15	21	97	0	0	118	147
07:30 AM	0	0	0	0	0	0	23	0	0	23	0	0	11	0	11	29	139	0	0	168	202
07:45 AM	0	0	0	0	0	0	24	1	0	25	1	0	18	0	19	27	111	0	0	138	182
Total	0	0	0	0	0	0	87	2	0	89	1	0	52	0	53	110	428	0	0	538	680
08:00 AM	0	0	0	0	0	0	24	0	0	24	0	0	15	0	15	31	105	0	0	136	175
08:15 AM	0	0	0	0	0	0	30	2	0	32	1	0	17	0	18	18	73	0	0	91	141
08:30 AM	0	0	0	0	0	0	18	0	0	18	1	0	16	0	17	24	50	0	0	74	109
08:45 AM	0	0	0	0	0	0	15	0	0	15	1	0	11	0	12	25	54	0	0	79	106
Total	0	0	0	0	0	0	87	2	0	89	3	0	59	0	62	98	282	0	0	380	531
Grand Total	1	0	0	0	1	0	260	4	0	264	8	0	153	0	161	283	957	0	0	1240	1666
Apprch %	100	0	0	0		0	98.5	1.5	0		5	0	95	0		22.8	77.2	0	0		
Total %	0.1	0	0	0	0.1	0	15.6	0.2	0	15.8	0.5	0	9.2	0	9.7	17	57.4	0	0	74.4	
Unshifted	1	0	0	0	1	0	229	4	0	233	7	0	134	0	141	264	930	0	0	1194	1569
% Unshifted	100	0	0	0	100	0	88.1	100	0	88.3	87.5	0	87.6	0	87.6	93.3	97.2	0	0	96.3	94.2
Bank 1	0	0	0	0	0	0	31	0	0	31	1	0	19	0	20	19	27	0	0	46	97
% Bank 1	0	0	0	0	0	0	11.9	0	0	11.7	12.5	0	12.4	0	12.4	6.7	2.8	0	0	3.7	5.8

	IRELAND RD From North					SR 23 From East					IRELAND RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 05:45 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	0	0	0	0	0	13	**1**	0	14	0	0	15	0	15	21	97	0	0	118	147
07:30 AM	0	0	0	0	0	0	23	0	0	23	0	0	11	0	11	29	**139**	0	0	**168**	**202**
07:45 AM	0	0	0	0	0	0	**24**	1	0	**25**	**1**	0	**18**	0	**19**	27	111	0	0	138	182
08:00 AM	0	0	0	0	0	0	24	0	0	24	0	0	15	0	15	**31**	105	0	0	136	175
Total Volume	0	0	0	0	0	0	84	2	0	86	1	0	59	0	60	108	452	0	0	560	706
% App. Total	0	0	0	0		0	97.7	2.3	0		1.7	0	98.3	0		19.3	80.7	0	0		
PHF	.000	.000	.000	.000	.000	.000	.875	.500	.000	.860	.250	.000	.819	.000	.789	.871	.813	.000	.000	.833	.874
Unshifted	0	0	0	0	0	0	72	2	0	74	1	0	55	0	56	104	444	0	0	548	678
% Unshifted																					
Bank 1	0	0	0	0	0	0	12	0	0	12	0	0	4	0	4	4	8	0	0	12	28
% Bank 1	0	0	0	0	0	0	14.3	0	0	14.0	0	0	6.8	0	6.7	3.7	1.8	0	0	2.1	4.0

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : SR 23 & Ireland PM
Site Code : 00000000
Start Date : 1/23/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	IRELAND RD From North					SR 23 From East					IRELAND RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	0	0	0	0	0	49	1	0	50	1	0	28	0	29	21	27	0	0	48	127
03:15 PM	0	0	0	0	0	0	53	0	0	53	2	0	37	0	39	28	42	1	1	72	164
03:30 PM	0	0	0	0	0	0	45	0	0	45	0	0	36	0	36	29	35	0	0	64	145
03:45 PM	0	0	0	0	0	0	49	1	0	50	0	0	38	0	38	25	55	0	0	80	168
Total	0	0	0	0	0	0	196	2	0	198	3	0	139	0	142	103	159	1	1	264	604
04:00 PM	0	0	0	0	0	0	69	0	0	69	1	0	42	0	43	30	36	0	0	66	178
04:15 PM	0	0	0	0	0	0	73	1	0	74	2	0	51	0	53	23	43	0	0	66	193
04:30 PM	0	0	0	0	0	0	51	2	0	53	2	0	29	0	31	25	32	0	0	57	141
04:45 PM	0	0	0	0	0	0	66	1	0	67	1	0	33	0	34	22	24	0	1	47	148
Total	0	0	0	0	0	0	259	4	0	263	6	0	155	0	161	100	135	0	1	236	660
05:00 PM	0	0	0	0	0	0	76	1	0	77	0	0	35	0	35	34	32	0	0	66	178
05:15 PM	0	0	0	0	0	0	85	2	0	87	1	0	57	0	58	31	36	0	0	67	212
05:30 PM	0	0	0	0	0	0	68	1	0	69	1	0	55	0	56	37	34	0	0	71	196
05:45 PM	0	0	0	0	0	0	79	0	0	79	0	0	40	0	40	23	33	0	0	56	175
Total	0	0	0	0	0	0	308	4	0	312	2	0	187	0	189	125	135	0	0	260	761
Grand Total	0	0	0	0	0	0	763	10	0	773	11	0	481	0	492	328	429	1	2	760	2025
Apprch %	0	0	0	0		0	98.7	1.3	0		2.2	0	97.8	0		43.2	56.4	0.1	0.3		
Total %	0	0	0	0	0	0	37.7	0.5	0	38.2	0.5	0	23.8	0	24.3	16.2	21.2	0	0.1	37.5	
Unshifted	0	0	0	0	0	0	748	10	0	758	11	0	473	0	484	314	392	0	2	708	1950
% Unshifted	0	0	0	0	0	0	98	100	0	98.1	100	0	98.3	0	98.4	95.7	91.4	0	100	93.2	96.3
Bank 1	0	0	0	0	0	0	15	0	0	15	0	0	8	0	8	14	37	1	0	52	75
% Bank 1	0	0	0	0	0	0	2	0	0	1.9	0	0	1.7	0	1.6	4.3	8.6	100	0	6.8	3.7

	IRELAND RD From North					SR 23 From East					IRELAND RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	76	1	0	77	0	0	35	0	35	34	32	0	0	66	178
05:15 PM	0	0	0	0	0	0	**85**	**2**	0	**87**	**1**	0	**57**	0	**58**	31	**36**	0	0	67	**212**
05:30 PM	0	0	0	0	0	0	68	1	0	69	1	0	55	0	56	**37**	34	0	0	**71**	196
05:45 PM	0	0	0	0	0	0	79	0	0	79	0	0	40	0	40	23	33	0	0	56	175
Total Volume	0	0	0	0	0	0	308	4	0	312	2	0	187	0	189	125	135	0	0	260	761
% App. Total	0	0	0	0		0	98.7	1.3	0		1.1	0	98.9	0		48.1	51.9	0	0		
PHF	.000	.000	.000	.000	.000	.000	.906	.500	.000	.897	.500	.000	.820	.000	.815	.845	.938	.000	.000	.915	.897
Unshifted	0	0	0	0	0	0	306	4	0	310	2	0	187	0	189	123	130	0	0	253	752
% Unshifted																					
Bank 1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	5	0	0	7	9
% Bank 1	0	0	0	0	0	0	0.6	0	0	0.6	0	0	0	0	0	1.6	3.7	0	0	2.7	1.2

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : SR 23 & US 20 Bypass (Eastbound Ramps) AM
Site Code : 00000000
Start Date : 1/22/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					US 20 From East					SR 23 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	14	5	0	19	0	0	0	0	0	15	23	0	0	38	2	0	4	0	6	63
06:15 AM	0	4	12	0	16	0	0	0	0	0	15	24	0	0	39	1	0	9	0	10	65
06:30 AM	0	7	8	0	15	0	0	0	0	0	17	53	0	0	70	2	0	13	0	15	100
06:45 AM	0	18	2	0	20	0	0	0	0	0	7	32	0	0	39	3	0	5	0	8	67
Total	0	43	27	0	70	0	0	0	0	0	54	132	0	0	186	8	0	31	0	39	295
07:00 AM	0	17	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
07:15 AM	0	17	3	0	20	0	0	0	0	0	7	33	0	0	40	0	0	0	0	0	60
07:30 AM	0	3	14	0	17	0	0	0	0	0	17	110	0	0	127	1	0	21	0	22	166
07:45 AM	0	0	10	0	10	0	0	0	0	0	12	74	0	0	86	0	0	25	0	25	121
Total	0	37	27	0	64	0	0	0	0	0	36	217	0	0	253	1	0	46	0	47	364
08:00 AM	0	5	15	0	20	0	0	0	0	0	7	61	0	0	68	1	0	12	0	13	101
08:15 AM	0	0	15	0	15	0	0	0	0	0	7	60	0	0	67	2	0	16	0	18	100
08:30 AM	0	10	10	0	20	0	0	0	0	0	5	37	0	0	42	1	0	9	0	10	72
08:45 AM	0	15	4	0	19	0	0	0	0	0	6	29	0	0	35	1	0	14	0	15	69
Total	0	30	44	0	74	0	0	0	0	0	25	187	0	0	212	5	0	51	0	56	342
Grand Total	0	110	98	0	208	0	0	0	0	0	115	536	0	0	651	14	0	128	0	142	1001
Apprch %	0	52.9	47.1	0		0	0	0	0		17.7	82.3	0	0		9.9	0	90.1	0		
Total %	0	11	9.8	0	20.8	0	0	0	0	0	11.5	53.5	0	0	65	1.4	0	12.8	0	14.2	
Unshifted	0	107	64	0	171	0	0	0	0	0	110	527	0	0	637	10	0	113	0	123	931
% Unshifted	0	97.3	65.3	0	82.2	0	0	0	0	0	95.7	98.3	0	0	97.8	71.4	0	88.3	0	86.6	93
Bank 1	0	3	34	0	37	0	0	0	0	0	5	9	0	0	14	4	0	15	0	19	70
% Bank 1	0	2.7	34.7	0	17.8	0	0	0	0	0	4.3	1.7	0	0	2.2	28.6	0	11.7	0	13.4	7

	SR 23 From North					US 20 From East					SR 23 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	3	14	0	17	0	0	0	0	0	**17**	**110**	0	0	**127**	1	0	21	0	22	**166**
07:45 AM	0	0	10	0	10	0	0	0	0	0	12	74	0	0	86	0	0	**25**	0	**25**	121
08:00 AM	0	**5**	**15**	0	**20**	0	0	0	0	0	7	61	0	0	68	1	0	12	0	13	101
08:15 AM	0	0	15	0	15	0	0	0	0	0	7	60	0	0	67	**2**	0	16	0	18	100
Total Volume	0	8	54	0	62	0	0	0	0	0	43	305	0	0	348	4	0	74	0	78	488
% App. Total	0	12.9	87.1	0		0	0	0	0		12.4	87.6	0	0		5.1	0	94.9	0		
PHF	.000	.400	.900	.000	.775	.000	.000	.000	.000	.000	.632	.693	.000	.000	.685	.500	.000	.740	.000	.780	.735
Unshifted	0	8	34	0	42	0	0	0	0	0	41	299	0	0	340	3	0	68	0	71	453
% Unshifted																					
Bank 1	0	0	20	0	20	0	0	0	0	0	2	6	0	0	8	1	0	6	0	7	35
% Bank 1	0	0	37.0	0	32.3	0	0	0	0	0	4.7	2.0	0	0	2.3	25.0	0	8.1	0	9.0	7.2

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
T: (574) 236-4400
F: (574) 236-4471

File Name : SR 23 & US 20 Bypass (Eastbound Ramps) PM
Site Code : 00000000
Start Date : 1/22/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					US 20 From East					SR 23 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	13	15	0	28	0	0	0	0	0	5	31	0	0	36	1	0	19	0	20	84
03:15 PM	0	28	22	0	50	0	0	0	0	0	9	37	0	0	46	0	0	19	0	19	115
03:30 PM	0	30	23	0	53	0	0	0	0	0	13	31	0	0	44	3	0	10	0	13	110
03:45 PM	0	39	14	0	53	0	0	0	0	0	8	24	0	0	32	1	0	19	0	20	105
Total	0	110	74	0	184	0	0	0	0	0	35	123	0	0	158	5	0	67	0	72	414
04:00 PM	0	30	17	0	47	0	0	0	0	0	11	21	0	0	32	3	0	6	0	9	88
04:15 PM	0	30	27	0	57	0	0	0	0	0	9	27	0	0	36	5	0	19	0	24	117
04:30 PM	0	46	19	0	65	0	0	0	0	0	9	20	0	0	29	3	2	16	0	21	115
04:45 PM	0	61	13	0	74	0	0	0	0	0	7	17	0	0	24	1	0	15	0	16	114
Total	0	167	76	0	243	0	0	0	0	0	36	85	0	0	121	12	2	56	0	70	434
05:00 PM	0	32	28	0	60	0	0	0	0	0	8	23	0	0	31	2	0	16	0	18	109
05:15 PM	0	63	21	0	84	0	0	0	0	0	8	15	0	0	23	2	0	24	0	26	133
05:30 PM	0	61	17	0	78	0	0	0	0	0	14	17	0	0	31	0	0	25	0	25	134
05:45 PM	0	65	13	0	78	0	0	0	0	0	8	13	0	0	21	4	0	22	0	26	125
Total	0	221	79	0	300	0	0	0	0	0	38	68	0	0	106	8	0	87	0	95	501
Grand Total	0	498	229	0	727	0	0	0	0	0	109	276	0	0	385	25	2	210	0	237	1349
Apprch %	0	68.5	31.5	0		0	0	0	0		28.3	71.7	0	0		10.5	0.8	88.6	0		
Total %	0	36.9	17	0	53.9	0	0	0	0	0	8.1	20.5	0	0	28.5	1.9	0.1	15.6	0	17.6	
Unshifted	0	498	195	0	693	0	0	0	0	0	104	272	0	0	376	23	2	164	0	189	1258
% Unshifted	0	100	85.2	0	95.3	0	0	0	0	0	95.4	98.6	0	0	97.7	92	100	78.1	0	79.7	93.3
Bank 1	0	0	34	0	34	0	0	0	0	0	5	4	0	0	9	2	0	46	0	48	91
% Bank 1	0	0	14.8	0	4.7	0	0	0	0	0	4.6	1.4	0	0	2.3	8	0	21.9	0	20.3	6.7

	SR 23 From North					US 20 From East					SR 23 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	32	**28**	0	60	0	0	0	0	0	8	**23**	0	0	**31**	2	0	16	0	18	109
05:15 PM	0	63	21	0	**84**	0	0	0	0	0	8	15	0	0	23	2	0	24	0	**26**	133
05:30 PM	0	61	17	0	78	0	0	0	0	0	**14**	17	0	0	31	0	0	**25**	0	25	**134**
05:45 PM	0	**65**	13	0	78	0	0	0	0	0	8	13	0	0	21	**4**	0	22	0	26	125
Total Volume	0	221	79	0	300	0	0	0	0	0	38	68	0	0	106	8	0	87	0	95	501
% App. Total	0	73.7	26.3	0		0	0	0	0		35.8	64.2	0	0		8.4	0	91.6	0		
PHF	.000	.850	.705	.000	.893	.000	.000	.000	.000	.000	.679	.739	.000	.000	.855	.500	.000	.870	.000	.913	.935
Unshifted	0	221	69	0	290	0	0	0	0	0	38	67	0	0	105	8	0	74	0	82	477
% Unshifted																					
Bank 1	0	0	10	0	10	0	0	0	0	0	0	1	0	0	1	0	0	13	0	13	24
% Bank 1	0	0	12.7	0	3.3	0	0	0	0	0	0	1.5	0	0	0.9	0	0	14.9	0	13.7	4.8

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
T: (574) 236-4400
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File Name : SR 23 & US 20 (Westbound Ramps) AM
Site Code : 00000000
Start Date : 1/22/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					US 20 From East					SR 23 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	11	11	0	0	22	8	0	7	1	16	0	26	1	0	27	0	0	0	0	0	65
06:15 AM	12	10	0	0	22	5	0	4	0	9	0	30	3	0	33	0	0	0	0	0	64
06:30 AM	16	7	0	0	23	16	0	9	0	25	0	57	8	0	65	0	0	0	0	0	113
06:45 AM	7	11	0	0	18	26	0	9	0	35	0	35	1	0	36	0	0	0	0	0	89
Total	46	39	0	0	85	55	0	29	1	85	0	148	13	0	161	0	0	0	0	0	331
07:00 AM	10	11	0	0	21	16	0	6	0	22	0	0	1	0	1	0	0	0	0	0	44
07:15 AM	9	13	0	0	22	12	0	7	0	19	0	31	2	0	33	0	0	0	0	0	74
07:30 AM	13	5	0	0	18	22	0	6	1	29	0	125	4	0	129	0	0	0	0	0	176
07:45 AM	11	7	0	0	18	26	0	3	0	29	0	97	3	0	100	0	0	0	0	0	147
Total	43	36	0	0	79	76	0	22	1	99	0	253	10	0	263	0	0	0	0	0	441
08:00 AM	12	4	0	0	16	9	0	6	0	15	0	68	2	0	70	0	0	0	0	0	101
08:15 AM	13	7	0	0	20	9	0	4	0	13	0	72	3	0	75	0	0	0	0	0	108
08:30 AM	8	10	0	0	18	9	0	5	0	14	0	43	2	0	45	0	0	0	0	0	77
08:45 AM	15	17	0	0	32	7	0	2	0	9	0	43	0	0	43	0	0	0	0	0	84
Total	48	38	0	0	86	34	0	17	0	51	0	226	7	0	233	0	0	0	0	0	370
Grand Total	137	113	0	0	250	165	0	68	2	235	0	627	30	0	657	0	0	0	0	0	1142
Apprch %	54.8	45.2	0	0		70.2	0	28.9	0.9		0	95.4	4.6	0		0	0	0	0		
Total %	12	9.9	0	0	21.9	14.4	0	6	0.2	20.6	0	54.9	2.6	0	57.5	0	0	0	0	0	
Unshifted	110	105	0	0	215	140	0	63	1	204	0	615	26	0	641	0	0	0	0	0	1060
% Unshifted	80.3	92.9	0	0	86	84.8	0	92.6	50	86.8	0	98.1	86.7	0	97.6	0	0	0	0	0	92.8
Bank 1	27	8	0	0	35	25	0	5	1	31	0	12	4	0	16	0	0	0	0	0	82
% Bank 1	19.7	7.1	0	0	14	15.2	0	7.4	50	13.2	0	1.9	13.3	0	2.4	0	0	0	0	0	7.2

	SR 23 From North					US 20 From East					SR 23 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	**13**	5	0	0	18	22	0	**6**	**1**	**29**	0	**125**	**4**	0	**129**	0	0	0	0	0	**176**
07:45 AM	11	**7**	0	0	18	**26**	0	3	0	29	0	97	3	0	100	0	0	0	0	0	147
08:00 AM	12	4	0	0	16	9	0	6	0	15	0	68	2	0	70	0	0	0	0	0	101
08:15 AM	13	7	0	0	**20**	9	0	4	0	13	0	72	3	0	75	0	0	0	0	0	108
Total Volume	49	23	0	0	72	66	0	19	1	86	0	362	12	0	374	0	0	0	0	0	532
% App. Total	68.1	31.9	0	0		76.7	0	22.1	1.2		0	96.8	3.2	0		0	0	0	0		
PHF	.942	.821	.000	.000	.900	.635	.000	.792	.250	.741	.000	.724	.750	.000	.725	.000	.000	.000	.000	.000	.756
Unshifted	38	22	0	0	60	57	0	17	0	74	0	357	10	0	367	0	0	0	0	0	501
% Unshifted																					
Bank 1	11	1	0	0	12	9	0	2	1	12	0	5	2	0	7	0	0	0	0	0	31
% Bank 1	22.4	4.3	0	0	16.7	13.6	0	10.5	100	14.0	0	1.4	16.7	0	1.9	0	0	0	0	0	5.8

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : SR 23 & US 20 (Westbound Ramps) PM
Site Code : 00000000
Start Date : 1/22/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					US 20 From East					SR 23 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	13	14	0	0	27	29	0	13	0	42	0	50	0	0	50	0	0	0	0	0	119
03:15 PM	22	40	1	0	63	24	0	10	0	34	0	52	4	0	56	0	0	0	0	0	153
03:30 PM	33	35	0	0	68	23	0	16	0	39	0	39	2	0	41	0	0	0	0	0	148
03:45 PM	18	35	0	0	53	20	0	15	0	35	0	40	3	0	43	0	0	0	0	0	131
Total	86	124	1	0	211	96	0	54	0	150	0	181	9	0	190	0	0	0	0	0	551
04:00 PM	21	28	0	0	49	17	0	17	0	34	0	24	3	0	27	0	0	0	0	0	110
04:15 PM	22	42	0	0	64	17	0	13	0	30	0	45	1	0	46	0	0	0	0	0	140
04:30 PM	24	50	0	0	74	28	0	12	0	40	0	32	4	0	36	0	0	0	0	0	150
04:45 PM	21	55	0	0	76	14	0	19	0	33	0	30	2	0	32	0	0	0	0	0	141
Total	88	175	0	0	263	76	0	61	0	137	0	131	10	0	141	0	0	0	0	0	541
05:00 PM	22	42	0	0	64	29	0	15	1	45	0	39	1	0	40	0	0	0	0	0	149
05:15 PM	32	64	0	0	96	14	0	20	0	34	0	37	2	0	39	0	0	0	0	0	169
05:30 PM	21	64	0	0	85	16	0	14	0	30	0	40	2	0	42	0	0	0	0	0	157
05:45 PM	23	49	0	0	72	19	0	25	0	44	0	32	3	0	35	0	0	0	0	0	151
Total	98	219	0	0	317	78	0	74	1	153	0	148	8	0	156	0	0	0	0	0	626
Grand Total	272	518	1	0	791	250	0	189	1	440	0	460	27	0	487	0	0	0	0	0	1718
Apprch %	34.4	65.5	0.1	0		56.8	0	43	0.2		0	94.5	5.5	0		0	0	0	0		
Total %	15.8	30.2	0.1	0	46	14.6	0	11	0.1	25.6	0	26.8	1.6	0	28.3	0	0	0	0	0	
Unshifted	227	508	0	0	735	205	0	185	0	390	0	417	19	0	436	0	0	0	0	0	1561
% Unshifted	83.5	98.1	0	0	92.9	82	0	97.9	0	88.6	0	90.7	70.4	0	89.5	0	0	0	0	0	90.9
Bank 1	45	10	1	0	56	45	0	4	1	50	0	43	8	0	51	0	0	0	0	0	157
% Bank 1	16.5	1.9	100	0	7.1	18	0	2.1	100	11.4	0	9.3	29.6	0	10.5	0	0	0	0	0	9.1

	SR 23 From North					US 20 From East					SR 23 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	22	42	0	0	64	**29**	0	15	**1**	**45**	0	39	1	0	40	0	0	0	0	0	149
05:15 PM	**32**	**64**	0	0	**96**	14	0	20	0	34	0	37	2	0	39	0	0	0	0	0	**169**
05:30 PM	21	64	0	0	85	16	0	14	0	30	0	**40**	2	0	**42**	0	0	0	0	0	157
05:45 PM	23	49	0	0	72	19	0	**25**	0	44	0	32	**3**	0	35	0	0	0	0	0	151
Total Volume	98	219	0	0	317	78	0	74	1	153	0	148	8	0	156	0	0	0	0	0	626
% App. Total	30.9	69.1	0	0		51	0	48.4	0.7		0	94.9	5.1	0		0	0	0	0		
PHF	.766	.855	.000	.000	.826	.672	.000	.740	.250	.850	.000	.925	.667	.000	.929	.000	.000	.000	.000	.000	.926
Unshifted	81	216	0	0	297	56	0	74	0	130	0	135	6	0	141	0	0	0	0	0	568
% Unshifted																					
Bank 1	17	3	0	0	20	22	0	0	1	23	0	13	2	0	15	0	0	0	0	0	58
% Bank 1	17.3	1.4	0	0	6.3	28.2	0	0	100	15.0	0	8.8	25.0	0	9.6	0	0	0	0	0	9.3

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
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File Name : SR 23 & New Energy Drive AM
Site Code : 00000000
Start Date : 1/24/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					NEW ENERGY DR From East					SR 23 From South					NEW ENERGY DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	17	0	0	17	0	0	0	0	0	0	31	0	0	31	0	0	1	0	1	49
06:15 AM	1	20	0	0	21	0	0	0	0	0	0	48	4	0	52	0	0	0	0	0	73
06:30 AM	1	40	0	0	41	0	0	0	0	0	0	70	2	0	72	0	0	0	0	0	113
06:45 AM	2	39	0	0	41	0	0	0	0	0	0	98	8	0	106	0	0	0	0	0	147
Total	4	116	0	0	120	0	0	0	0	0	0	247	14	0	261	0	0	1	0	1	382
07:00 AM	0	36	0	0	36	0	0	0	0	0	0	77	6	0	83	2	0	0	0	2	121
07:15 AM	1	48	0	0	49	0	0	0	0	0	0	127	5	0	132	1	0	0	0	1	182
07:30 AM	2	52	0	0	54	0	0	0	0	0	0	167	5	0	172	0	0	0	0	0	226
07:45 AM	0	28	0	0	28	0	0	0	0	0	0	151	6	0	157	2	0	4	0	6	191
Total	3	164	0	0	167	0	0	0	0	0	0	522	22	0	544	5	0	4	0	9	720
08:00 AM	0	35	0	0	35	0	0	0	0	0	0	117	3	0	120	1	0	0	0	1	156
08:15 AM	3	49	0	0	52	0	0	0	0	0	0	105	4	0	109	2	0	0	0	2	163
08:30 AM	3	37	0	0	40	0	0	0	0	0	0	49	2	0	51	3	0	4	0	7	98
08:45 AM	3	38	0	0	41	0	0	0	0	0	0	74	1	0	75	0	0	1	0	1	117
Total	9	159	0	0	168	0	0	0	0	0	0	345	10	0	355	6	0	5	0	11	534
Grand Total	16	439	0	0	455	0	0	0	0	0	0	1114	46	0	1160	11	0	10	0	21	1636
Apprch %	3.5	96.5	0	0		0	0	0	0		0	96	4	0		52.4	0	47.6	0		
Total %	1	26.8	0	0	27.8	0	0	0	0	0	0	68.1	2.8	0	70.9	0.7	0	0.6	0	1.3	
Unshifted	9	368	0	0	377	0	0	0	0	0	0	1059	36	0	1095	7	0	4	0	11	1483
% Unshifted	56.2	83.8	0	0	82.9	0	0	0	0	0	0	95.1	78.3	0	94.4	63.6	0	40	0	52.4	90.6
Bank 1	7	71	0	0	78	0	0	0	0	0	0	55	10	0	65	4	0	6	0	10	153
% Bank 1	43.8	16.2	0	0	17.1	0	0	0	0	0	0	4.9	21.7	0	5.6	36.4	0	60	0	47.6	9.4

	SR 23 From North					NEW ENERGY DR From East					SR 23 From South					NEW ENERGY DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	1	48	0	0	49	0	0	0	0	0	0	127	5	0	132	1	0	0	0	1	182
07:30 AM	**2**	**52**	0	0	**54**	0	0	0	0	0	0	**167**	5	0	**172**	0	0	0	0	0	**226**
07:45 AM	0	28	0	0	28	0	0	0	0	0	0	151	**6**	0	157	**2**	0	**4**	0	**6**	191
08:00 AM	0	35	0	0	35	0	0	0	0	0	0	117	3	0	120	1	0	0	0	1	156
Total Volume	3	163	0	0	166	0	0	0	0	0	0	562	19	0	581	4	0	4	0	8	755
% App. Total	1.8	98.2	0	0		0	0	0	0		0	96.7	3.3	0		50	0	50	0		
PHF	.375	.784	.000	.000	.769	.000	.000	.000	.000	.000	.000	.841	.792	.000	.844	.500	.000	.250	.000	.333	.835
Unshifted	3	144	0	0	147	0	0	0	0	0	0	547	13	0	560	3	0	1	0	4	711
% Unshifted																					
Bank 1	0	19	0	0	19	0	0	0	0	0	0	15	6	0	21	1	0	3	0	4	44
% Bank 1	0	11.7	0	0	11.4	0	0	0	0	0	0	2.7	31.6	0	3.6	25.0	0	75.0	0	50.0	5.8

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
T: (574) 236-4400
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File Name : SR 23 & New Energy Drive PM
Site Code : 00000000
Start Date : 1/24/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					NEW ENERGY DR From East					SR 23 From South					NEW ENERGY DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	1	60	0	0	61	0	0	0	0	0	0	68	6	0	74	2	0	2	0	4	139
03:15 PM	0	90	0	0	90	0	0	0	0	0	0	70	4	0	74	2	0	1	0	3	167
03:30 PM	0	106	0	0	106	0	0	0	0	0	0	56	1	0	57	5	0	1	0	6	169
03:45 PM	2	99	0	0	101	0	0	0	0	0	0	79	2	0	81	4	0	3	0	7	189
Total	3	355	0	0	358	0	0	0	0	0	0	273	13	0	286	13	0	7	0	20	664
04:00 PM	3	86	0	0	89	0	0	0	0	0	0	60	5	0	65	4	0	0	0	4	158
04:15 PM	0	89	0	0	89	0	0	0	0	0	0	56	2	0	58	3	0	2	0	5	152
04:30 PM	3	104	0	0	107	0	0	0	0	0	0	57	1	0	58	8	0	2	0	10	175
04:45 PM	0	94	0	0	94	0	0	0	0	0	0	68	1	0	69	10	0	2	0	12	175
Total	6	373	0	0	379	0	0	0	0	0	0	241	9	0	250	25	0	6	0	31	660
05:00 PM	1	107	0	0	108	0	0	0	0	0	0	60	2	0	62	4	0	2	0	6	176
05:15 PM	0	111	0	0	111	0	0	0	0	0	0	67	0	0	67	3	0	0	0	3	181
05:30 PM	0	98	0	0	98	0	0	0	0	0	0	63	2	0	65	4	0	0	0	4	167
05:45 PM	1	94	0	0	95	0	0	0	0	0	0	66	2	0	68	3	0	0	0	3	166
Total	2	410	0	0	412	0	0	0	0	0	0	256	6	0	262	14	0	2	0	16	690
Grand Total	11	1138	0	0	1149	0	0	0	0	0	0	770	28	0	798	52	0	15	0	67	2014
Apprch %	1	99	0	0		0	0	0	0		0	96.5	3.5	0		77.6	0	22.4	0		
Total %	0.5	56.5	0	0	57.1	0	0	0	0	0	0	38.2	1.4	0	39.6	2.6	0	0.7	0	3.3	
Unshifted	5	1060	0	0	1065	0	0	0	0	0	0	655	18	0	673	43	0	14	0	57	1795
% Unshifted	45.5	93.1	0	0	92.7	0	0	0	0	0	0	85.1	64.3	0	84.3	82.7	0	93.3	0	85.1	89.1
Bank 1	6	78	0	0	84	0	0	0	0	0	0	115	10	0	125	9	0	1	0	10	219
% Bank 1	54.5	6.9	0	0	7.3	0	0	0	0	0	0	14.9	35.7	0	15.7	17.3	0	6.7	0	14.9	10.9

	SR 23 From North					NEW ENERGY DR From East					SR 23 From South					NEW ENERGY DR From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	**3**	104	0	0	107	0	0	0	0	0	0	57	1	0	58	8	0	**2**	0	10	175
04:45 PM	0	94	0	0	94	0	0	0	0	0	0	**68**	1	0	**69**	**10**	0	2	0	**12**	175
05:00 PM	1	107	0	0	108	0	0	0	0	0	0	60	**2**	0	62	4	0	2	0	6	176
05:15 PM	0	**111**	0	0	**111**	0	0	0	0	0	0	67	0	0	67	3	0	0	0	3	**181**
Total Volume	4	416	0	0	420	0	0	0	0	0	0	252	4	0	256	25	0	6	0	31	707
% App. Total	1	99	0	0		0	0	0	0		0	98.4	1.6	0		80.6	0	19.4	0		
PHF	.333	.937	.000	.000	.946	.000	.000	.000	.000	.000	.000	.926	.500	.000	.928	.625	.000	.750	.000	.646	.977
Unshifted	1	393	0	0	394	0	0	0	0	0	0	209	3	0	212	22	0	5	0	27	633
% Unshifted																					
Bank 1	3	23	0	0	26	0	0	0	0	0	0	43	1	0	44	3	0	1	0	4	74
% Bank 1	75.0	5.5	0	0	6.2	0	0	0	0	0	0	17.1	25.0	0	17.2	12.0	0	16.7	0	12.9	10.5

