



December 19, 2025

Mr. Anthony Antonelli  
District Traffic Services Manager  
PennDOT District 6-0  
7000 Geerdes Boulevard  
King of Prussia, PA 19406

RE: **HOP Application No. 375666**  
**Interim Submission | Modified Access Scenario**  
Shoppes at Concord Development  
Concord Township, Delaware County  
Bowman Project No. 314352-01-002

Dear Mr. Antonelli:

On behalf of Concord Acquisition, LLC, Bowman is pleased to provide an interim submission as part of the Highway Occupancy Permit (HOP) Application No. 375666 for the above-referenced project. The purpose of this interim submission is to provide a conceptual design and supporting traffic analysis for a modified access scenario discussed with the District at a meeting on November 19, 2025. The analysis also preliminarily addresses several comments contained in the Cycle 3 HOP review letter (dated October 30, 2025) and discussed on November 19, 2025; however, a full response and revised submission will be provided upon receipt of the Department's review of this interim solution. As such, the modified access scenario includes the following changes to the proposed site accesses:

**Wilmington West Chester Pike (S.R. 0202) and Right-in/Right-Out/Left-In Access**

As directed by the Department, the previously proposed northernmost unsignalized right-in/right-out driveway has been evaluated as a new partial signalized site access. This modified access would continue to permit the right-in/right-out movements to/from the site but would now permit the left-turn entering movement, which would be controlled by a partial traffic signal. This partial traffic signal would function to stop only southbound S.R. 0202 traffic for the concurrent northbound left-turn and eastbound right-turn exit movement to/from the shopping center. A new 200-foot northbound left-turn lane would need to be constructed (partially on the Lamar electronic billboard property) in addition to the previously proposed 200-foot southbound S.R. 0202 right-turn lane. The applicant has begun discussions to acquire the necessary right-of-way from Lamar to accommodate the new left-turn lane.

Subsequently, the traffic analyses (as described below) of the above-described modified access scenario provides two key benefits to the nearby traffic network and addresses concerns raised by PennDOT and Concord Township. These key benefits include: 1) a Less Impactful Northbound S.R. 0202 improvement configuration at the S.R. 0202 and Ridge Road (S.R. 3048)/Springhill Drive intersection and 2) a Reduction in traffic volumes along Ridge Road, which in turn reduces the necessary roadway cross-section. These benefits are described in further detail, as follows:

425 Commerce Drive, Suite 200, Fort Washington, PA 19034

P: 215.283.9444

**bowman.com**

**1) Wilmington West Chester Pike (S.R. 0202) and Ridge Road (S.R. 3048)/Springhill Drive**

Provision of the partial signalized access and permitting left-turn entering movements into the northern S.R. 0202 site driveway will, as expected, shift a significant number of northbound left-turn site trips turning from Ridge Road to the partial signalized access. As a result, the improvements needed at the northbound approach to the S.R. 0202 and Ridge Road (S.R. 3048)/Springhill Drive intersection can be reduced and the existing lane configuration (i.e., one northbound left-turn lane, two northbound through lanes, and one northbound right-turn lane) will remain. The single northbound left-turn lane (as compared to the double left-turn lane previously proposed) will be consistent with other nearby intersections along the corridor and provide an easier turning maneuver for the left-turn traffic, which was a key concern recently raised by PennDOT, Concord Township, and the public. The modification will allow the existing northbound separate right-turn lane to be retained, which will segregate slower right turns from the faster through travel lanes.

The previously proposed/approved modifications to the lane configurations of the eastbound Ridge Road and westbound Springhill Drive approaches generally remain the same; however, a single lane westbound departure can now be provided. With the proposed improvements to Ridge Road (and re-striping of the Springhill Drive approach), concurrent side-street traffic signal phasing will be provided to allow more efficient operations, as previously proposed. The separate southbound S.R. 0202 right-turn lane continues to be proposed.

**2) Ridge Road (S.R. 3048)**

In conjunction with the removal of the second northbound S.R. 0202 left-turn lane at the S.R. 0202/Ridge Road/Springhill Drive intersection, the previously proposed second westbound receiving lane along Ridge Road can be eliminated, and one westbound travel lane past the site access is now proposed, as noted above. Elimination of this lane will narrow the width of Ridge Road and allow for reduced roadway widening as noted below:

- Along the Ridge Road site frontage - varying reductions up to 12 feet).
- Along the S.R. 0202 Shoppes at Concord site frontage (a five-foot reduction).
- Along the S.R. 0202 site frontage of the Olde Ridge Village Shopping Center (a five-foot reduction).

Please note that vertical reprofiling of Ridge Road is still proposed to address existing sight distance limitations and improve safety. West of the site, Ridge Road will transition back to a two-lane roadway with appropriate tapering, as previously proposed.

The following documents are included in this interim submission for the Department's preliminary review and comment:

1. *Preliminary Pavement Marking Exhibit for the Shoppes at Concord Development*, dated December 11, 2025
2. *Synchro worksheets (attached) and Files (electronic files via email)*

### **Preliminary Pavement Marking Exhibit**

The attached exhibit illustrates the modified access improvements noted above, as well as the resulting modified improvements to the S.R. 0202 and Ridge Road (S.R. 3048)/Springhill Drive intersection, and frontage improvements along Ridge Road and S.R. 0202. The new lane configurations are depicted in blue, reduced roadway widening is depicted in yellow, and new pavement area is shown in red. For the purposes of this exhibit, only the proposed traffic signal equipment is shown for the modified partial access along S.R. 0202. Required and previously acquired rights-of-way are also labeled.

As shown in the exhibit, along northbound S.R. 0202, a new 200-foot left-turn lane can be accommodated with widening provided the necessary right-of-way can be acquired. As noted previously, the existing northbound approach including single left-turn lane, two through lanes, and right-turn lane, will remain along S.R. 0202 at its intersection with Ridge Road/Springhill Drive. Consequently, the cross-section of Ridge Road will be reduced by 12 feet, as measured approximately 14 feet west of S.R. 0202. At the proposed Ridge Road site access, reductions in the width of Ridge Road will vary between approximately six feet and 10 feet. Also, with the reduced cartway width combined with the channelized concrete islands and lane striping, the intersection can be effectively reduced to a three-lane cross-section in terms of turning and crossing movements.

### **Traffic Analysis**

To complete the revised traffic analysis for the modified site access configuration and subsequent intersection modifications described above, our office used the same traffic analysis assumptions used in the latest traffic study for the site entitled Transportation Impact Study for the Shoppes at Concord, prepared by our office and dated September 11, 2025, with the exceptions noted below. **Figures 1 through 3** show the revised new, pass-by, and combined site traffic reflecting these changes:

- Northbound S.R. 0202 traffic approaching the site was re-assigned to reflect the new site access configuration. Please note that approximately 60 percent of the site traffic approaching the site from the south along S.R. 0202 is assumed to enter the site via the new signalized S.R. 0202 site access, with the remaining approximately 40 percent of this traffic entering the Ridge Road site access.
- In order to evaluate the highest traffic volume scenario at the Route 202/Ridge Road/Springhill Drive intersection, as well as along Ridge Road between the proposed site access and Route 202, the overall directions of approach and departure for new site traffic from the prior traffic studies were utilized. It is noted the trip distribution assumptions noted herein yield the most conservative results in terms of the design of S.R. 0202 improvements. (See below regarding the sensitivity for the alternative trip distribution conditions.)

The site traffic volumes shown in **Figure 3** were added to the 2033 future without-development traffic volumes shown in Figure 5A of the September 11, 2025 traffic study, and the resultant 2033 future with-development traffic volumes are shown in **Figure 4**. The traffic volumes in Figure 4 were subjected to detailed capacity analysis, the results of which are summarized in **Tables 1 through 6**. The traffic analysis worksheets are contained in **Attachment 1**.

Based on the results for the analysis, please note the following regarding the modified site access and off-site improvements submission:

- As shown in Tables 1 through 6, the site access intersections and the off-site S.R. 0202/Ridge Road/Springhill Drive intersection will operate at acceptable overall LOS D or better and all queues will fit within the proposed storage lane lengths. Notably, the overall intersection operations improve at the Ridge Road site access and the S.R. 0202/Ridge Road/Springhill Drive intersection in terms of delay and levels-of-service.
- The queuing at the new signalized site access along S.R. 0202 was evaluated using both HCM 7<sup>th</sup> Edition queuing results and SimTraffic queuing results due to the close spacing of this intersection with the S.R. 0202/Ridge Road/Springhill Drive intersection. Based on these analyses, the northbound left-turn queues at the modified S.R. 0202 site access will fit within the proposed storage and the southbound S.R. 0202 queue will not back through the adjacent the S.R. 0202/Ridge Road/Springhill Drive intersection.
- As shown in Table 7 below, the traffic along Ridge Road between the proposed Ridge Road site access and S.R. 0202 has been significantly reduced by 115 trips during the weekday afternoon peak hour, 149 trips during the Saturday midday peak hour, and 1,275 daily trips, which represents a 21 to 26 percent decrease in traffic volumes along this section of Ridge Road as compared to the original site access design condition.

**Table 7 – Traffic Volume Comparison**  
**Two-Way Traffic Volumes Along Ridge Road Between the Site Access and S.R. 0202**

| Time Period                 | Previous Design | Modified Design | Difference | % Reduction |
|-----------------------------|-----------------|-----------------|------------|-------------|
| Weekday Afternoon Peak Hour | 479             | 364             | -115       | -24%        |
| Saturday Midday Peak Hour   | 581             | 432             | -149       | -26%        |
| Daily Trips                 | 6,143           | 4,868           | -1,275     | -21%        |

#### **Alternative Trip Distribution Assumptions**

As noted in the contained in the Cycle 3 HOP review letter, PennDOT required a limited-scope sensitivity analysis to evaluate a trip distribution scenario whereby 15 percent of new site trips are oriented to/from the west along Ridge Road. The results of this sensitivity analysis are included in **Attachment 2**. Based on the findings of this sensitivity analysis, we do not recommend modifications to the site access design beyond what was presented in the attached Preliminary Pavement Marking Plan for the modified access scenario. It is noted that a traffic signal will continue to not be warranted at the Ridge Road site access based on PennDOT criteria and that the proposed improvements and site access design will function acceptably.

## **Conclusion**

The traffic analyses contained herein demonstrate that the modified access scenario and subsequent changes to the Ridge Road and the S.R. 0202/Ridge Road/Springhill Drive intersection will provide several benefits and address recent concerns raised by PennDOT and others, including:

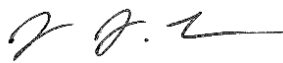
- The northbound approach to the S.R. 0202/Ridge Road/Springhill Drive intersection will not require dual northbound left-turn lanes and the northbound right-turn lane will be retained.
- The study intersection evaluated herein will function at acceptable overall levels of service during the peak hours, and in most cases individual movements will operate with less delay compared to the prior improvement and access scenario.
- Traffic volumes along Ridge Road between S.R. 0202 and the site access will be reduced by 21 percent on a daily basis and up to 26 percent during the peak hours compared to the prior access plan.
- The proposed turning lanes will accommodate vehicular queuing in all auxiliary turning lanes. Also, the traffic analyses and simulation indicate that the queuing between the new partial signal at the S.R. 0202 site access and the S.R. 0202/Ridge Road/Springhill Drive intersection can easily be accommodated.
- The scale of the widening along Ridge Road and S.R. 0202 will be reduced up to 12 feet in some locations. Along Ridge Road, the need for a second westbound travel lane along the site frontage can be eliminated.

We trust that you will find the enclosed submission package in order. If there are any questions concerning this submission or if you require additional information, please feel free to contact John Yurick at 610-594-9995 | [jjurick@bowman.com](mailto:jjurick@bowman.com) or Jamie Kouch at 215-283-9444 | [jkouch@bowman.com](mailto:jkouch@bowman.com). We look forward to receiving your feedback on the modified access scenario prior to a full resubmission.

Sincerely,



John J. Yurick, PE, PTOE, PTP  
Senior Project Manager



Jamie Kouch, PE  
Regional Service Leader – Municipal/Private Design

JJY/JDG

cc: Fran Hanney, PennDOT  
Ashwin Patel, PennDOT  
Mirlene Santival, PennDOT  
John Gallagher, PennDOT  
Kevin Lewis, PennDOT  
Andy Parker, PE, McCormick Taylor (PennDOT Review Consultant)  
Nate Cline, PE, Pennoni Associates (Concord Township Engineer)  
Morgan Hill Konstantinidis, Retail Sites, LLC  
Robert Hill, Retail Sites, LLC  
Aristidis Christakis, Esquire, Buckley Brion McGuire & Morris, LLP  
Eric Britz, PE, Bohler Engineering, Inc.

V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineering\QA-QC\traffic\2025-12-19 Interim PennDOT Submission Letter.docx

**Table 1 - Level of Service Matrices**

**1. Ridge Road (S.R. 3048) and Proposed Site Access/Ridge Village Shoppes Access  
(5% To/From West on Ridge Road)**

| Time Period                  |           | Weekday Afternoon Peak Hour |                               |                               | Saturday Midday Peak Hour |                               |                               |
|------------------------------|-----------|-----------------------------|-------------------------------|-------------------------------|---------------------------|-------------------------------|-------------------------------|
| Year                         |           | 2033 Design Year            |                               |                               | 2033 Design Year          |                               |                               |
| Development Condition        |           | w/o Dev                     | w/Dev<br>Original Access Plan | w/Dev<br>Modified Access Plan | w/o Dev                   | w/Dev<br>Original Access Plan | w/Dev<br>Modified Access Plan |
| Ridge Road (S.R. 3048)       | Left      | A                           | A                             | A                             | A                         | A                             | A                             |
|                              | EB Thru   |                             | 8.5                           | 8.5                           |                           | 8.5                           | 8.5                           |
|                              | Right     | 8.5                         | (1)                           | (1)                           | 8.4                       | (1)                           | (1)                           |
|                              |           |                             | (1)                           | (1)                           |                           | (1)                           | (1)                           |
|                              | Left      | (1)                         | A                             | A                             | (1)                       | B                             | A                             |
|                              | WB Thru   |                             | 9.7                           | 9.0                           |                           | 10.6                          | 9.4                           |
| Proposed Site Access         | Right     | (2)                         | (1)                           | (1)                           | (2)                       | (1)                           | (1)                           |
|                              |           |                             | (1)                           | (1)                           |                           | (1)                           | (1)                           |
|                              | Left/Thru | (2)                         | A                             | A                             | (2)                       | B                             | A                             |
|                              | NB        |                             | 9.5                           | 9.3                           |                           | 10.8                          | 9.6                           |
| Ridge Village Shoppes Access | Right     | (2)                         | A                             | A                             | (2)                       | B                             | B                             |
|                              |           |                             | 9.9                           | 9.9                           |                           | 10.1                          | 10.1                          |
|                              | Left      | A                           | D                             | C                             | A                         | F                             | D                             |
| Overall                      | SB Thru   | 9.5                         | 34.8                          | 19.7                          | 9.5                       | 73.2                          | 27.1                          |
|                              | Right     | A                           | A                             | A                             | A                         | A                             | A                             |
|                              |           | 0.7                         | 7.8                           | 6.2                           | 0.6                       | 9.9                           | 6.8                           |

(1) Movement operates at free-flow conditions.

(2) Movement does not exist.

**Table 2 - 95th Percentile Queue Matrices**

**1. Ridge Road (S.R. 3048) and Proposed Site Access/Ridge Village Shoppes Access  
(5% To/From West on Ridge Road)**

| Time Period                  |         |       | Future Storage |
|------------------------------|---------|-------|----------------|
| Year                         |         |       |                |
| Development Condition        |         |       |                |
| Ridge Road (S.R. 3048)       | EB      | Left  | 210'           |
|                              |         | Thru  |                |
|                              |         | Right | 240'           |
|                              | WB      | Left  | 180'           |
|                              |         | Thru  |                |
|                              |         | Right |                |
| Proposed Site Access         | Left    |       |                |
|                              | NB Thru |       |                |
|                              | Right   |       |                |
| Ridge Village Shoppes Access | Left    |       |                |
|                              | SB Thru |       |                |
|                              | Right   |       |                |

| Weekday Afternoon Peak Hour |                            |                            |
|-----------------------------|----------------------------|----------------------------|
| 2033 Design Year            |                            |                            |
| w/o Dev                     | w/Dev Original Access Plan | w/Dev Modified Access Plan |
| 0                           | 0                          | 0                          |
|                             | (1)                        | (1)                        |
|                             | (1)                        | (1)                        |
| (1)                         | 33                         | 25                         |
|                             | (1)                        | (1)                        |
|                             | (1)                        | (1)                        |
| (2)                         | 25                         | 25                         |
|                             | 25                         | 25                         |
| 25                          | 35                         | 25                         |

| Saturday Midday Peak Hour |                            |                            |
|---------------------------|----------------------------|----------------------------|
| 2033 Design Year          |                            |                            |
| w/o Dev                   | w/Dev Original Access Plan | w/Dev Modified Access Plan |
| 0                         | 0                          | 0                          |
|                           | (1)                        | (1)                        |
|                           | (1)                        | (1)                        |
| (1)                       | 50                         | 25                         |
|                           | (1)                        | (1)                        |
|                           | (1)                        | (1)                        |
| (2)                       | 30                         | 25                         |
|                           | 25                         | 25                         |
| 25                        | 53                         | 25                         |

(1) Movement operates at free-flow conditions.

(2) Movement does not exist.

**Table 3 - Level of Service Matrices**

**2. Ridge Road/Springhill Drive and US Route 202  
(5% To/From West on Ridge Road)**

| Time Period           |          |                      | Weekday Afternoon Peak Hour |                               |                               | Saturday Midday Peak Hour |                               |                               |
|-----------------------|----------|----------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------|-------------------------------|-------------------------------|
| Year                  |          |                      | 2033 Design Year            |                               |                               | 2033 Design Year          |                               |                               |
| Development Condition |          |                      | w/o Dev                     | w/Dev<br>Original Access Plan | w/Dev<br>Modified Access Plan | w/o Dev                   | w/Dev<br>Original Access Plan | w/Dev<br>Modified Access Plan |
| Ridge Road            | EB       | Left                 | F<br><br>110.0              | F<br>99.2                     | F<br>99.2                     | F<br><br>266.1            | E<br>73.2                     | E<br>73.7                     |
|                       |          | Thru                 |                             | D<br>53.2                     | D<br>53.5                     |                           | D<br>48.7                     | D<br>46.1                     |
|                       |          | Right                |                             | D<br>30.7                     | D<br>30.7                     |                           | D<br>30.3                     | D<br>27.7                     |
|                       | WB       | Left &<br>Left/Thru  | E<br>61.6                   | E<br>61.7                     | E<br>62.5                     | D<br>52.4                 | E<br>59.3                     | E<br>64.4                     |
|                       |          | Right                | E<br>66.9                   | E<br>74.7                     | E<br>80.0                     | A<br>0.0                  | F<br>143.1                    | F<br>96.7                     |
|                       |          |                      | E<br>62.2                   |                               |                               | F<br>80.4                 |                               |                               |
| US Route 202          | NB       | Left*                | E<br>65.1                   | E<br>65.4                     | E<br>74.2                     | E<br>64.6                 | E<br>65.6                     | E<br>75.3                     |
|                       |          | Thru &<br>Thru/Right | D<br>36.5                   | D<br>45.5                     | A<br>7.5                      | C<br>33.5                 | D<br>47.5                     | B<br>19.6                     |
|                       |          |                      | B<br>14.4                   | D<br>46.2                     | A<br>0.1                      | B<br>14.6                 | D<br>47.6                     | A<br>1.3                      |
|                       |          |                      | SB                          | Left                          | E<br>64.6                     | E<br>64.6                 | E<br>64.6                     | F<br>98.3                     |
|                       | Thru (2) | D<br>40.8            |                             | D<br>50.9                     | D<br>52.5                     | C<br>29.5                 | D<br>47.9                     | D<br>54.2                     |
|                       |          | D<br>41.3            |                             | B<br>13.1                     | B<br>13.3                     | C<br>29.4                 | B<br>14.1                     | B<br>15.1                     |
|                       | Right    | D<br>44.1            |                             | D<br>51.8                     | D<br>37.7                     | D<br>48.7                 | D<br>54.5                     | D<br>43.0                     |
|                       |          | Overall              |                             |                               |                               |                           |                               |                               |

\*With Development conditions with 2 NBL turn lanes, With Development North Access Signalized conditions with 1 NBL turn lane.

**Table 4 - 95th Percentile Queue Matrices**

**2. Ridge Road/Springhill Drive and US Route 202  
(5% To/From West on Ridge Road)**

| Time Period  |    | w/Dev<br>Original<br>Access Plan<br>Storage | w/Dev<br>Modified<br>Access Plan<br>Storage | Weekday Afternoon Peak Hour |                               |                               | Saturday Midday Peak Hour |                               |                               |     |
|--------------|----|---------------------------------------------|---------------------------------------------|-----------------------------|-------------------------------|-------------------------------|---------------------------|-------------------------------|-------------------------------|-----|
| Year         |    |                                             |                                             | 2033 Design Year            |                               |                               | 2033 Design Year          |                               |                               |     |
|              |    |                                             |                                             | w/o Dev                     | w/Dev<br>Original Access Plan | w/Dev<br>Modified Access Plan | w/o Dev                   | w/Dev<br>Original Access Plan | w/Dev<br>Modified Access Plan |     |
| Ridge Road   | EB | Left                                        | 250' (2)                                    | 250' (2)                    | 298                           | 208                           | 208                       | 493                           | 185                           | 188 |
|              |    | Thru                                        |                                             |                             |                               | 38                            | 35                        |                               | 38                            | 38  |
|              |    | Right                                       | 275'                                        | 275'                        |                               | 55                            | 55                        |                               | 68                            | 68  |
|              | WB | Left                                        | 165' (2)                                    | 165' (2)                    | 135                           | 103                           | 103                       | 133                           | 128                           | 135 |
|              |    | Thru/<br>Right                              |                                             |                             | 173                           | 213                           | 220                       | 0                             | 368                           | 310 |
|              |    |                                             |                                             |                             | 123                           |                               |                           | 235                           |                               |     |
| US Route 202 | NB | Left*                                       | 300' (2)                                    | 300'                        | 138                           | 223                           | 248                       | 113                           | 243                           | 258 |
|              |    | Thru (2)                                    |                                             |                             | 800                           | 883                           | 85                        | 683                           | 803                           | 205 |
|              |    |                                             | Right                                       | 175'                        | 175'                          | 38                            | 928                       | 25                            | 28                            | 838 |
|              | SB | Left                                        | 200'                                        | 200'                        | 170                           | 170                           | 170                       | 258                           | 258                           | 233 |
|              |    | Thru (2)                                    |                                             |                             | 848                           | 955                           | 968                       | 608                           | 805                           | 838 |
|              |    |                                             | Right                                       | 200'                        | 200'                          | 890                           | 25                        | 25                            | 630                           | 105 |

\*With Development conditions with 2 NBL turn lanes, With Development North Access Signalized conditions with 1 NBL turn lane.

**Table 5 - Level of Service Matrices**

**3. Proposed North Site Access and US Route 202  
(5% To/From West on Ridge Road)**

| Time Period                   |             | Weekday Afternoon<br>Peak Hour |                               | Saturday Midday<br>Peak Hour  |                               |
|-------------------------------|-------------|--------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Year                          |             | 2033 Design Year               |                               | 2033 Design Year              |                               |
| Development Condition         |             | w/Dev<br>Original Access Plan  | w/Dev<br>Modified Access Plan | w/Dev<br>Original Access Plan | w/Dev<br>Modified Access Plan |
| Proposed North<br>Site Access | EB Right    | D<br><br>31.4                  | D<br><br>38.1                 | D<br><br>31.9                 | D<br><br>38.6                 |
|                               | Left        | (1)                            | D<br>51.8                     | (1)                           | D<br>53.9                     |
| US Route 202                  | NB Thru (2) |                                | A<br><br>0.9                  |                               | A<br><br>0.7                  |
|                               | Thru (2)    | (1)                            | A<br><br>3.8                  | (1)                           | A<br><br>3.1                  |
|                               | SB Right    | (1)                            | A<br>0.0                      | (1)                           | A<br>0.0                      |
|                               | Overall     | A<br><br>1.6                   | A<br><br>4.7                  | A<br><br>2.1                  | A<br><br>5.1                  |

(1) Movement operates at free-flow conditions.

