

**2019 Total Traffic PM Peak  
Sheets With Recommended  
Improvements In Traffic  
Control And Geometry**

# APPENDIX 14

**Signalization Warrant**  
 Maple Grove Rd. at Boxwood Dr  
 2014 Total, Option 'A' Scenario - Weekday P.M. Peak Hour

1a

1b

2a

2b

| WARRANT                       | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |                    |
|-------------------------------|--|---|---------------|--------------------|-----|--------------------|
|                               |  | FLOW RATE                               |               | SECTIONAL          |     | (4)<br>ENTIRE<br>% |
|                               |  |   |               | NUMERICAL          | %   |                    |
| 1<br>MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                | 82  |                    |
|                               | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170                                     | 658           | 82                 |     |                    |
| 2<br>DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY, PER HOUR FOR 8 HOURS, AND   | 900                                     | 800           | 100                | 88  |                    |
|                               | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 700           | 88                 |     |                    |
| 3<br>ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents | 0   |                    |
|                               |  |   | 5             | 0.00               |     |                    |
|                               | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    |     | 0                  |
|                               | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |                    |
| 4<br>COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |                    |

**Signalization Warrant**  
 Maple Grove Rd. at Boxwood Dr  
 2014 Total, Option 'B' Scenario - Weekday P.M. Peak Hour

| 1a | WARRANT                  | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |          |
|----|--------------------------|--|---|---------------|--------------------|-----|----------|
|    |                          |  | FLOW RATE                               |               | SECTIONAL          |     | (4)      |
|    |                          |  |   |               | NUMERICAL          | %   | ENTIRE % |
| 1  | MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                |     |          |
|    |                          | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170                                     | 800           | 100                | 100 |          |
| 2  | DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY, PER HOUR FOR 8 HOURS, AND   | 900                                     | 800           | 100                |     |          |
|    |                          | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 800           | 100                | 100 |          |
| 3  | ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents |     |          |
|    |                          |  |   | 5             | 0.00               | 0   |          |
|    |                          | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    | 0   |          |
| 2a |                          |  |   |               | 0                  |     |          |
| 2b |                          | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |          |
|    |                          |  |   |               |                    |     |          |
| 4  | COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |          |

**Signalization Warrant**  
 Maple Grove Rd. at Boxwood Dr  
 2014 Total, Option 'C' Scenario - Weekday P.M. Peak Hour

| 1a | WARRANT                     | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |                    |
|----|-----------------------------|--|---|---------------|--------------------|-----|--------------------|
|    |                             |  | FLOW RATE                               |               | SECTIONAL          |     | (4)<br>ENTIRE<br>% |
|    |                             |  |   |               | NUMERICAL          | %   |                    |
| 1  | MINIMUM VEHICULAR VOLUME    | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     |               | 800                | 100 | 87                 |
|    |                             | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170                                     |               | 699                | 87  |                    |
| 1b | 2<br>DELAY TO CROSS TRAFFIC | A. VEHICLE VOLUME, ALONG ARTERY, PER HOUR FOR 8 HOURS, AND   | 900                                     |               | 800                | 100 | 100                |
|    |                             | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      |               | 800                | 100 |                    |
| 2a | 3<br>ACCIDENT HAZARD        | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents |     | 0                  |
|    |                             |  |   | 5             | 0.00               | 0   |                    |
|    |                             | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    | 0   |                    |
| 2b |                             | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 | 0                  |
|    | 4<br>COMBINATION WARRANT    | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |                    |

**Signalization Warrant**  
 Maple Grove Rd. at Boxwood Dr  
 2019 Total, Option 'A' Scenario - Weekday P.M. Peak Hour

| 1a | WARRANT                  | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |           |          |
|----|--------------------------|--|---|---------------|--------------------|-----------|----------|
|    |                          |  | FLOW RATE                               |               | SECTIONAL          |           | (4)      |
|    |                          |  |   |               | NUMERICAL          | %         | ENTIRE % |
| 1  | MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                |           |          |
|    |                          | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170                                     | 658           | 82                 | <b>82</b> |          |
| 2  | DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     | 800           | 100                |           |          |
|    |                          | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 700           | 88                 | <b>88</b> |          |
| 3  | ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents |           |          |
|    |                          |  |   | 5             | 0.00               | 0         |          |
|    |                          | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    | 0         |          |
| 2a |                          |  |   |               | <b>0</b>           |           |          |
| 2b |                          | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100       |          |
|    |                          |  |   |               |                    |           |          |
| 4  | COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |           |          |