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : SR 23 & Prairie Apartments Entrance AM
Site Code : 00000000
Start Date : 1/24/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					PRAIRIE AVE From East					SR 23 From South					PRAIRIE AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	17	1	0	18	2	0	1	0	3	0	29	0	0	29	0	0	0	0	0	50
06:15 AM	0	27	3	0	30	7	0	2	0	9	1	57	0	0	58	0	0	0	0	0	97
06:30 AM	0	40	6	0	46	5	0	1	0	6	2	88	0	0	90	0	0	0	0	0	142
06:45 AM	0	35	5	0	40	8	0	4	0	12	0	82	0	0	82	0	0	0	0	0	134
Total	0	119	15	0	134	22	0	8	0	30	3	256	0	0	259	0	0	0	0	0	423
07:00 AM	0	38	6	0	44	7	0	1	0	8	1	101	0	0	102	0	0	0	0	0	154
07:15 AM	0	46	2	0	48	13	0	1	0	14	1	133	0	0	134	0	0	0	0	0	196
07:30 AM	0	48	5	0	53	15	0	2	0	17	1	170	0	0	171	0	0	0	0	0	241
07:45 AM	0	32	3	0	35	20	0	2	0	22	2	146	0	0	148	0	0	0	0	0	205
Total	0	164	16	0	180	55	0	6	0	61	5	550	0	0	555	0	0	0	0	0	796
08:00 AM	0	47	8	0	55	7	0	0	0	7	1	109	0	0	110	0	0	0	0	0	172
08:15 AM	0	43	5	0	48	8	0	1	0	9	2	103	0	0	105	0	0	0	0	0	162
08:30 AM	0	39	7	0	46	3	0	0	0	3	1	61	0	0	62	0	0	0	0	0	111
08:45 AM	0	42	5	0	47	9	0	0	0	9	0	72	0	0	72	0	0	0	0	0	128
Total	0	171	25	0	196	27	0	1	0	28	4	345	0	0	349	0	0	0	0	0	573
Grand Total	0	454	56	0	510	104	0	15	0	119	12	1151	0	0	1163	0	0	0	0	0	1792
Apprch %	0	89	11	0		87.4	0	12.6	0		1	99	0	0		0	0	0	0		
Total %	0	25.3	3.1	0	28.5	5.8	0	0.8	0	6.6	0.7	64.2	0	0	64.9	0	0	0	0	0	
Unshifted	0	377	56	0	433	104	0	15	0	119	12	1090	0	0	1102	0	0	0	0	0	1654
% Unshifted	0	83	100	0	84.9	100	0	100	0	100	100	94.7	0	0	94.8	0	0	0	0	0	92.3
Bank 1	0	77	0	0	77	0	0	0	0	0	0	61	0	0	61	0	0	0	0	0	138
% Bank 1	0	17	0	0	15.1	0	0	0	0	0	0	5.3	0	0	5.2	0	0	0	0	0	7.7

	SR 23 From North					PRAIRIE AVE From East					SR 23 From South					PRAIRIE AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	46	2	0	48	13	0	1	0	14	1	133	0	0	134	0	0	0	0	0	196
07:30 AM	0	**48**	5	0	53	15	0	**2**	0	17	1	**170**	0	0	**171**	0	0	0	0	0	**241**
07:45 AM	0	32	3	0	35	**20**	0	2	0	**22**	**2**	146	0	0	148	0	0	0	0	0	205
08:00 AM	0	47	**8**	0	**55**	7	0	0	0	7	1	109	0	0	110	0	0	0	0	0	172
Total Volume	0	173	18	0	191	55	0	5	0	60	5	558	0	0	563	0	0	0	0	0	814
% App. Total	0	90.6	9.4	0		91.7	0	8.3	0		0.9	99.1	0	0		0	0	0	0		
PHF	.000	.901	.563	.000	.868	.688	.000	.625	.000	.682	.625	.821	.000	.000	.823	.000	.000	.000	.000	.000	.844
Unshifted	0	151	18	0	169	55	0	5	0	60	5	539	0	0	544	0	0	0	0	0	773
% Unshifted																					
Bank 1	0	22	0	0	22	0	0	0	0	0	0	19	0	0	19	0	0	0	0	0	41
% Bank 1	0	12.7	0	0	11.5	0	0	0	0	0	0	3.4	0	0	3.4	0	0	0	0	0	5.0

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : SR 23 & Prairie Apartments Entrance PM
Site Code : 00000000
Start Date : 1/24/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					PRAIRIE AVE From East					SR 23 From South					PRAIRIE AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	66	15	0	81	13	0	0	0	13	1	76	0	0	77	0	0	0	0	0	171
03:15 PM	0	100	15	0	115	20	0	2	0	22	1	67	0	0	68	0	0	0	0	0	205
03:30 PM	0	106	12	0	118	10	0	3	0	13	5	60	0	0	65	0	0	0	0	0	196
03:45 PM	0	102	18	0	120	11	0	3	0	14	2	76	0	0	78	0	0	0	0	0	212
Total	0	374	60	0	434	54	0	8	0	62	9	279	0	0	288	0	0	0	0	0	784
04:00 PM	0	89	12	0	101	11	0	1	0	12	0	64	0	0	64	0	0	0	0	0	177
04:15 PM	0	85	14	0	99	7	0	4	0	11	2	59	0	0	61	0	0	0	0	0	171
04:30 PM	0	113	8	0	121	13	0	2	0	15	1	72	0	0	73	0	0	0	0	0	209
04:45 PM	0	86	11	0	97	15	0	0	0	15	0	58	0	0	58	0	0	0	0	0	170
Total	0	373	45	0	418	46	0	7	0	53	3	253	0	0	256	0	0	0	0	0	727
05:00 PM	0	124	9	0	133	8	0	0	0	8	0	62	0	0	62	0	0	0	0	0	203
05:15 PM	0	120	19	0	139	9	0	1	0	10	0	70	0	0	70	0	0	0	0	0	219
05:30 PM	0	88	16	0	104	12	0	1	0	13	2	61	0	0	63	0	0	0	0	0	180
05:45 PM	0	77	18	0	95	10	0	1	0	11	1	67	0	0	68	0	0	0	0	0	174
Total	0	409	62	0	471	39	0	3	0	42	3	260	0	0	263	0	0	0	0	0	776
Grand Total	0	1156	167	0	1323	139	0	18	0	157	15	792	0	0	807	0	0	0	0	0	2287
Apprch %	0	87.4	12.6	0		88.5	0	11.5	0		1.9	98.1	0	0		0	0	0	0		
Total %	0	50.5	7.3	0	57.8	6.1	0	0.8	0	6.9	0.7	34.6	0	0	35.3	0	0	0	0	0	
Unshifted	0	1081	167	0	1248	138	0	18	0	156	15	685	0	0	700	0	0	0	0	0	2104
% Unshifted	0	93.5	100	0	94.3	99.3	0	100	0	99.4	100	86.5	0	0	86.7	0	0	0	0	0	92
Bank 1	0	75	0	0	75	1	0	0	0	1	0	107	0	0	107	0	0	0	0	0	183
% Bank 1	0	6.5	0	0	5.7	0.7	0	0	0	0.6	0	13.5	0	0	13.3	0	0	0	0	0	8

	SR 23 From North					PRAIRIE AVE From East					SR 23 From South					PRAIRIE AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	0	113	8	0	121	13	0	**2**	0	**15**	**1**	**72**	0	0	**73**	0	0	0	0	0	209
04:45 PM	0	86	11	0	97	**15**	0	0	0	15	0	58	0	0	58	0	0	0	0	0	170
05:00 PM	0	**124**	9	0	133	8	0	0	0	8	0	62	0	0	62	0	0	0	0	0	203
05:15 PM	0	120	**19**	0	**139**	9	0	1	0	10	0	70	0	0	70	0	0	0	0	0	**219**
Total Volume	0	443	47	0	490	45	0	3	0	48	1	262	0	0	263	0	0	0	0	0	801
% App. Total	0	90.4	9.6	0		93.8	0	6.2	0		0.4	99.6	0	0		0	0	0	0		
PHF	.000	.893	.618	.000	.881	.750	.000	.375	.000	.800	.250	.910	.000	.000	.901	.000	.000	.000	.000	.000	.914
Unshifted	0	418	47	0	465	45	0	3	0	48	1	220	0	0	221	0	0	0	0	0	734
% Unshifted																					
Bank 1	0	25	0	0	25	0	0	0	0	0	0	42	0	0	42	0	0	0	0	0	67
% Bank 1	0	5.6	0	0	5.1	0	0	0	0	0	0	16.0	0	0	16.0	0	0	0	0	0	8.4

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : SR 23 & Ewing AM
Site Code : 00000000
Start Date : 1/23/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					EWING AVE From East					SR 23 From South					EWING AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	11	0	0	11	0	4	6	0	10	3	22	0	0	25	2	1	0	0	3	49
06:15 AM	0	19	0	0	19	0	3	8	0	11	4	53	3	0	60	0	1	1	0	2	92
06:30 AM	3	29	2	0	34	0	9	13	0	22	7	85	0	0	92	0	1	1	0	2	150
06:45 AM	2	24	2	0	28	1	13	7	0	21	14	65	0	0	79	0	7	1	0	8	136
Total	5	83	4	0	92	1	29	34	0	64	28	225	3	0	256	2	10	3	0	15	427
07:00 AM	2	22	1	0	25	2	8	9	0	19	16	77	0	0	93	0	4	0	0	4	141
07:15 AM	1	26	0	0	27	1	10	12	0	23	42	108	0	0	150	0	4	0	0	4	204
07:30 AM	7	27	1	0	35	3	16	11	0	30	57	139	0	0	196	0	10	0	0	10	271
07:45 AM	2	27	1	0	30	2	16	12	0	30	52	142	0	0	194	0	12	0	0	12	266
Total	12	102	3	0	117	8	50	44	0	102	167	466	0	0	633	0	30	0	0	30	882
08:00 AM	4	35	4	0	43	3	21	13	0	37	26	107	0	0	133	0	8	1	0	9	222
08:15 AM	2	32	1	0	35	1	14	6	0	21	23	81	0	0	104	0	5	0	0	5	165
08:30 AM	2	27	1	0	30	0	10	23	0	33	16	63	0	0	79	0	5	0	0	5	147
08:45 AM	1	20	1	0	22	2	12	9	0	23	12	49	0	0	61	0	5	2	0	7	113
Total	9	114	7	0	130	6	57	51	0	114	77	300	0	0	377	0	23	3	0	26	647
Grand Total	26	299	14	0	339	15	136	129	0	280	272	991	3	0	1266	2	63	6	0	71	1956
Apprch %	7.7	88.2	4.1	0		5.4	48.6	46.1	0		21.5	78.3	0.2	0		2.8	88.7	8.5	0		
Total %	1.3	15.3	0.7	0	17.3	0.8	7	6.6	0	14.3	13.9	50.7	0.2	0	64.7	0.1	3.2	0.3	0	3.6	
Unshifted	26	276	12	0	314	15	136	129	0	280	269	971	1	0	1241	1	62	6	0	69	1904
% Unshifted	100	92.3	85.7	0	92.6	100	100	100	0	100	98.9	98	33.3	0	98	50	98.4	100	0	97.2	97.3
Bank 1	0	23	2	0	25	0	0	0	0	0	3	20	2	0	25	1	1	0	0	2	52
% Bank 1	0	7.7	14.3	0	7.4	0	0	0	0	0	1.1	2	66.7	0	2	50	1.6	0	0	2.8	2.7

	SR 23 From North					EWING AVE From East					SR 23 From South					EWING AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	1	26	0	0	27	1	10	12	0	23	42	108	0	0	150	0	4	0	0	4	204
07:30 AM	**7**	27	1	0	35	**3**	16	11	0	30	**57**	139	0	0	**196**	0	10	0	0	10	**271**
07:45 AM	2	27	1	0	30	2	16	12	0	30	52	**142**	0	0	194	0	**12**	0	0	**12**	266
08:00 AM	4	**35**	**4**	0	**43**	3	**21**	**13**	0	**37**	26	107	0	0	133	0	8	**1**	0	9	222
Total Volume	14	115	6	0	135	9	63	48	0	120	177	496	0	0	673	0	34	1	0	35	963
% App. Total	10.4	85.2	4.4	0		7.5	52.5	40	0		26.3	73.7	0	0		0	97.1	2.9	0		
PHF	.500	.821	.375	.000	.785	.750	.750	.923	.000	.811	.776	.873	.000	.000	.858	.000	.708	.250	.000	.729	.888
Unshifted	14	105	4	0	123	9	63	48	0	120	176	489	0	0	665	0	34	1	0	35	943
% Unshifted																					
Bank 1	0	10	2	0	12	0	0	0	0	0	1	7	0	0	8	0	0	0	0	0	20
% Bank 1	0	8.7	33.3	0	8.9	0	0	0	0	0	0.6	1.4	0	0	1.2	0	0	0	0	0	2.1

DLZ Indiana, LLC

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File Name : SR 23 & Ewing PM
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Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 23 From North					EWING AVE From East					SR 23 From South					EWING AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	51	2	0	53	2	13	27	0	42	30	47	0	0	77	1	11	0	0	12	184
03:15 PM	3	56	4	0	63	5	20	16	0	41	30	50	0	0	80	0	15	1	0	16	200
03:30 PM	6	70	2	0	78	2	18	21	0	41	27	50	0	0	77	1	9	1	0	11	207
03:45 PM	5	86	2	0	93	5	13	15	0	33	32	58	1	0	91	0	9	1	0	10	227
Total	14	263	10	0	287	14	64	79	0	157	119	205	1	0	325	2	44	3	0	49	818
04:00 PM	3	68	4	0	75	1	14	23	0	38	27	48	1	0	76	0	9	1	0	10	199
04:15 PM	10	64	1	0	75	0	13	23	0	36	31	48	0	0	79	0	11	0	0	11	201
04:30 PM	5	77	2	0	84	3	12	14	0	29	20	51	0	0	71	0	7	1	0	8	192
04:45 PM	8	85	1	0	94	4	9	20	0	33	27	56	0	0	83	0	10	2	0	12	222
Total	26	294	8	0	328	8	48	80	0	136	105	203	1	0	309	0	37	4	0	41	814
05:00 PM	4	83	1	0	88	3	12	22	0	37	39	44	0	0	83	0	20	0	0	20	228
05:15 PM	4	91	1	0	96	1	13	13	0	27	36	55	0	0	91	0	15	2	0	17	231
05:30 PM	2	81	1	0	84	3	10	22	0	35	30	44	0	0	74	0	9	3	0	12	205
05:45 PM	6	43	1	0	50	2	10	17	0	29	24	41	0	0	65	0	5	4	0	9	153
Total	16	298	4	0	318	9	45	74	0	128	129	184	0	0	313	0	49	9	0	58	817
Grand Total	56	855	22	0	933	31	157	233	0	421	353	592	2	0	947	2	130	16	0	148	2449
Apprch %	6	91.6	2.4	0		7.4	37.3	55.3	0		37.3	62.5	0.2	0		1.4	87.8	10.8	0		
Total %	2.3	34.9	0.9	0	38.1	1.3	6.4	9.5	0	17.2	14.4	24.2	0.1	0	38.7	0.1	5.3	0.7	0	6	
Unshifted	56	838	22	0	916	30	155	232	0	417	352	570	2	0	924	2	130	16	0	148	2405
% Unshifted	100	98	100	0	98.2	96.8	98.7	99.6	0	99	99.7	96.3	100	0	97.6	100	100	100	0	100	98.2
Bank 1	0	17	0	0	17	1	2	1	0	4	1	22	0	0	23	0	0	0	0	0	44
% Bank 1	0	2	0	0	1.8	3.2	1.3	0.4	0	1	0.3	3.7	0	0	2.4	0	0	0	0	0	1.8

	SR 23 From North					EWING AVE From East					SR 23 From South					EWING AVE From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	**8**	85	**1**	0	94	**4**	9	20	0	33	27	**56**	0	0	83	0	10	2	0	12	222
05:00 PM	4	83	1	0	88	3	12	**22**	0	**37**	**39**	44	0	0	83	0	**20**	0	0	**20**	228
05:15 PM	4	**91**	1	0	**96**	1	**13**	13	0	27	36	55	0	0	**91**	0	15	2	0	17	**231**
05:30 PM	2	81	1	0	84	3	10	22	0	35	30	44	0	0	74	0	9	**3**	0	12	205
Total Volume	18	340	4	0	362	11	44	77	0	132	132	199	0	0	331	0	54	7	0	61	886
% App. Total	5	93.9	1.1	0		8.3	33.3	58.3	0		39.9	60.1	0	0		0	88.5	11.5	0		
PHF	.563	.934	1.000			.688	.846	.875			.846	.888	.000			.000	.675	.586			
Unshifted	18	336	4	0	358	10	44	77	0	131	132	192	0	0	324	0	54	7	0	61	874
% Unshifted	100	98.8	100	0	98.9	90.9	100	100	0	99.2	100	96.5	0	0	97.9	0	100	100	0	100	98.6
Bank 1	0	4	0	0	4	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	12
% Bank 1	0	1.2	0	0	1.1	9.1	0	0	0	0.8	0	3.5	0	0	2.1	0	0	0	0	0	1.4

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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Site Code : 00000000
Start Date : 1/23/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	LOCUST RD From North					SR 23 From East					LOCUST RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	3	10	0	0	13	3	5	3	0	11	1	21	8	0	30	9	4	2	0	15	69
06:15 AM	2	13	1	0	16	5	15	2	0	22	4	49	25	0	78	8	9	5	0	22	138
06:30 AM	0	36	1	0	37	11	22	9	0	42	3	76	25	0	104	12	19	1	0	32	215
06:45 AM	3	26	2	0	31	6	19	4	0	29	0	70	27	0	97	9	25	3	0	37	194
Total	8	85	4	0	97	25	61	18	0	104	8	216	85	0	309	38	57	11	0	106	616
07:00 AM	0	22	2	0	24	15	19	4	0	38	8	80	29	0	117	21	17	4	0	42	221
07:15 AM	1	24	2	0	27	14	23	8	0	45	2	133	35	0	170	20	13	21	0	54	296
07:30 AM	1	25	3	0	29	24	27	6	0	57	3	144	33	0	180	13	23	30	0	66	332
07:45 AM	2	36	5	0	43	17	19	3	0	39	4	132	38	0	174	15	21	12	0	48	304
Total	4	107	12	0	123	70	88	21	0	179	17	489	135	0	641	69	74	67	0	210	1153
08:00 AM	1	38	6	0	45	9	19	5	0	33	2	109	18	0	129	23	16	12	0	51	258
08:15 AM	1	26	3	0	30	9	14	5	0	28	2	69	15	0	86	15	4	11	0	30	174
08:30 AM	2	34	2	0	38	3	8	2	0	13	1	65	17	0	83	14	10	9	0	33	167
08:45 AM	1	20	1	0	22	2	13	5	0	20	5	42	13	0	60	17	13	5	0	35	137
Total	5	118	12	0	135	23	54	17	0	94	10	285	63	0	358	69	43	37	0	149	736
Grand Total	17	310	28	0	355	118	203	56	0	377	35	990	283	0	1308	176	174	115	0	465	2505
Apprch %	4.8	87.3	7.9	0		31.3	53.8	14.9	0		2.7	75.7	21.6	0		37.8	37.4	24.7	0		
Total %	0.7	12.4	1.1	0	14.2	4.7	8.1	2.2	0	15	1.4	39.5	11.3	0	52.2	7	6.9	4.6	0	18.6	
Unshifted	14	278	27	0	319	114	198	53	0	365	34	960	232	0	1226	120	166	106	0	392	2302
% Unshifted	82.4	89.7	96.4	0	89.9	96.6	97.5	94.6	0	96.8	97.1	97	82	0	93.7	68.2	95.4	92.2	0	84.3	91.9
Bank 1	3	32	1	0	36	4	5	3	0	12	1	30	51	0	82	56	8	9	0	73	203
% Bank 1	17.6	10.3	3.6	0	10.1	3.4	2.5	5.4	0	3.2	2.9	3	18	0	6.3	31.8	4.6	7.8	0	15.7	8.1

	LOCUST RD From North					SR 23 From East					LOCUST RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	1	24	2	0	27	14	23	**8**	0	45	2	133	35	0	170	20	13	21	0	54	296
07:30 AM	1	25	3	0	29	**24**	**27**	6	0	**57**	3	**144**	33	0	**180**	13	**23**	**30**	0	**66**	**332**
07:45 AM	**2**	36	5	0	43	17	19	3	0	39	**4**	132	**38**	0	174	15	21	12	0	48	304
08:00 AM	1	**38**	**6**	0	**45**	9	19	5	0	33	2	109	18	0	129	**23**	16	12	0	51	258
Total Volume	5	123	16	0	144	64	88	22	0	174	11	518	124	0	653	71	73	75	0	219	1190
% App. Total	3.5	85.4	11.1	0		36.8	50.6	12.6	0		1.7	79.3	19	0		32.4	33.3	34.2	0		
PHF	.625	.809	.667	.000	.800	.667	.815	.688	.000	.763	.688	.899	.816	.000	.907	.772	.793	.625	.000	.830	.896
Unshifted	5	113	16	0	134	63	85	20	0	168	10	507	107	0	624	53	70	74	0	197	1123
% Unshifted																					
Bank 1	0	10	0	0	10	1	3	2	0	6	1	11	17	0	29	18	3	1	0	22	67
% Bank 1	0	8.1	0	0	6.9	1.6	3.4	9.1	0	3.4	9.1	2.1	13.7	0	4.4	25.4	4.1	1.3	0	10.0	5.6

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Start Date : 1/23/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	LOCUST RD From North					SR 23 From East					LOCUST RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	2	53	6	0	61	0	22	8	0	30	3	49	28	0	80	22	19	13	0	54	225
03:15 PM	0	69	6	0	75	5	20	14	0	39	2	57	30	0	89	36	31	18	0	85	288
03:30 PM	0	73	2	0	75	9	39	5	0	53	7	52	22	0	81	32	30	14	0	76	285
03:45 PM	3	80	13	0	96	7	22	5	0	34	10	59	25	0	94	24	31	20	0	75	299
Total	5	275	27	0	307	21	103	32	0	156	22	217	105	0	344	114	111	65	0	290	1097
04:00 PM	1	91	6	0	98	6	19	6	0	31	4	47	26	0	77	17	14	16	0	47	253
04:15 PM	2	57	8	0	67	5	18	9	0	32	2	48	20	0	70	16	32	21	0	69	238
04:30 PM	5	66	7	0	78	4	20	8	0	32	0	52	16	0	68	27	32	14	0	73	251
04:45 PM	1	84	9	0	94	10	22	6	0	38	6	43	15	0	64	27	26	16	0	69	265
Total	9	298	30	0	337	25	79	29	0	133	12	190	77	0	279	87	104	67	0	258	1007
05:00 PM	3	82	9	0	94	3	20	10	0	33	3	49	19	0	71	42	33	27	0	102	300
05:15 PM	2	77	14	0	93	3	14	13	0	30	2	65	16	0	83	32	25	22	0	79	285
05:30 PM	1	72	13	0	86	10	17	12	0	39	3	47	18	0	68	18	29	8	0	55	248
05:45 PM	1	46	6	0	53	1	19	7	0	27	6	42	15	0	63	23	25	17	0	65	208
Total	7	277	42	0	326	17	70	42	0	129	14	203	68	0	285	115	112	74	0	301	1041
Grand Total	21	850	99	0	970	63	252	103	0	418	48	610	250	0	908	316	327	206	0	849	3145
Apprch %	2.2	87.6	10.2	0		15.1	60.3	24.6	0		5.3	67.2	27.5	0		37.2	38.5	24.3	0		
Total %	0.7	27	3.1	0	30.8	2	8	3.3	0	13.3	1.5	19.4	7.9	0	28.9	10	10.4	6.6	0	27	
Unshifted	21	821	98	0	940	62	249	99	0	410	46	583	158	0	787	266	318	197	0	781	2918
% Unshifted	100	96.6	99	0	96.9	98.4	98.8	96.1	0	98.1	95.8	95.6	63.2	0	86.7	84.2	97.2	95.6	0	92	92.8
Bank 1	0	29	1	0	30	1	3	4	0	8	2	27	92	0	121	50	9	9	0	68	227
% Bank 1	0	3.4	1	0	3.1	1.6	1.2	3.9	0	1.9	4.2	4.4	36.8	0	13.3	15.8	2.8	4.4	0	8	7.2

	LOCUST RD From North					SR 23 From East					LOCUST RD From South					SR 23 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	69	6	0	75	5	20	**14**	0	39	2	57	**30**	0	89	**36**	**31**	18	0	**85**	288
03:30 PM	0	73	2	0	75	**9**	**39**	5	0	**53**	7	52	22	0	81	32	30	14	0	76	285
03:45 PM	**3**	80	**13**	0	96	7	22	5	0	34	**10**	**59**	25	0	**94**	24	31	**20**	0	75	**299**
04:00 PM	1	**91**	6	0	**98**	6	19	6	0	31	4	47	26	0	77	17	14	16	0	47	253
Total Volume	4	313	27	0	344	27	100	30	0	157	23	215	103	0	341	109	106	68	0	283	1125
% App. Total	1.2	91	7.8	0		17.2	63.7	19.1	0		6.7	63	30.2	0		38.5	37.5	24	0		
PHF	.333	.860	.519	.000	.878	.750	.641	.536	.000	.741	.575	.911	.858	.000	.907	.757	.855	.850	.000	.832	.941
Unshifted	4	295	26	0	325	26	98	28	0	152	21	203	74	0	298	94	101	64	0	259	1034
% Unshifted																					
Bank 1	0	18	1	0	19	1	2	2	0	5	2	12	29	0	43	15	5	4	0	24	91
% Bank 1	0	5.8	3.7	0	5.5	3.7	2.0	6.7	0	3.2	8.7	5.6	28.2	0	12.6	13.8	4.7	5.9	0	8.5	8.1

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File Name : Ireland & Locust AM
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Start Date : 1/24/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	LOCUST RD From North					IRELAND RD From East					LOCUST RD From South					IRELAND RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	1	4	0	5	4	6	0	0	10	2	2	0	0	4	0	23	0	0	23	42
06:15 AM	1	2	5	0	8	5	11	1	0	17	1	6	3	0	10	2	14	2	0	18	53
06:30 AM	0	2	7	0	9	8	4	2	0	14	2	6	7	0	15	0	14	3	0	17	55
06:45 AM	0	1	29	0	30	12	14	1	0	27	7	19	3	0	29	1	20	2	0	23	109
Total	1	6	45	0	52	29	35	4	0	68	12	33	13	0	58	3	71	7	0	81	259
07:00 AM	2	3	14	0	19	6	14	1	0	21	7	16	0	0	23	1	22	2	0	25	88
07:15 AM	2	2	13	0	17	8	15	1	0	24	7	20	4	0	31	0	21	6	0	27	99
07:30 AM	0	5	12	0	17	12	17	1	0	30	9	25	1	0	35	1	51	8	0	60	142
07:45 AM	1	5	21	0	27	17	16	2	0	35	7	25	2	0	34	1	40	6	0	47	143
Total	5	15	60	0	80	43	62	5	0	110	30	86	7	0	123	3	134	22	0	159	472
08:00 AM	1	3	24	0	28	13	18	3	0	34	4	13	3	0	20	2	28	7	0	37	119
08:15 AM	1	5	10	0	16	10	11	1	0	22	4	10	5	0	19	2	20	2	0	24	81
08:30 AM	2	6	15	0	23	9	12	1	0	22	2	8	0	0	10	2	24	0	0	26	81
08:45 AM	0	6	11	0	17	8	12	2	0	22	3	5	1	0	9	1	29	1	0	31	79
Total	4	20	60	0	84	40	53	7	0	100	13	36	9	0	58	7	101	10	0	118	360
Grand Total	10	41	165	0	216	112	150	16	0	278	55	155	29	0	239	13	306	39	0	358	1091
Apprch %	4.6	19	76.4	0		40.3	54	5.8	0		23	64.9	12.1	0		3.6	85.5	10.9	0		
Total %	0.9	3.8	15.1	0	19.8	10.3	13.7	1.5	0	25.5	5	14.2	2.7	0	21.9	1.2	28	3.6	0	32.8	
Unshifted	8	36	160	0	204	107	136	15	0	258	54	152	29	0	235	8	292	38	0	338	1035
% Unshifted	80	87.8	97	0	94.4	95.5	90.7	93.8	0	92.8	98.2	98.1	100	0	98.3	61.5	95.4	97.4	0	94.4	94.9
Bank 1	2	5	5	0	12	5	14	1	0	20	1	3	0	0	4	5	14	1	0	20	56
% Bank 1	20	12.2	3	0	5.6	4.5	9.3	6.2	0	7.2	1.8	1.9	0	0	1.7	38.5	4.6	2.6	0	5.6	5.1

	LOCUST RD From North					IRELAND RD From East					LOCUST RD From South					IRELAND RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**2**	2	13	0	17	8	15	1	0	24	7	20	**4**	0	31	0	21	6	0	27	99
07:30 AM	0	**5**	12	0	17	12	17	1	0	30	**9**	**25**	1	0	**35**	1	**51**	**8**	0	**60**	142
07:45 AM	1	5	21	0	27	**17**	16	2	0	**35**	7	25	2	0	34	1	40	6	0	47	**143**
08:00 AM	1	3	**24**	0	**28**	13	**18**	**3**	0	34	4	13	3	0	20	**2**	28	7	0	37	119
Total Volume	4	15	70	0	89	50	66	7	0	123	27	83	10	0	120	4	140	27	0	171	503
% App. Total	4.5	16.9	78.7	0		40.7	53.7	5.7	0		22.5	69.2	8.3	0		2.3	81.9	15.8	0		
PHF	.500	.750	.729	.000	.795	.735	.917	.583	.000	.879	.750	.830	.625	.000	.857	.500	.686	.844	.000	.713	.879
Unshifted	4	14	66	0	84	47	58	7	0	112	27	82	10	0	119	4	132	27	0	163	478
% Unshifted																					
Bank 1	0	1	4	0	5	3	8	0	0	11	0	1	0	0	1	0	8	0	0	8	25
% Bank 1	0	6.7	5.7	0	5.6	6.0	12.1	0	0	8.9	0	1.2	0	0	0.8	0	5.7	0	0	4.7	5.0

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Page No : 1

Groups Printed- Unshifted - Bank 1

	LOCUST RD From North					IRELAND RD From East					LOCUST RD From South					IRELAND RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	4	10	10	0	24	14	36	7	0	57	5	2	1	0	8	3	34	0	0	37	126
03:15 PM	2	9	20	0	31	23	50	8	0	81	5	4	7	0	16	1	24	1	0	26	154
03:30 PM	2	14	25	0	41	15	44	8	0	67	6	3	1	0	10	1	32	1	0	34	152
03:45 PM	2	6	22	0	30	44	45	15	0	104	4	9	3	0	16	5	25	2	0	32	182
Total	10	39	77	0	126	96	175	38	0	309	20	18	12	0	50	10	115	4	0	129	614
04:00 PM	1	11	16	0	28	14	40	15	0	69	4	3	4	0	11	4	36	2	0	42	150
04:15 PM	1	12	18	0	31	19	43	10	0	72	2	7	3	0	12	4	28	1	0	33	148
04:30 PM	1	6	19	0	26	15	44	10	0	69	5	7	3	0	15	2	22	0	0	24	134
04:45 PM	2	15	21	0	38	24	55	5	0	84	9	10	2	0	21	6	37	0	0	43	186
Total	5	44	74	0	123	72	182	40	0	294	20	27	12	0	59	16	123	3	0	142	618
05:00 PM	3	15	36	0	54	18	39	9	0	66	5	7	4	0	16	3	33	1	0	37	173
05:15 PM	5	24	27	0	56	14	54	13	0	81	7	2	1	0	10	4	31	1	0	36	183
05:30 PM	6	17	17	0	40	21	51	15	0	87	10	6	3	0	19	3	31	1	0	35	181
05:45 PM	2	13	14	0	29	15	49	10	0	74	5	6	2	0	13	5	24	1	0	30	146
Total	16	69	94	0	179	68	193	47	0	308	27	21	10	0	58	15	119	4	0	138	683
Grand Total	31	152	245	0	428	236	550	125	0	911	67	66	34	0	167	41	357	11	0	409	1915
Apprch %	7.2	35.5	57.2	0		25.9	60.4	13.7	0		40.1	39.5	20.4	0		10	87.3	2.7	0		
Total %	1.6	7.9	12.8	0	22.3	12.3	28.7	6.5	0	47.6	3.5	3.4	1.8	0	8.7	2.1	18.6	0.6	0	21.4	
Unshifted	30	151	243	0	424	232	544	124	0	900	64	61	33	0	158	41	338	11	0	390	1872
% Unshifted	96.8	99.3	99.2	0	99.1	98.3	98.9	99.2	0	98.8	95.5	92.4	97.1	0	94.6	100	94.7	100	0	95.4	97.8
Bank 1	1	1	2	0	4	4	6	1	0	11	3	5	1	0	9	0	19	0	0	19	43
% Bank 1	3.2	0.7	0.8	0	0.9	1.7	1.1	0.8	0	1.2	4.5	7.6	2.9	0	5.4	0	5.3	0	0	4.6	2.2