**Table 6 - 95th Percentile Queue Matrices**

**3. Proposed North Site Access and US Route 202  
(5% To/From West on Ridge Road)**

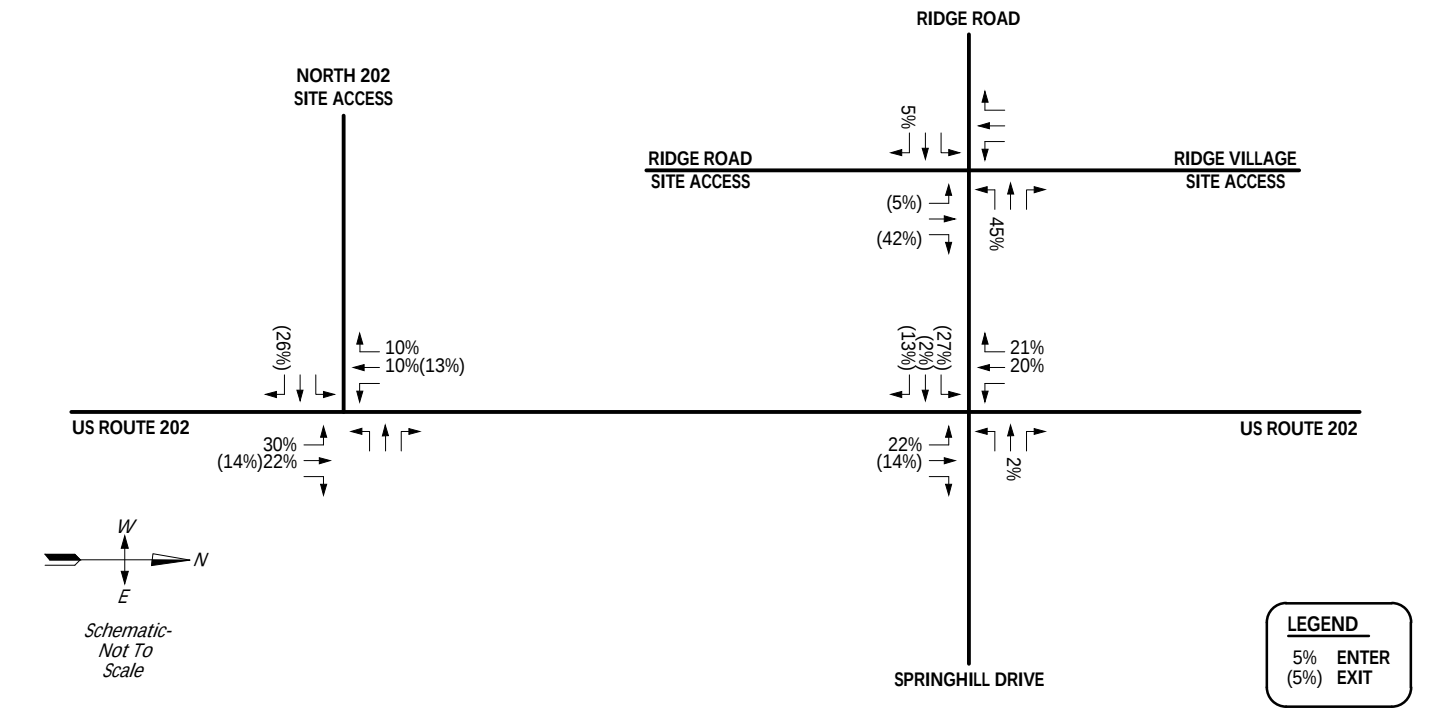
| Time Period                |             | Future Storage |
|----------------------------|-------------|----------------|
| Year                       |             |                |
| Development Condition      |             |                |
| Proposed North Site Access | EB Right    |                |
|                            |             |                |
| US Route 202               | Left        | 200'           |
|                            | NB Thru (2) |                |
|                            |             |                |
|                            | Thru (2)    | 475'           |
|                            | SB Right    |                |
|                            |             |                |
|                            |             |                |

| Weekday Afternoon Peak Hour |                            |
|-----------------------------|----------------------------|
| 2033 Design Year            |                            |
| w/Dev Original Access Plan  | w/Dev Modified Access Plan |
| 55                          | 119<br><br>(122)           |
| (1)                         | 158<br><br>(143)           |
|                             | 0<br><br>(116)             |
|                             |                            |
| (1)                         | 25<br><br>(84)             |
| (1)                         | 0<br>(25)                  |

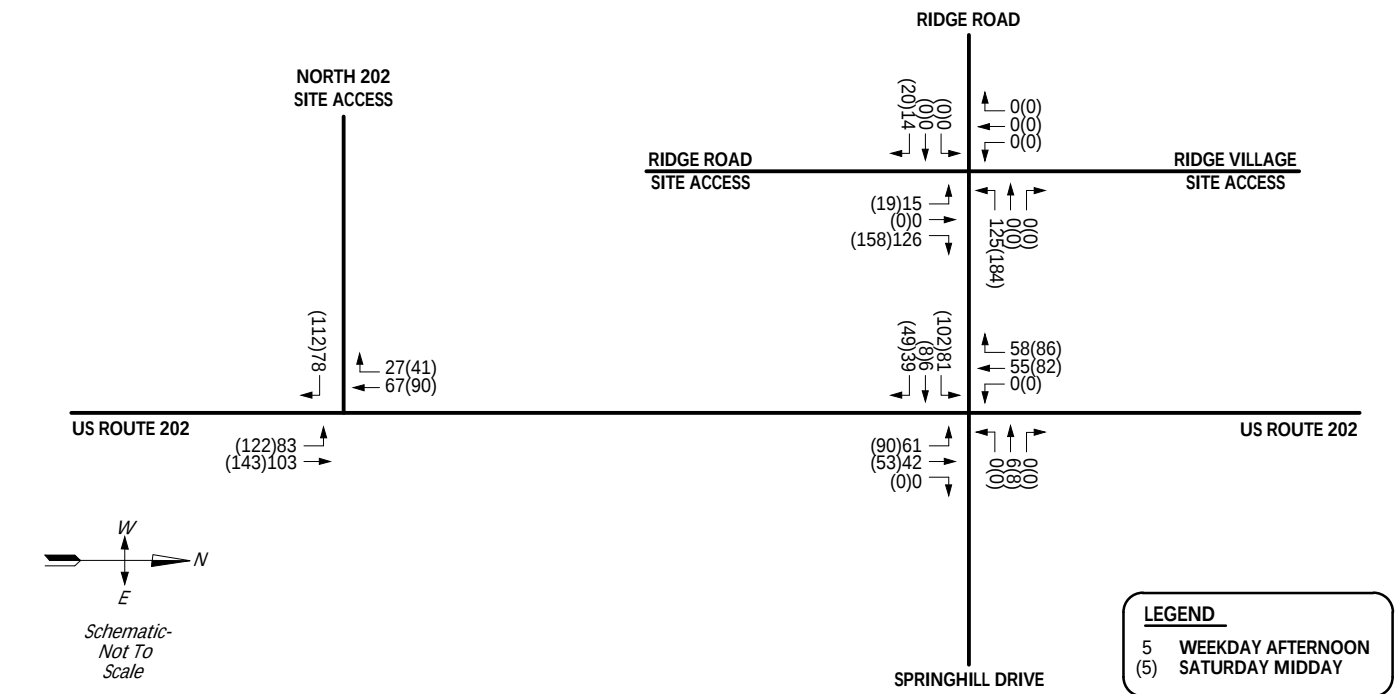
| Saturday Midday Peak Hour  |                            |
|----------------------------|----------------------------|
| 2033 Design Year           |                            |
| w/Dev Original Access Plan | w/Dev Modified Access Plan |
| 70                         | 138<br><br>(129)           |
| (1)                        | 190<br><br>(152)           |
|                            | 0<br><br>(211)             |
|                            |                            |
| (1)                        | 28<br><br>(82)             |
| (1)                        | 0<br>(27)                  |

(1) The reported queuing results (feet) are based on the HCM 7th Edition (outside the parenthesis) and SimTraffic (inside the parenthesis).

## New Trip Distribution 5% To/From West on Ridge Road



## New Trip Assignments 5% To/From West on Ridge Road



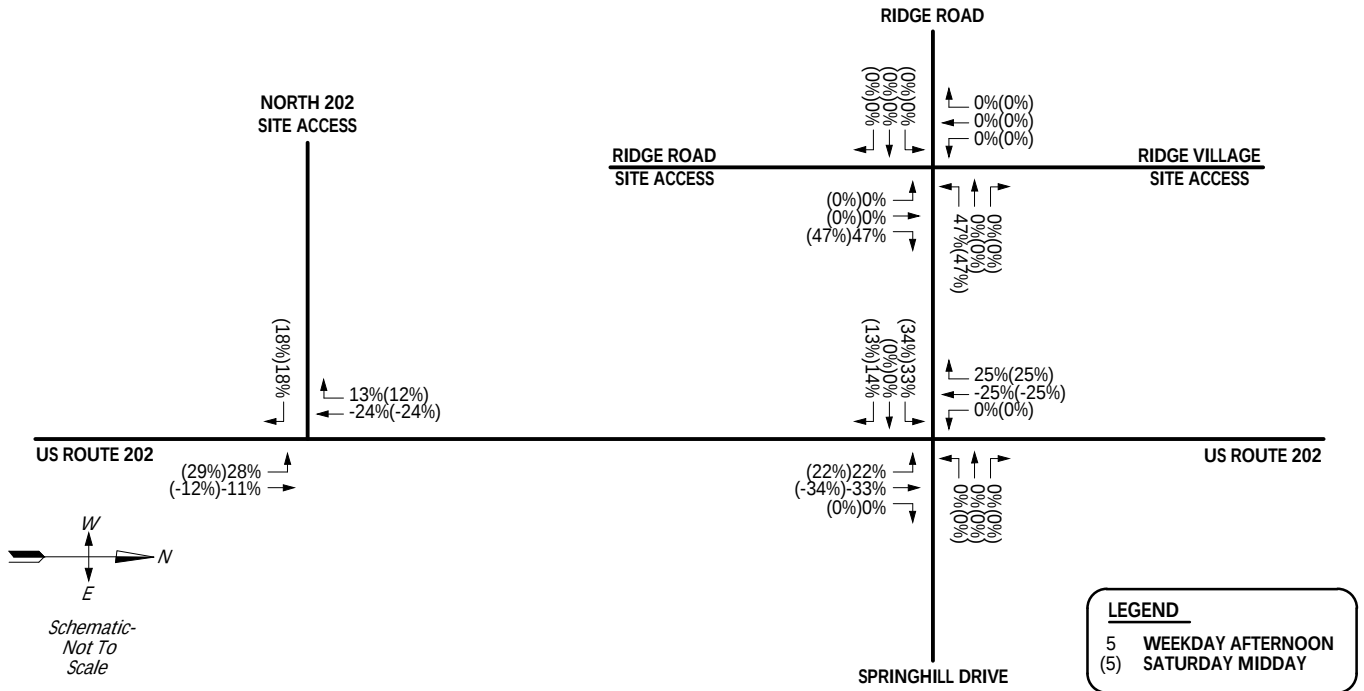
**FIGURE 1**

New Trips

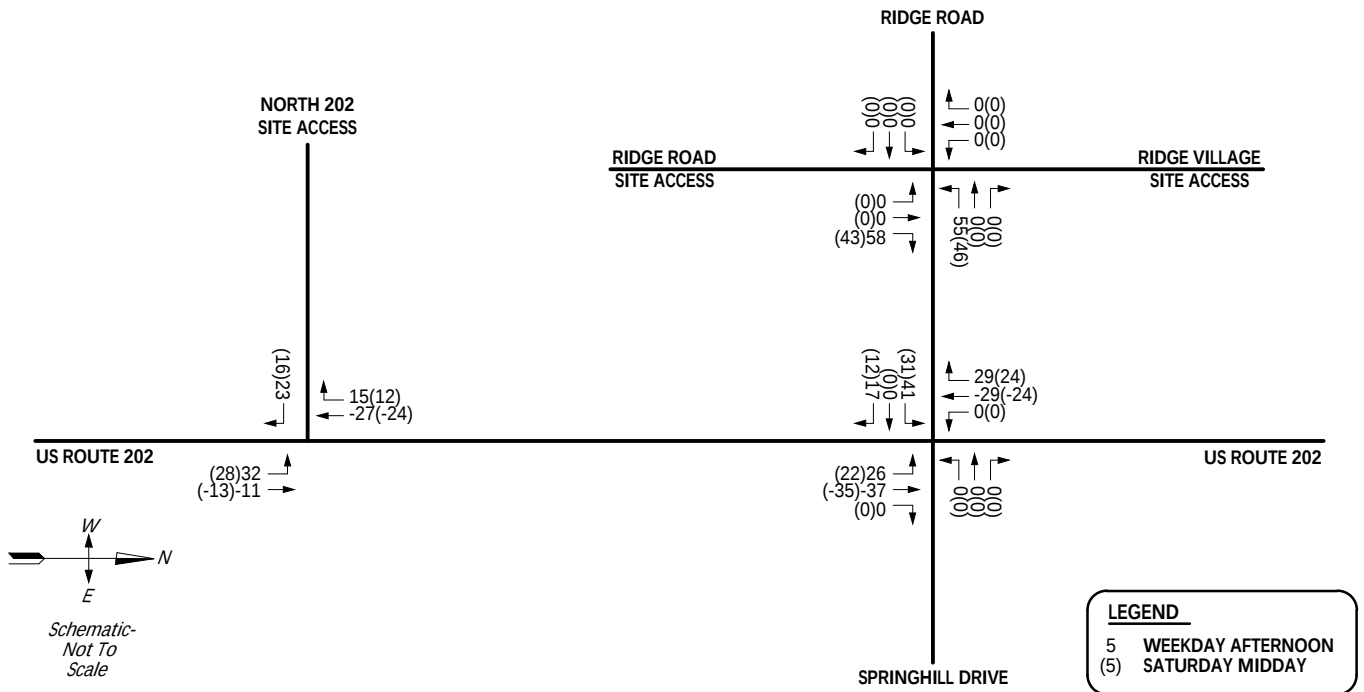
**THE SHOPPES AT CONCORD**  
CONCORD, DELAWARE COUNTY, PA

**Bowman**

# **Pass-By Trip Distribution** **5% To/From West on Ridge Road**

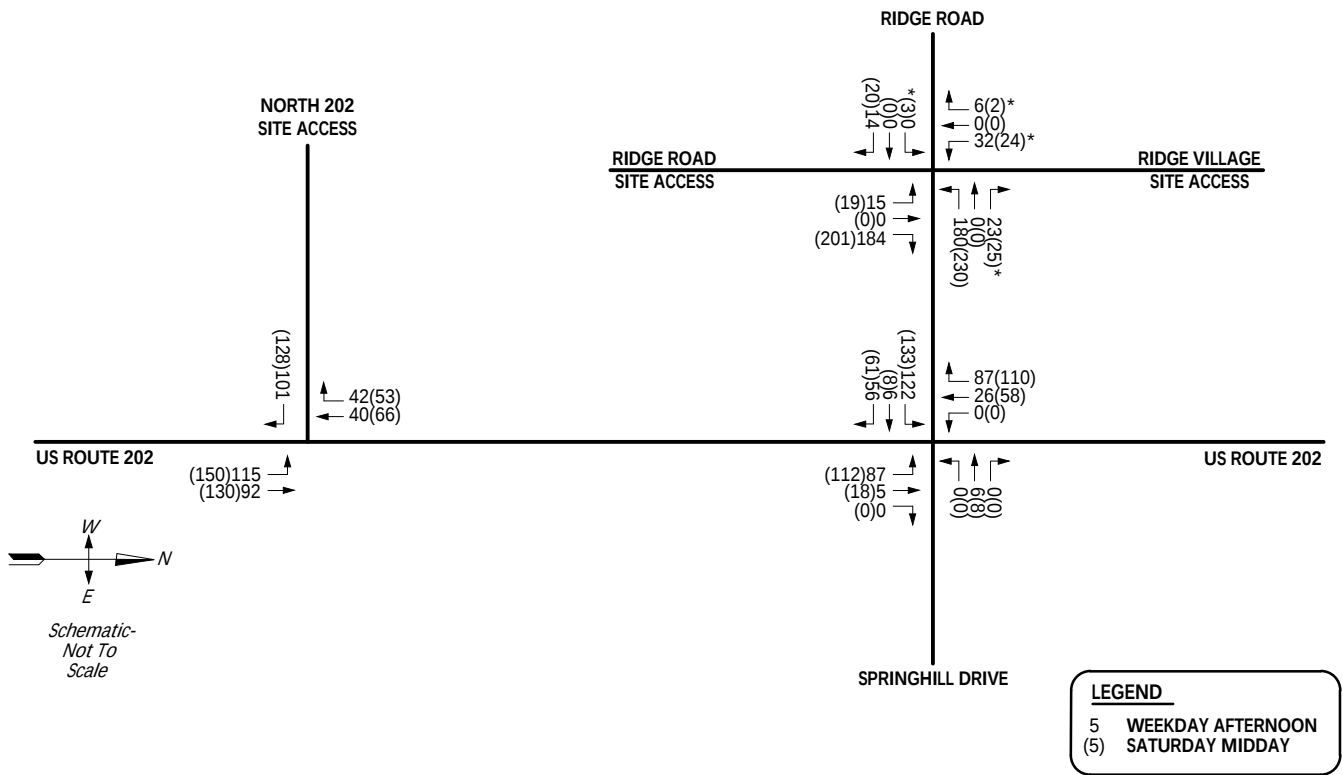


# **Pass-By Trip Assignments** **5% To/From West on Ridge Road**



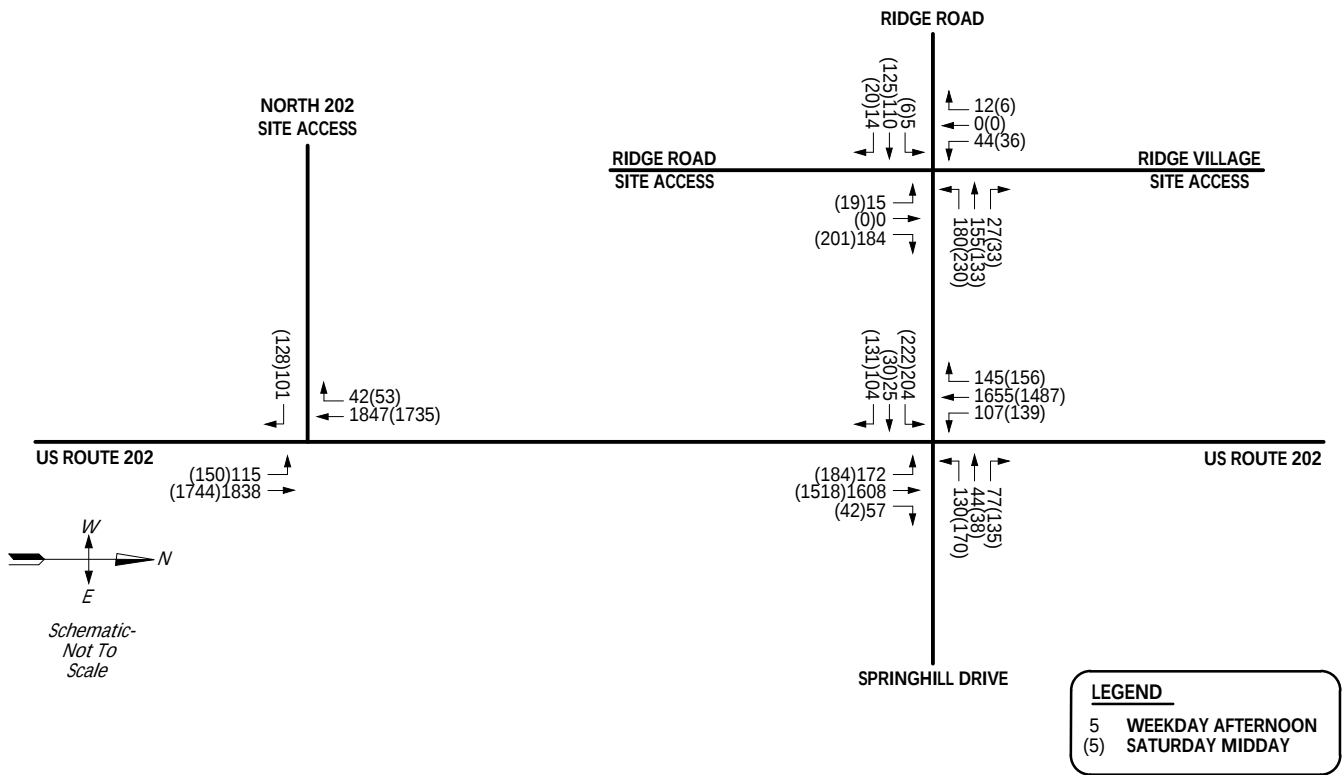
**FIGURE 2**  
 Pass-By Trips  
**THE SHOPPES AT CONCORD**  
 CONCORD, DELAWARE COUNTY, PA

**Net Site Trip Assignments**  
**5% To/From West on Ridge Road**



**FIGURE 3**  
 Net Site Trips  
**THE SHOPPES AT CONCORD**  
 CONCORD, DELAWARE COUNTY, PA

**Bowman**



**FIGURE 4**  
2033 Future Peak Hour Volumes - with Development  
**THE SHOPPES AT CONCORD**  
CONCORD, DELAWARE COUNTY, PA

**Bowman**

The top of the page features a dark green triangular area on the left containing the word "Bowman" in white. To the right, a white diagonal line separates this from an aerial photograph of a complex traffic intersection with a roundabout and several cars.

# Bowman

## **ATTACHMENT 1**

Traffic Analysis Worksheets



**Weekday Afternoon Peak Hour**

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Weekday Afternoon Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |  |  |  |  |                                                                                     |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)    | 5                                                                                 | 110                                                                               | 14                                                                                | 180                                                                               | 155                                                                               | 27                                                                                | 15                                                                                  | 0                                                                                   | 184                                                                                 | 44                                                                                  | 0                                                                                   | 12                                                                                  |
| Future Volume (vph)     | 5                                                                                 | 110                                                                               | 14                                                                                | 180                                                                               | 155                                                                               | 27                                                                                | 15                                                                                  | 0                                                                                   | 184                                                                                 | 44                                                                                  | 0                                                                                   | 12                                                                                  |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 11                                                                                | 11                                                                                | 14                                                                                | 11                                                                                | 12                                                                                | 14                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Storage Length (ft)     | 205                                                                               |                                                                                   | 205                                                                               | 175                                                                               |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   |
| Storage Lanes           | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)       | 75                                                                                |                                                                                   |                                                                                   | 75                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                     |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.875                                                                               |                                                                                     |                                                                                     | 0.971                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                     | 0.996                                                                               |                                                                                     |                                                                                     | 0.962                                                                               |                                                                                     |
| Satd. Flow (prot)       | 1736                                                                              | 1792                                                                              | 1680                                                                              | 1711                                                                              | 1881                                                                              | 1723                                                                              | 0                                                                                   | 1623                                                                                | 0                                                                                   | 0                                                                                   | 1775                                                                                | 0                                                                                   |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                     | 0.996                                                                               |                                                                                     |                                                                                     | 0.962                                                                               |                                                                                     |
| Satd. Flow (perm)       | 1736                                                                              | 1792                                                                              | 1680                                                                              | 1711                                                                              | 1881                                                                              | 1723                                                                              | 0                                                                                   | 1623                                                                                | 0                                                                                   | 0                                                                                   | 1775                                                                                | 0                                                                                   |
| Link Speed (mph)        |                                                                                   | 35                                                                                |                                                                                   |                                                                                   | 35                                                                                |                                                                                   |                                                                                     | 30                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 1587                                                                              |                                                                                   |                                                                                   | 577                                                                               |                                                                                   |                                                                                     | 578                                                                                 |                                                                                     |                                                                                     | 696                                                                                 |                                                                                     |
| Travel Time (s)         |                                                                                   | 30.9                                                                              |                                                                                   |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                     | 13.1                                                                                |                                                                                     |                                                                                     | 15.8                                                                                |                                                                                     |
| Peak Hour Factor        | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Heavy Vehicles (%)      | 0%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 1%                                                                                | 0%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)         | 5                                                                                 | 121                                                                               | 15                                                                                | 198                                                                               | 170                                                                               | 30                                                                                | 16                                                                                  | 0                                                                                   | 202                                                                                 | 48                                                                                  | 0                                                                                   | 13                                                                                  |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 5                                                                                 | 121                                                                               | 15                                                                                | 198                                                                               | 170                                                                               | 30                                                                                | 0                                                                                   | 218                                                                                 | 0                                                                                   | 0                                                                                   | 61                                                                                  | 0                                                                                   |
| Sign Control            |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                     | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:              | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:           | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Weekday Afternoon Peak Hour

| Intersection             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |       |      |                                                                                     |      |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 6.2                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |       |      |                                                                                     |      |
| Movement                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL  | NBT                                                                               | NBR   | SBL  | SBT                                                                                 | SBR  |
| Lane Configurations      |  |  |  |  |  |  |      |  |       |      |  |      |
| Traffic Vol, veh/h       | 5                                                                                 | 110                                                                               | 14                                                                                | 180                                                                               | 155                                                                               | 27                                                                                | 15   | 0                                                                                 | 184   | 44   | 0                                                                                   | 12   |
| Future Vol, veh/h        | 5                                                                                 | 110                                                                               | 14                                                                                | 180                                                                               | 155                                                                               | 27                                                                                | 15   | 0                                                                                 | 184   | 44   | 0                                                                                   | 12   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0     | 0    | 0                                                                                   | 0    |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Stop | Stop                                                                              | Stop  | Stop | Stop                                                                                | Stop |
| RT Channelized           | -                                                                                 | -                                                                                 | Yield                                                                             | -                                                                                 | -                                                                                 | None                                                                              | -    | -                                                                                 | Yield | -    | -                                                                                   | None |
| Storage Length           | 205                                                                               | -                                                                                 | 205                                                                               | 175                                                                               | -                                                                                 | 0                                                                                 | -    | -                                                                                 | -     | -    | -                                                                                   | -    |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 | -     | -    | 0                                                                                   | -    |
| Grade, %                 | -                                                                                 | 1                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 | -     | -    | 0                                                                                   | -    |
| Peak Hour Factor         | 91                                                                                | 91                                                                                | 91                                                                                | 91                                                                                | 91                                                                                | 91                                                                                | 91   | 91                                                                                | 91    | 91   | 91                                                                                  | 91   |
| Heavy Vehicles, %        | 0                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 0                                                                                 | 2    | 2                                                                                 | 2     | 0    | 0                                                                                   | 0    |
| Mvmt Flow                | 5                                                                                 | 121                                                                               | 15                                                                                | 198                                                                               | 170                                                                               | 30                                                                                | 16   | 0                                                                                 | 202   | 48   | 0                                                                                   | 13   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |      |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|------|-----|--------|-----|-----|
| Conflicting Flow All | 200    | 0 | 0 | 121    | 0 | 0 | 698    | 727  | 121 | 698    | 698 | 170 |
| Stage 1              | -      | - | - | -      | - | - | 132    | 132  | -   | 566    | 566 | -   |
| Stage 2              | -      | - | - | -      | - | - | 566    | 596  | -   | 132    | 132 | -   |
| Critical Hdwy        | 4.3    | - | - | 4.3    | - | - | 7.1    | 6.5  | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.12   | 5.52 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.12   | 5.52 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 3      | - | - | 3      | - | - | 3      | 4    | 3.1 | 3      | 4   | 3.1 |
| Pot Cap-1 Maneuver   | 1026   | - | - | 1092   | - | - | 400    | 353  | 993 | 400    | 367 | 931 |
| Stage 1              | -      | - | - | -      | - | - | 1013   | 790  | -   | 577    | 511 | -   |
| Stage 2              | -      | - | - | -      | - | - | 575    | 494  | -   | 1013   | 791 | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |      |     |        |     |     |
| Mov Cap-1 Maneuver   | 1026   | - | - | 1092   | - | - | 321    | 287  | 993 | 259    | 299 | 931 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 321    | 287  | -   | 259    | 299 | -   |
| Stage 1              | -      | - | - | -      | - | - | 1007   | 786  | -   | 472    | 418 | -   |
| Stage 2              | -      | - | - | -      | - | - | 464    | 404  | -   | 803    | 787 | -   |

| Approach          | EB   | WB   | NB   | SB    |
|-------------------|------|------|------|-------|
| HCM Ctrl Dly, s/v | 0.33 | 4.49 | 9.27 | 19.67 |
| HCM LOS           |      |      | A    | C     |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 1061  | 1026  | -   | -   | 1092  | -   | -   | 307   |
| HCM Lane V/C Ratio    | 0.206 | 0.005 | -   | -   | 0.181 | -   | -   | 0.201 |
| HCM Ctrl Dly (s/v)    | 9.3   | 8.5   | -   | -   | 9     | -   | -   | 19.7  |
| HCM Lane LOS          | A     | A     | -   | -   | A     | -   | -   | C     |
| HCM 95th %tile Q(veh) | 0.8   | 0     | -   | -   | 0.7   | -   | -   | 0.7   |