**Signalization Warrant**  
 Maple Grove Rd. at Boxwood Dr  
 2019 Total, Option 'B' Scenario - Weekday P.M. Peak Hour

1a

| WARRANT                             | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |                    |
|-------------------------------------|--|---|---------------|--------------------|-----|--------------------|
|                                     |  | FLOW RATE                               |               | SECTIONAL          |     | (4)<br>ENTIRE<br>% |
|                                     |  |   |               | NUMERICAL          | %   |                    |
| 1<br>MINIMUM<br>VEHICULAR<br>VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     |               | 800                | 100 |                    |
|                                     | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170                                     |               | 800                | 100 | 100                |
| 2<br>DELAY<br>TO CROSS<br>TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     |               | 800                | 100 |                    |
|                                     | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      |               | 800                | 100 | 100                |
| 3<br>ACCIDENT<br>HAZARD             | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents |     |                    |
|                                     |  |   | 5             | 0.00               | 0   |                    |
|                                     | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    | 0   |                    |
| 2a                                  |  |   |               |                    |     | 0                  |
|                                     | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |                    |
| 2b                                  |  |   |               |                    |     |                    |
| 4<br>COMBINATION<br>WARRANT         | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |                    |

**Signalization Warrant**  
 Maple Grove Rd. at Boxwood Dr  
 2019 Total, Option 'C' Scenario - Weekday P.M. Peak Hour

1a

| WARRANT                       | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |               |
|-------------------------------|--|---|---------------|--------------------|-----|---------------|
|                               |  | FLOW RATE                               |               | SECTIONAL          |     | (4)<br>ENTIRE |
|                               |  |   |               | NUMERICAL          | %   | %             |
| 1<br>MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                | 88  |               |
|                               | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170                                     | 700           | 88                 |     |               |
| 2<br>DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     | 800           | 100                | 100 |               |
|                               | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 800           | 100                |     |               |
| 3<br>ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents | 0   |               |
|                               |  |   | 5             | 0.00               |     |               |
|                               | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               | 0                  |     |               |
| 2a                            | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |               |
|                               |  |   |               |                    |     |               |
| 2b                            |  |   |               |                    |     |               |
| 4<br>COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |               |

**Signalization Warrant**  
 Briardean Rd. at Speedsville Rd.  
 2014 Total, Option 'B' Scenario - Weekday P.M. Peak Hour

| 1a | WARRANT                  | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |          |
|----|--------------------------|--|---|---------------|--------------------|-----|----------|
|    |                          |  | FLOW RATE                               |               | SECTIONAL          |     | (4)      |
|    |                          |  |   |               | NUMERICAL          | %   | ENTIRE % |
| 1  | MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                |     |          |
|    |                          | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170                                     | 692           | 87                 | 87  |          |
| 2  | DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     | 539           | 67                 |     |          |
|    |                          | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 720           | 90                 | 67  |          |
| 2a | ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents |     |          |
|    |                          |  | 5                                       | 0.00          | 0                  |     |          |
|    |                          | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    | 0   | 0        |
| 2b |                          | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |          |
| 4  | COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |          |

**Signalization Warrant**  
 Briardean Rd. at Speedsville Rd.  
 2019 Total, Option 'A' Scenario - Weekday P.M. Peak Hour

| 1a | WARRANT                  | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS   |               | COMPLIANCE         |     |          |
|----|--------------------------|--|---|---------------|--------------------|-----|----------|
|    |                          |  | FLOW RATE   |               | SECTIONAL          |     | (4)      |
|    |                          |  |   |               | NUMERICAL          | %   | ENTIRE % |
| 1  | MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900   | 800           | 100                |     |          |
|    |                          | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170   | 740           | 93                 | 93  |          |
| 2  | DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900   | 740           | 93                 |     |          |
|    |                          | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75  | 293           | 37                 | 37  |          |
| 3  | ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents   | Warrant Value | Avg. No. Accidents |     |          |
|    |                          |  | 5   | 0.00          | 0                  |     |          |
|    |                          | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no   |               |                    | 0   |          |
| 2a |                          | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no   |               | yes                | 100 |          |
| 2b | 4                        | COMBINATION WARRANT  | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE. |               | YES or NO          |     |          |

## Signalization Warrant

Briardean Rd. at Speedsville Rd.

2019 Total, Option 'B' Scenario - Weekday P.M. Peak Hour

| 1a | WARRANT | DESCRIPTION   | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS   |               | COMPLIANCE         |     |                    |
|----|---------|---|---|---------------|--------------------|-----|--------------------|
|    |         |   | FLOW RATE   |               | SECTIONAL          |     | (4)<br>ENTIRE<br>% |
|    |         |   |   |               | NUMERICAL          | %   |                    |
|    | 1       | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND<br><br>B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 900   |               | 800                | 100 |                    |
|    |         |   | 170   |               | 800                | 100 | 100                |
|    | 2       | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND<br><br>B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.  | 900   |               | 740                | 93  |                    |
|    |         |   | 75  |               | 800                | 100 | 93                 |
| 1b | 3       | ACCIDENT HAZARD<br><br>A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND<br><br>B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND<br><br>C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more | No. accidents   | Warrant Value | Avg. No. Accidents |     |                    |
|    |         |   |   | 5             | 0.00               | 0   |                    |
|    |         |   | yes OR no   |               |                    | 0   | 0                  |
| 2a |         |   | yes OR no   |               | yes                | 100 | 0                  |
| 2b | 4       | COMBINATION WARRANT   | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE. |               | YES or NO          |     |                    |