	LOCUST RD From North					IRELAND RD From East					LOCUST RD From South					IRELAND RD From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	2	15	21	0	38	**24**	**55**	5	0	84	9	**10**	2	0	**21**	**6**	**37**	0	0	**43**	**186**
05:00 PM	3	15	**36**	0	54	18	39	9	0	66	5	7	**4**	0	16	3	33	**1**	0	37	173
05:15 PM	5	**24**	27	0	**56**	14	54	13	0	81	7	2	1	0	10	4	31	1	0	36	183
05:30 PM	**6**	17	17	0	40	21	51	**15**	0	**87**	**10**	6	3	0	19	3	31	1	0	35	181
Total Volume	16	71	101	0	188	77	199	42	0	318	31	25	10	0	66	16	132	3	0	151	723
% App. Total	8.5	37.8	53.7	0		24.2	62.6	13.2	0		47	37.9	15.2	0		10.6	87.4	2	0		
PHF	.667	.740	.701	.000	.839	.802	.905	.700	.000	.914	.775	.625	.625	.000	.786	.667	.892	.750	.000	.878	.972
Unshifted	16	71	101	0	188	75	196	42	0	313	31	25	10	0	66	16	127	3	0	146	713
% Unshifted																					
Bank 1	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	5	0	0	5	10
% Bank 1	0	0	0	0	0	2.6	1.5	0	0	1.6	0	0	0	0	0	0	3.8	0	0	3.3	1.4

Elkhart Site

Intersection Counts

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
T: (574) 236-4400
F: (574) 236-4471

File Name : SR 19 & US 20 (Westbound Ramps) AM
Site Code : 00000000
Start Date : 1/18/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 19 From North					US 20 From East					SR 19 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	15	54	0	0	69	16	1	10	0	27	0	43	18	0	61	0	0	0	0	0	157
06:15 AM	27	81	0	0	108	14	0	13	0	27	0	92	25	0	117	0	0	0	0	0	252
06:30 AM	36	93	0	0	129	43	1	11	0	55	0	119	35	0	154	0	0	0	0	0	338
06:45 AM	27	66	0	0	93	54	0	18	0	72	0	151	25	0	176	0	0	0	0	0	341
Total	105	294	0	0	399	127	2	52	0	181	0	405	103	0	508	0	0	0	0	0	1088
07:00 AM	39	85	0	0	124	33	0	19	0	52	0	110	40	0	150	0	0	0	0	0	326
07:15 AM	54	99	0	0	153	34	0	21	0	55	0	135	41	0	176	0	0	0	0	0	384
07:30 AM	43	96	0	0	139	54	0	20	7	81	0	165	77	0	242	0	0	0	0	0	462
07:45 AM	40	103	0	0	143	85	0	28	0	113	0	202	58	0	260	0	0	0	0	0	516
Total	176	383	0	0	559	206	0	88	7	301	0	612	216	0	828	0	0	0	0	0	1688
08:00 AM	42	89	0	0	131	46	0	20	0	66	0	165	54	0	219	0	0	0	0	0	416
08:15 AM	46	85	0	0	131	56	0	8	0	64	0	150	54	0	204	0	0	0	0	0	399
08:30 AM	50	76	0	0	126	46	0	14	0	60	0	97	44	0	141	0	0	0	0	0	327
08:45 AM	39	84	0	0	123	51	0	17	0	68	0	115	23	0	138	0	0	0	0	0	329
Total	177	334	0	0	511	199	0	59	0	258	0	527	175	0	702	0	0	0	0	0	1471
Grand Total	458	1011	0	0	1469	532	2	199	7	740	0	1544	494	0	2038	0	0	0	0	0	4247
Apprch %	31.2	68.8	0	0		71.9	0.3	26.9	0.9		0	75.8	24.2	0		0	0	0	0		
Total %	10.8	23.8	0	0	34.6	12.5	0	4.7	0.2	17.4	0	36.4	11.6	0	48	0	0	0	0	0	
Unshifted	383	808	0	0	1191	427	1	157	7	592	0	1390	460	0	1850	0	0	0	0	0	3633
% Unshifted	83.6	79.9	0	0	81.1	80.3	50	78.9	100	80	0	90	93.1	0	90.8	0	0	0	0	0	85.5
Bank 1	75	203	0	0	278	105	1	42	0	148	0	154	34	0	188	0	0	0	0	0	614
% Bank 1	16.4	20.1	0	0	18.9	19.7	50	21.1	0	20	0	10	6.9	0	9.2	0	0	0	0	0	14.5

	SR 19 From North					US 20 From East					SR 19 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	43	96	0	0	139	54	0	20	**7**	81	0	165	**77**	0	242	0	0	0	0	0	462
07:45 AM	40	**103**	0	0	**143**	**85**	0	**28**	0	**113**	0	**202**	58	0	**260**	0	0	0	0	0	**516**
08:00 AM	42	89	0	0	131	46	0	20	0	66	0	165	54	0	219	0	0	0	0	0	416
08:15 AM	**46**	85	0	0	131	56	0	8	0	64	0	150	54	0	204	0	0	0	0	0	399
Total Volume	171	373	0	0	544	241	0	76	7	324	0	682	243	0	925	0	0	0	0	0	1793
% App. Total	31.4	68.6	0	0		74.4	0	23.5	2.2		0	73.7	26.3	0		0	0	0	0		
PHF	.929	.905	.000	.000	.951	.709	.000	.679	.250	.717	.000	.844	.789	.000	.889	.000	.000	.000	.000	.000	.869
Unshifted	145	305	0	0	450	203	0	63	7	273	0	602	227	0	829	0	0	0	0	0	1552
% Unshifted																					
Bank 1	26	68	0	0	94	38	0	13	0	51	0	80	16	0	96	0	0	0	0	0	241
% Bank 1	15.2	18.2	0	0	17.3	15.8	0	17.1	0	15.7	0	11.7	6.6	0	10.4	0	0	0	0	0	13.4

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
T: (574) 236-4400
F: (574) 236-4471

File Name : SR 19 & US 20 (Westbound Ramps) PM
Site Code : 00000000
Start Date : 1/18/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 19 From North					US 20 From East					SR 19 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	83	134	0	0	217	48	0	31	0	79	0	112	51	0	163	0	0	0	0	0	459
03:15 PM	84	150	0	0	234	49	0	20	0	69	0	117	77	0	194	0	0	0	0	0	497
03:30 PM	89	139	0	0	228	43	0	19	0	62	0	107	64	0	171	0	0	0	0	0	461
03:45 PM	97	149	0	0	246	46	0	20	0	66	0	130	61	0	191	0	0	0	0	0	503
Total	353	572	0	0	925	186	0	90	0	276	0	466	253	0	719	0	0	0	0	0	1920
04:00 PM	80	160	0	0	240	48	0	34	0	82	0	113	60	0	173	0	0	0	0	0	495
04:15 PM	100	124	0	0	224	48	0	23	0	71	0	121	54	0	175	0	0	0	0	0	470
04:30 PM	87	113	0	0	200	44	0	31	0	75	0	131	63	0	194	0	0	0	0	0	469
04:45 PM	93	122	0	0	215	42	0	33	0	75	0	114	48	0	162	0	0	0	0	0	452
Total	360	519	0	0	879	182	0	121	0	303	0	479	225	0	704	0	0	0	0	0	1886
05:00 PM	110	147	0	0	257	37	0	26	0	63	0	112	51	0	163	0	0	0	0	0	483
05:15 PM	127	160	0	0	287	36	0	21	0	57	0	140	71	0	211	0	0	0	0	0	555
05:30 PM	80	111	0	0	191	54	0	30	0	84	0	137	65	0	202	0	0	0	0	0	477
05:45 PM	83	122	0	0	205	44	0	24	0	68	0	103	52	0	155	0	0	0	0	0	428
Total	400	540	0	0	940	171	0	101	0	272	0	492	239	0	731	0	0	0	0	0	1943
Grand Total	1113	1631	0	0	2744	539	0	312	0	851	0	1437	717	0	2154	0	0	0	0	0	5749
Apprch %	40.6	59.4	0	0		63.3	0	36.7	0		0	66.7	33.3	0		0	0	0	0		
Total %	19.4	28.4	0	0	47.7	9.4	0	5.4	0	14.8	0	25	12.5	0	37.5	0	0	0	0	0	
Unshifted	1055	1550	0	0	2605	462	0	284	0	746	0	1323	677	0	2000	0	0	0	0	0	5351
% Unshifted	94.8	95	0	0	94.9	85.7	0	91	0	87.7	0	92.1	94.4	0	92.9	0	0	0	0	0	93.1
Bank 1	58	81	0	0	139	77	0	28	0	105	0	114	40	0	154	0	0	0	0	0	398
% Bank 1	5.2	5	0	0	5.1	14.3	0	9	0	12.3	0	7.9	5.6	0	7.1	0	0	0	0	0	6.9

	SR 19 From North					US 20 From East					SR 19 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	93	122	0	0	215	42	0	**33**	0	75	0	114	48	0	162	0	0	0	0	0	452
05:00 PM	110	147	0	0	257	37	0	26	0	63	0	112	51	0	163	0	0	0	0	0	483
05:15 PM	**127**	**160**	0	0	**287**	36	0	21	0	57	0	**140**	**71**	0	**211**	0	0	0	0	0	**555**
05:30 PM	80	111	0	0	191	**54**	0	30	0	**84**	0	137	65	0	202	0	0	0	0	0	477
Total Volume	410	540	0	0	950	169	0	110	0	279	0	503	235	0	738	0	0	0	0	0	1967
% App. Total	43.2	56.8	0	0		60.6	0	39.4	0		0	68.2	31.8	0		0	0	0	0		
PHF	.807	.844	.000	.000	.828	.782	.000	.833	.000	.830	.000	.898	.827	.000	.874	.000	.000	.000	.000	.000	.886
Unshifted	388	524	0	0	912	147	0	103	0	250	0	467	223	0	690	0	0	0	0	0	1852
% Unshifted																					
Bank 1	22	16	0	0	38	22	0	7	0	29	0	36	12	0	48	0	0	0	0	0	115
% Bank 1	5.4	3.0	0	0	4.0	13.0	0	6.4	0	10.4	0	7.2	5.1	0	6.5	0	0	0	0	0	5.8

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
T: (574) 236-4400
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File Name : SR 19 & US 20 Bypass (Eastbound Ramps) AM
Site Code : 00000000
Start Date : 1/17/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 19 From North					US 20 From East					SR 19 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	51	29	0	80	0	0	0	0	0	16	52	0	0	68	17	0	30	0	47	195
06:15 AM	0	49	22	0	71	0	0	0	0	0	18	86	0	0	104	30	0	42	0	72	247
06:30 AM	0	71	39	0	110	0	0	0	0	0	28	95	0	0	123	30	0	67	0	97	330
06:45 AM	0	82	38	0	120	0	0	0	0	0	26	91	0	0	117	33	0	93	0	126	363
Total	0	253	128	0	381	0	0	0	0	0	88	324	0	0	412	110	0	232	0	342	1135
07:00 AM	0	76	39	0	115	0	0	0	0	0	15	114	0	0	129	41	0	61	0	102	346
07:15 AM	0	89	40	0	129	0	0	0	0	0	45	139	0	0	184	41	0	81	0	122	435
07:30 AM	0	101	45	0	146	0	0	0	0	0	33	175	0	0	208	40	0	94	0	134	488
07:45 AM	0	113	51	0	164	0	0	0	0	0	27	156	0	0	183	51	0	143	0	194	541
Total	0	379	175	0	554	0	0	0	0	0	120	584	0	0	704	173	0	379	0	552	1810
08:00 AM	0	90	29	0	119	0	0	0	0	0	20	123	0	0	143	35	0	105	0	140	402
08:15 AM	0	74	38	0	112	0	0	0	0	0	22	107	0	0	129	23	0	71	0	94	335
08:30 AM	0	85	42	0	127	0	0	0	0	0	18	122	0	0	140	23	0	53	0	76	343
08:45 AM	0	86	27	0	113	0	0	0	0	0	21	104	0	0	125	17	0	47	0	64	302
Total	0	335	136	0	471	0	0	0	0	0	81	456	0	0	537	98	0	276	0	374	1382
Grand Total	0	967	439	0	1406	0	0	0	0	0	289	1364	0	0	1653	381	0	887	0	1268	4327
Apprch %	0	68.8	31.2	0		0	0	0	0		17.5	82.5	0	0		30	0	70	0		
Total %	0	22.3	10.1	0	32.5	0	0	0	0	0	6.7	31.5	0	0	38.2	8.8	0	20.5	0	29.3	
Unshifted	0	801	325	0	1126	0	0	0	0	0	258	1287	0	0	1545	353	0	794	0	1147	3818
% Unshifted	0	82.8	74	0	80.1	0	0	0	0	0	89.3	94.4	0	0	93.5	92.7	0	89.5	0	90.5	88.2
Bank 1	0	166	114	0	280	0	0	0	0	0	31	77	0	0	108	28	0	93	0	121	509
% Bank 1	0	17.2	26	0	19.9	0	0	0	0	0	10.7	5.6	0	0	6.5	7.3	0	10.5	0	9.5	11.8

	SR 19 From North					US 20 From East					SR 19 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	89	40	0	129	0	0	0	0	0	**45**	139	0	0	184	41	0	81	0	122	435
07:30 AM	0	101	45	0	146	0	0	0	0	0	33	**175**	0	0	**208**	40	0	94	0	134	488
07:45 AM	0	**113**	**51**	0	**164**	0	0	0	0	0	27	156	0	0	183	**51**	0	**143**	0	**194**	**541**
08:00 AM	0	90	29	0	119	0	0	0	0	0	20	123	0	0	143	35	0	105	0	140	402
Total Volume	0	393	165	0	558	0	0	0	0	0	125	593	0	0	718	167	0	423	0	590	1866
% App. Total	0	70.4	29.6	0		0	0	0	0		17.4	82.6	0	0		28.3	0	71.7	0		
PHF	.000	.869	.809	.000	.851	.000	.000	.000	.000	.000	.694	.847	.000	.000	.863	.819	.000	.740	.000	.760	.862
Unshifted	0	337	132	0	469	0	0	0	0	0	107	558	0	0	665	152	0	391	0	543	1677
% Unshifted																					
Bank 1	0	56	33	0	89	0	0	0	0	0	18	35	0	0	53	15	0	32	0	47	189
% Bank 1	0	14.2	20.0	0	15.9	0	0	0	0	0	14.4	5.9	0	0	7.4	9.0	0	7.6	0	8.0	10.1

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
South Bend, IN 46615
T: (574) 236-4400
F: (574) 236-4471

File Name : SR 19 & US 20 Bypass (Eastbound Ramps) PM
Site Code : 00000000
Start Date : 1/17/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 19 From North					US 20 From East					SR 19 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	113	53	0	166	0	0	0	0	0	27	153	0	0	180	39	0	50	0	89	435
03:15 PM	0	97	64	0	161	0	0	0	0	0	24	143	0	0	167	33	0	58	0	91	419
03:30 PM	0	114	59	0	173	0	0	0	0	0	29	145	0	0	174	38	0	43	0	81	428
03:45 PM	0	113	41	0	154	0	0	0	0	0	27	123	0	0	150	45	0	40	0	85	389
Total	0	437	217	0	654	0	0	0	0	0	107	564	0	0	671	155	0	191	0	346	1671
04:00 PM	0	106	51	0	157	0	0	0	0	0	23	174	0	0	197	53	0	44	0	97	451
04:15 PM	0	109	57	0	166	0	0	0	0	0	29	182	0	0	211	45	0	56	0	101	478
04:30 PM	0	116	65	0	181	0	0	0	0	0	19	176	0	0	195	42	0	43	0	85	461
04:45 PM	0	141	41	0	182	0	0	0	0	0	22	134	0	0	156	43	0	47	0	90	428
Total	0	472	214	0	686	0	0	0	0	0	93	666	0	0	759	183	0	190	0	373	1818
05:00 PM	0	127	77	0	204	0	0	0	0	0	24	135	0	0	159	64	0	42	0	106	469
05:15 PM	0	135	51	0	186	0	0	0	0	0	26	145	0	0	171	59	0	44	0	103	460
05:30 PM	0	98	28	0	126	0	0	0	0	0	22	115	0	0	137	45	0	51	0	96	359
05:45 PM	0	98	40	0	138	0	0	0	0	0	20	124	0	0	144	61	0	52	0	113	395
Total	0	458	196	0	654	0	0	0	0	0	92	519	0	0	611	229	0	189	0	418	1683
Grand Total	0	1367	627	0	1994	0	0	0	0	0	292	1749	0	0	2041	567	0	570	0	1137	5172
Apprch %	0	68.6	31.4	0		0	0	0	0		14.3	85.7	0	0		49.9	0	50.1	0		
Total %	0	26.4	12.1	0	38.6	0	0	0	0	0	5.6	33.8	0	0	39.5	11	0	11	0	22	
Unshifted	0	1307	583	0	1890	0	0	0	0	0	280	1665	0	0	1945	546	0	508	0	1054	4889
% Unshifted	0	95.6	93	0	94.8	0	0	0	0	0	95.9	95.2	0	0	95.3	96.3	0	89.1	0	92.7	94.5
Bank 1	0	60	44	0	104	0	0	0	0	0	12	84	0	0	96	21	0	62	0	83	283
% Bank 1	0	4.4	7	0	5.2	0	0	0	0	0	4.1	4.8	0	0	4.7	3.7	0	10.9	0	7.3	5.5

	SR 19 From North					US 20 From East					SR 19 From South					US 20 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	109	57	0	166	0	0	0	0	0	**29**	**182**	0	0	**211**	45	0	**56**	0	101	**478**
04:30 PM	0	116	65	0	181	0	0	0	0	0	19	176	0	0	195	42	0	43	0	85	461
04:45 PM	0	**141**	41	0	182	0	0	0	0	0	22	134	0	0	156	43	0	47	0	90	428
05:00 PM	0	127	**77**	0	**204**	0	0	0	0	0	24	135	0	0	159	**64**	0	42	0	**106**	469
Total Volume	0	493	240	0	733	0	0	0	0	0	94	627	0	0	721	194	0	188	0	382	1836
% App. Total	0	67.3	32.7	0		0	0	0	0		13	87	0	0		50.8	0	49.2	0		
PHF	.000	.874	.779	.000	.898	.000	.000	.000	.000	.000	.810	.861	.000	.000	.854	.758	.000	.839	.000	.901	.960
Unshifted	0	475	226	0	701	0	0	0	0	0	91	596	0	0	687	187	0	169	0	356	1744
% Unshifted																					
Bank 1	0	18	14	0	32	0	0	0	0	0	3	31	0	0	34	7	0	19	0	26	92
% Bank 1	0	3.7	5.8	0	4.4	0	0	0	0	0	3.2	4.9	0	0	4.7	3.6	0	10.1	0	6.8	5.0

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : SR 19 & CR 26 AM
Site Code : 00000000
Start Date : 1/16/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 19 From North					CR 26 From East					SR 19 From South					CR 26 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	2	46	5	0	53	6	2	1	0	9	1	56	0	0	57	4	0	3	0	7	126
06:15 AM	2	65	9	0	76	14	5	2	0	21	0	98	1	0	99	7	2	7	0	16	212
06:30 AM	1	90	19	0	110	17	2	3	0	22	1	96	2	0	99	8	3	8	0	19	250
06:45 AM	4	70	16	0	90	11	3	3	0	17	3	95	3	0	101	3	3	10	0	16	224
Total	9	271	49	0	329	48	12	9	0	69	5	345	6	0	356	22	8	28	0	58	812
07:00 AM	6	99	17	0	122	27	2	1	0	30	2	105	3	0	110	7	5	13	0	25	287
07:15 AM	4	98	27	0	129	20	5	1	0	26	6	98	2	0	106	8	13	17	0	38	299
07:30 AM	5	129	19	0	153	34	2	7	0	43	0	127	2	0	129	10	7	20	0	37	362
07:45 AM	3	99	35	0	137	18	3	5	0	26	4	122	4	0	130	1	17	10	0	28	321
Total	18	425	98	0	541	99	12	14	0	125	12	452	11	0	475	26	42	60	0	128	1269
08:00 AM	1	83	18	0	102	31	6	4	0	41	2	98	2	0	102	3	6	3	0	12	257
08:15 AM	2	88	13	0	103	19	2	2	0	23	0	107	3	0	110	1	5	3	0	9	245
08:30 AM	5	51	17	0	73	15	3	3	0	21	6	106	1	0	113	4	8	6	0	18	225
08:45 AM	0	78	23	0	101	9	5	2	0	16	3	98	0	0	101	2	5	4	0	11	229
Total	8	300	71	0	379	74	16	11	0	101	11	409	6	0	426	10	24	16	0	50	956
Grand Total	35	996	218	0	1249	221	40	34	0	295	28	1206	23	0	1257	58	74	104	0	236	3037
Apprch %	2.8	79.7	17.5	0		74.9	13.6	11.5	0		2.2	95.9	1.8	0		24.6	31.4	44.1	0		
Total %	1.2	32.8	7.2	0	41.1	7.3	1.3	1.1	0	9.7	0.9	39.7	0.8	0	41.4	1.9	2.4	3.4	0	7.8	
Unshifted	35	883	199	0	1117	208	40	32	0	280	27	1114	23	0	1164	58	74	104	0	236	2797
% Unshifted	100	88.7	91.3	0	89.4	94.1	100	94.1	0	94.9	96.4	92.4	100	0	92.6	100	100	100	0	100	92.1
Bank 1	0	113	19	0	132	13	0	2	0	15	1	92	0	0	93	0	0	0	0	0	240
% Bank 1	0	11.3	8.7	0	10.6	5.9	0	5.9	0	5.1	3.6	7.6	0	0	7.4	0	0	0	0	0	7.9

	SR 19 From North					CR 26 From East					SR 19 From South					CR 26 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**6**	99	17	0	122	27	2	1	0	30	2	105	3	0	110	7	5	13	0	25	287
07:15 AM	4	98	27	0	129	20	**5**	1	0	26	**6**	98	2	0	106	8	13	17	0	**38**	299
07:30 AM	5	**129**	19	0	**153**	**34**	2	**7**	0	**43**	0	**127**	2	0	129	**10**	7	**20**	0	37	**362**
07:45 AM	3	99	**35**	0	137	18	3	5	0	26	4	122	**4**	0	**130**	1	**17**	10	0	28	321
Total Volume	18	425	98	0	541	99	12	14	0	125	12	452	11	0	475	26	42	60	0	128	1269
% App. Total	3.3	78.6	18.1	0		79.2	9.6	11.2	0		2.5	95.2	2.3	0		20.3	32.8	46.9	0		
PHF	.750	.824	.700	.000	.884	.728	.600	.500	.000	.727	.500	.890	.688	.000	.913	.650	.618	.750	.000	.842	.876
Unshifted	18	391	93	0	502	94	12	14	0	120	12	426	11	0	449	26	42	60	0	128	1199
% Unshifted																					
Bank 1	0	34	5	0	39	5	0	0	0	5	0	26	0	0	26	0	0	0	0	0	70
% Bank 1	0	8.0	5.1	0	7.2	5.1	0	0	0	4.0	0	5.8	0	0	5.5	0	0	0	0	0	5.5

DLZ Indiana, LLC

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Start Date : 1/16/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 19 From North					CR 26 From East					SR 19 From South					CR 26 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	6	113	36	0	155	26	11	1	0	38	8	160	2	0	170	3	4	3	0	10	373
03:15 PM	6	106	30	0	142	38	6	5	0	49	0	124	7	0	131	3	8	1	0	12	334
03:30 PM	11	96	31	0	138	39	9	9	0	57	8	121	6	0	135	3	5	5	0	13	343
03:45 PM	6	114	27	0	147	28	8	5	0	41	4	127	5	0	136	3	8	5	0	16	340
Total	29	429	124	0	582	131	34	20	0	185	20	532	20	0	572	12	25	14	0	51	1390
04:00 PM	4	143	25	0	172	24	8	12	0	44	4	138	5	0	147	4	6	7	0	17	380
04:15 PM	9	131	34	0	174	32	10	9	0	51	3	127	5	0	135	6	5	5	0	16	376
04:30 PM	8	139	35	0	182	29	4	7	0	40	2	130	5	0	137	1	4	6	0	11	370
04:45 PM	9	129	20	0	158	35	9	13	0	57	4	135	9	0	148	4	3	2	0	9	372
Total	30	542	114	0	686	120	31	41	0	192	13	530	24	0	567	15	18	20	0	53	1498
05:00 PM	12	153	32	0	197	18	12	5	0	35	3	120	4	0	127	3	12	2	0	17	376
05:15 PM	17	167	27	0	211	27	9	9	0	45	2	149	11	0	162	7	3	10	0	20	438
05:30 PM	6	127	41	0	174	21	6	5	0	32	6	107	8	0	121	3	4	6	0	13	340
05:45 PM	9	110	25	0	144	18	5	7	0	30	2	92	6	0	100	0	4	2	0	6	280
Total	44	557	125	0	726	84	32	26	0	142	13	468	29	0	510	13	23	20	0	56	1434
Grand Total	103	1528	363	0	1994	335	97	87	0	519	46	1530	73	0	1649	40	66	54	0	160	4322
Apprch %	5.2	76.6	18.2	0		64.5	18.7	16.8	0		2.8	92.8	4.4	0		25	41.2	33.8	0		
Total %	2.4	35.4	8.4	0	46.1	7.8	2.2	2	0	12	1.1	35.4	1.7	0	38.2	0.9	1.5	1.2	0	3.7	
Unshifted	102	1483	333	0	1918	294	97	85	0	476	44	1478	73	0	1595	40	66	54	0	160	4149
% Unshifted	99	97.1	91.7	0	96.2	87.8	100	97.7	0	91.7	95.7	96.6	100	0	96.7	100	100	100	0	100	96
Bank 1	1	45	30	0	76	41	0	2	0	43	2	52	0	0	54	0	0	0	0	0	173
% Bank 1	1	2.9	8.3	0	3.8	12.2	0	2.3	0	8.3	4.3	3.4	0	0	3.3	0	0	0	0	0	4

	SR 19 From North					CR 26 From East					SR 19 From South					CR 26 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	8	139	**35**	0	182	29	4	7	0	40	2	130	5	0	137	1	4	6	0	11	370
04:45 PM	9	129	20	0	158	**35**	9	**13**	0	**57**	**4**	135	9	0	148	4	3	2	0	9	372
05:00 PM	12	153	32	0	197	18	**12**	5	0	35	3	120	4	0	127	3	**12**	2	0	17	376
05:15 PM	**17**	**167**	27	0	**211**	27	9	9	0	45	2	**149**	**11**	0	**162**	**7**	3	**10**	0	**20**	**438**
Total Volume	46	588	114	0	748	109	34	34	0	177	11	534	29	0	574	15	22	20	0	57	1556
% App. Total	6.1	78.6	15.2	0		61.6	19.2	19.2	0		1.9	93	5.1	0		26.3	38.6	35.1	0		
PHF	.676	.880	.814	.000	.886	.779	.708	.654	.000	.776	.688	.896	.659	.000	.886	.536	.458	.500	.000	.713	.888
Unshifted	45	575	110	0	730	96	34	34	0	164	10	520	29	0	559	15	22	20	0	57	1510
% Unshifted																					
Bank 1	1	13	4	0	18	13	0	0	0	13	1	14	0	0	15	0	0	0	0	0	46
% Bank 1	2.2	2.2	3.5	0	2.4	11.9	0	0	0	7.3	9.1	2.6	0	0	2.6	0	0	0	0	0	3.0

DLZ Indiana, LLC

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Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 19 From North					CR 28 From East					SR 19 From South					CR 28 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	1	45	1	0	47	0	1	0	0	1	1	46	1	0	48	2	1	3	0	6	102
06:15 AM	1	53	2	0	56	5	1	0	0	6	0	78	0	0	78	5	0	6	0	11	151
06:30 AM	2	85	3	0	90	1	0	1	0	2	1	97	3	0	101	9	1	9	0	19	212
06:45 AM	2	92	4	0	98	1	1	1	0	3	0	90	1	0	91	4	6	1	0	11	203
Total	6	275	10	0	291	7	3	2	0	12	2	311	5	0	318	20	8	19	0	47	668
07:00 AM	1	73	5	0	79	2	1	1	0	4	0	91	1	0	92	4	2	3	1	10	185
07:15 AM	2	100	7	0	109	7	1	0	0	8	1	115	1	0	117	6	1	2	0	9	243
07:30 AM	1	128	4	0	133	4	2	1	0	7	1	140	2	0	143	13	4	3	0	20	303
07:45 AM	2	134	3	0	139	6	4	1	0	11	2	143	1	0	146	6	2	9	1	18	314
Total	6	435	19	0	460	19	8	3	0	30	4	489	5	0	498	29	9	17	2	57	1045
08:00 AM	1	91	1	0	93	5	1	1	0	7	3	98	1	0	102	3	4	4	0	11	213
08:15 AM	0	104	2	0	106	4	1	0	0	5	1	102	1	0	104	5	4	7	0	16	231
08:30 AM	2	60	0	0	62	7	2	0	0	9	0	98	0	0	98	4	1	1	0	6	175
08:45 AM	0	73	2	0	75	4	1	1	0	6	0	107	3	0	110	3	4	4	0	11	202
Total	3	328	5	0	336	20	5	2	0	27	4	405	5	0	414	15	13	16	0	44	821
Grand Total	15	1038	34	0	1087	46	16	7	0	69	10	1205	15	0	1230	64	30	52	2	148	2534
Apprch %	1.4	95.5	3.1	0		66.7	23.2	10.1	0		0.8	98	1.2	0		43.2	20.3	35.1	1.4		
Total %	0.6	41	1.3	0	42.9	1.8	0.6	0.3	0	2.7	0.4	47.6	0.6	0	48.5	2.5	1.2	2.1	0.1	5.8	
Unshifted	15	895	34	0	944	44	15	7	0	66	10	1084	14	0	1108	64	27	51	1	143	2261
% Unshifted	100	86.2	100	0	86.8	95.7	93.8	100	0	95.7	100	90	93.3	0	90.1	100	90	98.1	50	96.6	89.2
Bank 1	0	143	0	0	143	2	1	0	0	3	0	121	1	0	122	0	3	1	1	5	273
% Bank 1	0	13.8	0	0	13.2	4.3	6.2	0	0	4.3	0	10	6.7	0	9.9	0	10	1.9	50	3.4	10.8

	SR 19 From North					CR 28 From East					SR 19 From South					CR 28 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**2**	100	**7**	0	109	**7**	1	0	0	8	1	115	1	0	117	6	1	2	0	9	243
07:30 AM	1	128	4	0	133	4	2	**1**	0	7	1	140	**2**	0	143	**13**	**4**	3	0	**20**	303
07:45 AM	2	**134**	3	0	**139**	6	**4**	1	0	**11**	2	**143**	1	0	**146**	6	2	**9**	**1**	18	**314**
08:00 AM	1	91	1	0	93	5	1	1	0	7	**3**	98	1	0	102	3	4	4	0	11	213
Total Volume	6	453	15	0	474	22	8	3	0	33	7	496	5	0	508	28	11	18	1	58	1073
% App. Total	1.3	95.6	3.2	0		66.7	24.2	9.1	0		1.4	97.6	1	0		48.3	19	31	1.7		
PHF	.750	.845	.536	.000	.853	.786	.500	.750	.000	.750	.583	.867	.625	.000	.870	.538	.688	.500	.250	.725	.854
Unshifted	6	398	15	0	419	22	8	3	0	33	7	463	5	0	475	28	10	18	0	56	983
% Unshifted																					
Bank 1	0	55	0	0	55	0	0	0	0	0	0	33	0	0	33	0	1	0	1	2	90
% Bank 1	0	12.1	0	0	11.6	0	0	0	0	0	0	6.7	0	0	6.5	0	9.1	0	100	3.4	8.4