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Weekday Afternoon Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)    | 204                                                                               | 25                                                                                | 104                                                                               | 130                                                                               | 44                                                                                | 77                                                                                | 172                                                                                 | 1608                                                                                | 57                                                                                  | 107                                                                                 | 1655                                                                                | 145                                                                                 |
| Future Volume (vph)     | 204                                                                               | 25                                                                                | 104                                                                               | 130                                                                               | 44                                                                                | 77                                                                                | 172                                                                                 | 1608                                                                                | 57                                                                                  | 107                                                                                 | 1655                                                                                | 145                                                                                 |
| Ideal Flow (vphpl)      | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                |
| Lane Width (ft)         | 11                                                                                | 11                                                                                | 11                                                                                | 11                                                                                | 11                                                                                | 14                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 10                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 2%                                                                                |                                                                                   |                                                                                     | 1%                                                                                  |                                                                                     |                                                                                     | -1%                                                                                 |                                                                                     |
| Storage Length (ft)     | 250                                                                               |                                                                                   | 300                                                                               | 175                                                                               |                                                                                   | 175                                                                               | 315                                                                                 |                                                                                     | 175                                                                                 | 150                                                                                 |                                                                                     | 150                                                                                 |
| Storage Lanes           | 2                                                                                 |                                                                                   | 1                                                                                 | 2                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)       | 75                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 150                                                                                 |                                                                                     |                                                                                     | 150                                                                                 |                                                                                     |                                                                                     |
| Lane Util. Factor       | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                     |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   | 0.905                                                                             |                                                                                   |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)       | 3191                                                                              | 1731                                                                              | 1472                                                                              | 3175                                                                              | 1530                                                                              | 0                                                                                 | 1652                                                                                | 3336                                                                                | 1522                                                                                | 1604                                                                                | 3337                                                                                | 1538                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)       | 3191                                                                              | 1731                                                                              | 1472                                                                              | 3175                                                                              | 1530                                                                              | 0                                                                                 | 1652                                                                                | 3336                                                                                | 1522                                                                                | 1604                                                                                | 3337                                                                                | 1538                                                                                |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | No                                                                                |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)       |                                                                                   |                                                                                   | 159                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 168                                                                                 |                                                                                     |                                                                                     | 101                                                                                 |
| Link Speed (mph)        |                                                                                   | 35                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 577                                                                               |                                                                                   |                                                                                   | 1338                                                                              |                                                                                   |                                                                                     | 595                                                                                 |                                                                                     |                                                                                     | 1546                                                                                |                                                                                     |
| Travel Time (s)         |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                   | 36.5                                                                              |                                                                                   |                                                                                     | 9.0                                                                                 |                                                                                     |                                                                                     | 23.4                                                                                |                                                                                     |
| Peak Hour Factor        | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Heavy Vehicles (%)      | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 3%                                                                                | 3%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)         | 213                                                                               | 26                                                                                | 108                                                                               | 135                                                                               | 46                                                                                | 80                                                                                | 179                                                                                 | 1675                                                                                | 59                                                                                  | 111                                                                                 | 1724                                                                                | 151                                                                                 |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 213                                                                               | 26                                                                                | 108                                                                               | 135                                                                               | 126                                                                               | 0                                                                                 | 179                                                                                 | 1675                                                                                | 59                                                                                  | 111                                                                                 | 1724                                                                                | 151                                                                                 |
| Number of Detectors     | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                   | 2                                                                                   | 1                                                                                   | 1                                                                                   | 2                                                                                   | 1                                                                                   |
| Detector Template       | Left                                                                              |                                                                                   | Right                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | Right                                                                               |
| Leading Detector (ft)   | 35                                                                                | 35                                                                                | 20                                                                                | 35                                                                                | 35                                                                                |                                                                                   | 35                                                                                  | 456                                                                                 | 0                                                                                   | 35                                                                                  | 456                                                                                 | 35                                                                                  |
| Trailing Detector (ft)  | -5                                                                                | -5                                                                                | 0                                                                                 | -5                                                                                | -5                                                                                |                                                                                   | -5                                                                                  | 330                                                                                 | -6                                                                                  | -5                                                                                  | 330                                                                                 | -5                                                                                  |
| Detector 1 Position(ft) | -5                                                                                | -5                                                                                | 0                                                                                 | -5                                                                                | -5                                                                                |                                                                                   | -5                                                                                  | 330                                                                                 | -6                                                                                  | -5                                                                                  | 330                                                                                 | -5                                                                                  |
| Detector 1 Size(ft)     | 40                                                                                | 40                                                                                | 20                                                                                | 40                                                                                | 40                                                                                |                                                                                   | 40                                                                                  | 6                                                                                   | 4                                                                                   | 40                                                                                  | 6                                                                                   | 40                                                                                  |
| Detector 1 Type         | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 2 Position(ft) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 450                                                                                 |                                                                                     |                                                                                     | 450                                                                                 |                                                                                     |
| Detector 2 Size(ft)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Detector 2 Type         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Cl+Ex                                                                               |                                                                                     |                                                                                     | Cl+Ex                                                                               |                                                                                     |
| Detector 2 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 2 Extend (s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Turn Type               | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases        | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 7                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase          | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   | 5                                                                                   | 2                                                                                   | 7                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 5.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 15.0                                                                                | 15.0                                                                                | 3.0                                                                                 | 15.0                                                                                | 5.0                                                                                 |
| Minimum Split (s)       | 13.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              |                                                                                   | 12.0                                                                                | 37.0                                                                                | 37.0                                                                                | 12.0                                                                                | 37.0                                                                                | 13.0                                                                                |
| Total Split (s)         | 16.0                                                                              | 19.0                                                                              | 19.0                                                                              | 17.0                                                                              | 20.0                                                                              |                                                                                   | 22.0                                                                                | 72.0                                                                                | 72.0                                                                                | 22.0                                                                                | 72.0                                                                                | 16.0                                                                                |

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Weekday Afternoon Peak Hour

|                       |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group            | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Total Split (%)       | 12.3%                                                                             | 14.6%                                                                             | 14.6%                                                                             | 13.1%                                                                             | 15.4%                                                                             |                                                                                   | 16.9%                                                                               | 55.4%                                                                               | 55.4%                                                                               | 16.9%                                                                               | 55.4%                                                                               | 12.3%                                                                               |
| Maximum Green (s)     | 8.0                                                                               | 11.0                                                                              | 11.0                                                                              | 9.0                                                                               | 12.0                                                                              |                                                                                   | 15.0                                                                                | 65.0                                                                                | 65.0                                                                                | 15.0                                                                                | 65.0                                                                                | 8.0                                                                                 |
| Yellow Time (s)       | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 4.0                                                                                 |
| Lost Time Adjust (s)  | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              |                                                                                   | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 |
| Lead/Lag              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                                | Lag                                                                                 | Lag                                                                                 | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?    | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | Yes                                                                                 |
| 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                                                                                 |
| Recall Mode           | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                                | C-Max                                                                               | C-Max                                                                               | None                                                                                | C-Max                                                                               | None                                                                                |

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive

|                                                                                                |                                                                                                    |                                                                                                  |                                                                                                  |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|  Ø1<br>22 s   |  Ø2 (R)<br>72 s   |  Ø3<br>17 s   |  Ø4<br>19 s   |
|  Ø5<br>22 s |  Ø6 (R)<br>72 s |  Ø7<br>16 s |  Ø8<br>20 s |

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Weekday Afternoon Peak Hour

|                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                    |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)                                                                                 | 204                                                                               | 25                                                                                | 104                                                                               | 130                                                                               | 44                                                                                | 77                                                                                | 172                                                                                 | 1608                                                                                | 57                                                                                  | 107                                                                                 | 1655                                                                                | 145                                                                                 |
| Future Volume (veh/h)                                                                                  | 204                                                                               | 25                                                                                | 104                                                                               | 130                                                                               | 44                                                                                | 77                                                                                | 172                                                                                 | 1608                                                                                | 57                                                                                  | 107                                                                                 | 1655                                                                                | 145                                                                                 |
| Initial Q (Qb), veh                                                                                    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Lane Width Adj.                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.04                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped-Bike Adj(A_pbT)                                                                                    | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                  | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                 | 1794                                                                              | 1794                                                                              | 1794                                                                              | 1778                                                                              | 1778                                                                              | 1805                                                                              | 1752                                                                                | 1766                                                                                | 1794                                                                                | 1837                                                                                | 1795                                                                                | 1837                                                                                |
| Adj Flow Rate, veh/h                                                                                   | 212                                                                               | 26                                                                                | 0                                                                                 | 135                                                                               | 46                                                                                | 80                                                                                | 179                                                                                 | 1675                                                                                | 59                                                                                  | 111                                                                                 | 1724                                                                                | 151                                                                                 |
| Peak Hour Factor                                                                                       | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Percent Heavy Veh, %                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 3                                                                                   | 2                                                                                   | 0                                                                                   | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                             | 230                                                                               | 184                                                                               |                                                                                   | 220                                                                               | 58                                                                                | 101                                                                               | 205                                                                                 | 1822                                                                                | 825                                                                                 | 154                                                                                 | 1731                                                                                | 898                                                                                 |
| Arrive On Green                                                                                        | 0.07                                                                              | 0.10                                                                              | 0.00                                                                              | 0.07                                                                              | 0.10                                                                              | 0.10                                                                              | 0.25                                                                                | 1.00                                                                                | 1.00                                                                                | 0.09                                                                                | 0.51                                                                                | 0.51                                                                                |
| Sat Flow, veh/h                                                                                        | 3315                                                                              | 1794                                                                              | 1521                                                                              | 3284                                                                              | 582                                                                               | 1013                                                                              | 1669                                                                                | 3356                                                                                | 1521                                                                                | 1750                                                                                | 3410                                                                                | 1557                                                                                |
| Grp Volume(v), veh/h                                                                                   | 212                                                                               | 26                                                                                | 0                                                                                 | 135                                                                               | 0                                                                                 | 126                                                                               | 179                                                                                 | 1675                                                                                | 59                                                                                  | 111                                                                                 | 1724                                                                                | 151                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                               | 1658                                                                              | 1794                                                                              | 1521                                                                              | 1642                                                                              | 0                                                                                 | 1595                                                                              | 1669                                                                                | 1678                                                                                | 1521                                                                                | 1750                                                                                | 1705                                                                                | 1557                                                                                |
| Q Serve(g_s), s                                                                                        | 8.3                                                                               | 1.7                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                               | 10.0                                                                              | 13.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 8.0                                                                                 | 65.5                                                                                | 5.9                                                                                 |
| Cycle Q Clear(g_c), s                                                                                  | 8.3                                                                               | 1.7                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                               | 10.0                                                                              | 13.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 8.0                                                                                 | 65.5                                                                                | 5.9                                                                                 |
| Prop In Lane                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.63                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                 | 230                                                                               | 184                                                                               |                                                                                   | 220                                                                               | 0                                                                                 | 160                                                                               | 205                                                                                 | 1822                                                                                | 825                                                                                 | 154                                                                                 | 1731                                                                                | 898                                                                                 |
| V/C Ratio(X)                                                                                           | 0.92                                                                              | 0.14                                                                              |                                                                                   | 0.61                                                                              | 0.00                                                                              | 0.79                                                                              | 0.87                                                                                | 0.92                                                                                | 0.07                                                                                | 0.72                                                                                | 1.00                                                                                | 0.17                                                                                |
| Avail Cap(c_a), veh/h                                                                                  | 230                                                                               | 184                                                                               |                                                                                   | 253                                                                               | 0                                                                                 | 160                                                                               | 205                                                                                 | 1822                                                                                | 825                                                                                 | 215                                                                                 | 1731                                                                                | 898                                                                                 |
| HCM Platoon Ratio                                                                                      | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                                | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                     | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.80                                                                                | 0.80                                                                                | 0.80                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                               | 60.2                                                                              | 53.1                                                                              | 0.0                                                                               | 59.0                                                                              | 0.0                                                                               | 57.2                                                                              | 48.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 57.7                                                                                | 31.9                                                                                | 12.9                                                                                |
| Incr Delay (d2), s/veh                                                                                 | 39.1                                                                              | 0.3                                                                               | 0.0                                                                               | 3.5                                                                               | 0.0                                                                               | 22.9                                                                              | 26.1                                                                                | 7.5                                                                                 | 0.1                                                                                 | 6.9                                                                                 | 20.7                                                                                | 0.4                                                                                 |
| Initial Q Delay(d3), s/veh                                                                             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(95%),veh/ln                                                                               | 8.3                                                                               | 1.4                                                                               | 0.0                                                                               | 4.1                                                                               | 0.0                                                                               | 8.8                                                                               | 9.9                                                                                 | 3.4                                                                                 | 0.1                                                                                 | 6.8                                                                                 | 38.7                                                                                | 0.2                                                                                 |
| Unsig. Movement Delay, s/veh                                                                           | 30.70                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d), s/veh                                                                                  | 99.2                                                                              | 53.5                                                                              | 30.7                                                                              | 62.5                                                                              | 0.0                                                                               | 80.0                                                                              | 74.2                                                                                | 7.5                                                                                 | 0.1                                                                                 | 64.6                                                                                | 52.5                                                                                | 13.3                                                                                |
| LnGrp LOS                                                                                              | F                                                                                 | D                                                                                 | C                                                                                 | E                                                                                 |                                                                                   | F                                                                                 | E                                                                                   | A                                                                                   | A                                                                                   | E                                                                                   | D                                                                                   | B                                                                                   |
| Approach Vol, veh/h                                                                                    | 346                                                                               |                                                                                   |                                                                                   | 261                                                                               |                                                                                   |                                                                                   | 1913                                                                                |                                                                                     |                                                                                     | 1986                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                  | 74.4                                                                              |                                                                                   |                                                                                   | 71.0                                                                              |                                                                                   |                                                                                   | 13.5                                                                                |                                                                                     |                                                                                     | 50.2                                                                                |                                                                                     |                                                                                     |
| Approach LOS                                                                                           | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                   | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                               | 22.0                                                                              | 72.0                                                                              | 15.7                                                                              | 20.3                                                                              | 17.4                                                                              | 76.6                                                                              | 16.0                                                                                | 20.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                | 7.0                                                                               | 7.0                                                                               | 8.0                                                                               | 8.0                                                                               | 7.0                                                                               | 7.0                                                                               | 8.0                                                                                 | 8.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                            | 15.0                                                                              | 65.0                                                                              | 9.0                                                                               | 11.0                                                                              | 15.0                                                                              | 65.0                                                                              | 8.0                                                                                 | 12.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                           | 15.9                                                                              | 68.0                                                                              | 7.7                                                                               | 4.2                                                                               | 10.5                                                                              | 2.5                                                                               | 10.8                                                                                | 12.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.1                                                                               | 58.8                                                                              | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 7th Control Delay, s/veh                                                                           | 37.7                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 7th LOS                                                                                            | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Bowman  
3: US 202

2033 Future with Development Conditions Whole Site as Shopping Center  
Weekday Afternoon Peak Hour

|                         |  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations     |                                                                                   |  |  |  |  |  |
| Traffic Volume (vph)    | 0                                                                                 | 101                                                                               | 115                                                                               | 1838                                                                              | 1847                                                                              | 42                                                                                |
| Future Volume (vph)     | 0                                                                                 | 101                                                                               | 115                                                                               | 1838                                                                              | 1847                                                                              | 42                                                                                |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)     | 0                                                                                 | 0                                                                                 | 200                                                                               |                                                                                   |                                                                                   | 200                                                                               |
| Storage Lanes           | 0                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |
| Taper Length (ft)       | 25                                                                                |                                                                                   | 25                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Lane Util. Factor       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |
| Frt                     |                                                                                   | 0.865                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |
| Flt Protected           |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)       | 0                                                                                 | 1611                                                                              | 1770                                                                              | 3539                                                                              | 3539                                                                              | 1583                                                                              |
| Flt Permitted           |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)       | 0                                                                                 | 1611                                                                              | 1770                                                                              | 3539                                                                              | 3539                                                                              | 1583                                                                              |
| Right Turn on Red       |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)       |                                                                                   | 29                                                                                |                                                                                   |                                                                                   |                                                                                   | 43                                                                                |
| Link Speed (mph)        | 25                                                                                |                                                                                   |                                                                                   | 45                                                                                | 45                                                                                |                                                                                   |
| Link Distance (ft)      | 251                                                                               |                                                                                   |                                                                                   | 240                                                                               | 595                                                                               |                                                                                   |
| Travel Time (s)         | 6.8                                                                               |                                                                                   |                                                                                   | 3.6                                                                               | 9.0                                                                               |                                                                                   |
| Peak Hour Factor        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Adj. Flow (vph)         | 0                                                                                 | 110                                                                               | 125                                                                               | 1998                                                                              | 2008                                                                              | 46                                                                                |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)   | 0                                                                                 | 110                                                                               | 125                                                                               | 1998                                                                              | 2008                                                                              | 46                                                                                |
| Number of Detectors     |                                                                                   | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 |
| Detector Template       |                                                                                   | Right                                                                             | Left                                                                              | Thru                                                                              | Thru                                                                              | Right                                                                             |
| Leading Detector (ft)   |                                                                                   | 20                                                                                | 20                                                                                | 100                                                                               | 100                                                                               | 20                                                                                |
| Trailing Detector (ft)  |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Position(ft) |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Size(ft)     |                                                                                   | 20                                                                                | 20                                                                                | 6                                                                                 | 6                                                                                 | 20                                                                                |
| Detector 1 Type         |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |
| Detector 1 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)   |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Queue (s)    |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Delay (s)    |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 2 Position(ft) |                                                                                   |                                                                                   |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |
| Detector 2 Size(ft)     |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |
| Detector 2 Type         |                                                                                   |                                                                                   |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 2 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)   |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Turn Type               |                                                                                   | Perm                                                                              | Prot                                                                              | NA                                                                                | NA                                                                                | Perm                                                                              |
| Protected Phases        |                                                                                   |                                                                                   | 5                                                                                 | 2                                                                                 | 6                                                                                 |                                                                                   |
| Permitted Phases        |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |
| Detector Phase          |                                                                                   | 5                                                                                 | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)     |                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)       |                                                                                   | 11.0                                                                              | 11.0                                                                              | 24.0                                                                              | 24.0                                                                              | 24.0                                                                              |
| Total Split (s)         |                                                                                   | 28.0                                                                              | 28.0                                                                              | 130.0                                                                             | 102.0                                                                             | 102.0                                                                             |
| Total Split (%)         |                                                                                   | 21.5%                                                                             | 21.5%                                                                             | 100.0%                                                                            | 78.5%                                                                             | 78.5%                                                                             |
| Maximum Green (s)       |                                                                                   | 22.0                                                                              | 22.0                                                                              | 124.0                                                                             | 96.0                                                                              | 96.0                                                                              |
| Yellow Time (s)         |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |

01 - 5% - 33 W PM TOTAL SITE No WB Right, Signalized North Access 2033 Future with Development Conditions  
V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineering\12-24-2021\Analysis\Synch

Bowman  
3: US 202

2033 Future with Development Conditions Whole Site as Shopping Center  
Weekday Afternoon Peak Hour

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| All-Red Time (s)        |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |
| Lost Time Adjust (s)    |                                                                                   | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              |
| Total Lost Time (s)     |                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag                |                                                                                   | Lead                                                                              | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               |
| Lead-Lag Optimize?      |                                                                                   | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               |
| Vehicle Extension (s)   |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |
| Recall Mode             |                                                                                   | Max                                                                               | Max                                                                               | C-Max                                                                             | C-Max                                                                             | C-Max                                                                             |
| Walk Time (s)           |                                                                                   |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |
| Flash Don't Walk (s)    |                                                                                   |                                                                                   |                                                                                   | 11.0                                                                              | 11.0                                                                              | 11.0                                                                              |
| Pedestrian Calls (#/hr) |                                                                                   |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Act Effect Green (s)    |                                                                                   | 23.0                                                                              | 23.0                                                                              | 130.0                                                                             | 97.0                                                                              | 97.0                                                                              |
| Actuated g/C Ratio      |                                                                                   | 0.18                                                                              | 0.18                                                                              | 1.00                                                                              | 0.75                                                                              | 0.75                                                                              |
| v/c Ratio               |                                                                                   | 0.36                                                                              | 0.40                                                                              | 0.56                                                                              | 0.76                                                                              | 0.04                                                                              |
| Control Delay (s/veh)   |                                                                                   | 38.1                                                                              | 51.8                                                                              | 0.7                                                                               | 2.6                                                                               | 0.0                                                                               |
| Queue Delay             |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 1.1                                                                               | 0.0                                                                               |
| Total Delay (s/veh)     |                                                                                   | 38.1                                                                              | 51.8                                                                              | 0.9                                                                               | 3.8                                                                               | 0.0                                                                               |
| LOS                     |                                                                                   | D                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |
| Approach Delay (s/veh)  | 38.1                                                                              |                                                                                   |                                                                                   | 3.9                                                                               | 3.7                                                                               |                                                                                   |
| Approach LOS            | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 | A                                                                                 |                                                                                   |
| Queue Length 50th (ft)  |                                                                                   | 60                                                                                | 94                                                                                | 0                                                                                 | 20                                                                                | 0                                                                                 |
| Queue Length 95th (ft)  |                                                                                   | 119                                                                               | 158                                                                               | 0                                                                                 | m24                                                                               | m0                                                                                |
| Internal Link Dist (ft) | 171                                                                               |                                                                                   |                                                                                   | 160                                                                               | 515                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   | 200                                                                               |                                                                                   |                                                                                   | 200                                                                               |
| Base Capacity (vph)     |                                                                                   | 308                                                                               | 313                                                                               | 3539                                                                              | 2640                                                                              | 1192                                                                              |
| Starvation Cap Reductn  |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 372                                                                               | 0                                                                                 |
| Spillback Cap Reductn   |                                                                                   | 0                                                                                 | 0                                                                                 | 675                                                                               | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       |                                                                                   | 0.36                                                                              | 0.40                                                                              | 0.70                                                                              | 0.89                                                                              | 0.04                                                                              |

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 4.7

Intersection LOS: A

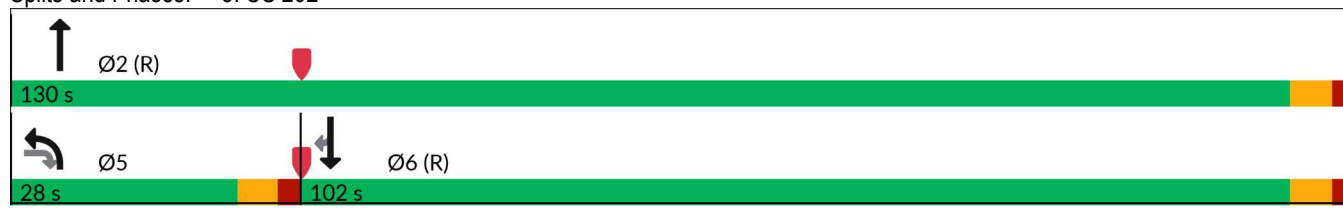
Intersection Capacity Utilization 65.8%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: US 202



Summary of All Intervals

| Run Number              | 1     | 2     | 3     | 4     | 5     | Avg   |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Start Time              | 6:57  | 6:57  | 6:57  | 6:57  | 6:57  | 6:57  |
| End Time                | 8:00  | 8:00  | 8:00  | 8:00  | 8:00  | 8:00  |
| Total Time (min)        | 63    | 63    | 63    | 63    | 63    | 63    |
| Time Recorded (min)     | 60    | 60    | 60    | 60    | 60    | 60    |
| # of Intervals          | 2     | 2     | 2     | 2     | 2     | 2     |
| # of Recorded Intervals | 1     | 1     | 1     | 1     | 1     | 1     |
| Vehs Entered            | 6385  | 6505  | 6476  | 6396  | 6477  | 6445  |
| Vehs Exited             | 6253  | 6356  | 6373  | 6280  | 6357  | 6324  |
| Starting Vehs           | 210   | 248   | 228   | 217   | 223   | 223   |
| Ending Vehs             | 342   | 397   | 331   | 333   | 343   | 347   |
| Travel Distance (mi)    | 5376  | 5384  | 5443  | 5348  | 5379  | 5386  |
| Travel Time (hr)        | 325.7 | 380.5 | 339.2 | 327.3 | 321.2 | 338.8 |
| Total Delay (hr)        | 165.7 | 220.4 | 176.9 | 168.2 | 161.3 | 178.5 |
| Total Stops             | 8806  | 9905  | 8845  | 7924  | 8480  | 8788  |
| Fuel Used (gal)         | 219.0 | 233.9 | 224.3 | 218.9 | 218.1 | 222.9 |

Interval #0 Information Seeding

|                                     |      |
|-------------------------------------|------|
| Start Time                          | 6:57 |
| End Time                            | 7:00 |
| Total Time (min)                    | 3    |
| Volumes adjusted by Growth Factors. |      |
| No data recorded this interval.     |      |

Interval #1 Information Recording

|                                     |      |
|-------------------------------------|------|
| Start Time                          | 7:00 |
| End Time                            | 8:00 |
| Total Time (min)                    | 60   |
| Volumes adjusted by Growth Factors. |      |

| Run Number           | 1     | 2     | 3     | 4     | 5     | Avg   |
|----------------------|-------|-------|-------|-------|-------|-------|
| Vehs Entered         | 6385  | 6505  | 6476  | 6396  | 6477  | 6445  |
| Vehs Exited          | 6253  | 6356  | 6373  | 6280  | 6357  | 6324  |
| Starting Vehs        | 210   | 248   | 228   | 217   | 223   | 223   |
| Ending Vehs          | 342   | 397   | 331   | 333   | 343   | 347   |
| Travel Distance (mi) | 5376  | 5384  | 5443  | 5348  | 5379  | 5386  |
| Travel Time (hr)     | 325.7 | 380.5 | 339.2 | 327.3 | 321.2 | 338.8 |
| Total Delay (hr)     | 165.7 | 220.4 | 176.9 | 168.2 | 161.3 | 178.5 |
| Total Stops          | 8806  | 9905  | 8845  | 7924  | 8480  | 8788  |
| Fuel Used (gal)      | 219.0 | 233.9 | 224.3 | 218.9 | 218.1 | 222.9 |