**Signalization Warrant**  
 Briardean Rd. at Speedsville Rd.  
 2019 Total, Option 'C' Scenario - Weekday P.M. Peak Hour

1a

| WARRANT                       | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS   |               | COMPLIANCE         |     |            |
|-------------------------------|--|---|---------------|--------------------|-----|------------|
|                               |  | FLOW RATE   |               | SECTIONAL          |     | (4) ENTIRE |
|                               |  |   |               | NUMERICAL          | %   | %          |
| 1<br>MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900   |               | 800                | 100 |            |
|                               | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 170   |               | 558                | 70  | 70         |
| 2<br>DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900   |               | 740                | 93  |            |
|                               | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75  |               | 153                | 19  | 19         |
| 3<br>ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents   | Warrant Value | Avg. No. Accidents |     |            |
|                               |  |   | 5             | 0.00               | 0   |            |
|                               | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no   |               |                    | 0   |            |
| 2a                            | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no   |               | No                 | 0   | 0          |
|                               | 4<br>COMBINATION WARRANT   | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE. |               | YES or NO          |     |            |

1b

2a

2b

**Signalization Warrant**  
 Royal Oak Rd at Speedsville Rd  
 2014 Total, Option 'A' Scenario - Weekday P.M. Peak Hour

1a

| WARRANT                       | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |          |
|-------------------------------|--|---|---------------|--------------------|-----|----------|
|                               |  | FLOW RATE                               |               | SECTIONAL          |     | (4)      |
|                               |  |   |               | NUMERICAL          | %   | ENTIRE % |
| 1<br>MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                |     |          |
|                               | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 255                                     | 800           | 100                | 100 |          |
| 2<br>DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     | 720           | 90                 |     |          |
|                               | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 587           | 73                 | 73  |          |
| 3<br>ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents |     |          |
|                               |  |   | 5             | 0.00               | 0   |          |
|                               | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    | 0   |          |
| 2a                            | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |          |
|                               |  |   |               |                    | 0   |          |
| 2b                            |  |   |               |                    |     |          |
| 4<br>COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |          |

**Signalization Warrant**  
 Royal Oak Rd at Speedsville Rd  
 2014 Total, Option 'B' Scenario - Weekday P.M. Peak Hour

1a

| WARRANT                       | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |               |
|-------------------------------|--|---|---------------|--------------------|-----|---------------|
|                               |  | FLOW RATE                               |               | SECTIONAL          |     | (4)<br>ENTIRE |
|                               |  |   |               | NUMERICAL          | %   | %             |
| 1<br>MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                | 100 |               |
|                               | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 255                                     | 800           | 100                |     |               |
| 2<br>DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     | 700           | 88                 | 63  |               |
|                               | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 507           | 63                 |     |               |
| 3<br>ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents | 0   |               |
|                               |  |   | 5             | 0.00               |     |               |
|                               | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               | 0                  |     |               |
|                               | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |               |
| 4<br>COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS {NUMBERS 1, 2, 3, OR 4} SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |               |

1b

2a

2b

**Signalization Warrant**  
 Royal Oak Rd at Speedsville Rd  
 2014 Total, Option 'C' Scenario - Weekday P.M. Peak Hour

| 1a | WARRANT                  | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS   |               | COMPLIANCE         |     |            |
|----|--------------------------|--|---|---------------|--------------------|-----|------------|
|    |                          |  | FLOW RATE   |               | SECTIONAL          |     | (4)        |
|    |                          |  |   |               | NUMERICAL          | %   | ENTIRE %   |
| 1  | MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900   | 800           | 100                |     |            |
|    |                          | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 255   | 800           | 100                |     | <b>100</b> |
| 2  | DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900   | 700           | 88                 |     |            |
|    |                          | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75  | 497           | 62                 |     | <b>62</b>  |
| 3  | ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents   | Warrant Value | Avg. No. Accidents |     |            |
|    |                          |  |   | 5             | 0.00               | 0   |            |
|    |                          | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no   |               |                    | 0   |            |
| 2a |                          | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no   |               | yes                | 100 | <b>0</b>   |
| 2b | 4                        | COMBINATION WARRANT  | TWO OR MORE OF ABOVE WARRANTS {NUMBERS 1, 2, 3, OR 4} SATISFIED TO THE EXTENT OF 80% OR MORE. |               | YES or NO          |     |            |