DLZ Indiana, LLC

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Page No : 1

Groups Printed- Unshifted - Bank 1

	SR 19 From North					CR 28 From East					SR 19 From South					CR 28 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:45 PM	4	121	3	0	128	3	6	0	0	9	2	126	4	0	132	0	3	1	0	4	273
Total	4	121	3	0	128	3	6	0	0	9	2	126	4	0	132	0	3	1	0	4	273
03:00 PM	3	103	6	0	112	4	2	0	0	6	0	162	11	0	173	0	5	6	0	11	302
03:15 PM	7	106	2	0	115	7	4	1	0	12	1	123	4	0	128	2	1	3	1	7	262
03:30 PM	1	106	5	0	112	7	3	0	0	10	1	134	3	0	138	4	2	0	0	6	266
03:45 PM	4	116	3	0	123	6	1	0	0	7	2	117	6	0	125	4	3	1	0	8	263
Total	15	431	16	0	462	24	10	1	0	35	4	536	24	0	564	10	11	10	1	32	1093
04:00 PM	5	145	2	0	152	6	2	0	0	8	1	159	16	0	176	4	1	2	0	7	343
04:15 PM	2	139	4	0	145	9	3	0	0	12	0	124	5	0	129	4	3	5	0	12	298
04:30 PM	3	139	5	0	147	7	0	1	0	8	0	142	4	0	146	2	5	1	0	8	309
04:45 PM	3	138	4	0	145	5	4	0	0	9	0	139	6	0	145	2	1	1	0	4	303
Total	13	561	15	0	589	27	9	1	0	37	1	564	31	0	596	12	10	9	0	31	1253
05:00 PM	2	140	14	0	156	8	1	1	0	10	0	138	7	0	145	5	3	1	0	9	320
05:15 PM	4	179	6	0	189	4	2	0	0	6	0	148	5	0	153	4	6	3	0	13	361
05:30 PM	8	117	6	0	131	8	2	2	0	12	0	113	4	0	117	3	3	5	0	11	271
Grand Total	46	1549	60	0	1655	74	30	5	0	109	7	1625	75	0	1707	34	36	29	1	100	3571
Apprch %	2.8	93.6	3.6	0		67.9	27.5	4.6	0		0.4	95.2	4.4	0		34	36	29	1		
Total %	1.3	43.4	1.7	0	46.3	2.1	0.8	0.1	0	3.1	0.2	45.5	2.1	0	47.8	1	1	0.8	0	2.8	
Unshifted	46	1476	60	0	1582	73	30	4	0	107	7	1545	75	0	1627	34	36	29	1	100	3416
% Unshifted	100	95.3	100	0	95.6	98.6	100	80	0	98.2	100	95.1	100	0	95.3	100	100	100	100	100	95.7
Bank 1	0	73	0	0	73	1	0	1	0	2	0	80	0	0	80	0	0	0	0	0	155
% Bank 1	0	4.7	0	0	4.4	1.4	0	20	0	1.8	0	4.9	0	0	4.7	0	0	0	0	0	4.3

	SR 19 From North					CR 28 From East					SR 19 From South					CR 28 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:45 PM to 05:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	3	139	5	0	147	7	0	**1**	0	8	0	142	4	0	146	2	5	1	0	8	309
04:45 PM	3	138	4	0	145	5	**4**	0	0	9	0	139	6	0	145	2	1	1	0	4	303
05:00 PM	2	140	**14**	0	156	**8**	1	1	0	**10**	0	138	**7**	0	145	**5**	3	1	0	9	320
05:15 PM	**4**	**179**	6	0	**189**	4	2	0	0	6	0	**148**	5	0	**153**	4	**6**	**3**	0	**13**	**361**
Total Volume	12	596	29	0	637	24	7	2	0	33	0	567	22	0	589	13	15	6	0	34	1293
% App. Total	1.9	93.6	4.6	0		72.7	21.2	6.1	0		0	96.3	3.7	0		38.2	44.1	17.6	0		
PHF	.750	.832	.518	.000	.843	.750	.438	.500	.000	.825	.000	.958	.786	.000	.962	.650	.625	.500	.000	.654	.895
Unshifted	12	572	29	0	613	23	7	2	0	32	0	539	22	0	561	13	15	6	0	34	1240
% Unshifted																					
Bank 1	0	24	0	0	24	1	0	0	0	1	0	28	0	0	28	0	0	0	0	0	53
% Bank 1	0	4.0	0	0	3.8	4.2	0	0	0	3.0	0	4.9	0	0	4.8	0	0	0	0	0	4.1

DLZ Indiana, LLC

2211 E. Jefferson Boulevard
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File Name : CR 7 & CR 28 PM
Site Code : 00000000
Start Date : 1/17/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	CR 7 From North					CR 28 From East					CR 7 From South					CR 28 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	0	9	2	0	11	2	7	0	0	9	0	20	0	0	20	0	7	1	0	8	48
03:15 PM	0	20	1	0	21	2	8	0	0	10	2	9	0	0	11	0	11	0	0	11	53
03:30 PM	0	11	1	0	12	1	4	0	0	5	1	10	0	0	11	0	4	0	0	4	32
03:45 PM	0	10	3	0	13	2	5	0	0	7	0	5	0	0	5	1	7	2	0	10	35
Total	0	50	7	0	57	7	24	0	0	31	3	44	0	0	47	1	29	3	0	33	168
04:00 PM	0	5	1	0	6	8	9	1	0	18	0	12	1	0	13	0	12	0	0	12	49
04:15 PM	0	20	1	0	21	3	16	1	0	20	1	9	0	0	10	0	11	0	0	11	62
04:30 PM	0	5	0	0	5	1	11	2	0	14	1	6	2	0	9	1	2	0	0	3	31
04:45 PM	1	6	0	0	7	3	11	0	0	14	0	12	0	0	12	1	6	0	0	7	40
Total	1	36	2	0	39	15	47	4	0	66	2	39	3	0	44	2	31	0	0	33	182
05:00 PM	1	16	1	0	18	5	10	0	0	15	0	5	0	0	5	1	7	0	0	8	46
05:15 PM	1	15	2	0	18	1	8	0	0	9	0	9	0	0	9	0	11	1	0	12	48
05:30 PM	0	12	1	0	13	7	9	0	0	16	0	5	0	0	5	0	8	0	0	8	42
05:45 PM	0	14	5	0	19	1	9	0	0	10	0	6	1	0	7	0	9	0	0	9	45
Total	2	57	9	0	68	14	36	0	0	50	0	25	1	0	26	1	35	1	0	37	181
Grand Total	3	143	18	0	164	36	107	4	0	147	5	108	4	0	117	4	95	4	0	103	531
Apprch %	1.8	87.2	11	0		24.5	72.8	2.7	0		4.3	92.3	3.4	0		3.9	92.2	3.9	0		
Total %	0.6	26.9	3.4	0	30.9	6.8	20.2	0.8	0	27.7	0.9	20.3	0.8	0	22	0.8	17.9	0.8	0	19.4	
Unshifted	3	139	17	0	159	33	106	4	0	143	4	105	4	0	113	3	93	3	0	99	514
% Unshifted	100	97.2	94.4	0	97	91.7	99.1	100	0	97.3	80	97.2	100	0	96.6	75	97.9	75	0	96.1	96.8
Bank 1	0	4	1	0	5	3	1	0	0	4	1	3	0	0	4	1	2	1	0	4	17
% Bank 1	0	2.8	5.6	0	3	8.3	0.9	0	0	2.7	20	2.8	0	0	3.4	25	2.1	25	0	3.9	3.2

	CR 7 From North					CR 28 From East					CR 7 From South					CR 28 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	5	**1**	0	6	**8**	9	1	0	18	0	**12**	1	0	**13**	0	**12**	0	0	**12**	49
04:15 PM	0	**20**	1	0	**21**	3	**16**	1	0	**20**	**1**	9	0	0	10	0	11	0	0	11	**62**
04:30 PM	0	5	0	0	5	1	11	**2**	0	14	1	6	**2**	0	9	**1**	2	0	0	3	31
04:45 PM	**1**	6	0	0	7	3	11	0	0	14	0	12	0	0	12	1	6	0	0	7	40
Total Volume	1	36	2	0	39	15	47	4	0	66	2	39	3	0	44	2	31	0	0	33	182
% App. Total	2.6	92.3	5.1	0		22.7	71.2	6.1	0		4.5	88.6	6.8	0		6.1	93.9	0	0		
PHF	.250	.450	.500	.000	.464	.469	.734	.500	.000	.825	.500	.813	.375	.000	.846	.500	.646	.000	.000	.688	.734
Unshifted	1	34	2	0	37	14	46	4	0	64	2	39	3	0	44	2	30	0	0	32	177
% Unshifted																					
Bank 1	0	2	0	0	2	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	5
% Bank 1	0	5.6	0	0	5.1	6.7	2.1	0	0	3.0	0	0	0	0	0	0	3.2	0	0	3.0	2.7

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Start Date : 1/16/2013
Page No : 1

Groups Printed- Unshifted - Bank 1

	CR 7 From North					CR 26 From East					CR 7 From South					CR 26 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	1	3	3	0	7	4	9	0	0	13	0	5	1	0	6	1	6	2	0	9	35
06:15 AM	2	7	1	0	10	1	15	0	0	16	0	8	1	0	9	0	5	3	0	8	43
06:30 AM	2	2	1	0	5	5	17	0	0	22	1	11	1	0	13	0	12	3	0	15	55
06:45 AM	1	1	3	0	5	7	16	0	0	23	1	9	3	0	13	1	12	13	0	26	67
Total	6	13	8	0	27	17	57	0	0	74	2	33	6	0	41	2	35	21	0	58	200
07:00 AM	2	3	4	0	9	1	22	0	0	23	0	10	1	0	11	1	21	5	0	27	70
07:15 AM	2	7	8	0	17	5	20	0	0	25	2	9	4	0	15	2	33	8	0	43	100
07:30 AM	9	7	15	0	31	8	32	1	0	41	0	16	1	0	17	4	30	4	0	38	127
07:45 AM	6	8	6	0	20	8	17	0	0	25	2	26	4	0	32	0	44	10	0	54	131
Total	19	25	33	0	77	22	91	1	0	114	4	61	10	0	75	7	128	27	0	162	428
08:00 AM	4	5	4	0	13	9	30	1	0	40	1	11	3	0	15	1	38	2	0	41	109
08:15 AM	2	4	7	0	13	9	28	1	0	38	0	8	0	0	8	0	13	3	0	16	75
08:30 AM	1	4	3	0	8	3	20	0	0	23	0	7	0	0	7	0	23	6	0	29	67
08:45 AM	2	3	3	0	8	2	12	0	0	14	0	9	1	0	10	2	24	5	0	31	63
Total	9	16	17	0	42	23	90	2	0	115	1	35	4	0	40	3	98	16	0	117	314
Grand Total	34	54	58	0	146	62	238	3	0	303	7	129	20	0	156	12	261	64	0	337	942
Apprch %	23.3	37	39.7	0		20.5	78.5	1	0		4.5	82.7	12.8	0		3.6	77.4	19	0		
Total %	3.6	5.7	6.2	0	15.5	6.6	25.3	0.3	0	32.2	0.7	13.7	2.1	0	16.6	1.3	27.7	6.8	0	35.8	
Unshifted	28	48	46	0	122	59	219	2	0	280	7	125	18	0	150	11	236	57	0	304	856
% Unshifted	82.4	88.9	79.3	0	83.6	95.2	92	66.7	0	92.4	100	96.9	90	0	96.2	91.7	90.4	89.1	0	90.2	90.9
Bank 1	6	6	12	0	24	3	19	1	0	23	0	4	2	0	6	1	25	7	0	33	86
% Bank 1	17.6	11.1	20.7	0	16.4	4.8	8	33.3	0	7.6	0	3.1	10	0	3.8	8.3	9.6	10.9	0	9.8	9.1

	CR 7 From North					CR 26 From East					CR 7 From South					CR 26 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	2	7	8	0	17	5	20	0	0	25	**2**	9	**4**	0	15	2	33	8	0	43	100
07:30 AM	**9**	7	**15**	0	**31**	8	**32**	**1**	0	**41**	0	16	1	0	17	**4**	30	4	0	38	127
07:45 AM	6	**8**	6	0	20	8	17	0	0	25	2	**26**	4	0	**32**	0	**44**	**10**	0	**54**	**131**
08:00 AM	4	5	4	0	13	**9**	30	1	0	40	1	11	3	0	15	1	38	2	0	41	109
Total Volume	21	27	33	0	81	30	99	2	0	131	5	62	12	0	79	7	145	24	0	176	467
% App. Total	25.9	33.3	40.7	0		22.9	75.6	1.5	0		6.3	78.5	15.2	0		4	82.4	13.6	0		
PHF	.583	.844	.550	.000	.653	.833	.773	.500	.000	.799	.625	.596	.750	.000	.617	.438	.824	.600	.000	.815	.891
Unshifted	16	25	23	0	64	28	92	1	0	121	5	61	11	0	77	6	135	21	0	162	424
% Unshifted																					
Bank 1	5	2	10	0	17	2	7	1	0	10	0	1	1	0	2	1	10	3	0	14	43
% Bank 1	23.8	7.4	30.3	0	21.0	6.7	7.1	50.0	0	7.6	0	1.6	8.3	0	2.5	14.3	6.9	12.5	0	8.0	9.2

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Page No : 1

Groups Printed- Unshifted - Bank 1

	CR 7 From North					CR 26 From East					CR 7 From South					CR 26 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:00 PM	4	9	7	0	20	18	28	0	0	46	1	11	4	0	16	0	40	5	0	45	127
03:15 PM	3	6	7	0	16	8	48	1	0	57	1	14	1	0	16	4	41	4	0	49	138
03:30 PM	8	17	9	0	34	11	45	0	0	56	1	14	3	0	18	1	34	3	0	38	146
03:45 PM	4	14	8	0	26	9	29	1	0	39	1	5	1	0	7	1	34	9	0	44	116
Total	19	46	31	0	96	46	150	2	0	198	4	44	9	0	57	6	149	21	0	176	527
04:00 PM	1	20	13	0	34	14	49	1	0	64	0	10	0	0	10	2	33	2	0	37	145
04:15 PM	9	12	15	0	36	15	52	0	0	67	1	12	5	0	18	2	35	7	0	44	165
04:30 PM	6	11	5	0	22	13	27	3	0	43	1	8	1	0	10	1	38	2	0	41	116
04:45 PM	8	19	4	0	31	12	51	0	0	63	3	11	2	0	16	1	30	3	0	34	144
Total	24	62	37	0	123	54	179	4	0	237	5	41	8	0	54	6	136	14	0	156	570
05:00 PM	9	8	11	0	28	12	35	1	0	48	0	7	1	0	8	2	26	4	0	32	116
05:15 PM	5	14	12	0	31	8	42	0	0	50	2	6	0	0	8	1	49	4	0	54	143
05:30 PM	2	16	8	0	26	9	25	2	0	36	0	10	4	0	14	3	31	5	0	39	115
05:45 PM	2	10	7	0	19	9	28	0	0	37	2	10	3	0	15	0	26	4	0	30	101
Total	18	48	38	0	104	38	130	3	0	171	4	33	8	0	45	6	132	17	0	155	475
Grand Total	61	156	106	0	323	138	459	9	0	606	13	118	25	0	156	18	417	52	0	487	1572
Apprch %	18.9	48.3	32.8	0		22.8	75.7	1.5	0		8.3	75.6	16	0		3.7	85.6	10.7	0		
Total %	3.9	9.9	6.7	0	20.5	8.8	29.2	0.6	0	38.5	0.8	7.5	1.6	0	9.9	1.1	26.5	3.3	0	31	
Unshifted	55	148	103	0	306	123	409	9	0	541	13	109	25	0	147	18	383	45	0	446	1440
% Unshifted	90.2	94.9	97.2	0	94.7	89.1	89.1	100	0	89.3	100	92.4	100	0	94.2	100	91.8	86.5	0	91.6	91.6
Bank 1	6	8	3	0	17	15	50	0	0	65	0	9	0	0	9	0	34	7	0	41	132
% Bank 1	9.8	5.1	2.8	0	5.3	10.9	10.9	0	0	10.7	0	7.6	0	0	5.8	0	8.2	13.5	0	8.4	8.4

	CR 7 From North					CR 26 From East					CR 7 From South					CR 26 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	8	17	9	0	34	11	45	0	0	56	**1**	**14**	3	0	**18**	1	34	3	0	38	146
03:45 PM	4	14	8	0	26	9	29	**1**	0	39	1	5	1	0	7	1	34	**9**	0	**44**	116
04:00 PM	1	**20**	13	0	34	14	49	1	0	64	0	10	0	0	10	**2**	33	2	0	37	145
04:15 PM	**9**	12	**15**	0	**36**	**15**	**52**	0	0	**67**	1	12	**5**	0	18	2	**35**	7	0	44	**165**
Total Volume	22	63	45	0	130	49	175	2	0	226	3	41	9	0	53	6	136	21	0	163	572
% App. Total	16.9	48.5	34.6	0		21.7	77.4	0.9	0		5.7	77.4	17	0		3.7	83.4	12.9	0		
PHF	.611	.788	.750	.000	.903	.817	.841	.500	.000	.843	.750	.732	.450	.000	.736	.750	.971	.583	.000	.926	.867
Unshifted	21	60	43	0	124	42	155	2	0	199	3	38	9	0	50	6	121	15	0	142	515
% Unshifted																					
Bank 1	1	3	2	0	6	7	20	0	0	27	0	3	0	0	3	0	15	6	0	21	57
% Bank 1	4.5	4.8	4.4	0	4.6	14.3	11.4	0	0	11.9	0	7.3	0	0	5.7	0	11.0	28.6	0	12.9	10.0

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Page No : 1

Groups Printed- Unshifted - Bank 1

	CR 7 From North					CR 28 From East					CR 7 From South					CR 28 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
06:00 AM	0	2	0	0	2	2	0	0	0	2	0	6	1	0	7	1	1	0	0	2	13
06:15 AM	0	3	0	0	3	1	0	0	0	1	0	2	0	0	2	0	2	0	0	2	8
06:30 AM	0	2	1	0	3	1	2	1	0	4	0	9	0	0	9	0	4	0	0	4	20
06:45 AM	0	1	0	0	1	3	4	0	0	7	0	14	0	0	14	0	6	0	0	6	28
Total	0	8	1	0	9	7	6	1	0	14	0	31	1	0	32	1	13	0	0	14	69
07:00 AM	0	5	0	0	5	0	10	0	0	10	1	7	0	0	8	0	5	0	0	5	28
07:15 AM	1	6	0	0	7	3	8	0	0	11	0	8	0	0	8	1	6	0	0	7	33
07:30 AM	0	5	2	0	7	2	13	1	0	16	0	12	0	0	12	0	10	1	0	11	46
07:45 AM	0	5	3	0	8	8	8	0	0	16	1	20	0	0	21	0	6	0	0	6	51
Total	1	21	5	0	27	13	39	1	0	53	2	47	0	0	49	1	27	1	0	29	158
08:00 AM	0	4	3	0	7	1	6	0	0	7	0	15	0	0	15	0	11	0	0	11	40
08:15 AM	1	8	0	0	9	3	3	0	0	6	0	4	0	0	4	0	7	0	0	7	26
08:30 AM	0	2	0	0	2	3	3	0	0	6	0	9	0	0	9	0	2	0	0	2	19
08:45 AM	1	7	2	0	10	1	9	0	0	10	0	6	0	0	6	0	5	1	0	6	32
Total	2	21	5	0	28	8	21	0	0	29	0	34	0	0	34	0	25	1	0	26	117
Grand Total	3	50	11	0	64	28	66	2	0	96	2	112	1	0	115	2	65	2	0	69	344
Apprch %	4.7	78.1	17.2	0		29.2	68.8	2.1	0		1.7	97.4	0.9	0		2.9	94.2	2.9	0		
Total %	0.9	14.5	3.2	0	18.6	8.1	19.2	0.6	0	27.9	0.6	32.6	0.3	0	33.4	0.6	18.9	0.6	0	20.1	
Unshifted	3	49	10	0	62	27	65	2	0	94	1	111	1	0	113	1	62	2	0	65	334
% Unshifted	100	98	90.9	0	96.9	96.4	98.5	100	0	97.9	50	99.1	100	0	98.3	50	95.4	100	0	94.2	97.1
Bank 1	0	1	1	0	2	1	1	0	0	2	1	1	0	0	2	1	3	0	0	4	10
% Bank 1	0	2	9.1	0	3.1	3.6	1.5	0	0	2.1	50	0.9	0	0	1.7	50	4.6	0	0	5.8	2.9

	CR 7 From North					CR 28 From East					CR 7 From South					CR 28 From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	**1**	**6**	0	0	7	3	8	0	0	11	0	8	0	0	8	**1**	6	0	0	7	33
07:30 AM	0	5	2	0	7	2	**13**	**1**	0	**16**	0	12	0	0	12	0	10	**1**	0	**11**	46
07:45 AM	0	5	**3**	0	**8**	**8**	8	0	0	16	**1**	**20**	0	0	**21**	0	6	0	0	6	**51**
08:00 AM	0	4	3	0	7	1	6	0	0	7	0	15	0	0	15	0	**11**	0	0	11	40
Total Volume	1	20	8	0	29	14	35	1	0	50	1	55	0	0	56	1	33	1	0	35	170
% App. Total	3.4	69	27.6	0		28	70	2	0		1.8	98.2	0	0		2.9	94.3	2.9	0		
PHF	.250	.833	.667	.000	.906	.438	.673	.250	.000	.781	.250	.688	.000	.000	.667	.250	.750	.250	.000	.795	.833
Unshifted	1	19	8	0	28	14	35	1	0	50	1	55	0	0	56	1	32	1	0	34	168
% Unshifted																					
Bank 1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
% Bank 1	0	5.0	0	0	3.4	0	0	0	0	0	0	0	0	0	0	0	3.0	0	0	2.9	1.2

Appendix F

Miscellaneous Calculations

Miscellaneous Calculations

DLZ

PHONE RECORD

Date: February 13, 2013 **Time:** approx 1:00pm CST
To: John-Paul Hopman, GIS/Network Modeling Manager
Organization: MACOG
Phone: (574) 674-8894

Project: Pokagon EIS
Re: Traffic Growth Rate for St. Joseph and Elkhart Counties

Account No.: 1364-2098-70

Inquired with Mr. Hopman about the general traffic growth rate used for the Pokagon sites in St. Joseph and Elkhart counties. He responded that generally a growth rate of 1% is used for both counties.

The foregoing constitutes our understanding of matters discussed and conclusions reached. Please review these items and advise the undersigned, in writing and within five (5) business days, of any errors or omissions.

DLZ INDIANA, LLC.

W. Michael Jabo
Division Manager

cc:

			Existing		With Growth - 2020		With Growth - 2035		Site Traffic - Alt A		Future - 2020 A		Future - 2035 A		Site Traffic - Alt C		Future - 2020 C		Future - 2035 C	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SR 23 & Ewing Ave	EB	Left	1	7	2	8	2	9	0	0	2	8	2	9	0	0	2	8	2	9
		Thru	34	54	37	58	42	66	0	0	37	58	42	66	0	0	37	58	42	66
		Right	0	0	0	0	0	0	4	0	4	0	4	0	0	3	0	3	0	3
	WB	Left	48	77	52	83	59	94	9	16	61	99	68	110	3	18	55	101	62	112
		Thru	63	44	68	48	77	54	0	0	68	48	77	54	0	0	68	48	77	54
		Right	9	11	10	12	11	14	0	0	10	12	11	14	0	0	10	12	11	14
	NEB	Left	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Thru	496	199	531	213	606	243	29	27	560	240	635	270	11	15	542	228	617	258
		Right	177	132	190	142	216	162	13	22	203	164	229	184	5	11	195	153	221	173
	SWB	Left	6	4	7	5	8	5	0	0	7	5	8	5	0	0	7	5	8	5
		Thru	115	340	124	364	141	415	13	34	137	398	154	449	3	19	127	383	144	434
		Right	14	18	15	20	18	22	0	0	15	20	18	22	0	0	15	20	18	22
Olive/Locust & SR 23	NEB	Left	123	103	132	111	151	126	35	39	167	150	186	165	7	15	139	126	158	141
		Thru	518	215	555	231	632	263	36	46	591	277	668	309	9	20	564	251	641	283
		Right	11	23	12	25	14	29	0	0	12	25	14	29	0	0	12	25	14	29
	SWB	Left	16	27	18	29	20	33	2	5	20	34	22	38	2	6	20	35	22	39
		Thru	123	313	132	335	151	382	24	25	156	360	175	407	4	34	136	369	155	416
		Right	5	4	6	5	7	5	0	0	6	5	7	5	0	0	6	5	7	5
	NB	Left	22	30	24	33	27	37	0	0	24	33	27	37	0	0	24	33	27	37
		Thru	88	100	95	107	108	122	6	2	101	109	114	124	8	3	103	110	116	125
		Right	64	27	69	29	79	33	6	3	75	32	85	36	7	4	76	33	86	37
	SB	Left	75	68	81	73	92	83	0	0	81	73	92	83	0	0	81	73	92	83
		Thru	73	106	79	114	90	130	1	3	80	117	91	133	1	4	80	118	91	134
		Right	71	109	76	117	87	133	12	31	88	148	99	164	2	15	78	132	89	148
Prarie Ave & SR 23	NEB	Thru	558	262	598	281	681	320	71	85	669	366	752	405	16	35	614	316	697	355
		Right	5	1	6	2	7	2	0	0	6	2	7	2	0	0	6	2	7	2
	SWB	Left	18	47	20	51	22	58	0	0	20	51	22	58	0	0	20	51	22	58
		Thru	173	443	186	475	212	541	36	76	222	551	248	617	6	49	192	524	218	590
	NB	Left	5	3	6	4	7	4	0	0	6	4	7	4	0	0	6	4	7	4
		Right	55	45	59	49	68	55	0	0	59	49	68	55	0	0	59	49	68	55
New Energy/Alt A Drive A/Alt C Drive B & SR 23	NEB	Left	19	4	21	5	24	5	0	0	21	5	24	5	0	1	21	6	24	6
		Thru	562	252	602	270	686	308	(5)	(9)	597	261	681	299	16	11	618	281	702	319
		Right							404	600	404	600	404	600	21	136	21	136	21	136
	SWB	Left							38	81	38	81	38	81	0	34	0	34	0	34
		Thru	163	416	175	446	199	508	(2)	(5)	173	441	197	503	6	15	181	461	205	523
		Right	3	4	4	5	4	5	0	0	4	5	4	5	0	0	4	5	4	5
	NB	Left							235	606	235	606	235	606	23	133	23	133	23	133
		Thru							0	7	0	7	0	7	0	3	0	3	0	3
		Right							75	93	75	93	75	93	0	24	0	24	0	24
	SB	Left	4	6	5	7	5	8	0	0	5	7	5	8	0	0	5	7	5	8
		Thru							0	6	0	6	0	6	0	2	0	2	0	2
		Right	4	25	5	27	5	31	0	0	5	27	5	31	0	1	5	28	5	32

			Existing		With Growth - 2020		With Growth - 2035		Site Traffic - Alt A		Future - 2020 A		Future - 2035 A		Site Traffic - Alt C		Future - 2020 C		Future - 2035 C	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SR 23 & WB Ramps	WB	Left	26	83	28	89	32	102	0	0	28	89	32	102	0	0	28	89	32	102
		Right	89	88	96	95	109	108	163	274	259	369	272	382	28	93	124	188	137	201
	NEB	Left	17	10	19	11	21	13	0	0	19	11	21	13	0	0	19	11	21	13
		Thru	492	167	527	179	601	204	235	317	762	496	836	521	44	114	571	293	645	318
	SWB	Thru	101	304	109	326	124	371	125	308	234	634	249	679	35	115	144	441	159	486
		Right	66	136	71	146	81	166	110	283	181	429	191	449	28	81	99	227	109	247
SR 23 & EB Ramps	EB	Left	25	92	27	99	31	113	182	265	209	364	213	378	30	81	57	180	61	194
		Right	3	8	4	9	4	10	0	0	4	9	4	10	0	0	4	9	4	10
	NEB	Thru	484	85	518	91	591	104	53	42	571	133	644	146	14	23	532	114	605	127
		Right	58	45	63	49	71	55	0	0	63	49	71	55	0	0	63	49	71	55
	SWB	Left	54	102	58	110	66	125	110	254	168	364	176	379	28	81	86	191	94	206
		Thru	73	285	79	305	90	348	15	64	94	369	105	412	7	34	86	339	97	382
SR 23 & Ireland Rd	WB	Left	59	187	64	201	72	229	0	0	64	201	72	229	0	0	64	201	72	229
		Right	1	2	2	3	2	3	0	0	2	3	2	3	0	0	2	3	2	3
	NEB	Thru	452	135	484	145	552	165	53	42	537	187	605	207	14	23	498	168	566	188
		Right	108	125	116	134	132	153	0	0	116	134	132	153	0	0	116	134	132	153
	SWB	Left	2	4	3	5	3	5	0	0	3	5	3	5	0	0	3	5	3	5
		Thru	84	308	90	330	103	376	15	64	105	394	118	440	7	34	97	364	110	410
SR 23 & Mayflower	NEB	Left	53	53	57	57	65	65	0	0	57	57	65	65	0	0	57	57	65	65
		Thru	316	111	339	119	386	136	31	13	370	132	417	149	9	7	348	126	395	143
		Right	6	3	7	4	8	4	0	0	7	4	8	4	0	0	7	4	8	4
	SWB	Left	3	52	4	56	4	64	3	8	7	64	7	72	2	5	6	61	6	69
		Thru	72	299	78	320	88	365	6	42	84	362	94	407	2	21	80	341	90	386
		Right	25	75	27	81	31	92	6	14	33	95	37	106	3	8	30	89	34	100
	NB	Left	1	10	2	11	2	13	0	0	2	11	2	13	0	0	2	11	2	13
		Thru	58	30	63	33	71	37	0	0	63	33	71	37	0	0	63	33	71	37
		Right	77	24	83	26	94	30	13	7	96	33	107	37	3	4	86	30	97	34
	SB	Left	57	67	61	72	70	82	9	22	70	94	79	104	2	12	63	84	72	94
		Thru	21	56	23	60	26	69	0	0	23	60	26	69	0	0	23	60	26	69
		Right	28	83	30	89	35	102	0	0	30	89	35	102	0	0	30	89	35	102
Locust & Ireland	EB	Left	27	3	29	4	33	4	0	0	29	4	33	4	0	0	29	4	33	4
		Thru	140	132	150	142	171	162	0	0	150	142	171	162	0	0	150	142	171	162
		Right	4	16	5	18	5	20	0	0	5	18	5	20	0	0	5	18	5	20
	WB	Left	7	42	8	45	9	52	0	0	8	45	9	52	0	0	8	45	9	52
		Thru	66	199	71	213	81	243	0	0	71	213	81	243	0	0	71	213	81	243
		Right	50	77	54	83	61	94	9	29	63	112	70	123	3	18	57	101	64	112
	NB	Left	10	10	11	11	13	13	0	0	11	11	13	13	0	0	11	11	13	13
		Thru	83	25	89	27	102	31	9	8	98	35	111	39	3	6	92	33	105	37
		Right	27	31	29	34	33	38	0	0	29	34	33	38	0	0	29	34	33	38
	SB	Left	70	101	75	109	86	124	13	27	88	136	99	151	5	13	80	122	91	137
		Thru	15	71	17	76	19	87	3	8	20	84	22	95	2	5	19	81	21	92
		Right	4	16	5	18	5	20	0	0	5	18	5	20	0	0	5	18	5	20

			Existing		With Growth - 2020		With Growth - 2035		Site Traffic - Alt A		Future - 2020 A		Future - 2035 A		Site Traffic - Alt C		Future - 2020 C		Future - 2035 C	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Alternative A - Drive B (Main Residential)	EB	Left							12	5	12	5	12	5						
		Thru							0	0	0	0	0	0						
		Right							1	3	1	3	1	3						
	NB	Left							3	7	3	7	3	7						
		Thru	167	131	179	141	204	160	0	0	179	141	204	160						
		Right							0	0	0	0	0	0						
	SB	Left							0	0	0	0	0	0						
		Thru	95	172	102	185	116	210	0	1	102	186	116	211						
		Right							3	7	3	7	3	7						
Alternative A - Drive C (Residential/ Casino)	EB	Left							0	0	0	0	0	0						
		Thru							0	0	0	0	0	0						
		Right							15	32	15	32	15	32						
	NB	Left							15	30	15	30	15	30						
		Thru	167	131	179	141	204	160	3	7	182	148	207	167						
		Right							0	0	0	0	0	0						
	SB	Left							0	0	0	0	0	0						
		Thru	95	172	102	185	116	210	1	3	103	188	117	213						
		Right							0	1	0	1	0	1						
Alternative C - Drive B (Gas Station)	NEB	Left													0	0	0	0	0	0
		Thru	601	279	643	299	733	341							(53)	55	590	354	680	396
		Right													125	141	125	141	125	141
	SWB	Left													22	41	22	41	22	41
		Thru	148	420	159	450	181	513							7	119	166	569	188	632
		Right													0	0	0	0	0	0
	NB	Left													94	133	94	133	94	133
		Thru													0	0	0	0	0	0
		Right													49	33	49	33	49	33
	SB	Left													0	0	0	0	0	0
		Thru													0	0	0	0	0	0
		Right													0	0	0	0	0	0
Alternative C - Drive C (Residental)	EB	Left													13	3	13	3	13	3
		Thru													0	0	0	0	0	0
		Right													2	2	2	2	2	2
	NB	Left													2	5	2	5	2	5
		Thru	167	131	179	141	204	160							2	4	181	145	206	164
		Right													0	0	0	0	0	0
	SB	Left													0	0	0	0	0	0
		Thru	95	172	102	185	116	210							0	2	102	187	116	212
		Right													3	8	3	8	3	8
Alternative C - Drive D (Residential)	EB	Left													2	4	2	4	2	4
		Thru													0	0	0	0	0	0
		Right													5	16	5	16	5	16
	NB	Left													4	19	4	19	4	19
		Thru	167	131	179	141	204	160							2	5	181	146	206	165
		Right													0	0	0	0	0	0
	SB	Left													0	0	0	0	0	0
		Thru	95	172	102	185	116	210							2	2	104	187	118	212
		Right													0	2	0	2	0	2