1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Performance by movement

| Movement           | EBL | EBT | EBR | WBL | WBT | WBR | NBL | NBR | SBL | SBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Denied Del/Veh (s) | 2.2 | 0.2 | 2.4 | 0.0 | 0.0 | 0.0 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 |
| Total Del/Veh (s)  | 2.2 | 0.7 | 1.6 | 3.5 | 1.2 | 0.6 | 9.1 | 2.2 | 8.3 | 3.2 | 2.5 |

2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Performance by movement

| Movement           | EBL   | EBT  | EBR | WBL  | WBT  | WBR  | NBL  | NBT  | NBR | SBL   | SBT  | SBR  |
|--------------------|-------|------|-----|------|------|------|------|------|-----|-------|------|------|
| Denied Del/Veh (s) | 0.0   | 0.0  | 0.0 | 2.8  | 0.5  | 0.4  | 0.0  | 0.0  | 0.0 | 8.1   | 7.8  | 7.9  |
| Total Del/Veh (s)  | 122.6 | 49.3 | 6.2 | 48.7 | 65.8 | 65.0 | 75.0 | 31.8 | 9.2 | 107.0 | 81.1 | 50.8 |

2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Performance by movement

| Movement           | All  |
|--------------------|------|
| Denied Del/Veh (s) | 3.6  |
| Total Del/Veh (s)  | 60.2 |

3: US 202 Performance by movement

| Movement           | EBR  | NBL  | NBT | SBT  | SBR | All |
|--------------------|------|------|-----|------|-----|-----|
| Denied Del/Veh (s) | 0.2  | 0.0  | 0.0 | 0.0  | 0.0 | 0.0 |
| Total Del/Veh (s)  | 36.9 | 53.1 | 1.1 | 11.3 | 8.7 | 7.5 |

4: US 202 & South Site Access Performance by movement

| Movement           | EBR  | SBT | SBR | All |
|--------------------|------|-----|-----|-----|
| Denied Del/Veh (s) | 0.2  | 0.0 | 0.0 | 0.0 |
| Total Del/Veh (s)  | 47.2 | 2.0 | 2.3 | 4.4 |

5: US 202 Northbound/US 202 Northbound & Issac Bullock Lane/Buck Tavern Way Performance by movement

| Movement           | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  | All  |
|--------------------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.5  | 0.0  | 0.1  | 0.1  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Del/Veh (s)  | 27.3 | 25.5 | 26.4 | 29.0 | 12.3 | 15.1 | 12.4 | 15.9 |

6: US 202 Southbound & Springwater Plaza Access/Issac Bullock Lane Performance by movement

| Movement           | EBT  | EBR  | WBL  | WBT  | SBL | SBT  | SBR | All  |
|--------------------|------|------|------|------|-----|------|-----|------|
| Denied Del/Veh (s) | 0.1  | 0.1  | 9.8  | 9.1  | 0.1 | 0.0  | 0.0 | 0.5  |
| Total Del/Veh (s)  | 29.0 | 18.0 | 16.2 | 19.6 | 9.0 | 11.4 | 5.7 | 11.9 |

7: Smirthbridge Road (S.R. 3046)/Smithbridge Road (S.R. 3046) & US 202 Southbound Performance by movement

| Movement           | EBT  | EBR  | WBL  | WBT  | SBL  | SBT  | SBR  | All  |
|--------------------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.2  | 0.2  | 0.0  | 0.0  | 0.1  | 0.1  | 0.0  | 0.1  |
| Total Del/Veh (s)  | 42.2 | 34.5 | 44.0 | 41.4 | 20.9 | 25.7 | 22.2 | 28.0 |

8: US 202 Northbound & Smithbridge Road (S.R. 3046) Performance by movement

| Movement           | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  | All  |
|--------------------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.2  | 0.6  | 0.3  | 0.3  | 14.4 | 14.1 | 14.6 | 11.6 |
| Total Del/Veh (s)  | 40.4 | 41.9 | 58.6 | 48.6 | 40.6 | 42.4 | 38.1 | 43.5 |

20: US 202 & US 202 Northbound Performance by movement

| Movement           | SBT | NWT | NWR  | All |
|--------------------|-----|-----|------|-----|
| Denied Del/Veh (s) | 0.4 | 0.0 | 0.3  | 0.4 |
| Total Del/Veh (s)  | 2.0 | 2.2 | 11.0 | 6.5 |

Total Network Performance

| Denied Del/Veh (s) |  | 7.4  |  |
|--------------------|--|------|--|
| Total Del/Veh (s)  |  | 89.2 |  |

Queuing and Blocking Report  
Weekday Afternoon Peak Hour

12/05/2025

Intersection: 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | L   | L   | LTR | LTR |
| Maximum Queue (ft)    | 11  | 43  | 77  | 45  |
| Average Queue (ft)    | 0   | 12  | 24  | 18  |
| 95th Queue (ft)       | 6   | 37  | 65  | 35  |
| Link Distance (ft)    |     |     | 540 | 636 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) | 205 | 175 |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

Intersection: 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive

| Movement              | EB  | EB  | EB  | EB  | WB  | WB  | WB   | NB  | NB  | NB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Directions Served     | L   | L   | T   | R   | L   | L   | TR   | L   | T   | T   | R   | L   |
| Maximum Queue (ft)    | 215 | 243 | 263 | 80  | 110 | 163 | 191  | 380 | 511 | 512 | 345 | 300 |
| Average Queue (ft)    | 118 | 135 | 36  | 3   | 32  | 65  | 88   | 157 | 356 | 368 | 76  | 192 |
| 95th Queue (ft)       | 238 | 259 | 169 | 56  | 82  | 126 | 165  | 334 | 502 | 514 | 284 | 368 |
| Link Distance (ft)    |     |     | 490 |     |     |     | 1267 |     | 508 | 508 |     |     |
| Upstream Blk Time (%) |     |     | 0   |     |     |     |      |     | 0   | 1   |     |     |
| Queuing Penalty (veh) |     |     | 1   |     |     |     |      |     | 4   | 9   |     |     |
| Storage Bay Dist (ft) | 250 | 250 |     | 300 | 175 | 175 |      | 315 |     |     | 175 | 150 |
| Storage Blk Time (%)  | 2   | 6   | 0   |     |     |     | 1    | 0   | 13  | 30  |     | 4   |
| Queuing Penalty (veh) | 3   | 7   | 0   |     |     |     | 1    | 3   | 22  | 17  |     | 34  |

Intersection: 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive

| Movement              | SB   | SB   | SB  |
|-----------------------|------|------|-----|
| Directions Served     | T    | T    | R   |
| Maximum Queue (ft)    | 1081 | 1055 | 295 |
| Average Queue (ft)    | 768  | 760  | 175 |
| 95th Queue (ft)       | 1430 | 1423 | 397 |
| Link Distance (ft)    | 1497 | 1497 |     |
| Upstream Blk Time (%) | 9    | 8    |     |
| Queuing Penalty (veh) | 0    | 0    |     |
| Storage Bay Dist (ft) |      |      | 150 |
| Storage Blk Time (%)  | 44   | 41   |     |
| Queuing Penalty (veh) | 47   | 60   |     |

Queuing and Blocking Report  
Weekday Afternoon Peak Hour

12/05/2025

Intersection: 3: US 202

| Movement              | EB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | R   | L   | T   | T   | T   | T   | R   |
| Maximum Queue (ft)    | 171 | 165 | 242 | 122 | 74  | 73  | 27  |
| Average Queue (ft)    | 59  | 83  | 21  | 16  | 26  | 26  | 1   |
| 95th Queue (ft)       | 122 | 143 | 116 | 93  | 64  | 62  | 12  |
| Link Distance (ft)    | 189 |     | 187 | 187 | 508 | 508 |     |
| Upstream Blk Time (%) | 0   | 0   | 1   | 0   |     |     |     |
| Queuing Penalty (veh) | 0   | 0   | 7   | 4   |     |     |     |
| Storage Bay Dist (ft) |     | 200 |     |     |     |     | 200 |
| Storage Blk Time (%)  |     | 0   | 1   |     |     |     |     |
| Queuing Penalty (veh) |     | 0   | 1   |     |     |     |     |

Intersection: 4: US 202 & South Site Access

| Movement              | EB  |
|-----------------------|-----|
| Directions Served     | R   |
| Maximum Queue (ft)    | 191 |
| Average Queue (ft)    | 77  |
| 95th Queue (ft)       | 149 |
| Link Distance (ft)    | 784 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

Intersection: 5: US 202 Northbound/US 202 Northbound & Issac Bullock Lane/Buck Tavern Way

| Movement              | EB | B10 | B28 | WB  | NB  | NB   | NB   | NB  |
|-----------------------|----|-----|-----|-----|-----|------|------|-----|
| Directions Served     | LT | T   | T   | TR  | L   | T    | T    | R   |
| Maximum Queue (ft)    | 85 | 68  | 4   | 37  | 30  | 213  | 205  | 16  |
| Average Queue (ft)    | 64 | 12  | 0   | 8   | 4   | 110  | 118  | 1   |
| 95th Queue (ft)       | 94 | 46  | 3   | 27  | 20  | 206  | 213  | 10  |
| Link Distance (ft)    | 33 | 20  | 302 | 167 |     | 1686 | 1686 |     |
| Upstream Blk Time (%) | 49 | 2   |     |     |     |      |      |     |
| Queuing Penalty (veh) | 63 | 2   |     |     |     |      |      |     |
| Storage Bay Dist (ft) |    |     |     |     | 275 |      |      | 250 |
| Storage Blk Time (%)  |    |     |     |     |     |      |      |     |
| Queuing Penalty (veh) |    |     |     |     |     |      |      |     |

Queuing and Blocking Report  
Weekday Afternoon Peak Hour

12/05/2025

Intersection: 6: US 202 Southbound & Springwater Plaza Access/Issac Bullock Lane

| Movement              | EB  | WB | B16 | SB  | SB  | SB  |
|-----------------------|-----|----|-----|-----|-----|-----|
| Directions Served     | TR  | LT | T   | L   | T   | TR  |
| Maximum Queue (ft)    | 75  | 64 | 15  | 72  | 229 | 244 |
| Average Queue (ft)    | 37  | 34 | 1   | 22  | 118 | 135 |
| 95th Queue (ft)       | 66  | 56 | 7   | 58  | 194 | 212 |
| Link Distance (ft)    | 126 | 17 | 245 |     | 914 | 914 |
| Upstream Blk Time (%) |     | 48 |     |     |     |     |
| Queuing Penalty (veh) |     | 12 |     |     |     |     |
| Storage Bay Dist (ft) |     |    |     | 230 |     |     |
| Storage Blk Time (%)  |     |    |     |     | 0   |     |
| Queuing Penalty (veh) |     |    |     |     | 0   |     |

Intersection: 7: Smirthbridge Road (S.R. 3046)/Smithbridge Road (S.R. 3046) & US 202 Southbound

| Movement              | EB   | WB  | SB  | SB  |
|-----------------------|------|-----|-----|-----|
| Directions Served     | TR   | LT  | LT  | TR  |
| Maximum Queue (ft)    | 174  | 263 | 531 | 556 |
| Average Queue (ft)    | 87   | 131 | 285 | 299 |
| 95th Queue (ft)       | 147  | 228 | 505 | 522 |
| Link Distance (ft)    | 1742 | 263 | 994 | 994 |
| Upstream Blk Time (%) |      | 0   |     |     |
| Queuing Penalty (veh) |      | 0   |     |     |
| Storage Bay Dist (ft) |      |     |     |     |
| Storage Blk Time (%)  |      |     |     |     |
| Queuing Penalty (veh) |      |     |     |     |

Intersection: 8: US 202 Northbound & Smithbridge Road (S.R. 3046)

| Movement              | EB  | WB   | NB  | NB  |
|-----------------------|-----|------|-----|-----|
| Directions Served     | LT  | TR   | LT  | TR  |
| Maximum Queue (ft)    | 221 | 391  | 658 | 673 |
| Average Queue (ft)    | 109 | 206  | 523 | 502 |
| 95th Queue (ft)       | 195 | 334  | 766 | 771 |
| Link Distance (ft)    | 263 | 1470 | 619 | 619 |
| Upstream Blk Time (%) | 0   |      | 21  | 18  |
| Queuing Penalty (veh) | 0   |      | 0   | 0   |
| Storage Bay Dist (ft) |     |      |     |     |
| Storage Blk Time (%)  |     |      |     |     |
| Queuing Penalty (veh) |     |      |     |     |

Queuing and Blocking Report  
Weekday Afternoon Peak Hour

12/05/2025

Intersection: 20: US 202 & US 202 Northbound

| Movement              | SB  | SB  | NW   | NW   | B13 | B13 |
|-----------------------|-----|-----|------|------|-----|-----|
| Directions Served     | T   | T   | R    | R    | T   | T   |
| Maximum Queue (ft)    | 54  | 50  | 338  | 351  | 8   | 10  |
| Average Queue (ft)    | 2   | 3   | 25   | 24   | 0   | 0   |
| 95th Queue (ft)       | 26  | 33  | 168  | 163  | 4   | 7   |
| Link Distance (ft)    | 187 | 187 | 1029 | 1029 | 368 | 368 |
| Upstream Blk Time (%) |     |     |      |      |     |     |
| Queuing Penalty (veh) |     |     |      |      |     |     |
| Storage Bay Dist (ft) |     |     |      |      |     |     |
| Storage Blk Time (%)  |     |     |      |      |     |     |
| Queuing Penalty (veh) |     |     |      |      |     |     |

Network Summary

Network wide Queuing Penalty: 297

**Saturday Midday Peak Hour**

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Saturday Midday Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |  |  |  |  |                                                                                     |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)    | 6                                                                                 | 125                                                                               | 20                                                                                | 230                                                                               | 133                                                                               | 33                                                                                | 19                                                                                  | 0                                                                                   | 201                                                                                 | 36                                                                                  | 0                                                                                   | 6                                                                                   |
| Future Volume (vph)     | 6                                                                                 | 125                                                                               | 20                                                                                | 230                                                                               | 133                                                                               | 33                                                                                | 19                                                                                  | 0                                                                                   | 201                                                                                 | 36                                                                                  | 0                                                                                   | 6                                                                                   |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 11                                                                                | 11                                                                                | 14                                                                                | 11                                                                                | 12                                                                                | 14                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Storage Length (ft)     | 205                                                                               |                                                                                   | 205                                                                               | 175                                                                               |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   |
| Storage Lanes           | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)       | 75                                                                                |                                                                                   |                                                                                   | 75                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                     |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.877                                                                               |                                                                                     |                                                                                     | 0.980                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                     | 0.996                                                                               |                                                                                     |                                                                                     | 0.959                                                                               |                                                                                     |
| Satd. Flow (prot)       | 1736                                                                              | 1827                                                                              | 1680                                                                              | 1711                                                                              | 1881                                                                              | 1723                                                                              | 0                                                                                   | 1627                                                                                | 0                                                                                   | 0                                                                                   | 1786                                                                                | 0                                                                                   |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                     | 0.996                                                                               |                                                                                     |                                                                                     | 0.959                                                                               |                                                                                     |
| Satd. Flow (perm)       | 1736                                                                              | 1827                                                                              | 1680                                                                              | 1711                                                                              | 1881                                                                              | 1723                                                                              | 0                                                                                   | 1627                                                                                | 0                                                                                   | 0                                                                                   | 1786                                                                                | 0                                                                                   |
| Link Speed (mph)        |                                                                                   | 35                                                                                |                                                                                   |                                                                                   | 35                                                                                |                                                                                   |                                                                                     | 30                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 1587                                                                              |                                                                                   |                                                                                   | 577                                                                               |                                                                                   |                                                                                     | 578                                                                                 |                                                                                     |                                                                                     | 696                                                                                 |                                                                                     |
| Travel Time (s)         |                                                                                   | 30.9                                                                              |                                                                                   |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                     | 13.1                                                                                |                                                                                     |                                                                                     | 15.8                                                                                |                                                                                     |
| Peak Hour Factor        | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                |
| Heavy Vehicles (%)      | 0%                                                                                | 0%                                                                                | 2%                                                                                | 2%                                                                                | 1%                                                                                | 0%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)         | 7                                                                                 | 142                                                                               | 23                                                                                | 261                                                                               | 151                                                                               | 38                                                                                | 22                                                                                  | 0                                                                                   | 228                                                                                 | 41                                                                                  | 0                                                                                   | 7                                                                                   |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 7                                                                                 | 142                                                                               | 23                                                                                | 261                                                                               | 151                                                                               | 38                                                                                | 0                                                                                   | 250                                                                                 | 0                                                                                   | 0                                                                                   | 48                                                                                  | 0                                                                                   |
| Sign Control            |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                     | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:              | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:           | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Saturday Midday Peak Hour

| Intersection             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |       |      |                                                                                     |      |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 6.8                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |       |      |                                                                                     |      |
| Movement                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL  | NBT                                                                               | NBR   | SBL  | SBT                                                                                 | SBR  |
| Lane Configurations      |  |  |  |  |  |  |      |  |       |      |  |      |
| Traffic Vol, veh/h       | 6                                                                                 | 125                                                                               | 20                                                                                | 230                                                                               | 133                                                                               | 33                                                                                | 19   | 0                                                                                 | 201   | 36   | 0                                                                                   | 6    |
| Future Vol, veh/h        | 6                                                                                 | 125                                                                               | 20                                                                                | 230                                                                               | 133                                                                               | 33                                                                                | 19   | 0                                                                                 | 201   | 36   | 0                                                                                   | 6    |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0     | 0    | 0                                                                                   | 0    |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Stop | Stop                                                                              | Stop  | Stop | Stop                                                                                | Stop |
| RT Channelized           | -                                                                                 | -                                                                                 | Yield                                                                             | -                                                                                 | -                                                                                 | None                                                                              | -    | -                                                                                 | Yield | -    | -                                                                                   | None |
| Storage Length           | 205                                                                               | -                                                                                 | 205                                                                               | 175                                                                               | -                                                                                 | 0                                                                                 | -    | -                                                                                 | -     | -    | -                                                                                   | -    |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 | -     | -    | 0                                                                                   | -    |
| Grade, %                 | -                                                                                 | 1                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 | -     | -    | 0                                                                                   | -    |
| Peak Hour Factor         | 88                                                                                | 88                                                                                | 88                                                                                | 88                                                                                | 88                                                                                | 88                                                                                | 88   | 88                                                                                | 88    | 88   | 88                                                                                  | 88   |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 0                                                                                 | 2    | 2                                                                                 | 2     | 0    | 0                                                                                   | 0    |
| Mvmt Flow                | 7                                                                                 | 142                                                                               | 23                                                                                | 261                                                                               | 151                                                                               | 38                                                                                | 22   | 0                                                                                 | 228   | 41   | 0                                                                                   | 7    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |      |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|------|-----|--------|-----|-----|
| Conflicting Flow All | 189    | 0 | 0 | 142    | 0 | 0 | 830    | 867  | 142 | 830    | 830 | 151 |
| Stage 1              | -      | - | - | -      | - | - | 156    | 156  | -   | 674    | 674 | -   |
| Stage 2              | -      | - | - | -      | - | - | 674    | 711  | -   | 156    | 156 | -   |
| Critical Hdwy        | 4.3    | - | - | 4.3    | - | - | 7.1    | 6.5  | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.12   | 5.52 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.12   | 5.52 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 3      | - | - | 3      | - | - | 3      | 4    | 3.1 | 3      | 4   | 3.1 |
| Pot Cap-1 Maneuver   | 1035   | - | - | 1074   | - | - | 324    | 293  | 966 | 324    | 308 | 955 |
| Stage 1              | -      | - | - | -      | - | - | 982    | 772  | -   | 501    | 457 | -   |
| Stage 2              | -      | - | - | -      | - | - | 499    | 437  | -   | 983    | 773 | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |      |     |        |     |     |
| Mov Cap-1 Maneuver   | 1035   | - | - | 1074   | - | - | 242    | 220  | 966 | 186    | 232 | 955 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 242    | 220  | -   | 186    | 232 | -   |
| Stage 1              | -      | - | - | -      | - | - | 976    | 767  | -   | 379    | 346 | -   |
| Stage 2              | -      | - | - | -      | - | - | 375    | 331  | -   | 746    | 768 | -   |

| Approach          | EB   | WB   | NB   | SB    |
|-------------------|------|------|------|-------|
| HCM Ctrl Dly, s/v | 0.34 | 5.48 | 9.65 | 27.12 |
| HCM LOS           |      |      | A    | D     |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 1024  | 1035  | -   | -   | 1074  | -   | -   | 210   |
| HCM Lane V/C Ratio    | 0.244 | 0.007 | -   | -   | 0.243 | -   | -   | 0.227 |
| HCM Ctrl Dly (s/v)    | 9.6   | 8.5   | -   | -   | 9.4   | -   | -   | 27.1  |
| HCM Lane LOS          | A     | A     | -   | -   | A     | -   | -   | D     |
| HCM 95th %tile Q(veh) | 1     | 0     | -   | -   | 1     | -   | -   | 0.8   |

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Saturday Midday Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)    | 222                                                                               | 30                                                                                | 131                                                                               | 170                                                                               | 38                                                                                | 135                                                                               | 184                                                                                 | 1518                                                                                | 42                                                                                  | 139                                                                                 | 1487                                                                                | 156                                                                                 |
| Future Volume (vph)     | 222                                                                               | 30                                                                                | 131                                                                               | 170                                                                               | 38                                                                                | 135                                                                               | 184                                                                                 | 1518                                                                                | 42                                                                                  | 139                                                                                 | 1487                                                                                | 156                                                                                 |
| Ideal Flow (vphpl)      | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                |
| Lane Width (ft)         | 11                                                                                | 11                                                                                | 11                                                                                | 11                                                                                | 11                                                                                | 14                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 10                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 2%                                                                                |                                                                                   |                                                                                     | 1%                                                                                  |                                                                                     |                                                                                     | -1%                                                                                 |                                                                                     |
| Storage Length (ft)     | 250                                                                               |                                                                                   | 300                                                                               | 175                                                                               |                                                                                   | 175                                                                               | 315                                                                                 |                                                                                     | 175                                                                                 | 150                                                                                 |                                                                                     | 150                                                                                 |
| Storage Lanes           | 2                                                                                 |                                                                                   | 1                                                                                 | 2                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)       | 75                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 150                                                                                 |                                                                                     |                                                                                     | 150                                                                                 |                                                                                     |                                                                                     |
| Lane Util. Factor       | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                     |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   | 0.883                                                                             |                                                                                   |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)       | 3191                                                                              | 1731                                                                              | 1472                                                                              | 3143                                                                              | 1521                                                                              | 0                                                                                 | 1701                                                                                | 3369                                                                                | 1522                                                                                | 1604                                                                                | 3403                                                                                | 1538                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)       | 3191                                                                              | 1731                                                                              | 1472                                                                              | 3143                                                                              | 1521                                                                              | 0                                                                                 | 1701                                                                                | 3369                                                                                | 1522                                                                                | 1604                                                                                | 3403                                                                                | 1538                                                                                |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | No                                                                                |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)       |                                                                                   |                                                                                   | 173                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 109                                                                                 |                                                                                     |                                                                                     | 109                                                                                 |
| Link Speed (mph)        |                                                                                   | 35                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 577                                                                               |                                                                                   |                                                                                   | 1338                                                                              |                                                                                   |                                                                                     | 632                                                                                 |                                                                                     |                                                                                     | 1546                                                                                |                                                                                     |
| Travel Time (s)         |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                   | 36.5                                                                              |                                                                                   |                                                                                     | 9.6                                                                                 |                                                                                     |                                                                                     | 23.4                                                                                |                                                                                     |
| Peak Hour Factor        | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Heavy Vehicles (%)      | 0%                                                                                | 0%                                                                                | 0%                                                                                | 1%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                  | 1%                                                                                  | 0%                                                                                  | 0%                                                                                  | 1%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)         | 231                                                                               | 31                                                                                | 136                                                                               | 177                                                                               | 40                                                                                | 141                                                                               | 192                                                                                 | 1581                                                                                | 44                                                                                  | 145                                                                                 | 1549                                                                                | 163                                                                                 |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 231                                                                               | 31                                                                                | 136                                                                               | 177                                                                               | 181                                                                               | 0                                                                                 | 192                                                                                 | 1581                                                                                | 44                                                                                  | 145                                                                                 | 1549                                                                                | 163                                                                                 |
| Number of Detectors     | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                   | 2                                                                                   | 1                                                                                   | 1                                                                                   | 2                                                                                   | 1                                                                                   |
| Detector Template       |                                                                                   |                                                                                   | Right                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Leading Detector (ft)   | 35                                                                                | 35                                                                                | 20                                                                                | 35                                                                                | 35                                                                                |                                                                                   | 35                                                                                  | 456                                                                                 | 0                                                                                   | 35                                                                                  | 456                                                                                 | 35                                                                                  |
| Trailing Detector (ft)  | -5                                                                                | -5                                                                                | 0                                                                                 | -5                                                                                | -5                                                                                |                                                                                   | -5                                                                                  | 330                                                                                 | -6                                                                                  | -5                                                                                  | 330                                                                                 | -5                                                                                  |
| Detector 1 Position(ft) | -5                                                                                | -5                                                                                | 0                                                                                 | -5                                                                                | -5                                                                                |                                                                                   | -5                                                                                  | 330                                                                                 | -6                                                                                  | -5                                                                                  | 330                                                                                 | -5                                                                                  |
| Detector 1 Size(ft)     | 40                                                                                | 40                                                                                | 20                                                                                | 40                                                                                | 40                                                                                |                                                                                   | 40                                                                                  | 6                                                                                   | 4                                                                                   | 40                                                                                  | 6                                                                                   | 40                                                                                  |
| Detector 1 Type         | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 2 Position(ft) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 450                                                                                 |                                                                                     |                                                                                     | 450                                                                                 |                                                                                     |
| Detector 2 Size(ft)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Detector 2 Type         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Cl+Ex                                                                               |                                                                                     |                                                                                     | Cl+Ex                                                                               |                                                                                     |
| Detector 2 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 2 Extend (s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Turn Type               | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | pm+ov                                                                               | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases        | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   | 3                                                                                   | 5                                                                                   | 2                                                                                   | 7                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase          | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   | 3                                                                                   | 5                                                                                   | 2                                                                                   | 7                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 15.0                                                                                | 3.0                                                                                 | 3.0                                                                                 | 15.0                                                                                | 3.0                                                                                 |
| Minimum Split (s)       | 38.0                                                                              | 38.0                                                                              | 38.0                                                                              | 38.0                                                                              | 38.0                                                                              |                                                                                   | 13.0                                                                                | 39.0                                                                                | 38.0                                                                                | 13.0                                                                                | 39.0                                                                                | 38.0                                                                                |
| Total Split (s)         | 17.0                                                                              | 23.0                                                                              | 23.0                                                                              | 16.0                                                                              | 22.0                                                                              |                                                                                   | 20.0                                                                                | 63.0                                                                                | 16.0                                                                                | 18.0                                                                                | 61.0                                                                                | 17.0                                                                                |