**Signalization Warrant**  
 Royal Oak Rd at Speedsville Rd  
 2019 Total, Option 'A' Scenario - Weekday P.M. Peak Hour

1a

| WARRANT                       | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |               |
|-------------------------------|--|---|---------------|--------------------|-----|---------------|
|                               |  | FLOW RATE                               |               | SECTIONAL          |     | (4)<br>ENTIRE |
|                               |  |   |               | NUMERICAL          | %   | %             |
| 1<br>MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                | 100 |               |
|                               | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 255                                     | 800           | 100                |     |               |
| 2<br>DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     | 800           | 100                | 79  |               |
|                               | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 628           | 79                 |     |               |
| 3<br>ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents | 0   |               |
|                               |  |   | 5             | 0.00               |     |               |
|                               | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               | 0                  |     |               |
|                               | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |               |
| 4<br>COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |               |

1b

2a

2b

**Signalization Warrant**  
 Royal Oak Rd at Speedsville Rd  
 2019 Total, Option 'B' Scenario - Weekday P.M. Peak Hour

| 1a | WARRANT                     | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |                    |   |
|----|-----------------------------|--|---|---------------|--------------------|--------------------|---|
|    |                             |  | FLOW RATE                               | SECTIONAL     |                    | (4)<br>ENTIRE<br>% |   |
|    |                             |  |   | NUMERICAL     | %                  |                    |   |
| 1  | MINIMUM VEHICULAR VOLUME    | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                | 100                |   |
|    |                             | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 255                                     | 800           | 100                |                    |   |
| 1b | 2<br>DELAY TO CROSS TRAFFIC | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     | 800           | 100                | 65                 |   |
|    |                             | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 519           | 65                 |                    |   |
| 2a | 3<br>ACCIDENT HAZARD        | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents | 0                  |   |
|    |                             |  | 5                                       | 0.00          | 0                  |                    |   |
|    |                             | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    |                    | 0 |
| 2b |                             | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100                |   |
|    | 4<br>COMBINATION WARRANT    | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |                    |   |

**Signalization Warrant**  
 Royal Oak Rd at Speedsville Rd  
 2019 Total, Option 'C' Scenario - Weekday P.M. Peak Hour

1a

| WARRANT                       | DESCRIPTION  | MINIMUM REQUIREMENT FOR 2 LANE HIGHWAYS |               | COMPLIANCE         |     |          |
|-------------------------------|--|---|---------------|--------------------|-----|----------|
|                               |  | FLOW RATE                               |               | SECTIONAL          |     | (4)      |
|                               |  |   |               | NUMERICAL          | %   | ENTIRE % |
| 1<br>MINIMUM VEHICULAR VOLUME | A. VEHICLE VOLUME, ALL APPROACHES PER HOUR FOR 8 HOURS, AND  | 900                                     | 800           | 100                |     |          |
|                               | B. VEHICLE VOLUME, ALONG MINOR STREETS, PER HOUR FOR SAME, 8 HOURS.  | 255                                     | 800           | 100                | 100 |          |
| 2<br>DELAY TO CROSS TRAFFIC   | A. VEHICLE VOLUME, ALONG ARTERY. PER HOUR FOR 8 HOURS, AND   | 900                                     | 800           | 100                |     |          |
|                               | B. COMBINED VEHICLE AND PEDESTRIAN VOLUME CROSSING ARTERY FROM MINOR STREETS, PER HOUR FOR SAME 8 HOURS.   | 75                                      | 513           | 64                 | 64  |          |
| 3<br>ACCIDENT HAZARD          | A. TOTAL REPORTED ACCIDENTS OF TYPES SUSCEPTIBLE TO CORRECTION BY A TRAFFIC SIGNAL WITHIN A 12 MONTH PERIOD, AND                                 | No. accidents                           | Warrant Value | Avg. No. Accidents |     |          |
|                               |  |   | 5             | 0.00               | 0   |          |
|                               | B. ADEQUATE TRIAL OF LESS RESTRICTIVE REMEDIES, WHERE SATISFACTORY OBSERVANCE AND ENFORCEMENT HAVE FAILED TO REDUCE THE NUMBER OF ACCIDENTS, AND | yes OR no                               |               |                    | 0   | 0        |
|                               | C. FULFILLMENT OF EITHER OF THE ABOVE WARRANTS Minimum Vehicular Volume or Delay to Cross Traffic to the Extent of 80% or more                   | yes OR no                               |               | yes                | 100 |          |
| 4<br>COMBINATION WARRANT      | TWO OR MORE OF ABOVE WARRANTS (NUMBERS 1, 2, 3, OR 4) SATISFIED TO THE EXTENT OF 80% OR MORE.  | YES or NO                               |               |                    |     |          |

1b

2a

2b