			Existing		With Growth - 2020		With Growth - 2035		Site Traffic		Future - 2020		Future - 2035	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
SR 19 & WB Ramps	WB	Left	92	132	99	142	113	162	121	161	220	303	234	323
		Right	241	169	258	181	295	207	0	0	258	181	295	207
	NB	Left	267	250	286	268	326	305	99	232	385	500	425	537
		Thru	748	534	801	572	913	652	58	81	859	653	971	733
	SB	Thru	466	645	499	691	569	787	68	138	567	829	637	925
		Right	171	410	183	439	209	501	0	0	183	439	209	501
SR 19 & EB Ramps	EB	Right	422	188	452	202	515	230	0	0	452	202	515	230
	WB	Right	173	211	186	226	212	258	103	179	289	405	315	437
	NB	Thru	593	596	635	638	724	728	157	313	792	951	881	1041
		Right	125	94	134	101	153	115	66	167	200	268	219	282
	SB	Left	165	240	177	257	202	293	0	0	177	257	202	293
		Thru	393	537	421	575	480	656	175	293	596	868	655	949
SR 19 & Co Rd 26	EB	Left	71	21	76	23	87	26	0	0	76	23	87	26
		Thru	42	22	45	24	52	27	1	1	46	25	53	28
		Right	26	15	28	17	32	19	15	5	43	22	47	24
	WB	Left	14	34	15	37	18	42	34	51	49	88	52	93
		Thru	12	34	13	37	15	42	0	1	13	38	15	43
		Right	116	113	125	121	142	138	33	47	158	168	175	185
	NB	Left	11	29	12	32	14	36	3	18	15	50	17	54
		Thru	531	556	569	595	648	679	190	453	759	1048	838	1132
		Right	12	11	13	12	15	14	28	50	41	62	43	64
	SB	Left	102	114	110	122	125	140	21	41	131	163	146	181
		Thru	445	588	477	630	543	718	273	439	750	1069	816	1157
		Right	19	46	21	50	24	57	0	0	21	50	24	57
SR 19 & Co Rd 28	EB	Left	18	6	20	7	22	8	8	6	28	13	30	14
		Thru	11	15	12	17	14	19	0	0	12	17	14	19
		Right	28	13	30	14	35	16	0	0	30	14	35	16
	WB	Left	3	2	4	3	4	3	0	0	4	3	4	3
		Thru	8	7	9	8	10	9	0	7	9	15	10	16
		Right	22	24	24	26	27	30	11	17	35	43	38	47
	NB	Left	5	22	6	24	7	27	0	0	6	24	7	27
		Thru	496	567	531	607	606	692	64	84	595	691	670	776
		Right	7	0	8	0	9	0	0	0	8	0	9	0
	SB	Left	15	29	17	32	19	36	4	12	21	44	23	48
		Thru	453	596	485	638	553	728	47	100	532	738	600	828
		Right	6	12	7	13	8	15	3	6	10	19	11	21

			Existing		With Growth - 2020		With Growth - 2035		Site Traffic		Future - 2020		Future - 2035	
			AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
Co Rd 7 & Co Rd 26	EB	Left	24	21	26	23	30	26	13	12	39	35	43	38
		Thru	145	136	156	146	177	166	15	31	171	177	192	197
		Right	7	6	8	7	9	8	0	2	8	9	9	10
	WB	Left	2	2	3	3	3	3	0	0	3	3	3	3
		Thru	99	175	106	188	121	214	16	30	122	218	137	244
		Right	30	49	33	53	37	60	0	0	33	53	37	60
	NB	Left	12	9	13	10	15	11	1	2	14	12	16	13
		Thru	62	41	67	44	76	51	0	0	67	44	76	51
		Right	5	3	6	4	7	4	0	0	6	4	7	4
	SB	Left	33	45	36	49	41	55	0	0	36	49	41	55
		Thru	27	63	29	68	33	77	0	0	29	68	33	77
		Right	21	22	23	24	26	27	12	18	35	42	38	45
Co Rd 7 & Co Rd 28	EB	Left	1	0	2	0	2	0	0	0	2	0	2	0
		Thru	33	31	36	34	41	38	2	6	38	40	43	44
		Right	1	2	2	3	2	3	2	6	4	9	4	9
	WB	Left	1	4	2	5	2	5	0	0	2	5	2	5
		Thru	35	47	38	51	43	58	4	11	42	62	47	69
		Right	14	15	15	17	18	19	0	4	15	21	18	23
	NB	Left	0	3	0	4	0	4	7	6	7	10	7	10
		Thru	55	39	59	42	68	48	1	0	60	42	69	48
		Right	1	2	2	3	2	3	0	0	2	3	2	3
	SB	Left	8	2	9	3	10	3	0	1	9	4	10	4
		Thru	20	46	22	50	25	57	0	1	22	51	25	58
		Right	1	1	2	2	2	2	0	0	2	2	2	2
Alternative B -Drive A (Casino)	WB	Left							48	116	48	116	48	116
		Thru							0	0	0	0	0	0
		Right							217	519	217	519	217	519
	NB	Left							0	0	0	0	0	0
		Thru	556	598	595	640	679	730	3	1	598	641	682	731
		Right							80	106	80	106	80	106
	SB	Left							315	491	315	491	315	491
		Thru	487	648	522	694	595	791	5	2	527	696	600	793
		Right							0	0	0	0	0	0
Alternative B -Drive B (Residential)	EB	Left							0	0	0	0	0	0
		Thru	164	155	176	166	201	190	22	41	198	207	223	231
		Right							28	51	28	51	28	51
	WB	Left							3	6	3	6	3	6
		Thru	129	202	139	217	158	247	26	44	165	261	184	291
		Right							0	0	0	0	0	0
	NB	Left							41	38	41	38	41	38
		Thru							0	0	0	0	0	0
		Right							6	4	6	4	6	4

Signal Warrant Analysis Summary
Pokagon Tribe Development EIS
2/25/2013

	No Build		Alternative A		Alternative B		Alternative C	
	2020	2035	2020	2035	2020	2035	2020	2035
SR 23 & WB US 20 Ramps	YES							
SR 23 & EB US 20 Ramps	NO	NO	YES				YES	
SR 23 & Ewing	YES							
SR 23 & Main Driveway			YES				YES	
SR 19 & Main Driveway					YES			
SR 23 & Driveway B							YES	
SR 19 & CR 28	NO	YES			YES			

Warrant Met from lower volume scenario
Not Applicable

Signal Warrant Analysis

Intersection Name	Eastbound Ramps & SR 23 - 2020 No Build
Major Street is	SR 23
Minor Street is	Eastbound Ramps
Number of lanes on Major Street	2
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	3
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 16 - Urban Minor Arterial
Minor Roadway Functional Classification: Type 11- Urban Interstate

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	105	336	84	630	53	504	42
Time										
12:00 AM	67	7								
1:00 AM	42	5								
2:00 AM	34	4								
3:00 AM	42	5								
4:00 AM	76	8								
5:00 AM	211	23								
6:00 AM	489	53								
7:00 AM	674	74								
8:00 AM	718	31								
9:00 AM	413	45								
10:00 AM	388	42								
11:00 AM	405	44								
12:00 PM	422	46								
1:00 PM	438	48								
2:00 PM	514	56								
3:00 PM	632	69								
4:00 PM	708	77								
5:00 PM	555	108								
6:00 PM	481	52								
7:00 PM	329	36								
8:00 PM	270	29								
9:00 PM	228	25								
10:00 PM	177	19								
11:00 PM	118	13								
Totals	8430	921								

Date of Vehicle count: 9/12/2012 Day(s) of week: Wednesday
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	4:00 PM	708	77
Eighth Highest Hour Minor	4:00 PM	708	77

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		No
A. Minimum Vehicle Volume	1 Hrs	
or B. Interruption of Traffic	3 Hrs	
or		
80% of Condition A	1 Hrs	
& 80% of Condition B	5 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		No
See 4C-2 Graph	0 Hrs	
Warrant # 3, Peak Hour (If evaluated)		No
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	108	
& c) Total Intersection Volume		
Min Volume Required	650	
Peak Volume	785	
OR		
See 4C-4 Graph	0 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	No	
OR 80% of Warrant # 1 Condition B Satisfied?	No	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

Revised 5/10/2006
Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	Westbound Ramps & SR 23 - 2020 No Build
Major Street is	SR 23
Minor Street is	Westbound Ramps
Number of lanes on Major Street	2
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	3
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 16 - Urban Minor Arterial
Minor Roadway Functional Classification: Type 11- Urban Interstate

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	105	336	84	630	53	504	42
Time										
12:00 AM	74	16								
1:00 AM	46	10								
2:00 AM	37	8								
3:00 AM	46	10								
4:00 AM	83	18								
5:00 AM	230	51								
6:00 AM	533	118								
7:00 AM	735	163								
8:00 AM	726	124								
9:00 AM	450	100								
10:00 AM	423	94								
11:00 AM	441	98								
12:00 PM	460	102								
1:00 PM	478	106								
2:00 PM	561	124								
3:00 PM	689	153								
4:00 PM	772	171								
5:00 PM	662	184								
6:00 PM	524	116								
7:00 PM	358	80								
8:00 PM	294	65								
9:00 PM	248	55								
10:00 PM	193	43								
11:00 PM	129	29								
Totals	9192	2040								

Date of Vehicle count: Day(s) of week:
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	6:00 PM	524	116
Eighth Highest Hour Minor	6:00 PM	524	116

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		**Yes**
A. Minimum Vehicle Volume	9 Hrs	
or B. Interruption of Traffic	5 Hrs	
or		
80% of Condition A	13 Hrs	
& 80% of Condition B	8 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	5 Hrs	
Warrant # 3, Peak Hour (If evaluated)		No
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	184	
& c) Total Intersection Volume		
Min Volume Required	650	
Peak Volume	943	
OR		
See 4C-4 Graph	0 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	Yes	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

Revised 5/10/2006
Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	SR 23 & Ewing - 2020 No Build
Major Street is	SR 23
Minor Street is	Ewing
Number of lanes on Major Street	1
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	35
85th percentile speed for the Major street	35
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	4
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

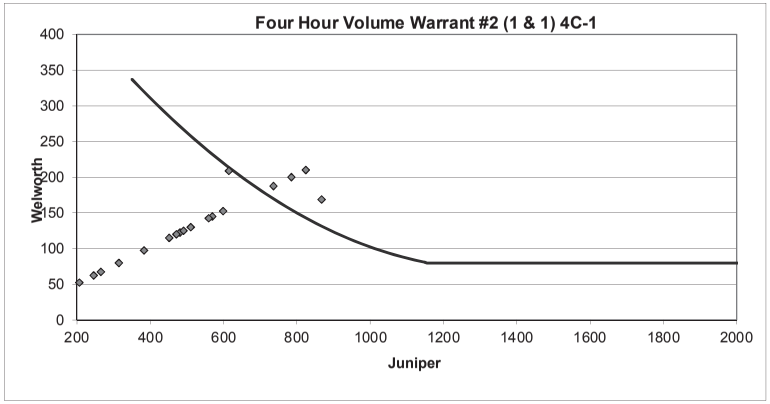
Major Roadway Functional Classification: Type 16 - Urban Minor Arterial
Minor Roadway Functional Classification: Type 16 - Urban Minor Arterial

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 100%		500	150	400	120	750	75	600	60
Time										
12:00 AM	78	20								
1:00 AM	49	13								
2:00 AM	39	10								
3:00 AM	49	13								
4:00 AM	88	23								
5:00 AM	245	63								
6:00 AM	569	145								
7:00 AM	785	200								
8:00 AM	867	169								
9:00 AM	481	123								
10:00 AM	451	115								
11:00 AM	471	120								
12:00 PM	490	125								
1:00 PM	510	130								
2:00 PM	598	153								
3:00 PM	736	188								
4:00 PM	824	210								
5:00 PM	614	209								
6:00 PM	559	143								
7:00 PM	383	98								
8:00 PM	314	80								
9:00 PM	265	68								
10:00 PM	206	53								
11:00 PM	137	35								
Totals	9808	2503								

Date of Vehicle count: Day(s) of week:
2 hours were used in the vehicle count and was statistically distributed
Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	6:00 PM	559	143
Eighth Highest Hour Minor	6:00 PM	559	143

Remarks:



Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		No
A. Minimum Vehicle Volume	6 Hrs	
or B. Interruption of Traffic	3 Hrs	
or		
80% of Condition A	12 Hrs	
& 80% of Condition B	5 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-1 Graph	4 Hrs	
Warrant # 3, Peak Hour (If evaluated)		No
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	210	
& c) Total Intersection Volume		
Min Volume Required	800	
Peak Volume	1036	
OR		
See 4C-3 Graph	0 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated)		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	Yes	
OR 80% of Warrant # 1 Condition B Satisfied?	No	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

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Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	Eastbound Ramps & SR 23 - 2035 No Build
Major Street is	SR 23
Minor Street is	Eastbound Ramps
Number of lanes on Major Street	2
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	3
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 14 - Urban Principal Arterial
Minor Roadway Functional Classification: Type 11- Urban Interstate

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	105	336	84	630	53	504	42
Time										
12:00 AM	77	8								
1:00 AM	48	5								
2:00 AM	38	4								
3:00 AM	48	5								
4:00 AM	86	9								
5:00 AM	240	26								
6:00 AM	557	61								
7:00 AM	768	84								
8:00 AM	818	35								
9:00 AM	471	51								
10:00 AM	442	48								
11:00 AM	461	50								
12:00 PM	480	52								
1:00 PM	499	54								
2:00 PM	586	64								
3:00 PM	720	78								
4:00 PM	807	88								
5:00 PM	632	123								
6:00 PM	547	60								
7:00 PM	375	41								
8:00 PM	307	33								
9:00 PM	259	28								
10:00 PM	202	22								
11:00 PM	134	15								
Totals	9603	1046								

Date of Vehicle count: Day(s) of week:
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	6:00 PM	547	60
Eighth Highest Hour Minor	1:00 PM	499	54

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		No
A. Minimum Vehicle Volume	1 Hrs	
or B. Interruption of Traffic	4 Hrs	
or		
80% of Condition A	2 Hrs	
& 80% of Condition B	7 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		No
See 4C-2 Graph	2 Hrs	
Warrant # 3, Peak Hour (If evaluated)		No
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	123	
& c) Total Intersection Volume		
Min Volume Required	650	
Peak Volume	895	
OR		
See 4C-4 Graph	0 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	No	
OR 80% of Warrant # 1 Condition B Satisfied?	No	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

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Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	SR 23 & Eastbound Ramps - 2020 Alternative A
Major Street is	SR 23
Minor Street is	Eastbound Ramps
Number of lanes on Major Street	2
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	3
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 16 - Urban Minor Arterial
Minor Roadway Functional Classification: Type 11- Urban Interstate

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	105	336	84	630	53	504	42
Time										
12:00 AM	96	31								
1:00 AM	60	20								
2:00 AM	48	16								
3:00 AM	60	20								
4:00 AM	108	35								
5:00 AM	301	98								
6:00 AM	698	227								
7:00 AM	962	313								
8:00 AM	896	213								
9:00 AM	589	192								
10:00 AM	553	180								
11:00 AM	577	188								
12:00 PM	601	196								
1:00 PM	625	204								
2:00 PM	734	239								
3:00 PM	902	294								
4:00 PM	1010	329								
5:00 PM	920	378								
6:00 PM	686	223								
7:00 PM	469	153								
8:00 PM	385	125								
9:00 PM	325	106								
10:00 PM	253	82								
11:00 PM	168	55								
Totals	12026	3914								

Date of Vehicle count: 9/12/2012 Day(s) of week: Wednesday
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	6:00 PM	686	223
Eighth Highest Hour Minor	8:00 AM	896	213

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		**Yes**
A. Minimum Vehicle Volume	14 Hrs	
or B. Interruption of Traffic	8 Hrs	
or		
80% of Condition A	15 Hrs	
& 80% of Condition B	13 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	13 Hrs	
Warrant # 3, Peak Hour (If evaluated)		**Yes**
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	378	
& c) Total Intersection Volume		
Min Volume Required	650	
Peak Volume	1339	
OR		
See 4C-4 Graph	8 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	Yes	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

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Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	SR 23 & Driveway A - 2020 Alternative A
Major Street is	SR 23
Minor Street is	Driveway A
Number of lanes on Major Street	2
Number of lanes on Minor Street	2
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	4
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 16 - Urban Minor Arterial
Minor Roadway Functional Classification: Type 19 - Urban Local

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	140	336	112	630	70	504	56
Time										
12:00 AM	139	54								
1:00 AM	87	34								
2:00 AM	69	27								
3:00 AM	87	34								
4:00 AM	156	61								
5:00 AM	434	170								
6:00 AM	1006	394								
7:00 AM	1388	544								
8:00 AM	1237	310								
9:00 AM	850	333								
10:00 AM	798	313								
11:00 AM	833	326								
12:00 PM	867	340								
1:00 PM	902	354								
2:00 PM	1058	415								
3:00 PM	1301	510								
4:00 PM	1457	571								
5:00 PM	1382	717								
6:00 PM	989	388								
7:00 PM	676	265								
8:00 PM	555	218								
9:00 PM	468	184								
10:00 PM	364	143								
11:00 PM	243	95								
Totals	17344	6801								

Date of Vehicle count: 9/12/2012 Day(s) of week: Wednesday
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	6:00 PM	989	388
Eighth Highest Hour Minor	1:00 PM	902	354

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		**Yes**
A. Minimum Vehicle Volume	17 Hrs	
or B. Interruption of Traffic	14 Hrs	
or		
80% of Condition A	18 Hrs	
& 80% of Condition B	15 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	15 Hrs	
Warrant # 3, Peak Hour (If evaluated)		**Yes**
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	150	
Peak Volume	717	
& c) Total Intersection Volume		
Min Volume Required	800	
Peak Volume	2099	
OR		
See 4C-4 Graph	14 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	Yes	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

Revised 5/10/2006
Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	SR 23 & Eastbound Ramps - 2020 Alternative C
Major Street is	SR 23
Minor Street is	Eastbound Ramps
Number of lanes on Major Street	2
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	3
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 16 - Urban Minor Arterial
Minor Roadway Functional Classification: Type 11- Urban Interstate

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	105	336	84	630	53	504	42
Time										
12:00 AM	96	22								
1:00 AM	60	14								
2:00 AM	48	11								
3:00 AM	60	14								
4:00 AM	108	25								
5:00 AM	300	70								
6:00 AM	695	163								
7:00 AM	959	225								
8:00 AM	833	152								
9:00 AM	587	138								
10:00 AM	551	129								
11:00 AM	575	135								
12:00 PM	599	140								
1:00 PM	623	146								
2:00 PM	731	171								
3:00 PM	899	211								
4:00 PM	1007	236								
5:00 PM	977	272								
6:00 PM	683	160								
7:00 PM	467	110								
8:00 PM	384	90								
9:00 PM	324	76								
10:00 PM	252	59								
11:00 PM	168	39								
Totals	11987	2808								

Date of Vehicle count: Day(s) of week:
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	6:00 PM	683	160
Eighth Highest Hour Minor	8:00 AM	833	152

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		**Yes**
A. Minimum Vehicle Volume	14 Hrs	
or B. Interruption of Traffic	8 Hrs	
or		
80% of Condition A	15 Hrs	
& 80% of Condition B	13 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	11 Hrs	
Warrant # 3, Peak Hour (If evaluated)		**Yes**
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	272	
& c) Total Intersection Volume		
Min Volume Required	650	
Peak Volume	1249	
OR		
See 4C-4 Graph	4 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	Yes	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

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Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	SR 23 & Driveway A - 2020 Alternative C
Major Street is	SR 23
Minor Street is	Driveway A
Number of lanes on Major Street	2
Number of lanes on Minor Street	2
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	4
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 16 - Urban Minor Arterial
Minor Roadway Functional Classification: Type 19 - Urban Local

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	140	336	112	630	70	504	56
Time										
12:00 AM	93	10								
1:00 AM	58	6								
2:00 AM	47	5								
3:00 AM	58	6								
4:00 AM	105	12								
5:00 AM	291	32								
6:00 AM	675	75								
7:00 AM	931	103								
8:00 AM	845	23								
9:00 AM	570	63								
10:00 AM	535	59								
11:00 AM	559	62								
12:00 PM	582	64								
1:00 PM	605	67								
2:00 PM	710	78								
3:00 PM	873	96								
4:00 PM	977	108								
5:00 PM	912	171								
6:00 PM	663	73								
7:00 PM	454	50								
8:00 PM	372	41								
9:00 PM	314	35								
10:00 PM	244	27								
11:00 PM	163	18								
Totals	11636	1285								

Date of Vehicle count: Day(s) of week:
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	6:00 PM	663	73
Eighth Highest Hour Minor	1:00 PM	605	67

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		No
A. Minimum Vehicle Volume	1 Hrs	
or B. Interruption of Traffic	7 Hrs	
or		
80% of Condition A	1 Hrs	
& 80% of Condition B	12 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	4 Hrs	
Warrant # 3, Peak Hour (If evaluated)		**Yes**
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	150	
Peak Volume	171	
& c) Total Intersection Volume		
Min Volume Required	800	
Peak Volume	1085	
OR		
See 4C-4 Graph	1 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	No	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

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Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	SR 23 & Driveway B - 2020 Alternative C
Major Street is	SR 23
Minor Street is	Driveway B
Number of lanes on Major Street	2
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	3
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 16 - Urban Minor Arterial
Minor Roadway Functional Classification: Type 19 - Urban Local

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	105	336	84	630	53	504	42
Time										
12:00 AM	106	16								
1:00 AM	66	10								
2:00 AM	53	8								
3:00 AM	66	10								
4:00 AM	120	18								
5:00 AM	332	51								
6:00 AM	771	119								
7:00 AM	1064	164								
8:00 AM	903	143								
9:00 AM	652	100								
10:00 AM	612	94								
11:00 AM	638	98								
12:00 PM	665	102								
1:00 PM	691	106								
2:00 PM	811	125								
3:00 PM	997	153								
4:00 PM	1117	172								
5:00 PM	1105	166								
6:00 PM	758	117								
7:00 PM	519	80								
8:00 PM	426	65								
9:00 PM	359	55								
10:00 PM	279	43								
11:00 PM	186	29								
Totals	13298	2046								

Date of Vehicle count: Day(s) of week:
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: Day(s) of week:
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	6:00 PM	758	117
Eighth Highest Hour Minor	6:00 PM	758	117

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		**Yes**
A. Minimum Vehicle Volume	9 Hrs	
or B. Interruption of Traffic	12 Hrs	
or		
80% of Condition A	13 Hrs	
& 80% of Condition B	14 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	9 Hrs	
Warrant # 3, Peak Hour (If evaluated)		**Yes**
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	172	
& c) Total Intersection Volume		
Min Volume Required	650	
Peak Volume	1289	
OR		
See 4C-4 Graph	5 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	Yes	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

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Signal Warrant Analysis

Intersection Name	SR 19 & CR 28 - No Build 2020
Major Street is	SR 19
Minor Street is	CR 28
Number of lanes on Major Street	1
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	55
85th percentile speed for the Major street	55
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	4
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 2 - Rural Principal Arterial
Minor Roadway Functional Classification: Type 9 - Rural Local

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		350	105	280	84	525	53	420	42
Time										
12:00 AM	163	6								
1:00 AM	109	4								
2:00 AM	109	3								
3:00 AM	127	4								
4:00 AM	235	7								
5:00 AM	525	19								
6:00 AM	995	44								
7:00 AM	1176	61								
8:00 AM	1057	62								
9:00 AM	923	37								
10:00 AM	941	35								
11:00 AM	995	37								
12:00 PM	1032	38								
1:00 PM	1050	40								
2:00 PM	1158	47								
3:00 PM	1376	57								
4:00 PM	1448	64								
5:00 PM	1314	38								
6:00 PM	977	44								
7:00 PM	706	30								
8:00 PM	597	24								
9:00 PM	489	21								
10:00 PM	362	16								
11:00 PM	253	11								
Totals	18117	748								

Date of Vehicle count: _____ Day(s) of week: _____
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: _____ Day(s) of week: _____
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	12:00 PM	1032	38
Eighth Highest Hour Minor	1:00 PM	1050	40

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		No
A. Minimum Vehicle Volume	0 Hrs	
or B. Interruption of Traffic	4 Hrs	
or		
80% of Condition A	0 Hrs	
& 80% of Condition B	7 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		No
See 4C-2 Graph	3 Hrs	
Warrant # 3, Peak Hour (If evaluated)		No
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	64	
& c) Total Intersection Volume		
Min Volume Required	800	
Peak Volume	1512	
OR		
See 4C-4 Graph	0 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	No	
OR 80% of Warrant # 1 Condition B Satisfied?	No	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

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Signal Warrant Analysis

Intersection Name	SR 19 & CR 28 - 2035 No Build
Major Street is	SR 19
Minor Street is	CR 28
Number of lanes on Major Street	1
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	55
85th percentile speed for the Major street	55
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	4
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 2 - Rural Principal Arterial
Minor Roadway Functional Classification: Type 9 - Rural Local

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		350	105	280	84	525	53	420	42
Time										
12:00 AM	186	7								
1:00 AM	124	4								
2:00 AM	124	3								
3:00 AM	144	4								
4:00 AM	268	8								
5:00 AM	598	22								
6:00 AM	1135	50								
7:00 AM	1341	70								
8:00 AM	1205	71								
9:00 AM	1052	43								
10:00 AM	1073	40								
11:00 AM	1135	42								
12:00 PM	1176	44								
1:00 PM	1197	45								
2:00 PM	1321	53								
3:00 PM	1568	65								
4:00 PM	1651	73								
5:00 PM	1498	43								
6:00 PM	1114	50								
7:00 PM	805	34								
8:00 PM	681	28								
9:00 PM	557	23								
10:00 PM	413	18								
11:00 PM	289	12								
Totals	20654	853								

Date of Vehicle count: _____ Day(s) of week: _____
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: _____ Day(s) of week: _____
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	12:00 PM	1176	44
Eighth Highest Hour Minor	1:00 PM	1197	45

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		No
A. Minimum Vehicle Volume	0 Hrs	
or B. Interruption of Traffic	5 Hrs	
or		
80% of Condition A	0 Hrs	
& 80% of Condition B	11 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	4 Hrs	
Warrant # 3, Peak Hour (If evaluated)		No
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	73	
& c) Total Intersection Volume		
Min Volume Required	800	
Peak Volume	1724	
OR		
See 4C-4 Graph	0 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	No	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

Revised 5/10/2006
Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	SR 19 & CR 28 - Alternative B 2020
Major Street is	SR 19
Minor Street is	CR 28
Number of lanes on Major Street	1
Number of lanes on Minor Street	1
Major Street runs North-South	
Speed limit for the Major street	55
85th percentile speed for the Major street	55
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	4
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 2 - Rural Principal Arterial
Minor Roadway Functional Classification: Type 9 - Rural Local

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		350	105	280	84	525	53	420	42
Time										
12:00 AM	185	8								
1:00 AM	123	5								
2:00 AM	123	4								
3:00 AM	144	5								
4:00 AM	267	9								
5:00 AM	596	24								
6:00 AM	1131	55								
7:00 AM	1337	76								
8:00 AM	1178	70								
9:00 AM	1049	46								
10:00 AM	1069	44								
11:00 AM	1131	45								
12:00 PM	1172	47								
1:00 PM	1193	49								
2:00 PM	1316	58								
3:00 PM	1563	71								
4:00 PM	1645	80								
5:00 PM	1516	54								
6:00 PM	1111	54								
7:00 PM	802	37								
8:00 PM	679	30								
9:00 PM	555	26								
10:00 PM	411	20								
11:00 PM	288	13								
Totals	20585	928								

Date of Vehicle count: _____ Day(s) of week: _____
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: _____ Day(s) of week: _____
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	12:00 PM	1172	47
Eighth Highest Hour Minor	6:00 PM	1111	54

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		**Yes**
A. Minimum Vehicle Volume	0 Hrs	
or B. Interruption of Traffic	8 Hrs	
or		
80% of Condition A	0 Hrs	
& 80% of Condition B	13 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	4 Hrs	
Warrant # 3, Peak Hour (If evaluated)		**Yes**
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	100	
Peak Volume	80	
& c) Total Intersection Volume		
Min Volume Required	800	
Peak Volume	1725	
OR		
See 4C-4 Graph	2 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	No	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

Revised 5/10/2006
Printed 2/28/2013

Signal Warrant Analysis

Intersection Name	SR 19 & Driveway A - 2020 Alternative B
Major Street is	SR 19 & Driveway A
Minor Street is	Driveway A
Number of lanes on Major Street	2
Number of lanes on Minor Street	2
Major Street runs North-South	
Speed limit for the Major street	45
85th percentile speed for the Major street	45
Is the area isolated or population below 10,000 people	N
Number of approaches to Intersection	3
Right Turn Discount East Approach	0
Right Turn Discount West Approach	0

Major Roadway Functional Classification: Type 2 - Rural Principal Arterial
Minor Roadway Functional Classification: Type 9 - Rural Local

			Warrant #1 Condition A				Warrant #1 Condition B			
			100%		80%		100%		80%	
	Major	Minor	Major	Minor	Major	Minor	Major	Minor	Major	Minor
Count to Use	Required at 70%		420	140	336	112	630	70	504	56
Time										
12:00 AM	234	55								
1:00 AM	156	34								
2:00 AM	156	27								
3:00 AM	182	34								
4:00 AM	338	62								
5:00 AM	754	172								
6:00 AM	1430	398								
7:00 AM	1690	550								
8:00 AM	1502	265								
9:00 AM	1326	337								
10:00 AM	1352	316								
11:00 AM	1430	330								
12:00 PM	1482	344								
1:00 PM	1508	357								
2:00 PM	1664	419								
3:00 PM	1977	515								
4:00 PM	2081	577								
5:00 PM	1905	635								
6:00 PM	1404	392								
7:00 PM	1014	268								
8:00 PM	858	220								
9:00 PM	702	185								
10:00 PM	520	144								
11:00 PM	364	96								
Totals	26034	6733								

Date of Vehicle count: _____ Day(s) of week: _____
2 hours were used in the vehicle count and was statistically distributed

Date of Pedestrian count: _____ Day(s) of week: _____
0 Hours were used in the pedestrian count

	Hour	Major	Minor
Eighth Highest Hour Major	12:00 PM	1482	344
Eighth Highest Hour Minor	1:00 PM	1508	357

Remarks:

Summary of Warrants Met

		Met?
Warrant # 1, Eight-Hour Vehicular Volume		**Yes**
A. Minimum Vehicle Volume	18 Hrs	
or B. Interruption of Traffic	17 Hrs	
or		
80% of Condition A	18 Hrs	
& 80% of Condition B	18 Hrs	
Warrant # 2, Four-Hour Vehicular Volume		**Yes**
See 4C-2 Graph	17 Hrs	
Warrant # 3, Peak Hour (If evaluated)		**Yes**
Does this intersection exhibit unusual circumstances?	Yes	
& a) Total Vehicle Delay		
Max Delay	Hrs	
Critical Delay	Hrs	
& b) Minor Street Volume		
Min Volume Required	150	
Peak Volume	635	
& c) Total Intersection Volume		
Min Volume Required	650	
Peak Volume	2658	
OR		
See 4C-4 Graph	15 Hrs	
Warrant # 4, Pedestrian Volume (If Evaluated)		N/A
Percent of Pedestrian Volume to use	100	
Time Studied (Hrs)		
Roadway Width (Ft)		
Group Size (People)		
Pedestrian Speed (ft/sec)	3.5	
Critical Gap (sec)	1.00	
Study Time Period (min)	0	
Pedestrian Volume above 100	0 Hrs	
OR Pedestrian Volume above 190	0 Hrs	
& Number of Sufficient Gaps	N/A	
& Nearest Signal Distance		
OR Will a Signal Disrupt Progressive Traffic Flow?		
Warrant # 5, School Crossing (If Evaluated)		N/A
Walk Smart Crosswalk? (Columbus)		
& Were less restrictive measures tried?		
& At least 20 children crossing per period?		
& Nearest Signal Distance		
& Are there Sufficient Gaps in Warrant # 4?	N/A	
Warrant # 6, Coordinated Signal System (If Evaluated)		N/A
Is Major Street One Way?		
Nearest Signal Distance (ft)		
Time Space Diagram Shows the Intersection can be Implemented into a System? (Attached)		
Warrant # 7, Crash Experience (If Evaluated		N/A
Were less restrictive measures tried?		
& Number of Accidents/Year that Could be Corrected by a Signal?		
& 80% of Warrant # 1 Condition A satisfied?	Yes	
OR 80% of Warrant # 1 Condition B Satisfied?	Yes	
OR 80% of Warrant # 4 Satisfied?	N/A	
Warrant # 8, Roadway Network (If Evaluated)		N/A
Are all Streets Major Routes?		
& Number of Hours Vehicular Volume is Higher than 1000 During the week Projected or Present	N/A Hrs	
& Based on a Five Year Study will the Intersection meet at least one of the Following Warrants: 1,2,8,9, or 11?		
OR		
Number of Hours Vehicular Volume is Higher than 1000 on Saturday and or Sunday	0 Hrs	