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Saturday Midday Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Total Split (%)         | 14.2%                                                                             | 19.2%                                                                             | 19.2%                                                                             | 13.3%                                                                             | 18.3%                                                                             |                                                                                   | 16.7%                                                                               | 52.5%                                                                               | 13.3%                                                                               | 15.0%                                                                               | 50.8%                                                                               | 14.2%                                                                               |
| Maximum Green (s)       | 9.0                                                                               | 15.0                                                                              | 15.0                                                                              | 8.0                                                                               | 14.0                                                                              |                                                                                   | 13.0                                                                                | 56.0                                                                                | 8.0                                                                                 | 11.0                                                                                | 54.0                                                                                | 9.0                                                                                 |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 5.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)        | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 2.0                                                                                 | 2.0                                                                                 | 4.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 4.0                                                                                 |
| Lost Time Adjust (s)    | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              |                                                                                   | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)     | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                                | C-Max                                                                               | None                                                                                | None                                                                                | C-Max                                                                               | None                                                                                |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Don't Walk (s)    | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              |                                                                                   | 23.0                                                                                | 23.0                                                                                |                                                                                     | 23.0                                                                                | 23.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Splits and Phases: 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive

|                                                                                                |                                                                                                    |                                                                                                  |                                                                                                  |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|  Ø1<br>20 s |  Ø2 (R)<br>61 s |  Ø3<br>16 s |  Ø4<br>23 s |
|  Ø5<br>18 s |  Ø6 (R)<br>63 s |  Ø7<br>17 s |  Ø8<br>22 s |

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Saturday Midday Peak Hour

|                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)                                                                                 | 222                                                                               | 30                                                                                | 131                                                                               | 170                                                                               | 38                                                                                | 135                                                                               | 184                                                                                 | 1518                                                                                | 42                                                                                  | 139                                                                                 | 1487                                                                                | 156                                                                                 |
| Future Volume (veh/h)                                                                                  | 222                                                                               | 30                                                                                | 131                                                                               | 170                                                                               | 38                                                                                | 135                                                                               | 184                                                                                 | 1518                                                                                | 42                                                                                  | 139                                                                                 | 1487                                                                                | 156                                                                                 |
| Initial Q (Qb), veh                                                                                    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Lane Width Adj.                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.04                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped-Bike Adj(A_pbT)                                                                                    | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                  | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                 | 1794                                                                              | 1794                                                                              | 1794                                                                              | 1764                                                                              | 1778                                                                              | 1849                                                                              | 1794                                                                                | 1780                                                                                | 1794                                                                                | 1837                                                                                | 1823                                                                                | 1837                                                                                |
| Adj Flow Rate, veh/h                                                                                   | 231                                                                               | 31                                                                                | 0                                                                                 | 177                                                                               | 40                                                                                | 141                                                                               | 192                                                                                 | 1581                                                                                | 44                                                                                  | 145                                                                                 | 1549                                                                                | 162                                                                                 |
| Peak Hour Factor                                                                                       | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Percent Heavy Veh, %                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 1                                                                                   | 0                                                                                   | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                             | 276                                                                               | 239                                                                               |                                                                                   | 244                                                                               | 43                                                                                | 152                                                                               | 199                                                                                 | 1607                                                                                | 836                                                                                 | 175                                                                                 | 1588                                                                                | 843                                                                                 |
| Arrive On Green                                                                                        | 0.08                                                                              | 0.13                                                                              | 0.00                                                                              | 0.08                                                                              | 0.13                                                                              | 0.13                                                                              | 0.23                                                                                | 0.95                                                                                | 0.95                                                                                | 0.10                                                                                | 0.46                                                                                | 0.46                                                                                |
| Sat Flow, veh/h                                                                                        | 3315                                                                              | 1794                                                                              | 1521                                                                              | 3259                                                                              | 345                                                                               | 1215                                                                              | 1709                                                                                | 3383                                                                                | 1521                                                                                | 1750                                                                                | 3464                                                                                | 1557                                                                                |
| Grp Volume(v), veh/h                                                                                   | 231                                                                               | 31                                                                                | 0                                                                                 | 177                                                                               | 0                                                                                 | 181                                                                               | 192                                                                                 | 1581                                                                                | 44                                                                                  | 145                                                                                 | 1549                                                                                | 162                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                               | 1658                                                                              | 1794                                                                              | 1521                                                                              | 1629                                                                              | 0                                                                                 | 1559                                                                              | 1709                                                                                | 1691                                                                                | 1521                                                                                | 1750                                                                                | 1732                                                                                | 1557                                                                                |
| Q Serve(g_s), s                                                                                        | 8.2                                                                               | 1.8                                                                               | 0.0                                                                               | 6.4                                                                               | 0.0                                                                               | 13.8                                                                              | 13.3                                                                                | 43.0                                                                                | 0.2                                                                                 | 9.8                                                                                 | 52.6                                                                                | 6.4                                                                                 |
| Cycle Q Clear(g_c), s                                                                                  | 8.2                                                                               | 1.8                                                                               | 0.0                                                                               | 6.4                                                                               | 0.0                                                                               | 13.8                                                                              | 13.3                                                                                | 43.0                                                                                | 0.2                                                                                 | 9.8                                                                                 | 52.6                                                                                | 6.4                                                                                 |
| Prop In Lane                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.78                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                 | 276                                                                               | 239                                                                               |                                                                                   | 244                                                                               | 0                                                                                 | 195                                                                               | 199                                                                                 | 1607                                                                                | 836                                                                                 | 175                                                                                 | 1588                                                                                | 843                                                                                 |
| V/C Ratio(X)                                                                                           | 0.84                                                                              | 0.13                                                                              |                                                                                   | 0.72                                                                              | 0.00                                                                              | 0.93                                                                              | 0.96                                                                                | 0.98                                                                                | 0.05                                                                                | 0.83                                                                                | 0.98                                                                                | 0.19                                                                                |
| Avail Cap(c_a), veh/h                                                                                  | 276                                                                               | 239                                                                               |                                                                                   | 244                                                                               | 0                                                                                 | 195                                                                               | 199                                                                                 | 1607                                                                                | 836                                                                                 | 175                                                                                 | 1588                                                                                | 843                                                                                 |
| HCM Platoon Ratio                                                                                      | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                                | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                     | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.83                                                                                | 0.83                                                                                | 0.83                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                               | 54.2                                                                              | 45.9                                                                              | 0.0                                                                               | 54.3                                                                              | 0.0                                                                               | 52.0                                                                              | 45.7                                                                                | 2.6                                                                                 | 1.2                                                                                 | 53.0                                                                                | 31.8                                                                                | 14.1                                                                                |
| Incr Delay (d2), s/veh                                                                                 | 19.5                                                                              | 0.2                                                                               | 0.0                                                                               | 10.2                                                                              | 0.0                                                                               | 44.7                                                                              | 47.6                                                                                | 17.0                                                                                | 0.1                                                                                 | 27.0                                                                                | 17.5                                                                                | 0.5                                                                                 |
| Initial Q Delay(d3), s/veh                                                                             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(95%),veh/ln                                                                               | 7.5                                                                               | 1.5                                                                               | 0.0                                                                               | 5.4                                                                               | 0.0                                                                               | 12.4                                                                              | 11.5                                                                                | 8.2                                                                                 | 0.1                                                                                 | 9.3                                                                                 | 32.2                                                                                | 4.3                                                                                 |
| Unsig. Movement Delay, s/veh                                                                           | 27.70                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d), s/veh                                                                                  | 73.7                                                                              | 46.1                                                                              | 27.7                                                                              | 64.4                                                                              | 0.0                                                                               | 96.7                                                                              | 93.3                                                                                | 19.6                                                                                | 1.3                                                                                 | 80.0                                                                                | 49.4                                                                                | 14.6                                                                                |
| LnGrp LOS                                                                                              | E                                                                                 | D                                                                                 | C                                                                                 | E                                                                                 |                                                                                   | F                                                                                 | F                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | D                                                                                   | B                                                                                   |
| Approach Vol, veh/h                                                                                    | 398                                                                               |                                                                                   |                                                                                   | 358                                                                               |                                                                                   |                                                                                   | 1817                                                                                |                                                                                     |                                                                                     | 1856                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                  | 55.8                                                                              |                                                                                   |                                                                                   | 80.7                                                                              |                                                                                   |                                                                                   | 27.0                                                                                |                                                                                     |                                                                                     | 48.7                                                                                |                                                                                     |                                                                                     |
| Approach LOS                                                                                           | E                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                   | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                               | 20.0                                                                              | 61.0                                                                              | 16.0                                                                              | 23.0                                                                              | 18.0                                                                              | 63.0                                                                              | 17.0                                                                                | 22.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                | 7.0                                                                               | 7.0                                                                               | 8.0                                                                               | 8.0                                                                               | 7.0                                                                               | 7.0                                                                               | 8.0                                                                                 | 8.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                            | 13.0                                                                              | 54.0                                                                              | 8.0                                                                               | 15.0                                                                              | 11.0                                                                              | 56.0                                                                              | 9.0                                                                                 | 14.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+l1), s                                                                           | 15.8                                                                              | 55.1                                                                              | 8.9                                                                               | 4.3                                                                               | 12.3                                                                              | 45.5                                                                              | 10.7                                                                                | 16.3                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 10.3                                                                              | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 7th Control Delay, s/veh                                                                           | 43.0                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 7th LOS                                                                                            | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved pedestrian interval to be less than phase max green.                                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
3: North Access & US 202 Saturday Midday Peak Hour

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations     |                                                                                   |  |  |  |  |  |
| Traffic Volume (vph)    | 0                                                                                 | 128                                                                               | 150                                                                               | 1744                                                                              | 1735                                                                              | 53                                                                                |
| Future Volume (vph)     | 0                                                                                 | 128                                                                               | 150                                                                               | 1744                                                                              | 1735                                                                              | 53                                                                                |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)     | 0                                                                                 | 0                                                                                 | 200                                                                               |                                                                                   |                                                                                   | 200                                                                               |
| Storage Lanes           | 0                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |
| Taper Length (ft)       | 25                                                                                |                                                                                   | 25                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Lane Util. Factor       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |
| Frt                     |                                                                                   | 0.865                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |
| Flt Protected           |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)       | 0                                                                                 | 1611                                                                              | 1770                                                                              | 3539                                                                              | 3539                                                                              | 1583                                                                              |
| Flt Permitted           |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)       | 0                                                                                 | 1611                                                                              | 1770                                                                              | 3539                                                                              | 3539                                                                              | 1583                                                                              |
| Right Turn on Red       |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)       |                                                                                   | 37                                                                                |                                                                                   |                                                                                   |                                                                                   | 58                                                                                |
| Link Speed (mph)        | 25                                                                                |                                                                                   |                                                                                   | 45                                                                                | 45                                                                                |                                                                                   |
| Link Distance (ft)      | 296                                                                               |                                                                                   |                                                                                   | 209                                                                               | 632                                                                               |                                                                                   |
| Travel Time (s)         | 8.1                                                                               |                                                                                   |                                                                                   | 3.2                                                                               | 9.6                                                                               |                                                                                   |
| Peak Hour Factor        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Adj. Flow (vph)         | 0                                                                                 | 139                                                                               | 163                                                                               | 1896                                                                              | 1886                                                                              | 58                                                                                |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)   | 0                                                                                 | 139                                                                               | 163                                                                               | 1896                                                                              | 1886                                                                              | 58                                                                                |
| Number of Detectors     |                                                                                   | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 |
| Detector Template       |                                                                                   | Right                                                                             | Left                                                                              | Thru                                                                              | Thru                                                                              | Right                                                                             |
| Leading Detector (ft)   |                                                                                   | 20                                                                                | 20                                                                                | 100                                                                               | 100                                                                               | 20                                                                                |
| Trailing Detector (ft)  |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Position(ft) |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Size(ft)     |                                                                                   | 20                                                                                | 20                                                                                | 6                                                                                 | 6                                                                                 | 20                                                                                |
| Detector 1 Type         |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |
| Detector 1 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)   |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Queue (s)    |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Delay (s)    |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 2 Position(ft) |                                                                                   |                                                                                   |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |
| Detector 2 Size(ft)     |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |
| Detector 2 Type         |                                                                                   |                                                                                   |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 2 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)   |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Turn Type               |                                                                                   | Perm                                                                              | Prot                                                                              | NA                                                                                | NA                                                                                | Perm                                                                              |
| Protected Phases        |                                                                                   |                                                                                   | 5                                                                                 | 2                                                                                 | 6                                                                                 |                                                                                   |
| Permitted Phases        |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |
| Detector Phase          |                                                                                   | 5                                                                                 | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)     |                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)       |                                                                                   | 11.0                                                                              | 11.0                                                                              | 24.0                                                                              | 24.0                                                                              | 24.0                                                                              |
| Total Split (s)         |                                                                                   | 25.0                                                                              | 25.0                                                                              | 120.0                                                                             | 95.0                                                                              | 95.0                                                                              |
| Total Split (%)         |                                                                                   | 20.8%                                                                             | 20.8%                                                                             | 100.0%                                                                            | 79.2%                                                                             | 79.2%                                                                             |
| Maximum Green (s)       |                                                                                   | 19.0                                                                              | 19.0                                                                              | 114.0                                                                             | 89.0                                                                              | 89.0                                                                              |
| Yellow Time (s)         |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |

01 - 5% - 33 W SAT TOTAL SITE No WB Right Signalized North Access 2033 Future with Development Conditions  
V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineering\12-24-22\Analysis\Synch

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 3: North Access & US 202 Saturday Midday Peak Hour

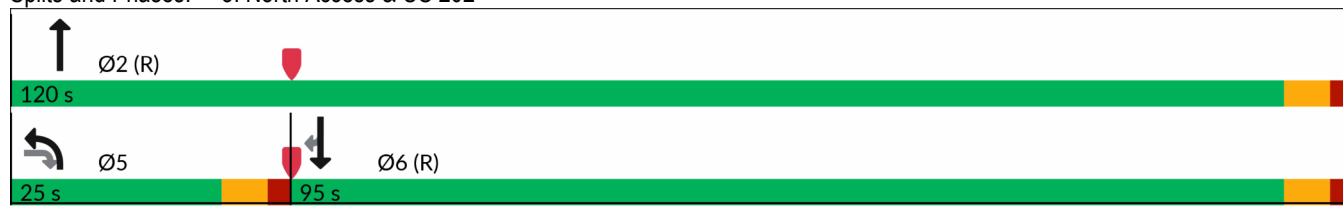
|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| All-Red Time (s)        |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |
| Lost Time Adjust (s)    |                                                                                   | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              |
| Total Lost Time (s)     |                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag                |                                                                                   | Lead                                                                              | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               |
| Lead-Lag Optimize?      |                                                                                   | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               |
| Vehicle Extension (s)   |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |
| Recall Mode             |                                                                                   | Max                                                                               | Max                                                                               | C-Max                                                                             | C-Max                                                                             | C-Max                                                                             |
| Walk Time (s)           |                                                                                   |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |
| Flash Don't Walk (s)    |                                                                                   |                                                                                   |                                                                                   | 11.0                                                                              | 11.0                                                                              | 11.0                                                                              |
| Pedestrian Calls (#/hr) |                                                                                   |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Act Effect Green (s)    |                                                                                   | 20.0                                                                              | 20.0                                                                              | 120.0                                                                             | 90.0                                                                              | 90.0                                                                              |
| Actuated g/C Ratio      |                                                                                   | 0.17                                                                              | 0.17                                                                              | 1.00                                                                              | 0.75                                                                              | 0.75                                                                              |
| v/c Ratio               |                                                                                   | 0.46                                                                              | 0.55                                                                              | 0.54                                                                              | 0.71                                                                              | 0.05                                                                              |
| Control Delay (s/veh)   |                                                                                   | 38.6                                                                              | 53.9                                                                              | 0.6                                                                               | 2.3                                                                               | 0.0                                                                               |
| Queue Delay             |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.8                                                                               | 0.0                                                                               |
| Total Delay (s/veh)     |                                                                                   | 38.6                                                                              | 53.9                                                                              | 0.7                                                                               | 3.1                                                                               | 0.0                                                                               |
| LOS                     |                                                                                   | D                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |
| Approach Delay (s/veh)  | 38.6                                                                              |                                                                                   |                                                                                   | 4.9                                                                               | 3.0                                                                               |                                                                                   |
| Approach LOS            | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 | A                                                                                 |                                                                                   |
| Queue Length 50th (ft)  |                                                                                   | 71                                                                                | 117                                                                               | 0                                                                                 | 20                                                                                | 0                                                                                 |
| Queue Length 95th (ft)  |                                                                                   | 138                                                                               | 190                                                                               | 0                                                                                 | m28                                                                               | m0                                                                                |
| Internal Link Dist (ft) | 216                                                                               |                                                                                   |                                                                                   | 129                                                                               | 552                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   | 200                                                                               |                                                                                   |                                                                                   | 200                                                                               |
| Base Capacity (vph)     |                                                                                   | 299                                                                               | 295                                                                               | 3539                                                                              | 2654                                                                              | 1201                                                                              |
| Starvation Cap Reductn  |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 419                                                                               | 0                                                                                 |
| Spillback Cap Reductn   |                                                                                   | 0                                                                                 | 0                                                                                 | 436                                                                               | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       |                                                                                   | 0.46                                                                              | 0.55                                                                              | 0.61                                                                              | 0.84                                                                              | 0.05                                                                              |

#### Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 63 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay (s/veh): 5.1 Intersection LOS: A  
 Intersection Capacity Utilization 64.6% ICU Level of Service C  
 Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: North Access & US 202



Summary of All Intervals

| Run Number              | 1     | 2     | 3     | 4     | 5     | Avg   |
|-------------------------|-------|-------|-------|-------|-------|-------|
| Start Time              | 6:50  | 6:50  | 6:50  | 6:50  | 6:50  | 6:50  |
| End Time                | 8:00  | 8:00  | 8:00  | 8:00  | 8:00  | 8:00  |
| Total Time (min)        | 70    | 70    | 70    | 70    | 70    | 70    |
| Time Recorded (min)     | 60    | 60    | 60    | 60    | 60    | 60    |
| # of Intervals          | 2     | 2     | 2     | 2     | 2     | 2     |
| # of Recorded Intervals | 1     | 1     | 1     | 1     | 1     | 1     |
| Vehs Entered            | 6525  | 6588  | 6548  | 6499  | 6402  | 6512  |
| Vehs Exited             | 6505  | 6544  | 6494  | 6484  | 6355  | 6478  |
| Starting Vehs           | 319   | 320   | 326   | 330   | 285   | 311   |
| Ending Vehs             | 339   | 364   | 380   | 345   | 332   | 351   |
| Travel Distance (mi)    | 5225  | 5319  | 5290  | 5190  | 5163  | 5238  |
| Travel Time (hr)        | 429.9 | 463.0 | 408.0 | 363.2 | 331.2 | 399.1 |
| Total Delay (hr)        | 273.3 | 303.5 | 249.4 | 206.8 | 176.0 | 241.8 |
| Total Stops             | 10039 | 11483 | 9818  | 9799  | 8742  | 9976  |
| Fuel Used (gal)         | 241.7 | 251.6 | 237.7 | 224.0 | 216.8 | 234.4 |

Interval #0 Information Seeding

|                  |      |
|------------------|------|
| Start Time       | 6:50 |
| End Time         | 7:00 |
| Total Time (min) | 10   |

No data recorded this interval.

Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:00 |
| End Time         | 8:00 |
| Total Time (min) | 60   |

| Run Number           | 1     | 2     | 3     | 4     | 5     | Avg   |
|----------------------|-------|-------|-------|-------|-------|-------|
| Vehs Entered         | 6525  | 6588  | 6548  | 6499  | 6402  | 6512  |
| Vehs Exited          | 6505  | 6544  | 6494  | 6484  | 6355  | 6478  |
| Starting Vehs        | 319   | 320   | 326   | 330   | 285   | 311   |
| Ending Vehs          | 339   | 364   | 380   | 345   | 332   | 351   |
| Travel Distance (mi) | 5225  | 5319  | 5290  | 5190  | 5163  | 5238  |
| Travel Time (hr)     | 429.9 | 463.0 | 408.0 | 363.2 | 331.2 | 399.1 |
| Total Delay (hr)     | 273.3 | 303.5 | 249.4 | 206.8 | 176.0 | 241.8 |
| Total Stops          | 10039 | 11483 | 9818  | 9799  | 8742  | 9976  |
| Fuel Used (gal)      | 241.7 | 251.6 | 237.7 | 224.0 | 216.8 | 234.4 |

1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Performance by movement

| Movement           | EBL | EBT | EBR | WBL | WBT | WBR | NBL  | NBR | SBL  | SBR | All |
|--------------------|-----|-----|-----|-----|-----|-----|------|-----|------|-----|-----|
| Denied Del/Veh (s) | 2.1 | 0.2 | 2.2 | 0.2 | 0.0 | 0.0 | 0.3  | 0.2 | 0.1  | 0.1 | 0.2 |
| Total Del/Veh (s)  | 2.6 | 0.7 | 2.8 | 6.0 | 1.3 | 0.6 | 14.7 | 3.1 | 12.7 | 4.0 | 3.8 |

2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Performance by movement

| Movement           | EBL  | EBT  | EBR | WBL  | WBT  | WBR  | NBL   | NBT  | NBR | SBL   | SBT  | SBR  |
|--------------------|------|------|-----|------|------|------|-------|------|-----|-------|------|------|
| Denied Del/Veh (s) | 0.0  | 0.0  | 0.0 | 2.6  | 0.7  | 0.5  | 0.1   | 0.1  | 1.2 | 2.2   | 0.6  | 2.0  |
| Total Del/Veh (s)  | 71.2 | 51.2 | 7.1 | 61.1 | 85.4 | 79.1 | 110.6 | 36.6 | 9.4 | 118.7 | 59.9 | 27.6 |

2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Performance by movement

| Movement           | All  |
|--------------------|------|
| Denied Del/Veh (s) | 0.5  |
| Total Del/Veh (s)  | 54.1 |

3: North Access & US 202 Performance by movement

| Movement           | EBR  | NBL  | NBT | SBT  | SBR | All |
|--------------------|------|------|-----|------|-----|-----|
| Denied Del/Veh (s) | 0.2  | 0.0  | 0.0 | 0.0  | 0.2 | 0.0 |
| Total Del/Veh (s)  | 31.2 | 51.4 | 1.2 | 12.1 | 9.7 | 8.2 |

4: US 202 & South Site Access Performance by movement

| Movement           | EBR  | SBT | SBR | All |
|--------------------|------|-----|-----|-----|
| Denied Del/Veh (s) | 0.2  | 0.0 | 0.0 | 0.0 |
| Total Del/Veh (s)  | 27.9 | 2.0 | 1.1 | 3.1 |

5: US 202 Northbound/US 202 Northbound & Issac Bullock Lane/Buck Tavern Way Performance by movement

| Movement           | EBL  | EBT  | WBT  | WBR  | NBL  | NBT  | NBR  | All  |
|--------------------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 5.8  | 3.5  | 0.1  | 0.2  | 0.0  | 0.0  | 0.0  | 0.4  |
| Total Del/Veh (s)  | 29.0 | 32.3 | 40.1 | 35.4 | 13.9 | 18.1 | 14.1 | 18.9 |

6: US 202 Southbound & Springwater Plaza Access/Issac Bullock Lane Performance by movement

| Movement           | EBT  | EBR  | WBL  | WBT  | SBL | SBT | SBR | All  |
|--------------------|------|------|------|------|-----|-----|-----|------|
| Denied Del/Veh (s) | 0.1  | 0.1  | 15.4 | 16.8 | 0.0 | 0.0 | 0.0 | 0.9  |
| Total Del/Veh (s)  | 35.1 | 22.8 | 23.5 | 27.8 | 7.4 | 9.1 | 9.6 | 10.3 |

7: Smirthbridge Road (S.R. 3046)/Smithbridge Road (S.R. 3046) & US 202 Southbound Performance by movement

| Movement           | EBT  | EBR  | WBL  | WBT  | SBL  | SBT  | SBR  | All  |
|--------------------|------|------|------|------|------|------|------|------|
| Denied Del/Veh (s) | 0.2  | 0.2  | 0.7  | 1.4  | 0.0  | 0.0  | 0.0  | 0.1  |
| Total Del/Veh (s)  | 27.8 | 23.2 | 32.0 | 38.0 | 30.8 | 36.0 | 33.3 | 34.6 |

8: US 202 Northbound & Smithbridge Road (S.R. 3046) Performance by movement

| Movement           | EBL  | EBT  | WBT  | WBR  | NBL   | NBT   | NBR   | All  |
|--------------------|------|------|------|------|-------|-------|-------|------|
| Denied Del/Veh (s) | 0.0  | 0.0  | 0.3  | 0.3  | 123.8 | 120.2 | 119.3 | 92.7 |
| Total Del/Veh (s)  | 33.0 | 25.9 | 38.2 | 30.3 | 63.4  | 66.4  | 64.3  | 57.9 |

20: US 202 & US 202 Northbound Performance by movement

| Movement           | SBT | NWR  | All |
|--------------------|-----|------|-----|
| Denied Del/Veh (s) | 0.4 | 1.4  | 0.9 |
| Total Del/Veh (s)  | 1.8 | 15.1 | 8.5 |

Total Network Performance

| Denied Del/Veh (s) |  | 37.3 |
|--------------------|--|------|
| Total Del/Veh (s)  |  | 91.2 |

Intersection: 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | L   | L   | LTR | LTR |
| Maximum Queue (ft)    | 23  | 65  | 108 | 60  |
| Average Queue (ft)    | 2   | 20  | 24  | 17  |
| 95th Queue (ft)       | 13  | 52  | 72  | 40  |
| Link Distance (ft)    |     |     | 540 | 636 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) | 205 | 175 |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

Intersection: 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive

| Movement              | EB  | EB  | EB  | EB  | WB  | WB  | WB   | NB  | NB  | NB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|
| Directions Served     | L   | L   | T   | R   | L   | L   | TR   | L   | T   | T   | R   | L   |
| Maximum Queue (ft)    | 165 | 193 | 89  | 60  | 139 | 199 | 399  | 392 | 509 | 538 | 345 | 300 |
| Average Queue (ft)    | 91  | 107 | 29  | 3   | 59  | 101 | 158  | 206 | 342 | 351 | 57  | 207 |
| 95th Queue (ft)       | 148 | 165 | 68  | 36  | 124 | 182 | 317  | 378 | 507 | 515 | 242 | 371 |
| Link Distance (ft)    |     |     | 490 |     |     |     | 1267 |     | 548 | 548 |     |     |
| Upstream Blk Time (%) |     |     |     |     |     |     |      |     | 1   | 2   |     |     |
| Queuing Penalty (veh) |     |     |     |     |     |     |      |     | 12  | 14  |     |     |
| Storage Bay Dist (ft) | 250 | 250 |     | 300 | 175 | 175 |      | 315 |     |     | 175 | 150 |
| Storage Blk Time (%)  |     |     |     |     | 0   | 0   | 11   | 5   | 13  | 33  |     | 20  |
| Queuing Penalty (veh) |     |     |     |     | 0   | 0   | 18   | 40  | 23  | 14  |     | 146 |

Intersection: 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive

| Movement              | SB   | SB   | SB  |
|-----------------------|------|------|-----|
| Directions Served     | T    | T    | R   |
| Maximum Queue (ft)    | 796  | 789  | 295 |
| Average Queue (ft)    | 517  | 502  | 156 |
| 95th Queue (ft)       | 859  | 847  | 373 |
| Link Distance (ft)    | 1497 | 1497 |     |
| Upstream Blk Time (%) |      |      |     |
| Queuing Penalty (veh) |      |      |     |
| Storage Bay Dist (ft) |      |      | 150 |
| Storage Blk Time (%)  | 46   | 41   |     |
| Queuing Penalty (veh) | 64   | 64   |     |

Queuing and Blocking Report  
 Satuday Midday Peak Hour

12/05/2025

Intersection: 3: North Access & US 202

| Movement              | EB  | NB  | NB  | NB  | SB  | SB  | SB  |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|
| Directions Served     | R   | L   | T   | T   | T   | T   | R   |
| Maximum Queue (ft)    | 158 | 142 | 212 | 124 | 125 | 100 | 56  |
| Average Queue (ft)    | 68  | 101 | 61  | 14  | 44  | 39  | 5   |
| 95th Queue (ft)       | 129 | 152 | 211 | 89  | 97  | 82  | 27  |
| Link Distance (ft)    | 236 |     | 154 | 154 | 548 | 548 |     |
| Upstream Blk Time (%) |     | 1   | 5   | 1   |     |     |     |
| Queuing Penalty (veh) |     | 0   | 64  | 13  |     |     |     |
| Storage Bay Dist (ft) |     | 200 |     |     |     |     | 200 |
| Storage Blk Time (%)  |     | 1   | 5   |     |     |     |     |
| Queuing Penalty (veh) |     | 5   | 8   |     |     |     |     |

Intersection: 4: US 202 & South Site Access

| Movement              | EB  |
|-----------------------|-----|
| Directions Served     | R   |
| Maximum Queue (ft)    | 124 |
| Average Queue (ft)    | 51  |
| 95th Queue (ft)       | 99  |
| Link Distance (ft)    | 784 |
| Upstream Blk Time (%) |     |
| Queuing Penalty (veh) |     |
| Storage Bay Dist (ft) |     |
| Storage Blk Time (%)  |     |
| Queuing Penalty (veh) |     |

Intersection: 5: US 202 Northbound/US 202 Northbound & Issac Bullock Lane/Buck Tavern Way

| Movement              | EB | B10 | B28 | WB  | NB  | NB   | NB   | NB  |
|-----------------------|----|-----|-----|-----|-----|------|------|-----|
| Directions Served     | LT | T   | T   | TR  | L   | T    | T    | R   |
| Maximum Queue (ft)    | 84 | 84  | 15  | 33  | 43  | 243  | 253  | 17  |
| Average Queue (ft)    | 65 | 19  | 0   | 7   | 6   | 157  | 170  | 1   |
| 95th Queue (ft)       | 98 | 62  | 5   | 25  | 28  | 233  | 238  | 11  |
| Link Distance (ft)    | 33 | 20  | 302 | 167 |     | 1686 | 1686 |     |
| Upstream Blk Time (%) | 54 | 4   |     |     |     |      |      |     |
| Queuing Penalty (veh) | 59 | 4   |     |     |     |      |      |     |
| Storage Bay Dist (ft) |    |     |     |     | 275 |      |      | 250 |
| Storage Blk Time (%)  |    |     |     |     |     |      | 0    |     |
| Queuing Penalty (veh) |    |     |     |     |     |      | 0    |     |

Queuing and Blocking Report  
 Satuday Midday Peak Hour

12/05/2025

Intersection: 6: US 202 Southbound & Springwater Plaza Access/Issac Bullock Lane

| Movement              | EB  | WB | B16 | SB  | SB  | SB  |
|-----------------------|-----|----|-----|-----|-----|-----|
| Directions Served     | TR  | LT | T   | L   | T   | TR  |
| Maximum Queue (ft)    | 97  | 67 | 41  | 73  | 211 | 212 |
| Average Queue (ft)    | 36  | 38 | 2   | 20  | 109 | 116 |
| 95th Queue (ft)       | 74  | 64 | 17  | 56  | 192 | 191 |
| Link Distance (ft)    | 126 | 17 | 245 |     | 914 | 914 |
| Upstream Blk Time (%) | 0   | 59 |     |     |     |     |
| Queuing Penalty (veh) | 0   | 16 |     |     |     |     |
| Storage Bay Dist (ft) |     |    |     | 230 |     |     |
| Storage Blk Time (%)  |     |    |     |     | 0   |     |
| Queuing Penalty (veh) |     |    |     |     | 0   |     |

Intersection: 7: Smirthbridge Road (S.R. 3046)/Smithbridge Road (S.R. 3046) & US 202 Southbound

| Movement              | EB   | WB  | SB  | SB  |
|-----------------------|------|-----|-----|-----|
| Directions Served     | TR   | LT  | LT  | TR  |
| Maximum Queue (ft)    | 166  | 260 | 708 | 714 |
| Average Queue (ft)    | 84   | 134 | 335 | 343 |
| 95th Queue (ft)       | 144  | 220 | 648 | 653 |
| Link Distance (ft)    | 1742 | 263 | 994 | 994 |
| Upstream Blk Time (%) |      | 0   |     |     |
| Queuing Penalty (veh) |      | 1   |     |     |
| Storage Bay Dist (ft) |      |     |     |     |
| Storage Blk Time (%)  |      |     |     |     |
| Queuing Penalty (veh) |      |     |     |     |

Intersection: 8: US 202 Northbound & Smithbridge Road (S.R. 3046)

| Movement              | EB  | WB   | NB  | NB  |
|-----------------------|-----|------|-----|-----|
| Directions Served     | LT  | TR   | LT  | TR  |
| Maximum Queue (ft)    | 206 | 344  | 671 | 671 |
| Average Queue (ft)    | 104 | 173  | 630 | 628 |
| 95th Queue (ft)       | 198 | 283  | 715 | 728 |
| Link Distance (ft)    | 263 | 1470 | 619 | 619 |
| Upstream Blk Time (%) | 1   |      | 54  | 49  |
| Queuing Penalty (veh) | 2   |      | 0   | 0   |
| Storage Bay Dist (ft) |     |      |     |     |
| Storage Blk Time (%)  |     |      |     |     |
| Queuing Penalty (veh) |     |      |     |     |

Intersection: 20: US 202 & US 202 Northbound

| Movement              | SB  | SB  | NW   | NW   |
|-----------------------|-----|-----|------|------|
| Directions Served     | T   | T   | R    | R    |
| Maximum Queue (ft)    | 92  | 99  | 652  | 645  |
| Average Queue (ft)    | 6   | 7   | 101  | 93   |
| 95th Queue (ft)       | 46  | 54  | 415  | 400  |
| Link Distance (ft)    | 154 | 154 | 1023 | 1023 |
| Upstream Blk Time (%) | 0   | 0   |      |      |
| Queuing Penalty (veh) | 0   | 0   |      |      |
| Storage Bay Dist (ft) |     |     |      |      |
| Storage Blk Time (%)  |     |     |      |      |
| Queuing Penalty (veh) |     |     |      |      |

Network Summary

Network wide Queuing Penalty: 569

The top of the page features a dark green triangular shape on the left containing the word "Bowman" in white. To the right of this triangle is a collage of three images: a stone bridge with arches, a residential street with houses, and a large roundabout with a central tree island. The collage is separated from the green triangle by a white diagonal line.

# Bowman

## **ATTACHMENT 2**

### Sensitivity Analysis



**Weekday Afternoon Peak Hour**

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Weekday Afternoon Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |  |  |  |  |                                                                                     |  |                                                                                     |                                                                                     |  |  |
| Traffic Volume (vph)    | 5                                                                                 | 110                                                                               | 42                                                                                | 152                                                                               | 155                                                                               | 27                                                                                | 45                                                                                  | 0                                                                                   | 154                                                                                 | 44                                                                                  | 0                                                                                   | 12                                                                                  |
| Future Volume (vph)     | 5                                                                                 | 110                                                                               | 42                                                                                | 152                                                                               | 155                                                                               | 27                                                                                | 45                                                                                  | 0                                                                                   | 154                                                                                 | 44                                                                                  | 0                                                                                   | 12                                                                                  |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 11                                                                                | 11                                                                                | 14                                                                                | 11                                                                                | 12                                                                                | 14                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Storage Length (ft)     | 205                                                                               |                                                                                   | 205                                                                               | 175                                                                               |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   |
| Storage Lanes           | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)       | 75                                                                                |                                                                                   |                                                                                   | 75                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                     |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.895                                                                               |                                                                                     |                                                                                     | 0.971                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                     | 0.989                                                                               |                                                                                     |                                                                                     | 0.962                                                                               |                                                                                     |
| Satd. Flow (prot)       | 1736                                                                              | 1792                                                                              | 1680                                                                              | 1711                                                                              | 1881                                                                              | 1723                                                                              | 0                                                                                   | 1649                                                                                | 0                                                                                   | 0                                                                                   | 1775                                                                                | 0                                                                                   |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                     | 0.989                                                                               |                                                                                     |                                                                                     | 0.962                                                                               |                                                                                     |
| Satd. Flow (perm)       | 1736                                                                              | 1792                                                                              | 1680                                                                              | 1711                                                                              | 1881                                                                              | 1723                                                                              | 0                                                                                   | 1649                                                                                | 0                                                                                   | 0                                                                                   | 1775                                                                                | 0                                                                                   |
| Link Speed (mph)        |                                                                                   | 35                                                                                |                                                                                   |                                                                                   | 35                                                                                |                                                                                   |                                                                                     | 30                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 1587                                                                              |                                                                                   |                                                                                   | 577                                                                               |                                                                                   |                                                                                     | 578                                                                                 |                                                                                     |                                                                                     | 696                                                                                 |                                                                                     |
| Travel Time (s)         |                                                                                   | 30.9                                                                              |                                                                                   |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                     | 13.1                                                                                |                                                                                     |                                                                                     | 15.8                                                                                |                                                                                     |
| Peak Hour Factor        | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Heavy Vehicles (%)      | 0%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 1%                                                                                | 0%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)         | 5                                                                                 | 121                                                                               | 46                                                                                | 167                                                                               | 170                                                                               | 30                                                                                | 49                                                                                  | 0                                                                                   | 169                                                                                 | 48                                                                                  | 0                                                                                   | 13                                                                                  |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 5                                                                                 | 121                                                                               | 46                                                                                | 167                                                                               | 170                                                                               | 30                                                                                | 0                                                                                   | 218                                                                                 | 0                                                                                   | 0                                                                                   | 61                                                                                  | 0                                                                                   |
| Sign Control            |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                     | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:              | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:           | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Weekday Afternoon Peak Hour

| Intersection             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |       |      |                                                                                     |      |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-------|------|-------------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 5.6                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |       |      |                                                                                     |      |
| Movement                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL  | NBT                                                                               | NBR   | SBL  | SBT                                                                                 | SBR  |
| Lane Configurations      |  |  |  |  |  |  |      |  |       |      |  |      |
| Traffic Vol, veh/h       | 5                                                                                 | 110                                                                               | 42                                                                                | 152                                                                               | 155                                                                               | 27                                                                                | 45   | 0                                                                                 | 154   | 44   | 0                                                                                   | 12   |
| Future Vol, veh/h        | 5                                                                                 | 110                                                                               | 42                                                                                | 152                                                                               | 155                                                                               | 27                                                                                | 45   | 0                                                                                 | 154   | 44   | 0                                                                                   | 12   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0     | 0    | 0                                                                                   | 0    |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Stop | Stop                                                                              | Stop  | Stop | Stop                                                                                | Stop |
| RT Channelized           | -                                                                                 | -                                                                                 | Yield                                                                             | -                                                                                 | -                                                                                 | None                                                                              | -    | -                                                                                 | Yield | -    | -                                                                                   | None |
| Storage Length           | 205                                                                               | -                                                                                 | 205                                                                               | 175                                                                               | -                                                                                 | 0                                                                                 | -    | -                                                                                 | -     | -    | -                                                                                   | -    |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 | -     | -    | 0                                                                                   | -    |
| Grade, %                 | -                                                                                 | 1                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 | -     | -    | 0                                                                                   | -    |
| Peak Hour Factor         | 91                                                                                | 91                                                                                | 91                                                                                | 91                                                                                | 91                                                                                | 91                                                                                | 91   | 91                                                                                | 91    | 91   | 91                                                                                  | 91   |
| Heavy Vehicles, %        | 0                                                                                 | 2                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 0                                                                                 | 2    | 2                                                                                 | 2     | 0    | 0                                                                                   | 0    |
| Mvmt Flow                | 5                                                                                 | 121                                                                               | 46                                                                                | 167                                                                               | 170                                                                               | 30                                                                                | 49   | 0                                                                                 | 169   | 48   | 0                                                                                   | 13   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |      |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|------|-----|--------|-----|-----|
| Conflicting Flow All | 200    | 0 | 0 | 121    | 0 | 0 | 636    | 666  | 121 | 636    | 636 | 170 |
| Stage 1              | -      | - | - | -      | - | - | 132    | 132  | -   | 504    | 504 | -   |
| Stage 2              | -      | - | - | -      | - | - | 504    | 534  | -   | 132    | 132 | -   |
| Critical Hdwy        | 4.3    | - | - | 4.3    | - | - | 7.1    | 6.5  | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.12   | 5.52 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.12   | 5.52 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 3      | - | - | 3      | - | - | 3      | 4    | 3.1 | 3      | 4   | 3.1 |
| Pot Cap-1 Maneuver   | 1026   | - | - | 1092   | - | - | 441    | 383  | 993 | 441    | 398 | 931 |
| Stage 1              | -      | - | - | -      | - | - | 1013   | 790  | -   | 625    | 544 | -   |
| Stage 2              | -      | - | - | -      | - | - | 624    | 526  | -   | 1013   | 791 | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |      |     |        |     |     |
| Mov Cap-1 Maneuver   | 1026   | - | - | 1092   | - | - | 366    | 322  | 993 | 308    | 335 | 931 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 366    | 322  | -   | 308    | 335 | -   |
| Stage 1              | -      | - | - | -      | - | - | 1007   | 786  | -   | 530    | 461 | -   |
| Stage 2              | -      | - | - | -      | - | - | 521    | 446  | -   | 836    | 787 | -   |

| Approach          | EB   | WB   | NB   | SB    |
|-------------------|------|------|------|-------|
| HCM Ctrl Dly, s/v | 0.27 | 4.05 | 9.18 | 17.06 |
| HCM LOS           |      |      | A    | C     |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 1079  | 1026  | -   | -   | 1092  | -   | -   | 360   |
| HCM Lane V/C Ratio    | 0.203 | 0.005 | -   | -   | 0.153 | -   | -   | 0.171 |
| HCM Ctrl Dly (s/v)    | 9.2   | 8.5   | -   | -   | 8.9   | -   | -   | 17.1  |
| HCM Lane LOS          | A     | A     | -   | -   | A     | -   | -   | C     |
| HCM 95th %tile Q(veh) | 0.8   | 0     | -   | -   | 0.5   | -   | -   | 0.6   |

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Weekday Afternoon Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph)    | 174                                                                               | 25                                                                                | 104                                                                               | 130                                                                               | 44                                                                                | 77                                                                                | 172                                                                                 | 1608                                                                                | 57                                                                                  | 107                                                                                 | 1655                                                                                | 117                                                                                 |
| Future Volume (vph)     | 174                                                                               | 25                                                                                | 104                                                                               | 130                                                                               | 44                                                                                | 77                                                                                | 172                                                                                 | 1608                                                                                | 57                                                                                  | 107                                                                                 | 1655                                                                                | 117                                                                                 |
| Ideal Flow (vphpl)      | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                              | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                | 1800                                                                                |
| Lane Width (ft)         | 11                                                                                | 11                                                                                | 11                                                                                | 11                                                                                | 11                                                                                | 14                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 10                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 2%                                                                                |                                                                                   |                                                                                     | 1%                                                                                  |                                                                                     |                                                                                     | -1%                                                                                 |                                                                                     |
| Storage Length (ft)     | 250                                                                               |                                                                                   | 300                                                                               | 175                                                                               |                                                                                   | 175                                                                               | 315                                                                                 |                                                                                     | 175                                                                                 | 150                                                                                 |                                                                                     | 150                                                                                 |
| Storage Lanes           | 2                                                                                 |                                                                                   | 1                                                                                 | 2                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)       | 75                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 150                                                                                 |                                                                                     |                                                                                     | 150                                                                                 |                                                                                     |                                                                                     |
| Lane Util. Factor       | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 0.97                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                     |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   | 0.905                                                                             |                                                                                   |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)       | 3191                                                                              | 1731                                                                              | 1472                                                                              | 3175                                                                              | 1530                                                                              | 0                                                                                 | 1652                                                                                | 3336                                                                                | 1522                                                                                | 1604                                                                                | 3337                                                                                | 1538                                                                                |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)       | 3191                                                                              | 1731                                                                              | 1472                                                                              | 3175                                                                              | 1530                                                                              | 0                                                                                 | 1652                                                                                | 3336                                                                                | 1522                                                                                | 1604                                                                                | 3337                                                                                | 1538                                                                                |
| Right Turn on Red       |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | No                                                                                |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)       |                                                                                   |                                                                                   | 159                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 168                                                                                 |                                                                                     |                                                                                     | 101                                                                                 |
| Link Speed (mph)        |                                                                                   | 35                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                     | 45                                                                                  |                                                                                     |                                                                                     | 45                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 577                                                                               |                                                                                   |                                                                                   | 1338                                                                              |                                                                                   |                                                                                     | 610                                                                                 |                                                                                     |                                                                                     | 1546                                                                                |                                                                                     |
| Travel Time (s)         |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                   | 36.5                                                                              |                                                                                   |                                                                                     | 9.2                                                                                 |                                                                                     |                                                                                     | 23.4                                                                                |                                                                                     |
| Peak Hour Factor        | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Heavy Vehicles (%)      | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 0%                                                                                | 3%                                                                                | 3%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 3%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)         | 181                                                                               | 26                                                                                | 108                                                                               | 135                                                                               | 46                                                                                | 80                                                                                | 179                                                                                 | 1675                                                                                | 59                                                                                  | 111                                                                                 | 1724                                                                                | 122                                                                                 |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 181                                                                               | 26                                                                                | 108                                                                               | 135                                                                               | 126                                                                               | 0                                                                                 | 179                                                                                 | 1675                                                                                | 59                                                                                  | 111                                                                                 | 1724                                                                                | 122                                                                                 |
| Number of Detectors     | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                   | 2                                                                                   | 1                                                                                   | 1                                                                                   | 2                                                                                   | 1                                                                                   |
| Detector Template       | Left                                                                              |                                                                                   | Right                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | Right                                                                               |
| Leading Detector (ft)   | 35                                                                                | 35                                                                                | 20                                                                                | 35                                                                                | 35                                                                                |                                                                                   | 35                                                                                  | 456                                                                                 | 0                                                                                   | 35                                                                                  | 456                                                                                 | 35                                                                                  |
| Trailing Detector (ft)  | -5                                                                                | -5                                                                                | 0                                                                                 | -5                                                                                | -5                                                                                |                                                                                   | -5                                                                                  | 330                                                                                 | -6                                                                                  | -5                                                                                  | 330                                                                                 | -5                                                                                  |
| Detector 1 Position(ft) | -5                                                                                | -5                                                                                | 0                                                                                 | -5                                                                                | -5                                                                                |                                                                                   | -5                                                                                  | 330                                                                                 | -6                                                                                  | -5                                                                                  | 330                                                                                 | -5                                                                                  |
| Detector 1 Size(ft)     | 40                                                                                | 40                                                                                | 20                                                                                | 40                                                                                | 40                                                                                |                                                                                   | 40                                                                                  | 6                                                                                   | 4                                                                                   | 40                                                                                  | 6                                                                                   | 40                                                                                  |
| Detector 1 Type         | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 2 Position(ft) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 450                                                                                 |                                                                                     |                                                                                     | 450                                                                                 |                                                                                     |
| Detector 2 Size(ft)     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |
| Detector 2 Type         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | Cl+Ex                                                                               |                                                                                     |                                                                                     | Cl+Ex                                                                               |                                                                                     |
| Detector 2 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 2 Extend (s)   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     | 0.0                                                                                 |                                                                                     |
| Turn Type               | Prot                                                                              | NA                                                                                | Perm                                                                              | Prot                                                                              | NA                                                                                |                                                                                   | Prot                                                                                | NA                                                                                  | Perm                                                                                | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases        | 7                                                                                 | 4                                                                                 |                                                                                   | 3                                                                                 | 8                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 7                                                                                   |
| Permitted Phases        |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase          | 7                                                                                 | 4                                                                                 | 4                                                                                 | 3                                                                                 | 8                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   | 6                                                                                   | 5                                                                                   | 2                                                                                   | 7                                                                                   |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)     | 5.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |                                                                                   | 3.0                                                                                 | 15.0                                                                                | 15.0                                                                                | 3.0                                                                                 | 15.0                                                                                | 5.0                                                                                 |
| Minimum Split (s)       | 13.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              | 19.0                                                                              |                                                                                   | 12.0                                                                                | 37.0                                                                                | 37.0                                                                                | 12.0                                                                                | 37.0                                                                                | 13.0                                                                                |
| Total Split (s)         | 16.0                                                                              | 19.0                                                                              | 19.0                                                                              | 17.0                                                                              | 20.0                                                                              |                                                                                   | 22.0                                                                                | 72.0                                                                                | 72.0                                                                                | 22.0                                                                                | 72.0                                                                                | 16.0                                                                                |

Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Weekday Afternoon Peak Hour

|                       |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group            | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Total Split (%)       | 12.3%                                                                             | 14.6%                                                                             | 14.6%                                                                             | 13.1%                                                                             | 15.4%                                                                             |                                                                                   | 16.9%                                                                               | 55.4%                                                                               | 55.4%                                                                               | 16.9%                                                                               | 55.4%                                                                               | 12.3%                                                                               |
| Maximum Green (s)     | 8.0                                                                               | 11.0                                                                              | 11.0                                                                              | 9.0                                                                               | 12.0                                                                              |                                                                                   | 15.0                                                                                | 65.0                                                                                | 65.0                                                                                | 15.0                                                                                | 65.0                                                                                | 8.0                                                                                 |
| Yellow Time (s)       | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 4.0                                                                                 |
| Lost Time Adjust (s)  | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              |                                                                                   | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 |
| Lead/Lag              | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                                | Lag                                                                                 | Lag                                                                                 | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?    | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | Yes                                                                                 |
| 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                                                                                 |
| Recall Mode           | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                                | C-Max                                                                               | C-Max                                                                               | None                                                                                | C-Max                                                                               | None                                                                                |

Intersection Summary

Area Type: Other

Cycle Length: 130

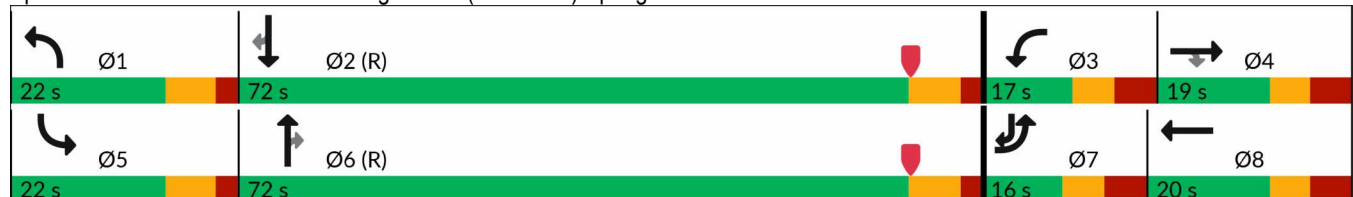
Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 130