Revised 5/10/2006
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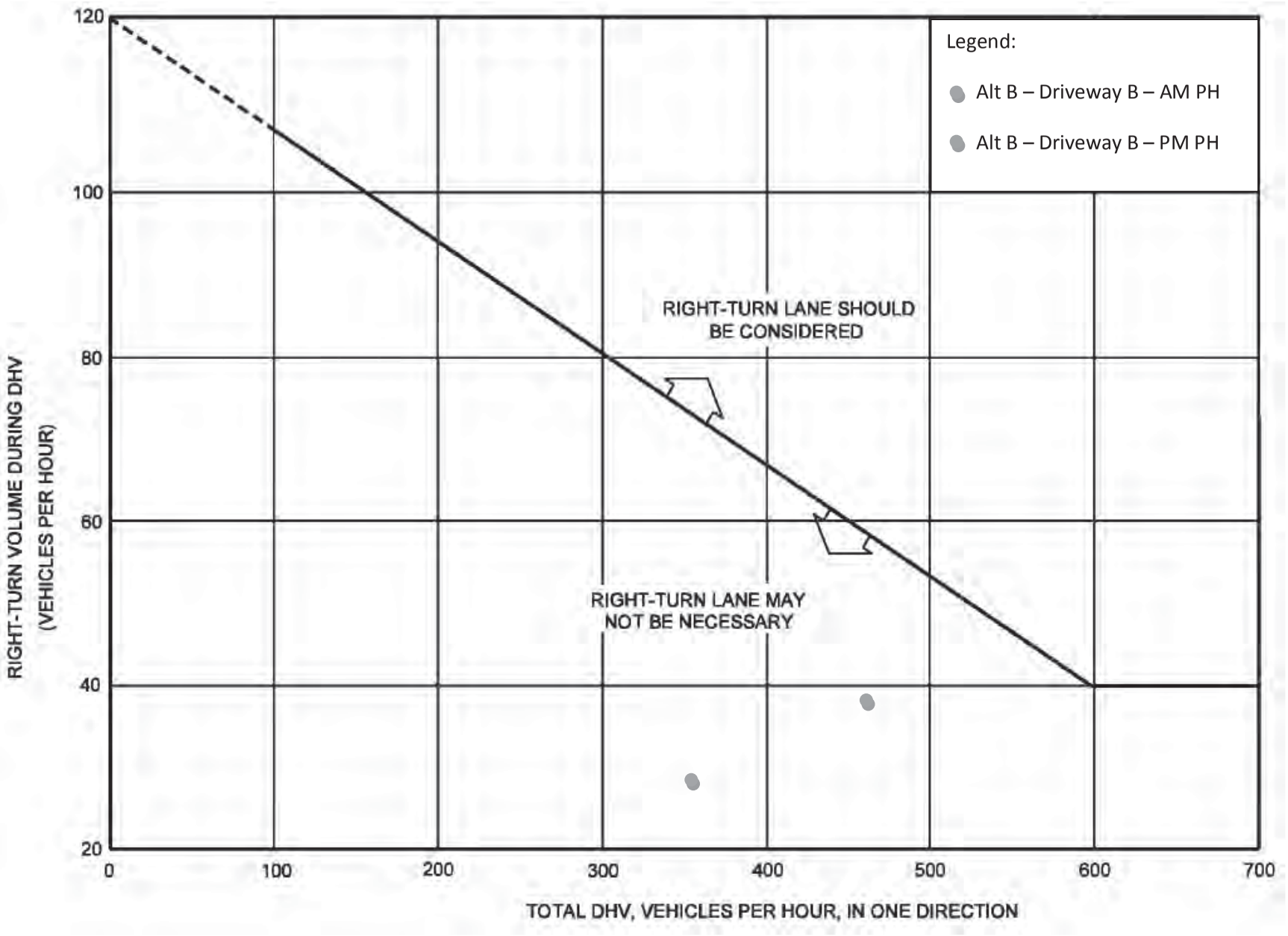
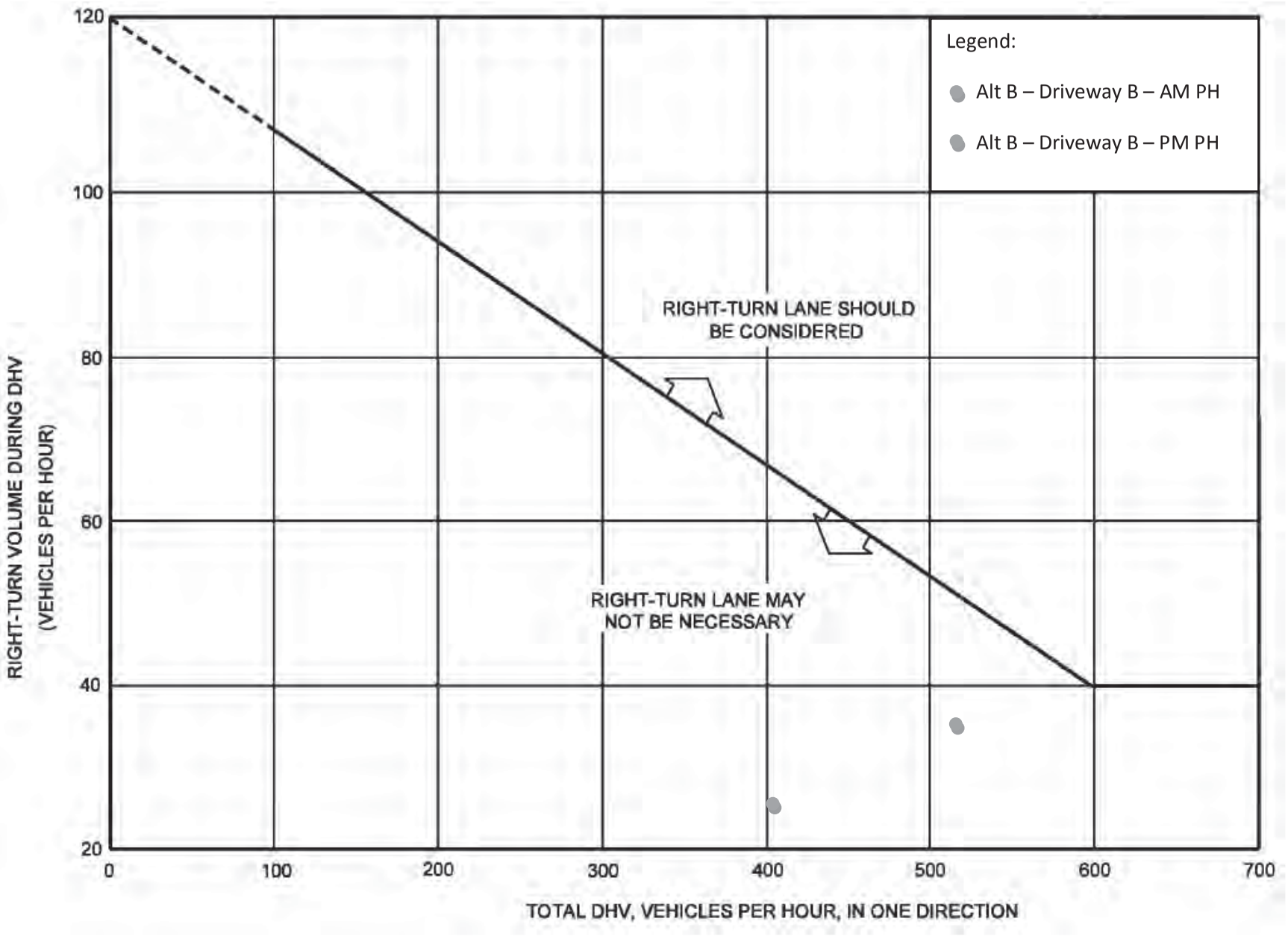
Warrants for a Right-Turn Lane 2020



NOTE: Right-turns for Alternative A and B fall below 20 vehicles during DHV

Warrants for a Right-Turn Lane 2035



NOTE: Right-turns for Alternative A and B fall below 20 vehicles during DHV

Operating Speed (mph)	Opposing Volume (veh/h)	Advancing Volume (veh/h)			
		5% Left Turns	10% Left Turns	20% Left Turns	30% Left Turns
40	800	330	240	180	160
	600	410	305	225	200
	400	510	380	275	245
	200	640	470	350	305
	100	720	515	390	340
50	800	280	210	165	135
	600	350	260	195	170
	400	430	320	240	210
	200	550	400	300	270
	100	615	445	335	295
60	800	230	170	125	115
	600	290	210	160	140
	400	365	270	200	175
	200	450	330	250	215
	100	505	370	275	240

VOLUME GUIDELINES FOR LEFT-TURN LANE ON TWO-LANE HIGHWAY

Warrants for a Left-Turn Lane

Alternative	Driveway	Year	Peak Hour	Operating Speed (mph)	Opposing Volume (veh/h)	% Left	Advancing Volume (veh/h)	Warrants Met
A	B	2020	AM	40	105	1%	182	NO
			PM		191	4%	148	NO
		2035	AM		119	1%	207	NO
			PM		216	4%	167	NO
	C	2020	AM		103	8%	197	NO
			PM		189	14%	197	NO
		2035	AM		117	7%	222	NO
			PM		214	15%	196	NO
B	B	2020	AM	45	226	1%	168	NO
			PM		246	1%	265	NO
		2035	AM		251	1%	187	NO
			PM		270	1%	298	NO
C	C	2020	AM	40	105	2%	183	NO
			PM		192	3%	150	NO
		2035	AM		119	1%	208	NO
			PM		218	3%	171	NO
	D	2020	AM		104	2%	185	NO
			PM		189	11%	164	NO
		2035	AM		118	1%	210	NO
			PM		214	10%	183	NO

Appendix F

Trip Generation

Trip Generation Calculations

Detailed Site Plan Uses

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S
1	Pokagon EIS							Inputs / Sums		Inputs / Sums		Inputs / Sums		Area Requirements		Criteria		
2	Total Program - Program Requirements							Qty	Unit	Qty	Unit	Qty	Unit	Qty	Unit	Qty	Unit / remarks	
3	PRIMARY PROGRAM INPUTS																	
4																		
5	BUILDINGS																	
6	A.	HOTEL																
7			Guest rooms					500.0	keys									
30																		
31						Total area hotel guest room tower								335,102.0	sf			
32						Analysis								670.2	sf per key			
33			Hotel Public Lobby, Registration, and Public Amenities															
64																		
65						Total area hotel lobby support								12,785.3	sf			
66																		
67			Spa															
68				Public Spaces				1.0	each	12,000.0	sf each			12,000.0	sf			
69				BOH support				1.0	each	3,000.0	sf each			3,000.0	sf			
70																		
71						Total area Spa								15,000.0	sf			
72						Total Hotel								362,887.2	sf			
73																		
74	B.	CASINO																
75			Gaming															
76					Slot machines													
77						Standard machines		3,000.0	machines	36.0	sf/slot			108,000.0	sf		Includes high-limit area; including internal circulation	
78								3,000.0	positions									
79					Table games													
80								75	tables	200.0	sf/table			15,000.0	sf	7	positions per table	
81						Roulette		0	tables	200.0	sf/table			0.0	sf	5	positions per table	
82						Craps		0	tables	200.0	sf/table			0.0	sf	6	positions per table	
83								525	positions									
84						Subtotal								123,000.0	sf			
85				Internal gaming floor circulation						20.0%	20.0			24,600.0	sf			
86						Subtotal								147,600.0	sf			
87														49.2	sf / slot			
88			Beverage Service															
89					Main Service bar			1	each	400.0	sf each			400.0	sf			
90					Secondary Service bar			3	each	320.0	sf each			960.0	sf			
91					Self-service beverage station			4	each	180.0	sf each			720.0	sf			
92					Subtotal									2,080.0	sf			
93			Public Amenities, Entries and Circulation															
101					Subtotal									33,157.2	sf			
102					Total Casino Gaming Floor			3,525.0	positions					182,837.2	sf			
103														60.9	sf per slot			
104														51.9	sf per gaming position			
105	C.	MEETING AND BANQUET SPACE																
106																		
107			Public Meeting Space and Amenities															
108				Total Meeting Space						11,500.0	sf			11,500.0	sf		Divisible into multiple rooms	
109					Prefunction Space					34.0%	of net meeting area			3,910.0	sf			
110																		
111					Subtotal									15,410.0	sf			
112																		
113				BOH and Infrastructure						30.0%	of public space			4,623.0	sf			
114					Circulation													
115					Storage													

F-442

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S
1	Pokagon EIS							Inputs / Sums		Inputs / Sums		Inputs / Sums		Area Requirements		Criteria		
2	Total Program - Program Requirements							Qty	Unit	Qty	Unit	Qty	Unit	Qty	Unit	Qty	Unit / remarks	
116						Banquet kitchen and staging												
117						Subtotal								4,623.0	sf			
118						**Total Public Meeting Space and Amenities**								**20,033.0**	**sf**			
119																		
151																		
152	**D.**	**RETAIL, FOOD & BEVERAGE**																
153			**Criteria check**															
154						**Total gaming positions**		**3,525.0**	positions									
155				**Ratio of dining spaces to gaming positions**				29.8%										
156				**Total number of dining positions programmed**				**1,051.0**	seats nic casino center bar									
157																		
158			**New Food & Beverage**															
159			**1**	**Buffet**														
160						Dining Room		**400.0**	seats	**22.00**	sf / seat			8,800.0	sf dining		**Expandable to 400 seats**	
161						Kitchen				**18.00**	sf / seat			7,200.0	sf kitchen			
162			**2**	**Themed Restaurant 1**				**150.0**	seats									
163						Dining Room		150.0	seats	**24.00**	sf / seat			3,600.0	sf dining			
164						Bar & bar seating		**0.0**	seats	**24.00**	sf / seat			0.0	sf bar			
165						Kitchen				**20.00**	sf / seat			3,000.0	sf kitchen			
166			**3**	**Themed Restaurant 2**				**150.0**	total seats									
167						Dining Room		135.0	seats	**24.00**	sf / seat			3,240.0	sf dining			
168						Bar & bar seating		**15.0**	seats	**24.00**	sf / seat			360.0	sf bar			
169						Kitchen				**20.00**	sf / seat			3,000.0	sf kitchen			
170			**4**	**Copper Rock Steakhouse**				**130.0**	total seats									
171						Dining Room		94.0	seats	**28.00**	sf / seat			2,632.0	sf dining			
172						Private Dining Room		36.0	seats	**32.00**	sf / seat			1,152.0	sf dining		3 rooms with average of 12 seats	
173						Bar & bar seating		12.0	seats	**60.00**	sf / seat			720.0	sf bar			
174						Kitchen				**22.00**	sf / seat			3,124.0	sf kitchen			
175			**5**	**Players Lounge**				**125.0**	total seats									
176						Dining Room		125.0	seats	**28.00**	sf / seat			3,500.0	sf dining			
177						Bar & bar seating		**0.0**	seats	**28.00**	sf / seat			0.0	sf bar			
178						Kitchen				**18.00**	sf / seat			2,250.0	sf kitchen			
179			**6**	**Timbers Fast Food and Deli**				**100.0**	total seats									
180						Dining Room		100.0	seats	**24.00**	sf / seat			2,400.0	sf dining			
181						Kitchen				**18.00**	sf / seat			1,800.0	sf kitchen			
182			**7**	**Casino Bar 1**				**20.0**	total seats									
183						Bar & bar seating		20.0	seats	**42.00**	sf / seat			840.0	sf public			
184						Lounge seating area		32.0	seats	**32.00**	sf / seat			1,024.0	sf dining			
185			**8**	**Casino Bar 2**				**20.0**	total seats									
186						Bar & bar seating		20.0	seats	**42.00**	sf / seat			840.0	sf public			
187						Lounge seating area		**0.0**	seats	**32.00**	sf / seat			0.0	sf dining			
188			**9**	**Casino Bar 3**														
189						Bar & bar seating		**20.0**	total seats	**42.00**	sf / seat			840.0	sf public			
190						Lounge seating area		**0.0**	seats	**32.00**	sf / seat			0.0	sf dining			
191			**10**	**Kiosk**														
192						Number of outlets		1.0	each	**300.00**	sf / each			300.0	sf public			
193						Subtotal								**29,224.0**	**sf dining / public**			
194						Subtotal								**20,674.0**	**sf kitchen**			
195																		
196																		
197			**Retail Outlets**															
202						Subtotal								**4,000.0**	**sf**		33,224.0	
203						**Total Retail, Food & Beverage**								**53,898.0**	**sf**			
204																		

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	S
1	Pokagon EIS							Inputs / Sums		Inputs / Sums		Inputs / Sums		Area Requirements		Criteria		
2	Total Program - Program Requirements							Qty	Unit	Qty	Unit	Qty	Unit	Qty	Unit	Qty	Unit / remarks	
205														236,735.2			216,061.2	
206	E.	ADMINISTRATION, AND BOH																
207						Sub-Total FOH		256,768.2	sf									
208					Administration			15.0%	% of total			28,886.4	sf					
209					Casino			25.0%	% of total			48,144.0	sf					
210					Facilities and MX			25.0%	% of total			48,144.0	sf					
211					Building Support			35.0%	% of total			67,401.7	sf					
212						Ratio of BOH to FOH		75.0%	% of FOH	100.0%	of BOH on-site	192,576.2	check total	192,576.2	sf			
213					Total Administration & BOH			100.0%						192,576.2	sf			
214																		
215					Total Buildings									812,231.7	sf			
229																		
230	G.	PARKING																
231			Public Parking Garage															
232				Spaces				3,500.0	spaces	325.0	sf/space			1,137,500.0	sf			
233					Parking levels			8.0	levels			142,187.5	sf/level					
238					Total Parking Garage									1,154,700.0				
239																		

Preformas

Market Studies

Klas Robinson QED
HOSPITALITY CONSULTING

11200 Vincent Avenue South
Minneapolis, MN 55431
toll free 800.475.8140
fax 952.888.0707

To: Amy Krebs
From: Jim Klas, KlasRobinson Q.E.D.
Re: Utilization for Options A & B
Date: February 6, 2013

Proformas for Option A (South Bend Casino) and Option B (Elkhart Casino) are attached. Additional visitation data is given in the table below. The figures do not include traffic/visits by employees of vendors at either facility. I am still refining the employment figures for the two operations. For traffic purposes, the patterns at New Buffalo should be fairly close, both in terms of employee traffic and vendor traffic. All figures in the table below (except occupied rooms) reflect people, not cars. We would assume average vehicle occupancy of 1.2 for the passing traffic captured and 1.65 for the direct traffic to the casino. I would check with Matt Harkness on average passengers per bus. Typically we would assume around 40. However, the bus visit figures below were built off of patterns from New Buffalo where we received info on the number of bus visitors but not the number of buses carrying them.

AVERAGE DAILY VISITS	SOUTH BEND	ELKHART
CASINO PATRONS	11,634	10,172
HOTEL OCCUPIED ROOMS	445	420
HOTEL GUESTS	823	777
GUESTS NOT USING CASINO	156	101
ADDITIONAL NON-GAMING VISITS	814	712
TOTAL CUSTOMER VISITS	12,604	10,985
BUS VISITS	592	592
ALREADY ON ACCESS ROAD (23 OR 19)	150	198
ALREADY ON HIGHWAY (20/31 0R 20)	660	600
DIRECT ON ACCESS ROAD (23 OR 19)	1,781	4,658
DIRECT ON HIGHWAY (20/31 OR 20)	9,422	4,938
TOTAL CUSTOMER VISITS	12,604	10,985

Aside from the issue of visitation, please note that the revenue sharing figures are based upon the same assumption as in our 2011 report (10% of Class III machine win). We should verify that we still want to use/show that assumption.

Please call with any questions.

Best Regards,

James M. Klas
Founder & Principal

Klas Robinson QED
HOSPITALITY CONSULTING

11200 Vincent Avenue South
Minneapolis, MN 55431
toll free 800.475.8140
fax 952.888.0707

To: Amy Krebs
From: Jim Klas, KlasRobinson Q.E.D.
Re: Utilization for Options A & B
Date: February 10, 2013

Proformas for the three components of Option C are attached. Additional visitation data is given in a table that is also attached. The visitation figures include expanded visitation data for Options A and B as well, including peak drive time and directional data. As before, the figures do not include traffic/visits by employees or vendors at any facility. I am awaiting a response on shift changes and vendor patterns at New Buffalo to include the employment and vendor travel pattern data. All figures in the table attached still reflect people, not cars. We would assume average vehicle occupancy of 1.2 for the passing traffic captured and 1.65 for the direct traffic to the casinos or Option C. I am also waiting for a response on average passengers per bus at New Buffalo for use in calculating bus traffic.

Please call or email with any questions. I will be in transit tomorrow and mostly unreachable. However, I will try to respond to emails tomorrow night or Tuesday morning. I will also be available to answer questions by phone on Tuesday.

Best Regards,

James M. Klas
Founder & Principal

AVERAGE DAILY VISITS	SOUTH BEND	ELKHART
CASINO PATRONS	11,634	10,172
HOTEL OCCUPIED ROOMS	445	420
HOTEL GUESTS	823	777
GUESTS NOT USING CASINO	156	101
ADDITIONAL NON-GAMING VISITS	814	712
TOTAL CUSTOMER VISITS	12,604	10,985

			BOTH SITES:		SOUTH BEND DIRECTION COMING FROM:				ELKHART DIRECTION COMING FROM:		
			8AM-9AM	5PM-6PM	NORTH	SOUTH	EAST	WEST	NORTH	SOUTH	EAST
BUS VISITS	592	592	0.0%	15.0%	18.0%	82.0%	46.0%	34.0%	95.0%	5.0%	50.0%
ALREADY ON ACCESS ROAD (23 OR 19)	150	198	NA	NA	NA	NA	NA	NA	NA	NA	NA
ALREADY ON HIGHWAY (20/31 0R 20)	660	600	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIRECT ON ACCESS ROAD (23 OR 19)	1,781	4,658	0.6%	3.8%	90.5%	9.5%	NA	NA	76.5%	23.5%	NA
DIRECT ON HIGHWAY (20/31 OR 20)	9,422	4,938	0.6%	3.8%	0.0%	100.0%	49.9%	50.1%	100.0%	0.0%	56.9%
TOTAL CUSTOMER VISITS	12,604	10,985									

AVERAGE DAILY VISITS	ALTERNATIVE C
TRAVEL PLAZA ALONE	1,385
RETAIL ALONE	542
FEC ALONE	259
TOTAL EXCLUDING CROSSOVER	2,187
NET OF CROSSOVER	**1,951**

		8AM-9AM	5PM-6PM	NORTH	SOUTH	EAST	WEST
ALREADY ON 23	419	NA	NA	NA	NA	NA	NA
ALREADY ON 20/31	847	NA	NA	NA	NA	NA	NA
DIRECT ON 23	417	7.2%	8.4%	96.5%	3.5%	NA	NA
DIRECT ON 20/31	268	4.5%	6.3%	0.0%	100.0%	37.7%	62.3%
	1,951						

New Buffalo Weekly Employee Traffic

Employee Traffic							
Time	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
00:00	205	207	218	240	271	299	282
01:00	19	16	11	18	20	27	57
02:00	31	27	26	22	26	85	77
03:00	19	9	11	16	18	33	36
04:00	10	9	9	8	12	22	24
05:00	8	8	10	11	8	8	9
06:00	33	34	37	36	38	36	33
07:00	144	142	136	155	171	175	171
08:00	234	227	235	225	228	232	167
09:00	149	155	168	151	159	57	96
10:00	24	37	36	47	42	58	52
11:00	21	21	22	28	37	21	16
12:00	20	22	19	26	24	32	21
13:00	14	14	12	8	18	19	21
14:00	76	92	91	92	63	82	105
15:00	162	150	161	167	210	232	174
16:00	227	233	225	243	257	259	192
17:00	194	182	195	200	226	153	153
18:00	33	39	41	39	54	71	50
19:00	26	28	34	33	53	53	28
20:00	16	17	22	27	34	48	21
21:00	24	29	19	33	25	18	32
22:00	66	57	73	54	45	61	103
23:00	56	60	55	73	106	109	65
Total	**1811**	**1815**	**1866**	**1952**	**2145**	**2190**	**1985**

Employee Traffic - In							
Hour In	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
00:00	110	116	118	126	129	133	124
01:00	2	2	1	2	2	1	1
02:00	10	10	10	8	9	24	22
03:00	7	2	5	6	6	6	8
04:00	6	7	5	5	4	4	3
05:00	1	1	3	1	1	1	
06:00	25	25	28	29	29	24	19
07:00	90	86	83	94	99	103	98
08:00	154	144	154	147	154	156	98
09:00	147	152	158	147	153	56	94
10:00	24	29	33	38	31	45	43
11:00	21	21	22	26	33	20	12
12:00	9	16	16	21	22	29	17
13:00	11	10	8	7	11	16	17
14:00	49	55	56	56	41	51	81
15:00	63	64	59	72	104	130	79
16:00	78	87	86	96	112	118	92
17:00	32	26	29	34	50	72	49
18:00	11	7	9	8	24	31	9
19:00	11	11	16	16	27	33	10
20:00	1	1	1	1	12	15	3
21:00	6	6	5	11	11	8	7
22:00	7	7	8	8	9	11	8
23:00	22	21	24	29	37	39	24
Total	**897**	**906**	**937**	**988**	**1110**	**1126**	**918**

Employee Traffic - Out							
Hour Out	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**	**Sunday**
00:00	95	91	100	114	142	166	158
01:00	17	14	10	16	18	26	56
02:00	21	17	16	14	17	61	55
03:00	12	7	6	10	12	27	28
04:00	4	2	4	3	8	18	21
05:00	7	7	7	10	7	7	9
06:00	8	9	9	7	9	12	14
07:00	54	56	53	61	72	72	73
08:00	80	83	81	78	74	76	69
09:00	2	3	10	4	6	1	2
10:00		8	3	9	11	13	9
11:00				2	4	1	4
12:00	11	6	3	5	2	3	4
13:00	3	4	4	1	7	3	4
14:00	27	37	35	36	22	31	24
15:00	99	86	102	95	106	102	95
16:00	149	146	139	147	145	141	100
17:00	162	156	166	166	176	81	104
18:00	22	32	32	31	30	40	41
19:00	15	17	18	17	26	20	18
20:00	15	16	21	26	22	33	18
21:00	18	23	14	22	14	10	25
22:00	59	50	65	46	36	50	95
23:00	34	39	31	44	69	70	41
Total	**914**	**909**	**929**	**964**	**1035**	**1064**	**1067**

Trip Generation Calculations per Market Study

Pokagon EIS Traffic Analysis
Daily Trip Calculations based on Marketing Study - ALTERNATIVE A
2/20/2013

Total Daily Patrons	12604		From market study
Less # of Pass By Patrons	810		From market study
New trip patrons	11794		= Daily patrons - pass by patrons
Patrons per vehicle	1.65		From market study
Car trips	14296		= new trip patrons / patrons per vehicle * 2
Patrons arriving by bus	592		From market study
Patrons per bus	30		From market study
Number of bus trips	40		= patrons arriving by bus / patrons per bus * 2
Number of car trips saved	638		= (patrons arriving by bus / 1.65) - number of bus trips * 2
Total new patron trips	13658		= car trips - car trips saved
Pass by patrons	810		From market study
Patrons per vehicle	1.2		From market study
Pass by trips	1350		= pass by patrons / patrons per vehicle * 2
Patron driveway trips	15008		= total new trips + pass by trips
Employees trips	1918		From Mark Phelen info on New Buffalo site
Vendors	20		From conference call discussion (similar to New Buffalo site)
Vendor trips	40		= vendors * 2
Total daily driveway trips	**16966**		= patron driveway trips + employee trips + vendor trips

Residential trips	646	From DLZ residential trip generation
Total site driveway trips	**17612**	= total daily driveway trips + DLZ residential trip generation

Pokagon EIS Traffic Analysis
Daily Trip Calculations based on Marketing Study - ALTERNATIVE B
2/20/2013

Total Daily Patrons	10985		From market study
Less # of Pass By Patrons	798		From market study
New trip patrons	10187		= Daily patrons - pass by patrons
Patrons per vehicle	1.65		From market study
Car trips	12348		= new trip patrons / patrons per vehicle * 2
Patrons arriving by bus	592		From market study
Patrons per bus	30		From market study
Number of bus trips	40		= patrons arriving by bus / patrons per bus * 2
Number of car trips saved	638		= (patrons arriving by bus / 1.65) - number of bus trips * 2
Total new patron trips	11710		= car trips - car trips saved
Pass by patrons	798		From market study
Patrons per vehicle	1.2		From market study
Pass by trips	1330		= pass by patrons / patrons per vehicle * 2
Patron driveway trips	13040		= total new trips + pass by trips
Employees trips	1918		From Mark Phelen info on New Buffalo site
Vendors	20		From conference call discussion (similar to New Buffalo site)
Vendor trips	40		= vendors * 2
Total daily driveway trips	**14998**		= patron driveway trips + employee trips + vendor trips

Residential trips	646	From DLZ residential trip generation
Total site driveway trips	**15644**	= total daily driveway trips + DLZ residential trip generation

Trip Generation Comparison

Trip Generation Models for Alternative A/B	Daily Driveway Trips	AM Peak Hour Driveway Trips		PM Peak Hour Driveway Trips	
		Number	% of Daily	Number	% of Daily
Option 1 - ITE Journal (Gaming Positions)	16,426	1,735	10.56%	2,874	17.50%
Option 2 - ITE Journal (Floor Area)	9,796	1,368	13.96%	2,141	21.86%
Test Option - ITE Trip Generation Manual (Floor Area)	12,982	1,079	8.31%	1,546	11.91%
Market Study	**17,562**	**800**	**4.55%**	**1,476**	**8.40%**

Appendix F

Tube Counts

Tube Counts

St. Joseph Site

Tube Counts

DLZ Indiana, LLC

2211 East Jefferson Blvd
South Bend, Indiana 46615
Tele: (574) 236-4400
Fax: (574) 236-4471

Site Code: STB-2
Station ID:
Locust Rd Between US 20 and SR 23

Latitude: 0' 0.000 Undefined

Start	28-Jan-13		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
12:00 AM	*	*	5	10	10	14	*	*	*	*	8	12	*	*	*	*
01:00	*	*	2	14	3	7	*	*	*	*	2	10	*	*	*	*
02:00	*	*	3	3	4	3	*	*	*	*	4	3	*	*	*	*
03:00	*	*	6	5	4	3	*	*	*	*	5	4	*	*	*	*
04:00	*	*	13	16	13	12	*	*	*	*	13	14	*	*	*	*
05:00	*	*	16	28	19	27	*	*	*	*	18	28	*	*	*	*
06:00	*	*	61	77	56	81	*	*	*	*	58	79	*	*	*	*
07:00	*	*	**88**	**149**	89	**149**	*	*	*	*	**88**	**149**	*	*	*	*
08:00	*	*	59	99	50	100	*	*	*	*	54	100	*	*	*	*
09:00	*	*	64	73	55	49	*	*	*	*	60	61	*	*	*	*
10:00	63	62	62	57	60	66	*	*	*	*	62	62	*	*	*	*
11:00	**92**	**65**	76	73	**97**	76	*	*	*	*	88	71	*	*	*	*
12:00 PM	94	77	81	82	*	*	*	*	*	*	88	80	*	*	*	*
01:00	84	112	73	81	*	*	*	*	*	*	78	96	*	*	*	*
02:00	93	100	88	104	*	*	*	*	*	*	90	102	*	*	*	*
03:00	128	**127**	147	**132**	*	*	*	*	*	*	138	**130**	*	*	*	*
04:00	140	110	169	129	*	*	*	*	*	*	154	120	*	*	*	*
05:00	**142**	106	**174**	115	*	*	*	*	*	*	**158**	110	*	*	*	*
06:00	99	74	111	99	*	*	*	*	*	*	105	86	*	*	*	*
07:00	65	76	71	71	*	*	*	*	*	*	68	74	*	*	*	*
08:00	62	54	50	51	*	*	*	*	*	*	56	52	*	*	*	*
09:00	36	55	35	43	*	*	*	*	*	*	36	49	*	*	*	*
10:00	37	31	21	37	*	*	*	*	*	*	29	34	*	*	*	*
11:00	18	24	22	21	*	*	*	*	*	*	20	22	*	*	*	*
Total	1153	1073	1497	1569	460	587	0	0	0	0	1480	1548	0	0	0	0
Day	2226		3066		1047		0		0		3028		0		0	
AM Peak	11:00	11:00	07:00	07:00	11:00	07:00					07:00	07:00				
Vol.	92	65	88	149	97	149					88	149				
PM Peak	17:00	15:00	17:00	15:00							17:00	15:00				
Vol.	142	127	174	132							158	130				