Control Type: Actuated-Coordinated

Splits and Phases: 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive



Bowman 2033 Future with Development Conditions Whole Site as Shopping Center  
 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Weekday Afternoon Peak Hour

|                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                    |  |  |  |  |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (veh/h)                                                                                 | 174                                                                               | 25                                                                                | 104                                                                               | 130                                                                               | 44                                                                                | 77                                                                                | 172                                                                                 | 1608                                                                                | 57                                                                                  | 107                                                                                 | 1655                                                                                | 117                                                                                 |
| Future Volume (veh/h)                                                                                  | 174                                                                               | 25                                                                                | 104                                                                               | 130                                                                               | 44                                                                                | 77                                                                                | 172                                                                                 | 1608                                                                                | 57                                                                                  | 107                                                                                 | 1655                                                                                | 117                                                                                 |
| Initial Q (Qb), veh                                                                                    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Lane Width Adj.                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.04                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped-Bike Adj(A_pbT)                                                                                    | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                  | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                 | 1794                                                                              | 1794                                                                              | 1794                                                                              | 1778                                                                              | 1778                                                                              | 1805                                                                              | 1752                                                                                | 1766                                                                                | 1794                                                                                | 1837                                                                                | 1795                                                                                | 1837                                                                                |
| Adj Flow Rate, veh/h                                                                                   | 181                                                                               | 26                                                                                | 0                                                                                 | 135                                                                               | 46                                                                                | 80                                                                                | 179                                                                                 | 1675                                                                                | 59                                                                                  | 111                                                                                 | 1724                                                                                | 122                                                                                 |
| Peak Hour Factor                                                                                       | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Percent Heavy Veh, %                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 3                                                                                 | 3                                                                                   | 2                                                                                   | 0                                                                                   | 0                                                                                   | 3                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                             | 230                                                                               | 184                                                                               |                                                                                   | 220                                                                               | 58                                                                                | 101                                                                               | 205                                                                                 | 1822                                                                                | 825                                                                                 | 154                                                                                 | 1731                                                                                | 898                                                                                 |
| Arrive On Green                                                                                        | 0.07                                                                              | 0.10                                                                              | 0.00                                                                              | 0.07                                                                              | 0.10                                                                              | 0.10                                                                              | 0.25                                                                                | 1.00                                                                                | 1.00                                                                                | 0.09                                                                                | 0.51                                                                                | 0.51                                                                                |
| Sat Flow, veh/h                                                                                        | 3315                                                                              | 1794                                                                              | 1521                                                                              | 3284                                                                              | 582                                                                               | 1013                                                                              | 1669                                                                                | 3356                                                                                | 1521                                                                                | 1750                                                                                | 3410                                                                                | 1557                                                                                |
| Grp Volume(v), veh/h                                                                                   | 181                                                                               | 26                                                                                | 0                                                                                 | 135                                                                               | 0                                                                                 | 126                                                                               | 179                                                                                 | 1675                                                                                | 59                                                                                  | 111                                                                                 | 1724                                                                                | 122                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                               | 1658                                                                              | 1794                                                                              | 1521                                                                              | 1642                                                                              | 0                                                                                 | 1595                                                                              | 1669                                                                                | 1678                                                                                | 1521                                                                                | 1750                                                                                | 1705                                                                                | 1557                                                                                |
| Q Serve(g_s), s                                                                                        | 7.0                                                                               | 1.7                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                               | 10.0                                                                              | 13.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 8.0                                                                                 | 65.5                                                                                | 4.7                                                                                 |
| Cycle Q Clear(g_c), s                                                                                  | 7.0                                                                               | 1.7                                                                               | 0.0                                                                               | 5.2                                                                               | 0.0                                                                               | 10.0                                                                              | 13.4                                                                                | 0.0                                                                                 | 0.0                                                                                 | 8.0                                                                                 | 65.5                                                                                | 4.7                                                                                 |
| Prop In Lane                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.63                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                 | 230                                                                               | 184                                                                               |                                                                                   | 220                                                                               | 0                                                                                 | 160                                                                               | 205                                                                                 | 1822                                                                                | 825                                                                                 | 154                                                                                 | 1731                                                                                | 898                                                                                 |
| V/C Ratio(X)                                                                                           | 0.79                                                                              | 0.14                                                                              |                                                                                   | 0.61                                                                              | 0.00                                                                              | 0.79                                                                              | 0.87                                                                                | 0.92                                                                                | 0.07                                                                                | 0.72                                                                                | 1.00                                                                                | 0.14                                                                                |
| Avail Cap(c_a), veh/h                                                                                  | 230                                                                               | 184                                                                               |                                                                                   | 253                                                                               | 0                                                                                 | 160                                                                               | 205                                                                                 | 1822                                                                                | 825                                                                                 | 215                                                                                 | 1731                                                                                | 898                                                                                 |
| HCM Platoon Ratio                                                                                      | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                                | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                     | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.80                                                                                | 0.80                                                                                | 0.80                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                               | 59.6                                                                              | 53.1                                                                              | 0.0                                                                               | 59.0                                                                              | 0.0                                                                               | 57.2                                                                              | 48.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 57.7                                                                                | 31.9                                                                                | 12.6                                                                                |
| Incr Delay (d2), s/veh                                                                                 | 16.6                                                                              | 0.3                                                                               | 0.0                                                                               | 3.5                                                                               | 0.0                                                                               | 22.9                                                                              | 26.1                                                                                | 7.5                                                                                 | 0.1                                                                                 | 6.9                                                                                 | 20.7                                                                                | 0.3                                                                                 |
| Initial Q Delay(d3), s/veh                                                                             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(95%),veh/ln                                                                               | 6.2                                                                               | 1.4                                                                               | 0.0                                                                               | 4.1                                                                               | 0.0                                                                               | 8.8                                                                               | 9.9                                                                                 | 3.4                                                                                 | 0.1                                                                                 | 6.8                                                                                 | 38.7                                                                                | 3.1                                                                                 |
| Unsig. Movement Delay, s/veh                                                                           | 30.70                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d), s/veh                                                                                  | 76.2                                                                              | 53.5                                                                              | 30.7                                                                              | 62.5                                                                              | 0.0                                                                               | 80.0                                                                              | 74.2                                                                                | 7.5                                                                                 | 0.1                                                                                 | 64.6                                                                                | 52.5                                                                                | 12.9                                                                                |
| LnGrp LOS                                                                                              | E                                                                                 | D                                                                                 | C                                                                                 | E                                                                                 |                                                                                   | F                                                                                 | E                                                                                   | A                                                                                   | A                                                                                   | E                                                                                   | D                                                                                   | B                                                                                   |
| Approach Vol, veh/h                                                                                    | 315                                                                               |                                                                                   |                                                                                   | 261                                                                               |                                                                                   |                                                                                   | 1913                                                                                |                                                                                     |                                                                                     | 1957                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                  | 58.7                                                                              |                                                                                   |                                                                                   | 71.0                                                                              |                                                                                   |                                                                                   | 13.5                                                                                |                                                                                     |                                                                                     | 50.8                                                                                |                                                                                     |                                                                                     |
| Approach LOS                                                                                           | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                   | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                               | 22.0                                                                              | 72.0                                                                              | 15.7                                                                              | 20.3                                                                              | 17.4                                                                              | 76.6                                                                              | 16.0                                                                                | 20.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                | 7.0                                                                               | 7.0                                                                               | 8.0                                                                               | 8.0                                                                               | 7.0                                                                               | 7.0                                                                               | 8.0                                                                                 | 8.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                            | 15.0                                                                              | 65.0                                                                              | 9.0                                                                               | 11.0                                                                              | 15.0                                                                              | 65.0                                                                              | 8.0                                                                                 | 12.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+l1), s                                                                           | 15.9                                                                              | 68.0                                                                              | 7.7                                                                               | 4.2                                                                               | 10.5                                                                              | 2.5                                                                               | 9.5                                                                                 | 12.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.1                                                                               | 58.8                                                                              | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 7th Control Delay, s/veh                                                                           | 36.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 7th LOS                                                                                            | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Bowman  
3: US 202

2033 Future with Development Conditions Whole Site as Shopping Center  
Weekday Afternoon Peak Hour

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations     |                                                                                   |  |  |  |  |  |
| Traffic Volume (vph)    | 0                                                                                 | 121                                                                               | 115                                                                               | 1838                                                                              | 1847                                                                              | 42                                                                                |
| Future Volume (vph)     | 0                                                                                 | 121                                                                               | 115                                                                               | 1838                                                                              | 1847                                                                              | 42                                                                                |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)     | 0                                                                                 | 0                                                                                 | 200                                                                               |                                                                                   |                                                                                   | 200                                                                               |
| Storage Lanes           | 0                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |
| Taper Length (ft)       | 25                                                                                |                                                                                   | 25                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Lane Util. Factor       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |
| Frt                     |                                                                                   | 0.865                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |
| Flt Protected           |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)       | 0                                                                                 | 1611                                                                              | 1770                                                                              | 3539                                                                              | 3539                                                                              | 1583                                                                              |
| Flt Permitted           |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)       | 0                                                                                 | 1611                                                                              | 1770                                                                              | 3539                                                                              | 3539                                                                              | 1583                                                                              |
| Right Turn on Red       |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)       |                                                                                   | 29                                                                                |                                                                                   |                                                                                   |                                                                                   | 43                                                                                |
| Link Speed (mph)        | 25                                                                                |                                                                                   |                                                                                   | 45                                                                                | 45                                                                                |                                                                                   |
| Link Distance (ft)      | 251                                                                               |                                                                                   |                                                                                   | 274                                                                               | 610                                                                               |                                                                                   |
| Travel Time (s)         | 6.8                                                                               |                                                                                   |                                                                                   | 4.2                                                                               | 9.2                                                                               |                                                                                   |
| Peak Hour Factor        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Adj. Flow (vph)         | 0                                                                                 | 132                                                                               | 125                                                                               | 1998                                                                              | 2008                                                                              | 46                                                                                |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)   | 0                                                                                 | 132                                                                               | 125                                                                               | 1998                                                                              | 2008                                                                              | 46                                                                                |
| Number of Detectors     |                                                                                   | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 |
| Detector Template       |                                                                                   | Right                                                                             | Left                                                                              | Thru                                                                              | Thru                                                                              | Right                                                                             |
| Leading Detector (ft)   |                                                                                   | 20                                                                                | 20                                                                                | 100                                                                               | 100                                                                               | 20                                                                                |
| Trailing Detector (ft)  |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Position(ft) |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Size(ft)     |                                                                                   | 20                                                                                | 20                                                                                | 6                                                                                 | 6                                                                                 | 20                                                                                |
| Detector 1 Type         |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |
| Detector 1 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)   |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Queue (s)    |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Delay (s)    |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 2 Position(ft) |                                                                                   |                                                                                   |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |
| Detector 2 Size(ft)     |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |
| Detector 2 Type         |                                                                                   |                                                                                   |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 2 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)   |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Turn Type               |                                                                                   | Perm                                                                              | Prot                                                                              | NA                                                                                | NA                                                                                | Perm                                                                              |
| Protected Phases        |                                                                                   |                                                                                   | 5                                                                                 | 2                                                                                 | 6                                                                                 |                                                                                   |
| Permitted Phases        |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |
| Detector Phase          |                                                                                   | 5                                                                                 | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)     |                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)       |                                                                                   | 11.0                                                                              | 11.0                                                                              | 24.0                                                                              | 24.0                                                                              | 24.0                                                                              |
| Total Split (s)         |                                                                                   | 28.0                                                                              | 28.0                                                                              | 130.0                                                                             | 102.0                                                                             | 102.0                                                                             |
| Total Split (%)         |                                                                                   | 21.5%                                                                             | 21.5%                                                                             | 100.0%                                                                            | 78.5%                                                                             | 78.5%                                                                             |
| Maximum Green (s)       |                                                                                   | 22.0                                                                              | 22.0                                                                              | 124.0                                                                             | 96.0                                                                              | 96.0                                                                              |
| Yellow Time (s)         |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |

Lanes, Volumes, Timings

3: US 202

V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineering\Traffic Analysis\Synch

Bowman  
3: US 202

2033 Future with Development Conditions Whole Site as Shopping Center  
Weekday Afternoon Peak Hour

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| All-Red Time (s)        |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |
| Lost Time Adjust (s)    |                                                                                   | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              |
| Total Lost Time (s)     |                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag                |                                                                                   | Lead                                                                              | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               |
| Lead-Lag Optimize?      |                                                                                   | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               |
| Vehicle Extension (s)   |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |
| Recall Mode             |                                                                                   | Max                                                                               | Max                                                                               | C-Max                                                                             | C-Max                                                                             | C-Max                                                                             |
| Walk Time (s)           |                                                                                   |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |
| Flash Don't Walk (s)    |                                                                                   |                                                                                   |                                                                                   | 11.0                                                                              | 11.0                                                                              | 11.0                                                                              |
| Pedestrian Calls (#/hr) |                                                                                   |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Act Effect Green (s)    |                                                                                   | 23.0                                                                              | 23.0                                                                              | 130.0                                                                             | 97.0                                                                              | 97.0                                                                              |
| Actuated g/C Ratio      |                                                                                   | 0.18                                                                              | 0.18                                                                              | 1.00                                                                              | 0.75                                                                              | 0.75                                                                              |
| v/c Ratio               |                                                                                   | 0.43                                                                              | 0.40                                                                              | 0.56                                                                              | 0.76                                                                              | 0.04                                                                              |
| Control Delay (s/veh)   |                                                                                   | 41.8                                                                              | 51.8                                                                              | 0.7                                                                               | 2.6                                                                               | 0.0                                                                               |
| Queue Delay             |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 1.1                                                                               | 0.0                                                                               |
| Total Delay (s/veh)     |                                                                                   | 41.8                                                                              | 51.8                                                                              | 0.9                                                                               | 3.7                                                                               | 0.0                                                                               |
| LOS                     |                                                                                   | D                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |
| Approach Delay (s/veh)  | 41.8                                                                              |                                                                                   |                                                                                   | 3.9                                                                               | 3.7                                                                               |                                                                                   |
| Approach LOS            | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 | A                                                                                 |                                                                                   |
| Queue Length 50th (ft)  |                                                                                   | 77                                                                                | 94                                                                                | 0                                                                                 | 20                                                                                | 0                                                                                 |
| Queue Length 95th (ft)  |                                                                                   | 143                                                                               | 158                                                                               | 0                                                                                 | m24                                                                               | m0                                                                                |
| Internal Link Dist (ft) | 171                                                                               |                                                                                   |                                                                                   | 194                                                                               | 530                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   | 200                                                                               |                                                                                   |                                                                                   | 200                                                                               |
| Base Capacity (vph)     |                                                                                   | 308                                                                               | 313                                                                               | 3539                                                                              | 2640                                                                              | 1192                                                                              |
| Starvation Cap Reductn  |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 366                                                                               | 0                                                                                 |
| Spillback Cap Reductn   |                                                                                   | 0                                                                                 | 0                                                                                 | 620                                                                               | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       |                                                                                   | 0.43                                                                              | 0.40                                                                              | 0.68                                                                              | 0.88                                                                              | 0.04                                                                              |

#### Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:NBT and 6:SBT, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay (s/veh): 4.9

Intersection LOS: A

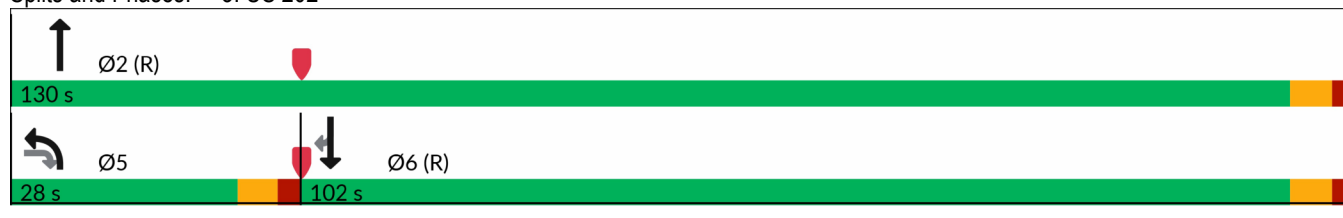
Intersection Capacity Utilization 66.9%

ICU Level of Service C

Analysis Period (min) 15

m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: US 202



Lanes, Volumes, Timings

3: US 202

V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineering\Traffic Analysis\Synch

**Saturday Midday Peak Hour**

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Saturday Midday Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations     |  |  |  |  |  |  |                                                                                     |  |  |                                                                                     |  |                                                                                     |
| Traffic Volume (vph)    | 6                                                                                 | 125                                                                               | 61                                                                                | 189                                                                               | 133                                                                               | 33                                                                                | 56                                                                                  | 0                                                                                   | 164                                                                                 | 36                                                                                  | 0                                                                                   | 6                                                                                   |
| Future Volume (vph)     | 6                                                                                 | 125                                                                               | 61                                                                                | 189                                                                               | 133                                                                               | 33                                                                                | 56                                                                                  | 0                                                                                   | 164                                                                                 | 36                                                                                  | 0                                                                                   | 6                                                                                   |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)         | 11                                                                                | 11                                                                                | 14                                                                                | 11                                                                                | 12                                                                                | 14                                                                                | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  | 12                                                                                  |
| Grade (%)               |                                                                                   | 1%                                                                                |                                                                                   |                                                                                   | 0%                                                                                |                                                                                   |                                                                                     | 0%                                                                                  |                                                                                     |                                                                                     | 0%                                                                                  |                                                                                     |
| Storage Length (ft)     | 205                                                                               |                                                                                   | 205                                                                               | 175                                                                               |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   |
| Storage Lanes           | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 0                                                                                   |                                                                                     | 1                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)       | 75                                                                                |                                                                                   |                                                                                   | 75                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                     |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     |                                                                                     | 0.850                                                                               |                                                                                     | 0.980                                                                               |                                                                                     |
| Flt Protected           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     | 0.959                                                                               |                                                                                     |
| Satd. Flow (prot)       | 1736                                                                              | 1827                                                                              | 1680                                                                              | 1711                                                                              | 1881                                                                              | 1723                                                                              | 0                                                                                   | 1770                                                                                | 1583                                                                                | 0                                                                                   | 1786                                                                                | 0                                                                                   |
| Flt Permitted           | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     | 0.959                                                                               |                                                                                     |
| Satd. Flow (perm)       | 1736                                                                              | 1827                                                                              | 1680                                                                              | 1711                                                                              | 1881                                                                              | 1723                                                                              | 0                                                                                   | 1770                                                                                | 1583                                                                                | 0                                                                                   | 1786                                                                                | 0                                                                                   |
| Link Speed (mph)        |                                                                                   | 35                                                                                |                                                                                   |                                                                                   | 35                                                                                |                                                                                   |                                                                                     | 30                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)      |                                                                                   | 1587                                                                              |                                                                                   |                                                                                   | 577                                                                               |                                                                                   |                                                                                     | 578                                                                                 |                                                                                     |                                                                                     | 696                                                                                 |                                                                                     |
| Travel Time (s)         |                                                                                   | 30.9                                                                              |                                                                                   |                                                                                   | 11.2                                                                              |                                                                                   |                                                                                     | 13.1                                                                                |                                                                                     |                                                                                     | 15.8                                                                                |                                                                                     |
| Peak Hour Factor        | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                |
| Heavy Vehicles (%)      | 0%                                                                                | 0%                                                                                | 2%                                                                                | 2%                                                                                | 1%                                                                                | 0%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 0%                                                                                  | 0%                                                                                  | 0%                                                                                  |
| Adj. Flow (vph)         | 7                                                                                 | 142                                                                               | 69                                                                                | 215                                                                               | 151                                                                               | 38                                                                                | 64                                                                                  | 0                                                                                   | 186                                                                                 | 41                                                                                  | 0                                                                                   | 7                                                                                   |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)   | 7                                                                                 | 142                                                                               | 69                                                                                | 215                                                                               | 151                                                                               | 38                                                                                | 0                                                                                   | 64                                                                                  | 186                                                                                 | 0                                                                                   | 48                                                                                  | 0                                                                                   |
| Sign Control            |                                                                                   | Free                                                                              |                                                                                   |                                                                                   | Free                                                                              |                                                                                   |                                                                                     | Stop                                                                                |                                                                                     |                                                                                     | Stop                                                                                |                                                                                     |
| Intersection Summary    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Area Type:              | Other                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Control Type:           | Unsignalized                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 1: Ridge Road (S.R. 3048) & Ridge Village Shoppes Access Saturday Midday Peak Hour

| Intersection             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |      |                                                                                     |                                                                                     |
|--------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Int Delay, s/veh         | 6.7                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |      |                                                                                   |                                                                                   |      |                                                                                     |                                                                                     |
| Movement                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL  | NBT                                                                               | NBR                                                                               | SBL  | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations      |  |  |  |  |  |  |      |  |  |      |  |  |
| Traffic Vol, veh/h       | 6                                                                                 | 125                                                                               | 61                                                                                | 189                                                                               | 133                                                                               | 33                                                                                | 56   | 0                                                                                 | 164                                                                               | 36   | 0                                                                                   | 6                                                                                   |
| Future Vol, veh/h        | 6                                                                                 | 125                                                                               | 61                                                                                | 189                                                                               | 133                                                                               | 33                                                                                | 56   | 0                                                                                 | 164                                                                               | 36   | 0                                                                                   | 6                                                                                   |
| Conflicting Peds, #/hr   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                 | 0                                                                                 | 0    | 0                                                                                   | 0                                                                                   |
| Sign Control             | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Free                                                                              | Stop | Stop                                                                              | Stop                                                                              | Stop | Stop                                                                                | Stop                                                                                |
| RT Channelized           | -                                                                                 | -                                                                                 | Yield                                                                             | -                                                                                 | -                                                                                 | None                                                                              | -    | -                                                                                 | Yield                                                                             | -    | -                                                                                   | None                                                                                |
| Storage Length           | 205                                                                               | -                                                                                 | 205                                                                               | 175                                                                               | -                                                                                 | 0                                                                                 | -    | -                                                                                 | 0                                                                                 | -    | -                                                                                   | -                                                                                   |
| Veh in Median Storage, # | -                                                                                 | 0                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 | -                                                                                 | -    | 0                                                                                   | -                                                                                   |
| Grade, %                 | -                                                                                 | 1                                                                                 | -                                                                                 | -                                                                                 | 0                                                                                 | -                                                                                 | -    | 0                                                                                 | -                                                                                 | -    | 0                                                                                   | -                                                                                   |
| Peak Hour Factor         | 88                                                                                | 88                                                                                | 88                                                                                | 88                                                                                | 88                                                                                | 88                                                                                | 88   | 88                                                                                | 88                                                                                | 88   | 88                                                                                  | 88                                                                                  |
| Heavy Vehicles, %        | 0                                                                                 | 0                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 | 0                                                                                 | 2    | 2                                                                                 | 2                                                                                 | 0    | 0                                                                                   | 0                                                                                   |
| Mvmt Flow                | 7                                                                                 | 142                                                                               | 69                                                                                | 215                                                                               | 151                                                                               | 38                                                                                | 64   | 0                                                                                 | 186                                                                               | 41   | 0                                                                                   | 7                                                                                   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |      |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|------|-----|--------|-----|-----|
| Conflicting Flow All | 189    | 0 | 0 | 142    | 0 | 0 | 736    | 774  | 142 | 736    | 736 | 151 |
| Stage 1              | -      | - | - | -      | - | - | 156    | 156  | -   | 581    | 581 | -   |
| Stage 2              | -      | - | - | -      | - | - | 581    | 618  | -   | 156    | 156 | -   |
| Critical Hdwy        | 4.3    | - | - | 4.3    | - | - | 7.1    | 6.5  | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.12   | 5.52 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.12   | 5.52 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 3      | - | - | 3      | - | - | 3      | 4    | 3.1 | 3      | 4   | 3.1 |
| Pot Cap-1 Maneuver   | 1035   | - | - | 1074   | - | - | 376    | 332  | 966 | 376    | 349 | 955 |
| Stage 1              | -      | - | - | -      | - | - | 982    | 772  | -   | 566    | 503 | -   |
| Stage 2              | -      | - | - | -      | - | - | 564    | 482  | -   | 983    | 773 | -   |
| Platoon blocked, %   |        | - | - |        | - | - |        |      |     |        |     |     |
| Mov Cap-1 Maneuver   | 1035   | - | - | 1074   | - | - | 297    | 264  | 966 | 241    | 277 | 955 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 297    | 264  | -   | 241    | 277 | -   |
| Stage 1              | -      | - | - | -      | - | - | 976    | 767  | -   | 453    | 402 | -   |
| Stage 2              | -      | - | - | -      | - | - | 448    | 386  | -   | 788    | 768 | -   |

| Approach          | EB   | WB   | NB    | SB    |
|-------------------|------|------|-------|-------|
| HCM Ctrl Dly, s/v | 0.27 | 4.89 | 12.37 | 21.19 |
| HCM LOS           |      |      | B     | C     |

| Minor Lane/Major Mvmt | NBLn1 | NBLn2 | EBL   | EBT | EBR | WBL  | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-------|-----|-----|------|-----|-----|-------|
| Capacity (veh/h)      | 297   | 966   | 1035  | -   | -   | 1074 | -   | -   | 270   |
| HCM Lane V/C Ratio    | 0.215 | 0.193 | 0.007 | -   | -   | 0.2  | -   | -   | 0.177 |
| HCM Ctrl Dly (s/v)    | 20.4  | 9.6   | 8.5   | -   | -   | 9.2  | -   | -   | 21.2  |
| HCM Lane LOS          | C     | A     | A     | -   | -   | A    | -   | -   | C     |
| HCM 95th %tile Q(veh) | 0.8   | 0.7   | 0     | -   | -   | 0.7  | -   | -   | 0.6   |