Comb. Total	2226	3066	1047	0	0	3028	0	0

ADT ADT 3,028 AADT 3,028

Indiana Department of Transportation

Daily Volume from 05/14/2012 through 05/16/2012

Site Names: 710891, SR 23
County: St Joseph
Funct. Class: Urban Principal Arterial - Other
Location: ON SR 23_ 100 N/O OLIVE STREET LT

Seasonal Factor Group: 14
Daily Factor Group: 14
Axle Factor Group: 14
Growth Factor Group: 14

	Sun 05/13/2012			Mon 05/14/2012			Tue 05/15/2012			Wed 05/16/2012			Thu 05/17/2012			Fri 05/18/2012			Sat 05/19/2012		
	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS
00:00							74	46	28	79	45	34									
01:00							25	11	14	39	22	17									
02:00							39	21	18	38	21	17									
03:00							41	22	19	34	21	13									
04:00							104	59	45	86	46	40									
05:00							216	84	132	189	70	119									
06:00							411	139	272	430	139	291									
07:00							850	208	642	828	204	624									
08:00							578	199	379	581	192	389									
09:00				458	162	296	480	182	298												
10:00				437	167	270	457	172	285												
11:00				479	217	262	514	236	278												
12:00				529	220	309	537	227	310												
13:00				508	224	284	530	240	290												
14:00				621	282	339	642	298	344												
15:00				736	337	399	787	375	412												
16:00				785	422	363	805	421	384												
17:00				798	414	384	798	391	407												
18:00				484	235	249	523	228	295												
19:00				418	211	207	433	237	196												
20:00				323	163	160	365	208	157												
21:00				306	149	157	288	144	144												
22:00				195	102	93	209	116	93												
23:00				113	61	52	92	46	46												
Volume				7,190	3,366	3,824	9,798	4,310	5,488	2,304	760	1,544									
AM Peak Vol							850	236	642												
AM Peak Fct							1.00	1.00	1.00												
AM Peak Hr							7.00	11.00	7.00												
PM Peak Vol				798	422	399	805	421	412												
PM Peak Fct				1.00	1.00	1.00	1.00	1.00	1.00												
PM Peak Hr				17.00	16.00	15.00	16.00	16.00	15.00												
Seasonal Fct				0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980									
Daily Fct				1.027	1.027	1.027	0.945	0.945	0.945	0.947	0.947	0.947									
Axle Fct				0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500									
Pulse Fct				2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000									

Collected by: INDOT

Created 12/21/2012 2:48:17 PM **ROAD AADT** **9,224** **NEG AADT** **4,042** **POS AADT** **5,182**

Indiana Department of Transportation

Daily Volume from 05/21/2012 through 05/23/2012

Site Names: 710880, SR 23
County: St Joseph
Funct. Class: Urban Minor Arterial
Location: ON SR 23_ 100 N/O MAGNOLIA ROAD RT

Seasonal Factor Group: 14
Daily Factor Group: 14
Axle Factor Group: 16
Growth Factor Group: 14

	Sun 05/20/2012			Mon 05/21/2012			Tue 05/22/2012			Wed 05/23/2012			Thu 05/24/2012			Fri 05/25/2012			Sat 05/26/2012		
	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS
00:00							38	27	11	40	22	18									
01:00							22	8	14	48	22	26									
02:00							35	14	21	24	12	12									
03:00							58	17	41	46	7	39									
04:00							102	31	71	112	32	80									
05:00							256	47	209	270	63	207									
06:00							519	147	372	548	164	384									
07:00							842	171	671	863	199	664									
08:00							469	131	338	646	192	454									
09:00				388	133	255	406	160	246												
10:00				378	155	223	350	135	215												
11:00				370	144	226	372	160	212												
12:00				371	164	207	387	170	217												
13:00				386	176	210	415	203	212												
14:00				452	237	215	457	247	210												
15:00				574	308	266	622	344	278												
16:00				631	362	269	611	350	261												
17:00				577	340	237	631	387	244												
18:00				354	181	173	359	186	173												
19:00				212	138	74	250	148	102												
20:00				161	99	62	225	144	81												
21:00				145	71	74	154	81	73												
22:00				114	64	50	106	51	55												
23:00				53	43	10	68	48	20												
Volume				5,166	2,615	2,551	7,754	3,407	4,347	2,597	713	1,884									
AM Peak Vol							842	171	671												
AM Peak Fct							1.00	1.00	1.00												
AM Peak Hr							7.00	7.00	7.00												
PM Peak Vol				631	362	269	631	387	278												
PM Peak Fct				1.00	1.00	1.00	1.00	1.00	1.00												
PM Peak Hr				16.00	16.00	16.00	17.00	17.00	15.00												
Seasonal Fct				0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980	0.980									
Daily Fct				1.027	1.027	1.027	0.945	0.945	0.945	0.947	0.947	0.947									
Axle Fct				0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500									
Pulse Fct				2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000									

Collected by: INDOT

Created 12/21/2012 2:48:21 PM **ROAD AADT** **7,395** **NEG AADT** **3,224** **POS AADT** **4,171**

Indiana Department of Transportation

Daily Volume from 07/20/2010 through 07/22/2010

Site Names: 710190, US 20
County: St Joseph
Funct. Class: Urban Principal Arterial - Other Freeways
Location: ON US 20_ .20M E. OF SR 123/BR 4048

Seasonal Factor Type: 11
Daily Factor Type: 11
Axle Factor Type: 11
Growth Factor Type: 11

	Sun 07/18/2010			Mon 07/19/2010			Tue 07/20/2010			Wed 07/21/2010			Thu 07/22/2010			Fri 07/23/2010			Sat 07/24/2010		
	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS
00:00										371	169	202	386	165	221						
01:00										282	141	141	296	133	163						
02:00										245	104	141	252	118	134						
03:00										263	104	159	335	147	188						
04:00										534	211	323	561	238	323						
05:00										1,045	448	597	999	432	567						
06:00										1,764	902	862	1,770	935	835						
07:00										2,449	1,247	1,202	2,446	1,304	1,142						
08:00										2,073	1,049	1,024	1,955	1,032	923						
09:00										1,862	926	936	1,873	929	944						
10:00										1,922	1,008	914	1,863	948	915						
11:00										2,170	1,172	998	2,069	1,095	974						
12:00										2,174	1,198	976	2,049	1,029	1,020						
13:00										2,207	1,137	1,070	2,056	1,070	986						
14:00										2,299	1,218	1,081	2,343	1,231	1,112						
15:00							2,624	1,338	1,286	2,685	1,358	1,327									
16:00							2,733	1,338	1,395	2,920	1,486	1,434									
17:00							2,891	1,430	1,461	3,050	1,468	1,582									
18:00							2,039	1,049	990	2,203	1,148	1,055									
19:00							1,524	772	752	1,627	796	831									
20:00							1,251	645	606	1,357	700	657									
21:00							1,138	525	613	1,277	602	675									
22:00							878	402	476	924	400	524									
23:00							604	256	348	619	292	327									
Volume							15,682	7,755	7,927	38,322	19,284	19,038	21,253	10,806	10,447						
AM Peak Vol										2,499	1,290	1,209	2,495	1,348	1,147						
AM Peak Fct										0.89	0.85	0.93	0.91	0.89	0.90						
AM Peak Hr										7.15	7.15	7.15	7.15	7.15	7.15						
PM Peak Vol										3,080	1,530	1,604									
PM Peak Fct										0.94	0.95	0.90									
PM Peak Hr										16.45	15.30	16.45									
Seasonal Fct							0.943	0.943	0.943	0.943	0.943	0.943	0.943	0.943	0.943						
Daily Fct							0.971	0.971	0.971	0.955	0.955	0.955	0.902	0.902	0.902						
Axle Fct							0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500						
Pulse Fct							2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000						

Created 09/28/2011 11:18:53 AM **ROAD AADT** **33,513** **NEG AADT** **16,854** **POS AADT** **16,659** DV03: Page 1 of 1

Elkhart Site

Tube Counts

DLZ Indiana, LLC

2211 East Jefferson Blvd
South Bend, Indiana 46615
Tele: (574) 236-4400
Fax: (574) 236-4471

Site Code: ETB-3
Station ID:
CR 26 Between SR 19 and CR 7

Latitude: 0' 0.000 Undefined

Start	14-Jan-13		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
12:00 AM	*	*	*	*	2	12	4	7	6	12	4	10	*	*	*	*
01:00	*	*	*	*	4	1	0	4	2	6	2	4	*	*	*	*
02:00	*	*	*	*	0	0	2	0	2	1	1	0	*	*	*	*
03:00	*	*	*	*	7	7	8	8	8	3	8	6	*	*	*	*
04:00	*	*	*	*	27	16	21	22	18	20	22	19	*	*	*	*
05:00	*	*	*	*	37	67	27	66	32	56	32	63	*	*	*	*
06:00	*	*	*	*	61	69	65	69	61	62	62	67	*	*	*	*
07:00	*	*	*	*	**163**	**120**	**158**	**137**	**150**	**121**	**157**	**126**	*	*	*	*
08:00	*	*	*	*	116	104	120	126	*	*	118	115	*	*	*	*
09:00	*	*	*	*	91	84	114	76	*	*	102	80	*	*	*	*
10:00	*	*	*	*	97	90	89	78	*	*	93	84	*	*	*	*
11:00	*	*	*	*	95	112	104	95	*	*	100	104	*	*	*	*
12:00 PM	*	*	*	*	112	92	107	111	*	*	110	102	*	*	*	*
01:00	*	*	*	*	82	120	105	123	*	*	94	122	*	*	*	*
02:00	*	*	*	*	**174**	133	172	126	*	*	**173**	130	*	*	*	*
03:00	*	*	143	177	174	180	184	**186**	*	*	167	**181**	*	*	*	*
04:00	*	*	**158**	171	156	**206**	154	166	*	*	156	181	*	*	*	*
05:00	*	*	150	**180**	157	154	**196**	162	*	*	168	165	*	*	*	*
06:00	*	*	91	86	102	97	95	104	*	*	96	96	*	*	*	*
07:00	*	*	56	82	58	52	62	83	*	*	59	72	*	*	*	*
08:00	*	*	43	33	55	43	39	47	*	*	46	41	*	*	*	*
09:00	*	*	57	42	42	43	22	37	*	*	40	41	*	*	*	*
10:00	*	*	32	18	25	14	25	33	*	*	27	22	*	*	*	*
11:00	*	*	16	11	11	13	12	15	*	*	13	13	*	*	*	*
Total	0	0	746	800	1848	1829	1885	1881	279	281	1850	1844	0	0	0	0
Day	0		1546		3677		3766		560		3694		0		0	
AM Peak					07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00				
Vol.					163	120	158	137	150	121	157	126				
PM Peak			16:00	17:00	14:00	16:00	17:00	15:00			14:00	15:00				
Vol.			158	180	174	206	196	186			173	181				

Comb. Total	0	1546	3677	3766	560	3694	0	0

ADT ADT 3,691 AADT 3,691

DLZ Indiana, LLC

2211 East Jefferson Blvd
South Bend, Indiana 46615
Tele: (574) 236-4400
Fax: (574) 236-4471

Site Code: ETB-1
Station ID:
CR 28 Between SR 19 and CR 7

Latitude: 0' 0.000 Undefined

Start	14-Jan-13		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound	Eastbound
12:00 AM	*	*	*	*	2	1	2	2	1	2	2	2	*	*	*	*
01:00	*	*	*	*	1	2	0	1	1	0	1	1	*	*	*	*
02:00	*	*	*	*	0	1	1	0	0	0	0	0	*	*	*	*
03:00	*	*	*	*	5	2	5	4	3	2	4	3	*	*	*	*
04:00	*	*	*	*	8	11	11	11	8	11	9	11	*	*	*	*
05:00	*	*	*	*	7	9	12	11	12	9	10	10	*	*	*	*
06:00	*	*	*	*	21	11	15	8	19	13	18	11	*	*	*	*
07:00	*	*	*	*	**34**	**37**	**35**	**40**	21	**31**	**30**	**36**	*	*	*	*
08:00	*	*	*	*	20	25	25	23	**27**	13	24	20	*	*	*	*
09:00	*	*	*	*	20	26	22	19	*	*	21	22	*	*	*	*
10:00	*	*	*	*	27	16	26	16	*	*	26	16	*	*	*	*
11:00	*	*	*	*	19	20	29	23	*	*	24	22	*	*	*	*
12:00 PM	*	*	*	*	18	18	25	25	*	*	22	22	*	*	*	*
01:00	*	*	*	*	32	23	23	18	*	*	28	20	*	*	*	*
02:00	*	*	*	*	34	25	**38**	36	*	*	36	30	*	*	*	*
03:00	*	*	*	*	32	36	35	21	*	*	34	28	*	*	*	*
04:00	*	*	**42**	43	28	**41**	33	**57**	*	*	34	**47**	*	*	*	*
05:00	*	*	39	**46**	**44**	35	33	33	*	*	**39**	38	*	*	*	*
06:00	*	*	20	19	16	27	17	27	*	*	18	24	*	*	*	*
07:00	*	*	12	13	12	6	19	13	*	*	14	11	*	*	*	*
08:00	*	*	16	11	8	11	8	13	*	*	11	12	*	*	*	*
09:00	*	*	7	3	10	5	11	6	*	*	9	5	*	*	*	*
10:00	*	*	5	2	4	4	7	6	*	*	5	4	*	*	*	*
11:00	*	*	6	2	8	2	7	2	*	*	7	2	*	*	*	*
Total	0	0	147	139	410	394	439	415	92	81	426	397	0	0	0	0
Day	0		286		804		854		173		823		0		0	
AM Peak					07:00	07:00	07:00	07:00	08:00	07:00	07:00	07:00				
Vol.					34	37	35	40	27	31	30	36				
PM Peak			16:00	17:00	17:00	16:00	14:00	16:00			17:00	16:00				
Vol.			42	46	44	41	38	57			39	47				
Comb. Total	0		286		804		854		173		823		0		0	
ADT	ADT 822				AADT 822											

DLZ Indiana, LLC

2211 East Jefferson Blvd
South Bend, Indiana 46615
Tele: (574) 236-4400
Fax: (574) 236-4471

Site Code: ETB-4
Station ID:
CR 7 Between CR 28 and CR 26

Latitude: 0' 0.000 Undefined

Start	14-Jan-13		Tue		Wed		Thu		Fri		Weekday Average		Sat		Sun	
Time	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
12:00 AM	*	*	*	*	1	0	1	1	1	0	1	0	*	*	*	*
01:00	*	*	*	*	0	1	0	1	0	1	0	1	*	*	*	*
02:00	*	*	*	*	1	2	1	2	5	6	2	3	*	*	*	*
03:00	*	*	*	*	3	3	6	2	4	3	4	3	*	*	*	*
04:00	*	*	*	*	19	8	19	8	17	8	18	8	*	*	*	*
05:00	*	*	*	*	19	31	21	31	25	32	22	31	*	*	*	*
06:00	*	*	*	*	16	40	10	38	14	28	13	35	*	*	*	*
07:00	*	*	*	*	**35**	**76**	**30**	**64**	**27**	**56**	**31**	**65**	*	*	*	*
08:00	*	*	*	*	20	39	25	41	13	27	19	36	*	*	*	*
09:00	*	*	*	*	14	23	22	23	*	*	18	23	*	*	*	*
10:00	*	*	*	*	28	13	27	19	*	*	28	16	*	*	*	*
11:00	*	*	*	*	16	26	23	23	*	*	20	24	*	*	*	*
12:00 PM	*	*	*	*	28	20	23	28	*	*	26	24	*	*	*	*
01:00	*	*	*	*	43	33	34	31	*	*	38	32	*	*	*	*
02:00	*	*	*	*	38	44	37	48	*	*	38	46	*	*	*	*
03:00	*	*	**65**	**66**	51	52	56	**59**	*	*	57	**59**	*	*	*	*
04:00	*	*	39	46	**75**	**53**	44	48	*	*	53	49	*	*	*	*
05:00	*	*	61	41	55	47	**63**	38	*	*	**60**	42	*	*	*	*
06:00	*	*	20	25	24	25	21	34	*	*	22	28	*	*	*	*
07:00	*	*	14	16	21	9	11	7	*	*	15	11	*	*	*	*
08:00	*	*	7	13	6	8	7	7	*	*	7	9	*	*	*	*
09:00	*	*	14	6	7	11	10	8	*	*	10	8	*	*	*	*
10:00	*	*	4	6	3	7	6	7	*	*	4	7	*	*	*	*
11:00	*	*	4	1	6	1	4	3	*	*	5	2	*	*	*	*
Total	0	0	228	220	529	572	501	571	106	161	511	562	0	0	0	0
Day	0		448		1101		1072		267		1073		0		0	
AM Peak					07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00				
Vol.					35	76	30	64	27	56	31	65				
PM Peak			15:00	15:00	16:00	16:00	17:00	15:00			17:00	15:00				
Vol.			65	66	75	53	63	59			60	59				
Comb. Total	0		448		1101		1072		267		1073		0		0	

ADT ADT 1,074 AADT 1,074

Indiana Department of Transportation

Daily Volume from 08/17/2010 through 08/19/2010

Site Names: 200840, SR 19
County: Elkhart
Funct. Class: Urban Principal Arterial - Other
Location: ON SR 19 8.10 MI N OF SR 119 RT

Seasonal Factor Type: 14
Daily Factor Type: 14
Axle Factor Type: 14
Growth Factor Type: 14

	Sun 08/15/2010			Mon 08/16/2010			Tue 08/17/2010			Wed 08/18/2010			Thu 08/19/2010			Fri 08/20/2010			Sat 08/21/2010		
	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS
00:00										84	51	33	101	60	41						
01:00										57	40	17	52	32	20						
02:00										46	25	21	37	21	16						
03:00										159	97	62	141	93	48						
04:00										470	232	238	485	258	227						
05:00										833	546	287	840	532	308						
06:00										786	376	410	781	388	393						
07:00										1,458	712	746	1,401	670	731						
08:00										1,128	525	603	1,167	517	650						
09:00							1,016	461	555	999	473	526	945	461	484						
10:00							993	491	502	1,012	493	519									
11:00							988	491	497	1,103	549	554									
12:00							1,054	503	551	1,087	554	533									
13:00							1,156	547	609	1,116	548	568									
14:00							1,378	684	694	1,375	670	705									
15:00							1,650	792	858	1,562	769	793									
16:00							1,674	815	859	1,687	778	909									
17:00							1,656	866	790	1,582	780	802									
18:00							991	518	473	1,007	495	512									
19:00							613	329	284	602	307	295									
20:00							515	286	229	499	285	214									
21:00							404	225	179	481	288	193									
22:00							271	146	125	276	141	135									
23:00							162	76	86	149	75	74									
Volume							14,521	7,230	7,291	19,558	9,809	9,749	5,950	3,032	2,918						
AM Peak Vol										1,491	713	778									
AM Peak Fct										0.89	0.92	0.86									
AM Peak Hr										7.15	7.15	7.15									
PM Peak Vol							1,789	866	968	1,713	814	909									
PM Peak Fct							0.96	0.85	0.94	0.92	0.95	0.87									
PM Peak Hr							15.30	17.00	15.30	16.15	16.30	16.00									
Seasonal Fct							0.961	0.961	0.961	0.961	0.961	0.961	0.961	0.961	0.961						
Daily Fct							0.959	0.959	0.959	0.943	0.943	0.943	0.934	0.934	0.934						
Axle Fct							0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500						
Pulse Fct							2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000						

Created 09/18/2011 3:03:08 PM **ROAD AADT** **17,799** **NEG AADT** **8,930** **POS AADT** **8,869** DV03: Page 1 of 1

Indiana Department of Transportation

Daily Volume from 08/16/2010 through 08/19/2010

Site Names: 200834, SR 19
County: Elkhart
Funct. Class: Rural Minor Arterial
Location: ON SR 19_ 1.40 MILE S/O CR 7232_ US 20

Seasonal Factor Type: 02
Daily Factor Type: 02
Axle Factor Type: 02
Growth Factor Type: 02

	Sun 08/15/2010			Mon 08/16/2010			Tue 08/17/2010			Wed 08/18/2010			Thu 08/19/2010			Fri 08/20/2010			Sat 08/21/2010		
	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS
00:00							65	31	34	68	42	26	77	45	32						
01:00							52	27	25	47	31	16	42	28	14						
02:00							47	23	24	31	21	10	32	18	14						
03:00							142	92	50	147	94	53	131	84	47						
04:00							438	212	226	442	219	223	467	249	218						
05:00							785	530	255	810	549	261	823	533	290						
06:00							784	379	405	709	336	373	691	322	369						
07:00							1,195	557	638	1,215	571	644	1,214	564	650						
08:00							951	435	516	948	443	505	968	441	527						
09:00							875	396	479	795	396	399	804	381	423						
10:00							786	390	396	830	391	439									
11:00							784	378	406	899	426	473									
12:00				870	429	441	833	382	451	852	431	421									
13:00				895	412	483	915	430	485	902	434	468									
14:00				1,098	517	581	1,164	555	609	1,152	531	621									
15:00				1,291	602	689	1,373	642	731	1,300	624	676									
16:00				1,248	580	668	1,437	657	780	1,400	618	782									
17:00				1,253	654	599	1,342	679	663	1,298	638	660									
18:00				695	347	348	802	435	367	736	348	388									
19:00				464	279	185	492	268	224	453	240	213									
20:00				345	213	132	403	231	172	397	229	168									
21:00				324	198	126	311	159	152	383	238	145									
22:00				219	114	105	223	119	104	238	118	120									
23:00				102	52	50	127	61	66	113	60	53									
Volume				8,804	4,397	4,407	16,326	8,068	8,258	16,165	8,028	8,137	5,249	2,665	2,584						
AM Peak Vol							1,199	557	650	1,218	571	655									
AM Peak Fct							0.85	0.91	0.80	0.84	0.90	0.80									
AM Peak Hr							7.15	7.00	7.15	7.15	7.00	7.15									
PM Peak Vol				1,374	672	766	1,522	684	849	1,437	655	797									
PM Peak Fct				0.91	0.89	0.88	1.00	0.99	0.95	0.96	0.93	0.93									
PM Peak Hr				15.30	16.45	15.30	15.30	15.45	15.30	15.45	16.30	15.45									
Seasonal Fct				0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.939	0.939						
Daily Fct				1.020	1.020	1.020	1.008	1.008	1.008	0.985	0.985	0.985	0.966	0.966	0.966						
Axle Fct				0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500						
Pulse Fct				2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000						

Created 09/18/2011 3:03:05 PM **ROAD AADT** **15,064** **NEG AADT** **7,486** **POS AADT** **7,579** DV03: Page 1 of 1

Indiana Department of Transportation

Daily Volume from 08/24/2010 through 08/26/2010

Site Names:	200200, US 20	Seasonal Factor Type:	11
County:	Elkhart	Daily Factor Type:	11
Funct. Class:	Urban Principal Arterial - Other Freeways	Axle Factor Type:	11
Location:	ON US 20_ 0.15 MILE E/O S 19	Growth Factor Type:	11

	Sun 08/22/2010			Mon 08/23/2010			Tue 08/24/2010			Wed 08/25/2010			Thu 08/26/2010			Fri 08/27/2010			Sat 08/28/2010		
	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS	ROAD	NEG	POS
00:00										173	76	97	190	94	96						
01:00										134	69	65	119	59	60						
02:00										133	70	63	132	60	72						
03:00										154	68	86	155	55	100						
04:00										457	177	280	460	166	294						
05:00										824	265	559	915	334	581						
06:00										1,155	513	642	1,154	517	637						
07:00										1,746	854	892	1,770	890	880						
08:00										1,390	620	770	1,324	623	701						
09:00										1,268	522	746	1,161	522	639						
10:00										1,224	563	661	1,272	614	658						
11:00										1,266	537	729	1,233	553	680						
12:00										1,257	589	668	1,186	572	614						
13:00							1,371	719	652	1,305	679	626									
14:00							1,662	955	707	1,709	938	771									
15:00							1,756	1,031	725	1,692	917	775									
16:00							1,883	1,089	794	1,829	979	850									
17:00							1,931	1,051	880	1,783	865	918									
18:00							1,217	670	547	1,250	617	633									
19:00							835	424	411	655	297	358									
20:00							700	346	354	649	295	354									
21:00							659	293	366	578	224	354									
22:00							430	183	247	438	176	262									
23:00							291	130	161	283	147	136									
Volume							12,735	6,891	5,844	23,352	11,057	12,295	11,071	5,059	6,012						
AM Peak Vol										1,771	859	912	1,770	890	880						
AM Peak Fct										0.86	0.89	0.83	0.86	0.82	0.87						
AM Peak Hr										7.15	7.15	7.15	7.00	7.00	7.00						
PM Peak Vol										1,890	979	932									
PM Peak Fct										0.90	0.97	0.90									
PM Peak Hr										16.30	16.00	16.30									
Seasonal Fct							0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938	0.938						
Daily Fct							0.984	0.984	0.984	0.952	0.952	0.952	0.920	0.920	0.920						
Axle Fct							0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500						
Pulse Fct							2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000						

Created 09/18/2011 3:03:15 PM **ROAD AADT** **21,130** **NEG AADT** **10,316** **POS AADT** **10,814** DV03: Page 1 of 1

Appendix F

Ambient Noise Measurement Logs

Noise Analysis Field Log

DLZ

Date:	3-26	Technician:	DJS
Project Name:	Pokagon	Temp. and Cloud Cover:	31 / Partly Cloudy
Project Number:		Wind Speed/Dir:	8 / NW

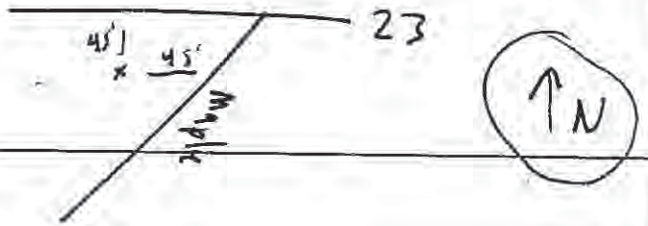
Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
1	A-AM	15:04	7:22	7:37	45 ft

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
71.1	52.6	58.5	69.6	74.3	—	81.1

$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(C)}$	$TWA_{(A)}$	%OL	dB RANGE
—	—	95.3	—		

Site Diagram



Comments:

SR23 N → ← S

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	25 20 10 10 10 10 10 20 10 10 10 10 10 ~~HHT~~ ~~HHT~~ ~~TRK~~ ~~HHT~~ ~~HHT~~	~~TRK~~ ~~TRK~~ ~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~ ~~TRK~~ ~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~ ~~HHT~~			Autos, Vans, Light Trucks		
Medium Trk.	11	~~HHT~~ 1			Medium Trk.		
Heavy Trucks	11	~~HHT~~ 11			Heavy Trucks		
Buses		11			Buses		
Motorcycles					Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Noise Analysis Field Log

DLZ

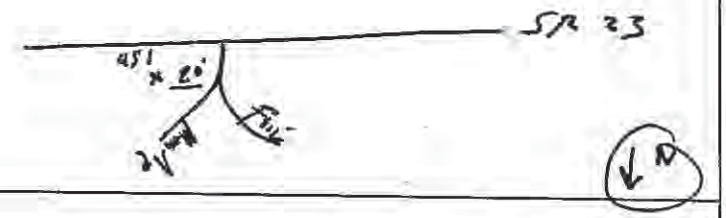
Date:	3-26	Technician:	DJS
Project Name:	Pokagon	Temp. and Cloud Cover:	51
Project Number:		Wind Speed/Dir:	8 / NNW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
2	A - AM	15:03	7:45	8:00	45 ft

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
69.3	50.1	58.8	66.8	71.7	—	83.8
$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(C)}$	$TWA_{(A)}$	%OL	dB RANGE	
—	—	97.2	—	—	—	

Site Diagram



Comments:

→ ←

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	~~HHT~~ ~~HHT~~ ~~HHT~~

Noise Analysis Field Log

DLZ

Date:	3-26	Technician:	DJS
Project Name:	Pokagon	Temp. and Cloud Cover:	31 / Partly Cloudy
Project Number:		Wind Speed/Dir:	8 / NNW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
3	A-AM	15:13	8:09	9:24	

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
51.9	47.3	49.9	51.4	53.6	—	60.3
$L_{dn(A)}$	CNEL(A)	$L_{peak(C)}$	TWA(A)	%OL	dB RANGE	
—	—	95.1	—	—		

Site Diagram

Comments:

* bird chirping

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Noise Analysis Field Log

DLZ

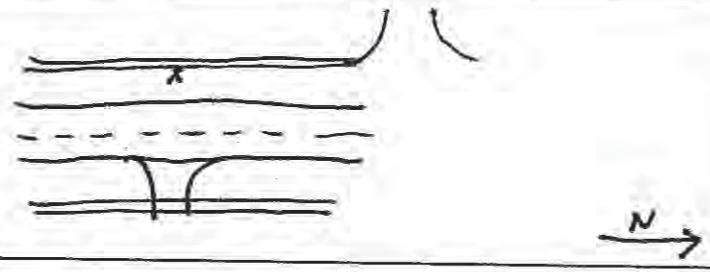
Date:	3-26	Technician:	DJS
Project Name:	Akagon	Temp. and Cloud Cover:	34° / Cloudy
Project Number:		Wind Speed/Dir:	7 / NW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
4	A-AM	15:11	8:38	8:53	10

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
63.5	43.7	48.0	53.6	63.3	—	79.6
$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(C)}$	$TWA_{(A)}$	%OL	dB RANGE	
—	—	96.1	—	—	—	

Site Diagram



Comments:

→ N ← S

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	𝍸 𝍸 𝍸 II	𝍸 𝍸 𝍸 𝍸 𝍸			Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Noise Analysis Field Log

DLZ

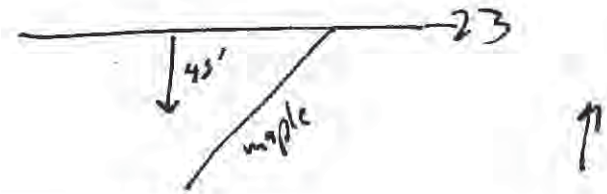
Date:	3-28	Technician:	DJS
Project Name:	Pokagon	Temp. and Cloud Cover:	47° clear
Project Number:		Wind Speed/Dir:	8 NW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
1	A-PM	15:01	4:00	4:15	45'

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
69.1	49.0	55.7	66.1	73.6	—	89.0
$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(C)}$	$TWA_{(A)}$	%OL	dB RANGE	
		93.5				

Site Diagram



Comments:

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	5 5 5 5 5 5 11 ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~	~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ ~~HH~~ 5 ~~HH~~ ~~HH~~ ~~HH~~ 1111 5 5 5 5 5 5 5 5			Autos, Vans, Light Trucks		
Medium Trk.		111			Medium Trk.		
Heavy Trucks	~~HH~~ 11	1111			Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Noise Analysis Field Log

DLZ

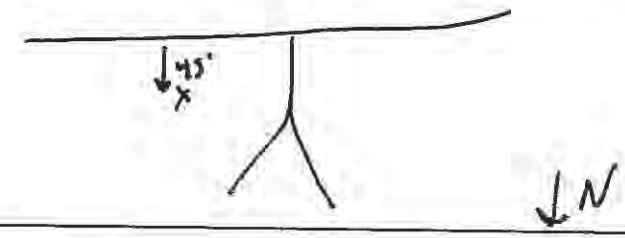
Date:	3-28	Technician:	DJS
Project Name:	Polygon	Temp. and Cloud Cover:	47° clear
Project Number:		Wind Speed/Dir:	8 NW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
2	A-3	15:01	4:26	4:35	45'

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{(A)}$	$L_{max(A)}$
65.7	55.7	49.7	61.7	68.7		81.7
$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(C)}$	$TWA_{(A)}$	%OL	dB RANGE	
		96.7				

Site Diagram



Comments:

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	44 44 44 44 44 44 5 5 5 5 5 44 44 44 44 44 44 44 44 44 44	44 5 5 44 44 44 44 44 44 44 44 44 44 44 44 44 44 44 44 44			Autos, Vans, Light Trucks		
Medium Trk.	1	1111			Medium Trk.		
Heavy Trucks	44 1	44 1111			Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Noise Analysis Field Log

DLZ

Date:	3-28	Technician:	OJS
Project Name:	Pokagon	Temp. and Cloud Cover:	47° clear
Project Number:		Wind Speed/Dir:	8 NW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
3	4a AM	15:20	4:00	4:15	

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{1(A)}$	$L_{max(A)}$
46.4	41.3	42.8	45.0	47.5		68.8
$L_{dn(A)}$	CNEL$_{(A)}$	$L_{peak(C)}$	TWA$_{(A)}$	%OL	dB RANGE	
		72.6				

Site Diagram

Comments:

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Noise Analysis Field Log

DLZ

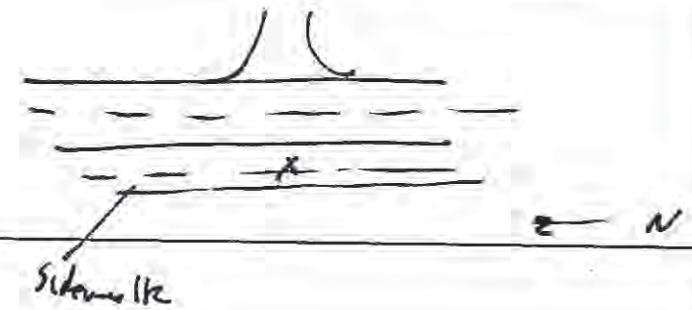
Date:	3-28	Technician:	DJS
Project Name:	Pokegon	Temp. and Cloud Cover:	47 clear
Project Number:		Wind Speed/Dir:	8 - WNW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
4	A-AM	15:0	5:41	5:16	10

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
65.6	49.2	49.3	58.1	69.8		82.4
$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(C)}$	$TWA_{(A)}$	%DL	dB RANGE	
		96.6				

Site Diagram



Comments:

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	HT LHT HHT HHL/II	LHT FHT HT HHT HHT HHT HHT HHT HHT I			Autos, Vans, Light Trucks		
Medium Trk.	I	I			Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses		I			Buses		
Motorcycles					Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Noise Analysis Field Log

DLZ

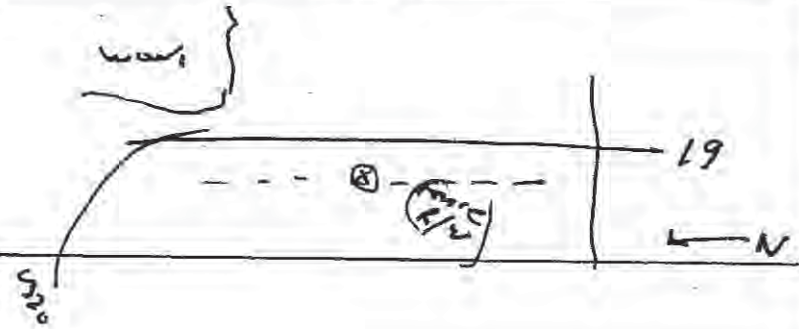
Date	3-27	Technician:	OJS
Project Name:	Pokegan	Temp and Cloud Cover:	32° Partly Cloudy
Project Number:		Wind Speed/Dir:	7 - WNW

Measurement Number	Datalog Measurement Id	Run Time	Time Start	Time Stop	Distance to Roadway
1	B - 449	45:44	[illegible]	[illegible]	95'

Noise Meter Readings

$L_{cd(A)}$	$L_{min(A)}$	$L_{01(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{99(A)}$	$L_{max(A)}$
45.7	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]
$L_{dn(A)}$	CNEL(A)	$L_{peak(O)}$	TWA(A)	%DL	dB RANGE	
—	—	77.5	—	—	—	

Site Diagram



Comments:

(S) bound → ← (N) bound

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	[illegible]	[illegible]			Autos, Vans, Light Trucks		
Medium Trk.	1 1				Medium Trk.		
Heavy Trucks	[illegible]	[illegible]			Heavy Trucks		
Buses		11			Buses		
Motorcycles					Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks					Autos, Vans, Light Trucks		
Medium Trk.					Medium Trk.		
Heavy Trucks					Heavy Trucks		
Buses					Buses		
Motorcycles					Motorcycles		

Noise Analysis Field Log

DLZ

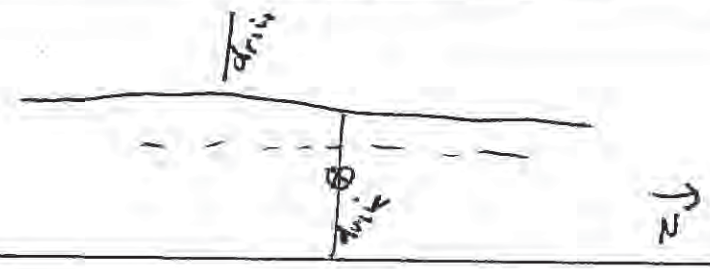
Date:	3-27	Technician:	DJS
Project Name:	Pokagon	Temp. and Cloud Cover:	32° - Prt. Cldy
Project Number:		Wind Speed/Dir:	6 - NNW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
2	B - [illegible]	15:05	7:43	7:58	10

Noise Meter Readings

$L_{90(A)}$	$L_{n(A)}$	$L_{50(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
76.5	[illegible]	[illegible]	[illegible]	[illegible]	—	[illegible]
$L_{eq(A)}$	CNEL(A)	$L_{peak(A)}$	TWA(A)	%OL	dB RANGE	
		94.1				

Site Diagram



Comments:

→ N ← S

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	5 5 10 5 5 5

Noise Analysis Field Log

DLZ

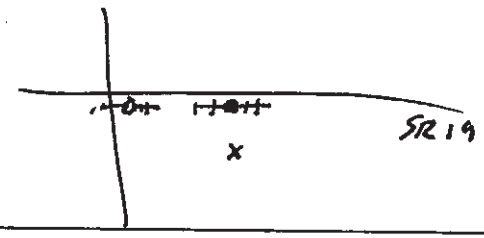
Date:	3-27	Technician:	JJS
Project Name:	Pokagon	Temp. and Cloud Cover:	29° Partly Cloudy
Project Number:		Wind Speed/Dir:	5 WNW

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
3	B-AA	75:12	7:07	8:22	50

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
71.9	59.1	61.3	69.7	76.9		81.5
$L_{dn(A)}$	CNEL(A)	$L_{peak(C)}$	TWA(A)	%OL	dB RANGE	
		96.5				

Site Diagram



Comments:

N → ← S

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	10 5 5 5

Noise Analysis Field Log

DLZ

Date:	3-27	Technician:	DJS
Project Name:	Aksgen	Temp. and Cloud Cover:	29° partly cloudy
Project Number:		Wind Speed/Dir:	5 WNW

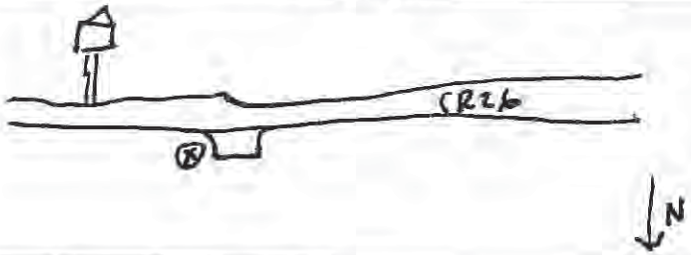
Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
4	15-Apr	6:14	5:30	6:44	40

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
49.6	52.2	44.4	56.3	67.1	—	74.5

$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(A)}$	$TWA_{(A)}$	%OL	dB RANGE
		76.7			

Site Diagram



Comments:

W → ← E

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4
Autos, Vans, Light Trucks	111 111 111

Noise Analysis Field Log

DLZ

Date:	4-3	Technician:	DJJ
Project Name:	Pokagon	Temp. and Cloud Cover:	44° Clear
Project Number:		Wind Speed/Dir:	7mph N

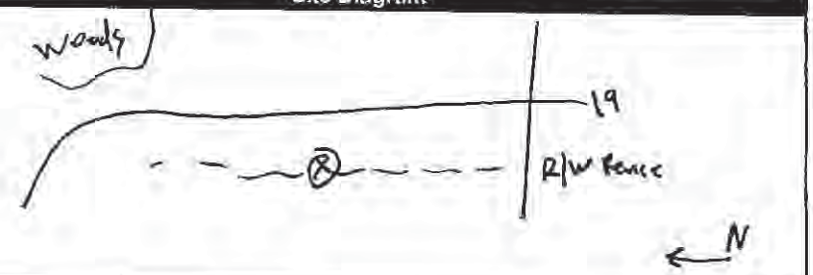
Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
1	0 - 2M	15 min	4:00	4:15	45'

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{1(A)}$	$L_{max(A)}$
66.6	43.7	53.5	49.9	74.3	—	75.2

$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(C)}$	TWA(A)	%OL	dB RANGE
—	—	98.6	—	—	—

Site Diagram



Comments:

← N →

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	5 5 10 10 5 5 5 5 5 10 5 5 5 10 5 5 5 10 10 5 10 10 5 10 10 10

Noise Analysis Field Log

DLZ

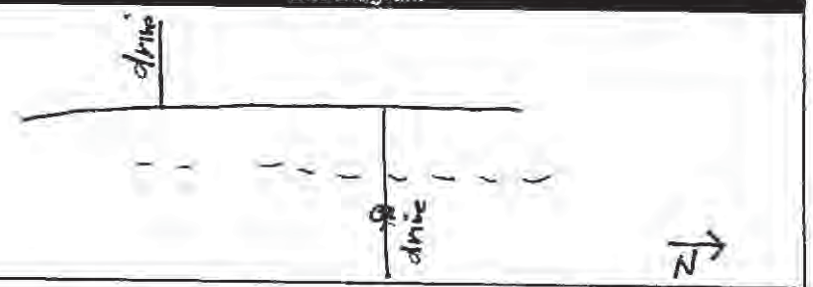
Date:	4-3	Technician:	DJS
Project Name:	Pokagon	Temp. and Cloud Cover:	44° clear
Project Number:		Wind Speed/Dir:	calm

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
2	B-FM	5:01	4:22	4:29	60'

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{n(A)}$	$L_{max(A)}$
65.7	38.8	44.1	62.6	73.4		76.7
$L_{dn(A)}$	CNEL(A)	$L_{peak(I)}$	TWA(A)	%OL	dB RANGE	
		77.2				

Site Diagram



Comments:

N → ← S

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	5 5 5

Noise Analysis Field Log

DLZ

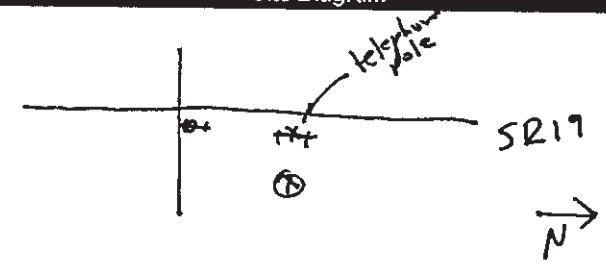
Date:	4-3	Technician:	DJS
Project Name:	Ritzson	Temp. and Cloud Cover:	44° clear
Project Number:		Wind Speed/Dir:	calm

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
3	B - PM	15:01	4:55	5:05	50'

Noise Meter Readings:

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
67.7	57.6	59.9	61.6	70.7	—	82.3
$L_{dn(A)}$	CNEL$_{(A)}$	$L_{peak(C)}$	TWA$_{(A)}$	%OL	dB RANGE	
		96.4				

Site Diagram



Comments:

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4	Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks	20 5 5 5

Noise Analysis Field Log

DLZ

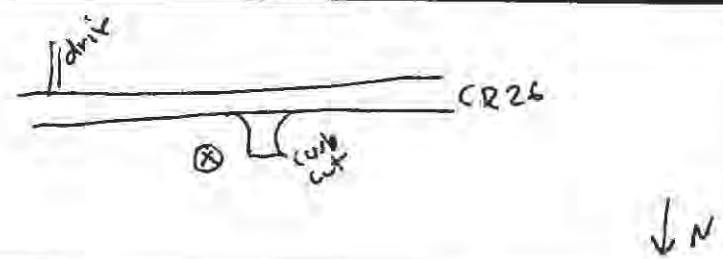
Date:	4-3	Technician:	DJ
Project Name:	Peterson	Temp and Cloud Cover:	44 clear
Project Number:		Wind Speed/Dir:	calm

Measurement Number	Datalog Measurement ID	Run Time	Time Start	Time Stop	Distance to Roadway
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Noise Meter Readings

$L_{eq(A)}$	$L_{min(A)}$	$L_{90(A)}$	$L_{50(A)}$	$L_{10(A)}$	$L_{5(A)}$	$L_{max(A)}$
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
$L_{dn(A)}$	$CNEL_{(A)}$	$L_{peak(C)}$	$TWA_{(A)}$	% OL	dB RANGE	
		[illegible]				

Site Diagram



Comments:

W-bound

E-bound

Roadway 1	Direction 1	Direction 2	Direction 3	Direction 4
Autos, Vans, Light Trucks	[illegible]	[illegible]		
Medium Trk.				
Heavy Trucks				
Buses				
Motorcycles				

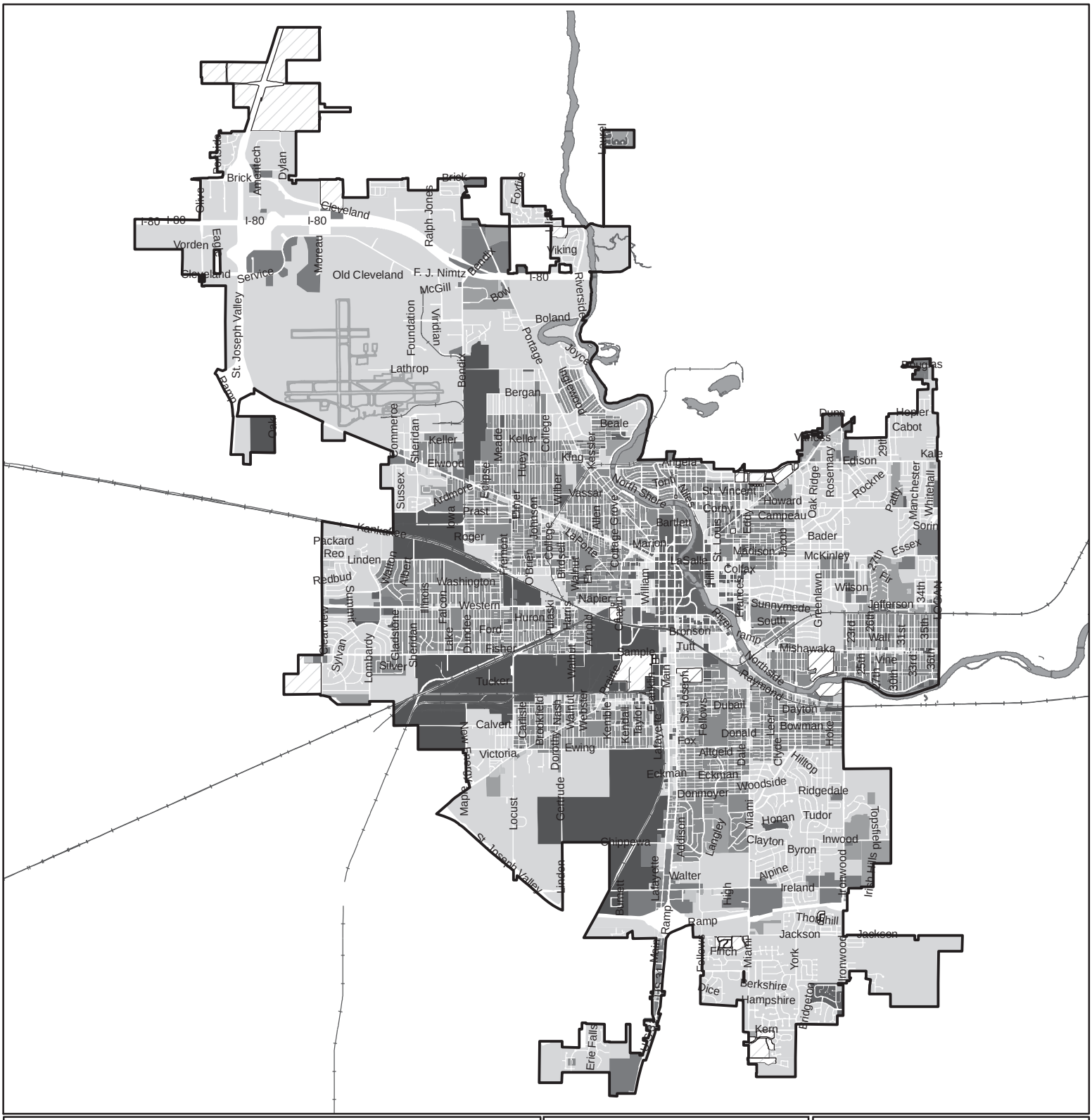
Roadway 3	Direction 1	Direction 2
Autos, Vans, Light Trucks		
Medium Trk.		
Heavy Trucks		
Buses		
Motorcycles		

Roadway 2	Direction 1	Direction 2	Direction 3	Direction 4
Autos, Vans, Light Trucks				
Medium Trk.				
Heavy Trucks				
Buses				
Motorcycles				

Roadway 4	Direction 1	Direction 2
Autos, Vans, Light Trucks		
Medium Trk.		
Heavy Trucks		
Buses		
Motorcycles		

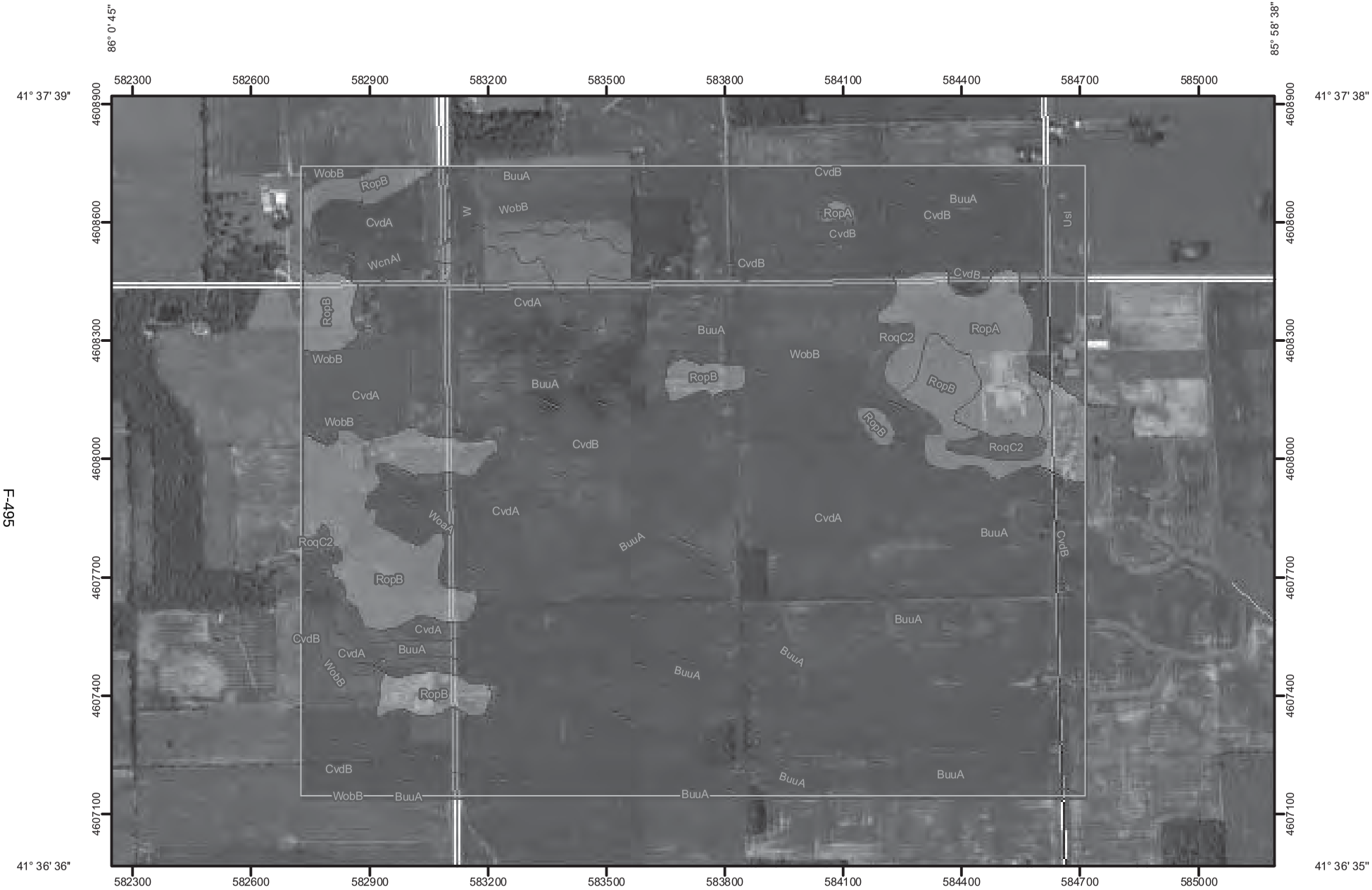
Appendix F

South Bend Zoning Map


Brick
Amentech
Dylan
Portside
Olive
I-80
Cleveland
Vorden
Eagle
Service
Moreau
Old Cleveland
F. J. Nimtz
McGill
Ralph Jones
Foxfire
Viking
Riverside
Bow
Boland
Foundation
Vintian
Portage
Joyce
Lathrop
St. Joseph Valley
Ramp
Oak
Bergan
Beale
Commerce
Sheridan
Keller
Elwood
Meade
College
King
Kessler
Sussex
Ardmore
Prast
Huey
Johnson
Vassar
Allen
Cottage Grove
Barnett
Marion
Roger
Packard
Reo
Linden
Redbud
Washington
Western
Huron
Ford
Fisher
Napier
Sample
Tutt
Bronson
Tucker
Calvert
Victoria
Ewing
Eckman
Donnover
Woodside
Ridgedale
Tudor
Inwood
Clayton
Byron
Alpine
Ireland
Walter
Chippewa
Locust
Gertrude
Linden
Jackson
Jackson
Ramp
Berkshire
Hampshire
Kern
Erie Falls
Douglas
Dunn
Hopler
Cabot
Kate
Edison
Rosemary
Oak Ridge
Howard
Campeau
Madison
Jacob
Bader
McKinley
Collax
Wilson
Greenlawn
Sunnymede
South
Mishawaka
Northside
Raymond
Dayton
Bowman
Donald
Dubail
Fox
Allgeld
Hillop
Hoke
Clyde
Lee
Dale
Miami
Honan
Langley
Addison
Lafayette
Bulla
High
Thomhill
Fellows
Dice
Bridgeton
Ironwood
Tolsted
Irish Hills
Manchester
Whitehall
Sorin
Essex
Patty
Rockne
Greenlawn
Jefferson
Vine
Wall
Mayer
Ewen
Maple
Kenmore
Dorothy
Nash
Walnut
Webster
Kenmore
Kendall
Bayard
Prairie
Clay
Lincoln
Walnut
Elm
Hill
Eddy
Lincoln
Tyler
Ash
Ironwood
Cleveland
Sylvan
Lombardy
Silver
Gladstone
Sheridan
Illinois
Falcon
Lake
Dundee
Albert
Walton
Kankakee
Iowa
Clearview
Summit
Bonney
Harris
Bissell

Appendix F

Farmland Classification: Elkhart Site


86° 0' 45"
85° 58' 38"
41° 37' 39"
41° 37' 38"
41° 36' 36"
41° 36' 35"
86° 0' 46"
85° 58' 39"
582300
582600
582900
583200
583500
583800
584100
584400
584700
585000
4608900
4608600
4608300
4608000
4607700
4607400
4607100
WobB
RopB
BuuA
CvdB
CvdA
W
RopA
Usl
WcnAl
RoqC2
WobA
Map Scale: 1:14,000 if printed on A size (8.5" x 11") sheet.
N
Meters
0
150
300
600
900
Feet
0
500
1,000
2,000
3,000

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:14,000 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Elkhart County, Indiana
Survey Area Data: Version 14, Dec 9, 2011

Date(s) aerial images were photographed: 7/16/2003; 7/19/2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — Elkhart County, Indiana (IN039)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
BuuA	Brookston loam, 0 to 1 percent slopes	Prime farmland if drained	63.8	8.1%
CvdA	Crosier loam, 0 to 1 percent slopes	Prime farmland if drained	368.4	46.9%
CvdB	Crosier loam, 1 to 4 percent slopes	Prime farmland if drained	180.1	22.9%
RopA	Riddles-Oshtemo fine sandy loams, 0 to 1 percent slopes	All areas are prime farmland	25.9	3.3%
RopB	Riddles-Oshtemo fine sandy loams, 1 to 5 percent slopes	All areas are prime farmland	73.6	9.4%
RoqC2	Riddles-Metea complex, 5 to 10 percent slopes, eroded	Not prime farmland	7.3	0.9%
Usl	Udorthents, rubbish	Not prime farmland	6.1	0.8%
W	Water	Not prime farmland	1.8	0.2%
WcnAl	Waterford loam, 0 to 2 percent slopes, frequently flooded, long duration	Not prime farmland	7.7	1.0%
WoaA	Williamstown loam, 0 to 1 percent slopes	Prime farmland if drained	8.5	1.1%
WobB	Williamstown-Crosier complex, 1 to 5 percent slopes	Prime farmland if drained	41.7	5.3%
Totals for Area of Interest			**784.8**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix F

Farmland Classification: South Bend Site

Map Scale: 1:10,500 if printed on A size (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1,600 2,400

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Units

Soil Ratings

- Not prime farmland
- All areas are prime farmland
- Prime farmland if drained
- Prime farmland if protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated
- Prime farmland if drained and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if irrigated and drained
- Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season
- Prime farmland if subsoiled, completely removing the root inhibiting soil layer
- Prime farmland if irrigated and the product of I (soil erodibility) x C (climate factor) does not exceed 60
- Prime farmland if irrigated and reclaimed of excess salts and sodium
- Farmland of statewide importance
- Farmland of local importance
- Farmland of unique importance
- Not rated or not available

Political Features

- Cities

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:10,500 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 16N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: St. Joseph County, Indiana
Survey Area Data: Version 15, Dec 12, 2011

Date(s) aerial images were photographed: 7/19/2003

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Farmland Classification

Farmland Classification— Summary by Map Unit — St. Joseph County, Indiana (IN141)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
AbhAU	Adrian muck, undrained, 0 to 1 percent slopes	Not prime farmland	4.9	1.6%
AxvA	Auten loam, 0 to 1 percent slopes	Prime farmland if drained	16.5	5.5%
BuuA	Brookston loam, 0 to 1 percent slopes	Prime farmland if drained	6.9	2.3%
CnbA	Coloma sand, 0 to 2 percent slopes	Not prime farmland	0.7	0.2%
CnbC	Coloma sand, 5 to 10 percent slopes	Not prime farmland	0.2	0.1%
HkkA	Hillsdale sandy loam, 0 to 1 percent slopes	All areas are prime farmland	5.0	1.7%
HkkB	Hillsdale sandy loam, 1 to 5 percent slopes	All areas are prime farmland	56.3	18.8%
HkpC2	Hillsdale-Tracy sandy loams, 5 to 10 percent slopes, eroded	Not prime farmland	50.5	16.9%
HkpD2	Hillsdale-Tracy sandy loams, 10 to 18 percent slopes, eroded	Not prime farmland	6.4	2.1%
MfaA	Martinsville loam, 0 to 1 percent slopes	All areas are prime farmland	4.6	1.5%
MfaB2	Martinsville loam, 1 to 5 percent slopes, eroded	All areas are prime farmland	37.0	12.3%
MfaC2	Martinsville loam, 5 to 10 percent slopes, eroded	Not prime farmland	11.2	3.7%
MouA	Milford silty clay loam, 0 to 1 percent slopes	Prime farmland if drained	14.2	4.7%
RenA	Rensselaer mucky loam, 0 to 1 percent slopes	Prime farmland if drained	4.4	1.5%
ReyA	Rensselaer loam, 0 to 1 percent slopes	Prime farmland if drained	12.4	4.1%
RopB	Riddles-Oshtemo fine sandy loams, 1 to 5 percent slopes	All areas are prime farmland	4.7	1.6%
SnlA	Southwest silt loam, 0 to 1 percent slopes	Prime farmland if drained	2.0	0.7%
TmpB	Tracy sandy loam, 1 to 5 percent slopes	All areas are prime farmland	12.9	4.3%
TmpC2	Tracy sandy loam, 5 to 10 percent slopes, eroded	Not prime farmland	16.2	5.4%
TxuC	Tyner loamy sand, 5 to 10 percent slopes	Not prime farmland	1.7	0.6%
TxuD	Tyner loamy sand, 10 to 18 percent slopes	Not prime farmland	9.5	3.2%
Uam	Udorthents, loamy	Not prime farmland	6.3	2.1%
UhmB	Urban land-Hillsdale complex, 1 to 5 percent slopes	Not prime farmland	0.7	0.2%
UhpC	Urban land-Hillsdale-Tracy complex, 5 to 10 percent slopes	Not prime farmland	3.3	1.1%

Farmland Classification— Summary by Map Unit — St. Joseph County, Indiana (IN141)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
WtbA	Whitaker loam, 0 to 1 percent slopes	Prime farmland if drained	11.0	3.7%
Totals for Area of Interest			**299.7**	**100.0%**

Description

Farmland classification identifies map units as prime farmland, farmland of statewide importance, farmland of local importance, or unique farmland. It identifies the location and extent of the soils that are best suited to food, feed, fiber, forage, and oilseed crops. NRCS policy and procedures on prime and unique farmlands are published in the "Federal Register," Vol. 43, No. 21, January 31, 1978.

Rating Options

Aggregation Method: No Aggregation Necessary

Tie-break Rule: Lower

Appendix F

Farmland Conversion Impact Ratings

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name of Project Pokagon Band	Federal Agency Involved
Proposed Land Use	County and State St. Joseph Co, IN
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 6-26-13 / Person Completing Form:

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated	Average Farm Size 166
Major Crop(s) Corn	Farmable Land In Govt. Jurisdiction Acres: 226,089 % 77	Amount of Farmland As Defined in FPPA Acres: 191,031 % 65	
Name of Land Evaluation System Used Lesa	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 7-1-13	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	109.33			
B. Total Acres Statewide Important or Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.073			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	67			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	69			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	0			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	0			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	0			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	3			
8. Creation Of Non-farmable Farmland	(10)	10			
9. Availability Of Farm Support Services	(5)	0			
10. On-Farm Investments	(20)	0			
11. Effects Of Conversion On Farm Support Services	(10)	0			
12. Compatibility With Existing Agricultural Use	(10)	5			
TOTAL SITE ASSESSMENT POINTS	160	28	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	69	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	28	0	0	0
TOTAL POINTS *(Total of above 2 lines)*	260	97	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**

U.S. Department of Agriculture

FARMLAND CONVERSION IMPACT RATING

PART I *(To be completed by Federal Agency)*	Date Of Land Evaluation Request
Name of Project Pokagon Band	Federal Agency Involved
Proposed Land Use	County and State Elkhart Co, IN
PART II *(To be completed by NRCS)*	Date Request Received By NRCS 6-26-13 / Person Completing Form:

Does the site contain Prime, Unique, Statewide or Local Important Farmland? *(If no, the FPPA does not apply - do not complete additional parts of this form)*	YES ☑ NO ☐	Acres Irrigated	Average Farm Size 166
Major Crop(s) Corn	Farmable Land In Govt. Jurisdiction Acres: 257,229 % 86	Amount of Farmland As Defined in FPPA Acres: 165,598 % 55	
Name of Land Evaluation System Used Lesa	Name of State or Local Site Assessment System	Date Land Evaluation Returned by NRCS 7-1-13	

PART III *(To be completed by Federal Agency)*	Alternative Site Rating Site A	Site B	Site C	Site D
A. Total Acres To Be Converted Directly				
B. Total Acres To Be Converted Indirectly				
C. Total Acres In Site				
PART IV *(To be completed by NRCS)* Land Evaluation Information				
A. Total Acres Prime And Unique Farmland	172.11			
B. Total Acres Statewide Important or Local Important Farmland				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted	0.068			
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value	34			
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)	89			

PART VI *(To be completed by Federal Agency)* Site Assessment Criteria *(Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)*	**Maximum Points**	Site A	Site B	Site C	Site D
1. Area In Non-urban Use	(15)	14			
2. Perimeter In Non-urban Use	(10)	10			
3. Percent Of Site Being Farmed	(20)	20			
4. Protection Provided By State and Local Government	(20)	0			
5. Distance From Urban Built-up Area	(15)	5			
6. Distance To Urban Support Services	(15)	0			
7. Size Of Present Farm Unit Compared To Average	(10)	10			
8. Creation Of Non-farmable Farmland	(10)	10			
9. Availability Of Farm Support Services	(5)	5			
10. On-Farm Investments	(20)	10			
11. Effects Of Conversion On Farm Support Services	(10)	1			
12. Compatibility With Existing Agricultural Use	(10)	5			
TOTAL SITE ASSESSMENT POINTS	160	90	0	0	0
PART VII ***(To be completed by Federal Agency)***					
Relative Value Of Farmland *(From Part V)*	100	89	0	0	0
Total Site Assessment *(From Part VI above or local site assessment)*	160	90	0	0	0
TOTAL POINTS ***(Total of above 2 lines)***	260	179	0	0	0

Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES ☐ NO ☐

Reason For Selection:

Name of Federal agency representative completing this form:	Date:

(See Instructions on reverse side) **Form AD-1006 (03-02)**