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Satuday Midday Peak Hour

|                         |                                                                                    |  |                                                                                    |                                                                                    |                                                                                    |  |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |                                                                                      |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                                                                                                                 | EBT                                                                               | EBR                                                                                                                                                                 | WBL                                                                                                                                                                 | WBT                                                                                                                                                                 | WBR                                                                               | NBL                                                                                                                                                                     | NBT                                                                                                                                                                     | NBR                                                                                                                                                                     | SBL                                                                                                                                                                     | SBT                                                                                                                                                                     | SBR                                                                                                                                                                     |
| Lane Configurations     |   |  |   |   |   |                                                                                   |   |   |   |   |   |   |
| Traffic Volume (vph)    | 184                                                                                                                                                                 | 30                                                                                | 131                                                                                                                                                                 | 170                                                                                                                                                                 | 38                                                                                                                                                                  | 135                                                                               | 184                                                                                                                                                                     | 1518                                                                                                                                                                    | 42                                                                                                                                                                      | 139                                                                                                                                                                     | 1487                                                                                                                                                                    | 115                                                                                                                                                                     |
| Future Volume (vph)     | 184                                                                                                                                                                 | 30                                                                                | 131                                                                                                                                                                 | 170                                                                                                                                                                 | 38                                                                                                                                                                  | 135                                                                               | 184                                                                                                                                                                     | 1518                                                                                                                                                                    | 42                                                                                                                                                                      | 139                                                                                                                                                                     | 1487                                                                                                                                                                    | 115                                                                                                                                                                     |
| Ideal Flow (vphpl)      | 1800                                                                                                                                                                | 1800                                                                              | 1800                                                                                                                                                                | 1800                                                                                                                                                                | 1800                                                                                                                                                                | 1800                                                                              | 1800                                                                                                                                                                    | 1800                                                                                                                                                                    | 1800                                                                                                                                                                    | 1800                                                                                                                                                                    | 1800                                                                                                                                                                    | 1800                                                                                                                                                                    |
| Lane Width (ft)         | 11                                                                                                                                                                  | 11                                                                                | 11                                                                                                                                                                  | 11                                                                                                                                                                  | 11                                                                                                                                                                  | 14                                                                                | 12                                                                                                                                                                      | 12                                                                                                                                                                      | 12                                                                                                                                                                      | 10                                                                                                                                                                      | 12                                                                                                                                                                      | 12                                                                                                                                                                      |
| Grade (%)               |                                                                                                                                                                     | 1%                                                                                |                                                                                                                                                                     |                                                                                                                                                                     | 2%                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 1%                                                                                                                                                                      |                                                                                                                                                                         |                                                                                                                                                                         | -1%                                                                                                                                                                     |                                                                                                                                                                         |
| Storage Length (ft)     | 250                                                                                                                                                                 |                                                                                   | 300                                                                                                                                                                 | 175                                                                                                                                                                 |                                                                                                                                                                     | 175                                                                               | 315                                                                                                                                                                     |                                                                                                                                                                         | 175                                                                                                                                                                     | 150                                                                                                                                                                     |                                                                                                                                                                         | 150                                                                                                                                                                     |
| Storage Lanes           | 2                                                                                                                                                                   |                                                                                   | 1                                                                                                                                                                   | 2                                                                                                                                                                   |                                                                                                                                                                     | 0                                                                                 | 1                                                                                                                                                                       |                                                                                                                                                                         | 1                                                                                                                                                                       | 1                                                                                                                                                                       |                                                                                                                                                                         | 1                                                                                                                                                                       |
| Taper Length (ft)       | 75                                                                                                                                                                  |                                                                                   |                                                                                                                                                                     | 25                                                                                                                                                                  |                                                                                                                                                                     |                                                                                   | 150                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         | 150                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         |
| Lane Util. Factor       | 0.97                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                | 0.97                                                                                                                                                                | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                                                                                                                    | 0.95                                                                                                                                                                    | 1.00                                                                                                                                                                    | 1.00                                                                                                                                                                    | 0.95                                                                                                                                                                    | 1.00                                                                                                                                                                    |
| Frt                     |                                                                                                                                                                     |                                                                                   | 0.850                                                                                                                                                               |                                                                                                                                                                     | 0.883                                                                                                                                                               |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 0.850                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 0.850                                                                                                                                                                   |
| Flt Protected           | 0.950                                                                                                                                                               |                                                                                   |                                                                                                                                                                     | 0.950                                                                                                                                                               |                                                                                                                                                                     |                                                                                   | 0.950                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 0.950                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |
| Satd. Flow (prot)       | 3191                                                                                                                                                                | 1731                                                                              | 1472                                                                                                                                                                | 3143                                                                                                                                                                | 1521                                                                                                                                                                | 0                                                                                 | 1701                                                                                                                                                                    | 3369                                                                                                                                                                    | 1522                                                                                                                                                                    | 1604                                                                                                                                                                    | 3403                                                                                                                                                                    | 1538                                                                                                                                                                    |
| Flt Permitted           | 0.950                                                                                                                                                               |                                                                                   |                                                                                                                                                                     | 0.950                                                                                                                                                               |                                                                                                                                                                     |                                                                                   | 0.950                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 0.950                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |
| Satd. Flow (perm)       | 3191                                                                                                                                                                | 1731                                                                              | 1472                                                                                                                                                                | 3143                                                                                                                                                                | 1521                                                                                                                                                                | 0                                                                                 | 1701                                                                                                                                                                    | 3369                                                                                                                                                                    | 1522                                                                                                                                                                    | 1604                                                                                                                                                                    | 3403                                                                                                                                                                    | 1538                                                                                                                                                                    |
| Right Turn on Red       |                                                                                                                                                                     |                                                                                   | Yes                                                                                                                                                                 |                                                                                                                                                                     |                                                                                                                                                                     | No                                                                                |                                                                                                                                                                         |                                                                                                                                                                         | Yes                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         | Yes                                                                                                                                                                     |
| Satd. Flow (RTOR)       |                                                                                                                                                                     |                                                                                   | 173                                                                                                                                                                 |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 109                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         | 109                                                                                                                                                                     |
| Link Speed (mph)        |                                                                                                                                                                     | 35                                                                                |                                                                                                                                                                     |                                                                                                                                                                     | 25                                                                                                                                                                  |                                                                                   |                                                                                                                                                                         | 45                                                                                                                                                                      |                                                                                                                                                                         |                                                                                                                                                                         | 45                                                                                                                                                                      |                                                                                                                                                                         |
| Link Distance (ft)      |                                                                                                                                                                     | 577                                                                               |                                                                                                                                                                     |                                                                                                                                                                     | 1338                                                                                                                                                                |                                                                                   |                                                                                                                                                                         | 595                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         | 1546                                                                                                                                                                    |                                                                                                                                                                         |
| Travel Time (s)         |                                                                                                                                                                     | 11.2                                                                              |                                                                                                                                                                     |                                                                                                                                                                     | 36.5                                                                                                                                                                |                                                                                   |                                                                                                                                                                         | 9.0                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         | 23.4                                                                                                                                                                    |                                                                                                                                                                         |
| Peak Hour Factor        | 0.96                                                                                                                                                                | 0.96                                                                              | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                                                                                                                | 0.96                                                                              | 0.96                                                                                                                                                                    | 0.96                                                                                                                                                                    | 0.96                                                                                                                                                                    | 0.96                                                                                                                                                                    | 0.96                                                                                                                                                                    | 0.96                                                                                                                                                                    |
| Heavy Vehicles (%)      | 0%                                                                                                                                                                  | 0%                                                                                | 0%                                                                                                                                                                  | 1%                                                                                                                                                                  | 0%                                                                                                                                                                  | 0%                                                                                | 0%                                                                                                                                                                      | 1%                                                                                                                                                                      | 0%                                                                                                                                                                      | 0%                                                                                                                                                                      | 1%                                                                                                                                                                      | 0%                                                                                                                                                                      |
| Adj. Flow (vph)         | 192                                                                                                                                                                 | 31                                                                                | 136                                                                                                                                                                 | 177                                                                                                                                                                 | 40                                                                                                                                                                  | 141                                                                               | 192                                                                                                                                                                     | 1581                                                                                                                                                                    | 44                                                                                                                                                                      | 145                                                                                                                                                                     | 1549                                                                                                                                                                    | 120                                                                                                                                                                     |
| Shared Lane Traffic (%) |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |
| Lane Group Flow (vph)   | 192                                                                                                                                                                 | 31                                                                                | 136                                                                                                                                                                 | 177                                                                                                                                                                 | 181                                                                                                                                                                 | 0                                                                                 | 192                                                                                                                                                                     | 1581                                                                                                                                                                    | 44                                                                                                                                                                      | 145                                                                                                                                                                     | 1549                                                                                                                                                                    | 120                                                                                                                                                                     |
| Number of Detectors     | 1                                                                                                                                                                   | 1                                                                                 | 1                                                                                                                                                                   | 1                                                                                                                                                                   | 1                                                                                                                                                                   |                                                                                   | 1                                                                                                                                                                       | 2                                                                                                                                                                       | 1                                                                                                                                                                       | 1                                                                                                                                                                       | 2                                                                                                                                                                       | 1                                                                                                                                                                       |
| Detector Template       |                                                                                                                                                                     |                                                                                   | Right                                                                                                                                                               |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |
| Leading Detector (ft)   | 35                                                                                                                                                                  | 35                                                                                | 20                                                                                                                                                                  | 35                                                                                                                                                                  | 35                                                                                                                                                                  |                                                                                   | 35                                                                                                                                                                      | 456                                                                                                                                                                     | 0                                                                                                                                                                       | 35                                                                                                                                                                      | 456                                                                                                                                                                     | 35                                                                                                                                                                      |
| Trailing Detector (ft)  | -5                                                                                                                                                                  | -5                                                                                | 0                                                                                                                                                                   | -5                                                                                                                                                                  | -5                                                                                                                                                                  |                                                                                   | -5                                                                                                                                                                      | 330                                                                                                                                                                     | -6                                                                                                                                                                      | -5                                                                                                                                                                      | 330                                                                                                                                                                     | -5                                                                                                                                                                      |
| Detector 1 Position(ft) | -5                                                                                                                                                                  | -5                                                                                | 0                                                                                                                                                                   | -5                                                                                                                                                                  | -5                                                                                                                                                                  |                                                                                   | -5                                                                                                                                                                      | 330                                                                                                                                                                     | -6                                                                                                                                                                      | -5                                                                                                                                                                      | 330                                                                                                                                                                     | -5                                                                                                                                                                      |
| Detector 1 Size(ft)     | 40                                                                                                                                                                  | 40                                                                                | 20                                                                                                                                                                  | 40                                                                                                                                                                  | 40                                                                                                                                                                  |                                                                                   | 40                                                                                                                                                                      | 6                                                                                                                                                                       | 4                                                                                                                                                                       | 40                                                                                                                                                                      | 6                                                                                                                                                                       | 40                                                                                                                                                                      |
| Detector 1 Type         | Cl+Ex                                                                                                                                                               | Cl+Ex                                                                             | Cl+Ex                                                                                                                                                               | Cl+Ex                                                                                                                                                               | Cl+Ex                                                                                                                                                               |                                                                                   | Cl+Ex                                                                                                                                                                   | Cl+Ex                                                                                                                                                                   | Cl+Ex                                                                                                                                                                   | Cl+Ex                                                                                                                                                                   | Cl+Ex                                                                                                                                                                   | Cl+Ex                                                                                                                                                                   |
| Detector 1 Channel      |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |
| Detector 1 Extend (s)   | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                 |                                                                                   | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     |
| Detector 1 Queue (s)    | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                 |                                                                                   | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     |
| Detector 1 Delay (s)    | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                 | 0.0                                                                                                                                                                 |                                                                                   | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     | 0.0                                                                                                                                                                     |
| Detector 2 Position(ft) |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | 450                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         | 450                                                                                                                                                                     |                                                                                                                                                                         |
| Detector 2 Size(ft)     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | 6                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 6                                                                                                                                                                       |                                                                                                                                                                         |
| Detector 2 Type         |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | Cl+Ex                                                                                                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | Cl+Ex                                                                                                                                                                   |                                                                                                                                                                         |
| Detector 2 Channel      |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |
| Detector 2 Extend (s)   |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         | 0.0                                                                                                                                                                     |                                                                                                                                                                         |                                                                                                                                                                         | 0.0                                                                                                                                                                     |                                                                                                                                                                         |
| Turn Type               | Prot                                                                                                                                                                | NA                                                                                | Perm                                                                                                                                                                | Prot                                                                                                                                                                | NA                                                                                                                                                                  |                                                                                   | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | pm+ov                                                                                                                                                                   | Prot                                                                                                                                                                    | NA                                                                                                                                                                      | pm+ov                                                                                                                                                                   |
| Protected Phases        | 7                                                                                                                                                                   | 4                                                                                 |                                                                                                                                                                     | 3                                                                                                                                                                   | 8                                                                                                                                                                   |                                                                                   | 1                                                                                                                                                                       | 6                                                                                                                                                                       | 3                                                                                                                                                                       | 5                                                                                                                                                                       | 2                                                                                                                                                                       | 7                                                                                                                                                                       |
| Permitted Phases        |                                                                                                                                                                     |                                                                                   | 4                                                                                                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         | 6                                                                                                                                                                       |                                                                                                                                                                         |                                                                                                                                                                         | 2                                                                                                                                                                       |
| Detector Phase          | 7                                                                                                                                                                   | 4                                                                                 | 4                                                                                                                                                                   | 3                                                                                                                                                                   | 8                                                                                                                                                                   |                                                                                   | 1                                                                                                                                                                       | 6                                                                                                                                                                       | 3                                                                                                                                                                       | 5                                                                                                                                                                       | 2                                                                                                                                                                       | 7                                                                                                                                                                       |
| Switch Phase            |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                                                                                                     |                                                                                   |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |                                                                                                                                                                         |
| Minimum Initial (s)     | 3.0                                                                                                                                                                 | 3.0                                                                               | 3.0                                                                                                                                                                 | 3.0                                                                                                                                                                 | 3.0                                                                                                                                                                 |                                                                                   | 3.0                                                                                                                                                                     | 15.0                                                                                                                                                                    | 3.0                                                                                                                                                                     | 3.0                                                                                                                                                                     | 15.0                                                                                                                                                                    | 3.0                                                                                                                                                                     |
| Minimum Split (s)       | 38.0                                                                                                                                                                | 38.0                                                                              | 38.0                                                                                                                                                                | 38.0                                                                                                                                                                | 38.0                                                                                                                                                                |                                                                                   | 13.0                                                                                                                                                                    | 39.0                                                                                                                                                                    | 38.0                                                                                                                                                                    | 13.0                                                                                                                                                                    | 39.0                                                                                                                                                                    | 38.0                                                                                                                                                                    |
| Total Split (s)         | 17.0                                                                                                                                                                | 23.0                                                                              | 23.0                                                                                                                                                                | 16.0                                                                                                                                                                | 22.0                                                                                                                                                                |                                                                                   | 21.0                                                                                                                                                                    | 63.0                                                                                                                                                                    | 16.0                                                                                                                                                                    | 18.0                                                                                                                                                                    | 60.0                                                                                                                                                                    | 17.0                                                                                                                                                                    |

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Saturday Midday Peak Hour

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Total Split (%)         | 14.2%                                                                             | 19.2%                                                                             | 19.2%                                                                             | 13.3%                                                                             | 18.3%                                                                             |                                                                                   | 17.5%                                                                               | 52.5%                                                                               | 13.3%                                                                               | 15.0%                                                                               | 50.0%                                                                               | 14.2%                                                                               |
| Maximum Green (s)       | 9.0                                                                               | 15.0                                                                              | 15.0                                                                              | 8.0                                                                               | 14.0                                                                              |                                                                                   | 14.0                                                                                | 56.0                                                                                | 8.0                                                                                 | 11.0                                                                                | 53.0                                                                                | 9.0                                                                                 |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 5.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)        | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 2.0                                                                                 | 2.0                                                                                 | 4.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 4.0                                                                                 |
| Lost Time Adjust (s)    | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              |                                                                                   | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                | -1.0                                                                                |
| Total Lost Time (s)     | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 6.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 | 6.0                                                                                 | 6.0                                                                                 | 7.0                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                                | Lag                                                                                 | Lead                                                                                | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| 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                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                                | C-Max                                                                               | None                                                                                | None                                                                                | C-Max                                                                               | None                                                                                |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |                                                                                     |
| Flash Don't Walk (s)    | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              | 23.0                                                                              |                                                                                   | 23.0                                                                                | 23.0                                                                                |                                                                                     | 23.0                                                                                | 23.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Splits and Phases: 2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive

|                                                                                                |                                                                                                    |                                                                                                  |                                                                                                  |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|  Ø1<br>21 s |  Ø2 (R)<br>60 s |  Ø3<br>16 s |  Ø4<br>23 s |
|  Ø5<br>18 s |  Ø6 (R)<br>63 s |  Ø7<br>17 s |  Ø8<br>22 s |

Lanes, Volumes, Timings

2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive

V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineering\Traffic Analysis\Synch

Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive Saturday Midday Peak Hour

|                                                                                                        |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                               | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                    |  |  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (veh/h)                                                                                 | 184                                                                               | 30                                                                                | 131                                                                               | 170                                                                               | 38                                                                                | 135                                                                               | 184                                                                                 | 1518                                                                                | 42                                                                                  | 139                                                                                 | 1487                                                                                | 115                                                                                 |
| Future Volume (veh/h)                                                                                  | 184                                                                               | 30                                                                                | 131                                                                               | 170                                                                               | 38                                                                                | 135                                                                               | 184                                                                                 | 1518                                                                                | 42                                                                                  | 139                                                                                 | 1487                                                                                | 115                                                                                 |
| Initial Q (Qb), veh                                                                                    | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Lane Width Adj.                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.04                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Ped-Bike Adj(A_pbT)                                                                                    | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Parking Bus, Adj                                                                                       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                  | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                 | 1794                                                                              | 1794                                                                              | 1794                                                                              | 1764                                                                              | 1778                                                                              | 1849                                                                              | 1794                                                                                | 1780                                                                                | 1794                                                                                | 1837                                                                                | 1823                                                                                | 1837                                                                                |
| Adj Flow Rate, veh/h                                                                                   | 192                                                                               | 31                                                                                | 0                                                                                 | 177                                                                               | 40                                                                                | 141                                                                               | 192                                                                                 | 1581                                                                                | 44                                                                                  | 145                                                                                 | 1549                                                                                | 120                                                                                 |
| Peak Hour Factor                                                                                       | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Percent Heavy Veh, %                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 1                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 1                                                                                   | 0                                                                                   | 0                                                                                   | 1                                                                                   | 0                                                                                   |
| Cap, veh/h                                                                                             | 276                                                                               | 239                                                                               |                                                                                   | 244                                                                               | 43                                                                                | 152                                                                               | 214                                                                                 | 1607                                                                                | 836                                                                                 | 175                                                                                 | 1559                                                                                | 830                                                                                 |
| Arrive On Green                                                                                        | 0.08                                                                              | 0.13                                                                              | 0.00                                                                              | 0.08                                                                              | 0.13                                                                              | 0.13                                                                              | 0.25                                                                                | 0.95                                                                                | 0.95                                                                                | 0.10                                                                                | 0.45                                                                                | 0.45                                                                                |
| Sat Flow, veh/h                                                                                        | 3315                                                                              | 1794                                                                              | 1521                                                                              | 3259                                                                              | 345                                                                               | 1215                                                                              | 1709                                                                                | 3383                                                                                | 1521                                                                                | 1750                                                                                | 3464                                                                                | 1557                                                                                |
| Grp Volume(v), veh/h                                                                                   | 192                                                                               | 31                                                                                | 0                                                                                 | 177                                                                               | 0                                                                                 | 181                                                                               | 192                                                                                 | 1581                                                                                | 44                                                                                  | 145                                                                                 | 1549                                                                                | 120                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                               | 1658                                                                              | 1794                                                                              | 1521                                                                              | 1629                                                                              | 0                                                                                 | 1559                                                                              | 1709                                                                                | 1691                                                                                | 1521                                                                                | 1750                                                                                | 1732                                                                                | 1557                                                                                |
| Q Serve(g_s), s                                                                                        | 6.8                                                                               | 1.8                                                                               | 0.0                                                                               | 6.4                                                                               | 0.0                                                                               | 13.8                                                                              | 13.0                                                                                | 43.0                                                                                | 0.2                                                                                 | 9.8                                                                                 | 53.4                                                                                | 4.7                                                                                 |
| Cycle Q Clear(g_c), s                                                                                  | 6.8                                                                               | 1.8                                                                               | 0.0                                                                               | 6.4                                                                               | 0.0                                                                               | 13.8                                                                              | 13.0                                                                                | 43.0                                                                                | 0.2                                                                                 | 9.8                                                                                 | 53.4                                                                                | 4.7                                                                                 |
| Prop In Lane                                                                                           | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                              |                                                                                   | 0.78                                                                              | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                 | 276                                                                               | 239                                                                               |                                                                                   | 244                                                                               | 0                                                                                 | 195                                                                               | 214                                                                                 | 1607                                                                                | 836                                                                                 | 175                                                                                 | 1559                                                                                | 830                                                                                 |
| V/C Ratio(X)                                                                                           | 0.69                                                                              | 0.13                                                                              |                                                                                   | 0.72                                                                              | 0.00                                                                              | 0.93                                                                              | 0.90                                                                                | 0.98                                                                                | 0.05                                                                                | 0.83                                                                                | 0.99                                                                                | 0.14                                                                                |
| Avail Cap(c_a), veh/h                                                                                  | 276                                                                               | 239                                                                               |                                                                                   | 244                                                                               | 0                                                                                 | 195                                                                               | 214                                                                                 | 1607                                                                                | 836                                                                                 | 175                                                                                 | 1559                                                                                | 830                                                                                 |
| HCM Platoon Ratio                                                                                      | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                                | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                     | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.83                                                                                | 0.83                                                                                | 0.83                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                               | 53.5                                                                              | 45.9                                                                              | 0.0                                                                               | 54.3                                                                              | 0.0                                                                               | 52.0                                                                              | 44.3                                                                                | 2.6                                                                                 | 1.2                                                                                 | 53.0                                                                                | 32.8                                                                                | 14.2                                                                                |
| Incr Delay (d2), s/veh                                                                                 | 7.3                                                                               | 0.2                                                                               | 0.0                                                                               | 10.2                                                                              | 0.0                                                                               | 44.7                                                                              | 31.1                                                                                | 17.0                                                                                | 0.1                                                                                 | 27.0                                                                                | 21.4                                                                                | 0.4                                                                                 |
| Initial Q Delay(d3), s/veh                                                                             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(95%),veh/ln                                                                               | 5.5                                                                               | 1.5                                                                               | 0.0                                                                               | 5.4                                                                               | 0.0                                                                               | 12.4                                                                              | 10.3                                                                                | 8.2                                                                                 | 0.1                                                                                 | 9.3                                                                                 | 33.5                                                                                | 3.2                                                                                 |
| Unsig. Movement Delay, s/veh                                                                           | 27.70                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d), s/veh                                                                                  | 60.9                                                                              | 46.1                                                                              | 27.7                                                                              | 64.4                                                                              | 0.0                                                                               | 96.7                                                                              | 75.3                                                                                | 19.6                                                                                | 1.3                                                                                 | 80.0                                                                                | 54.2                                                                                | 14.5                                                                                |
| LnGrp LOS                                                                                              | E                                                                                 | D                                                                                 | C                                                                                 | E                                                                                 |                                                                                   | F                                                                                 | E                                                                                   | B                                                                                   | A                                                                                   | E                                                                                   | D                                                                                   | B                                                                                   |
| Approach Vol, veh/h                                                                                    | 359                                                                               |                                                                                   |                                                                                   | 358                                                                               |                                                                                   |                                                                                   | 1817                                                                                |                                                                                     |                                                                                     | 1814                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                  | 47.0                                                                              |                                                                                   |                                                                                   | 80.7                                                                              |                                                                                   |                                                                                   | 25.1                                                                                |                                                                                     |                                                                                     | 53.6                                                                                |                                                                                     |                                                                                     |
| Approach LOS                                                                                           | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | C                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                   | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                               | 21.0                                                                              | 60.0                                                                              | 16.0                                                                              | 23.0                                                                              | 18.0                                                                              | 63.0                                                                              | 17.0                                                                                | 22.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                | 7.0                                                                               | 7.0                                                                               | 8.0                                                                               | 8.0                                                                               | 7.0                                                                               | 7.0                                                                               | 8.0                                                                                 | 8.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                            | 14.0                                                                              | 53.0                                                                              | 8.0                                                                               | 15.0                                                                              | 11.0                                                                              | 56.0                                                                              | 9.0                                                                                 | 14.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+l1), s                                                                           | 15.5                                                                              | 55.9                                                                              | 8.9                                                                               | 4.3                                                                               | 12.3                                                                              | 45.5                                                                              | 9.3                                                                                 | 16.3                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 10.3                                                                              | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 7th Control Delay, s/veh                                                                           | 43.4                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 7th LOS                                                                                            | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| User approved pedestrian interval to be less than phase max green.                                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR] is included in calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

HCM 7th Signalized Intersection Summary2: US 202 & Ridge Road (S.R. 3048)/Springhill Drive  
V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineer\Springhill Traffic Analysis\Synch

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| Lane Configurations     |                                                                                   |  |  |  |  |  |
| Traffic Volume (vph)    | 0                                                                                 | 128                                                                               | 150                                                                               | 1744                                                                              | 1735                                                                              | 53                                                                                |
| Future Volume (vph)     | 0                                                                                 | 128                                                                               | 150                                                                               | 1744                                                                              | 1735                                                                              | 53                                                                                |
| Ideal Flow (vphpl)      | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)     | 0                                                                                 | 0                                                                                 | 200                                                                               |                                                                                   |                                                                                   | 200                                                                               |
| Storage Lanes           | 0                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                 |
| Taper Length (ft)       | 25                                                                                |                                                                                   | 25                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Lane Util. Factor       | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |
| Frt                     |                                                                                   | 0.865                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |
| Flt Protected           |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (prot)       | 0                                                                                 | 1611                                                                              | 1770                                                                              | 3539                                                                              | 3539                                                                              | 1583                                                                              |
| Flt Permitted           |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Satd. Flow (perm)       | 0                                                                                 | 1611                                                                              | 1770                                                                              | 3539                                                                              | 3539                                                                              | 1583                                                                              |
| Right Turn on Red       |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)       |                                                                                   | 37                                                                                |                                                                                   |                                                                                   |                                                                                   | 58                                                                                |
| Link Speed (mph)        | 25                                                                                |                                                                                   |                                                                                   | 45                                                                                | 45                                                                                |                                                                                   |
| Link Distance (ft)      | 296                                                                               |                                                                                   |                                                                                   | 234                                                                               | 595                                                                               |                                                                                   |
| Travel Time (s)         | 8.1                                                                               |                                                                                   |                                                                                   | 3.5                                                                               | 9.0                                                                               |                                                                                   |
| Peak Hour Factor        | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              |
| Adj. Flow (vph)         | 0                                                                                 | 139                                                                               | 163                                                                               | 1896                                                                              | 1886                                                                              | 58                                                                                |
| Shared Lane Traffic (%) |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)   | 0                                                                                 | 139                                                                               | 163                                                                               | 1896                                                                              | 1886                                                                              | 58                                                                                |
| Number of Detectors     |                                                                                   | 1                                                                                 | 1                                                                                 | 2                                                                                 | 2                                                                                 | 1                                                                                 |
| Detector Template       |                                                                                   | Right                                                                             | Left                                                                              | Thru                                                                              | Thru                                                                              | Right                                                                             |
| Leading Detector (ft)   |                                                                                   | 20                                                                                | 20                                                                                | 100                                                                               | 100                                                                               | 20                                                                                |
| Trailing Detector (ft)  |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Position(ft) |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Detector 1 Size(ft)     |                                                                                   | 20                                                                                | 20                                                                                | 6                                                                                 | 6                                                                                 | 20                                                                                |
| Detector 1 Type         |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |
| Detector 1 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)   |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Queue (s)    |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 1 Delay (s)    |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |
| Detector 2 Position(ft) |                                                                                   |                                                                                   |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |
| Detector 2 Size(ft)     |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |
| Detector 2 Type         |                                                                                   |                                                                                   |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 2 Channel      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)   |                                                                                   |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Turn Type               |                                                                                   | Perm                                                                              | Prot                                                                              | NA                                                                                | NA                                                                                | Perm                                                                              |
| Protected Phases        |                                                                                   |                                                                                   | 5                                                                                 | 2                                                                                 | 6                                                                                 |                                                                                   |
| Permitted Phases        |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                 |
| Detector Phase          |                                                                                   | 5                                                                                 | 5                                                                                 | 2                                                                                 | 6                                                                                 | 6                                                                                 |
| Switch Phase            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Minimum Initial (s)     |                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Minimum Split (s)       |                                                                                   | 11.0                                                                              | 11.0                                                                              | 24.0                                                                              | 24.0                                                                              | 24.0                                                                              |
| Total Split (s)         |                                                                                   | 25.0                                                                              | 25.0                                                                              | 120.0                                                                             | 95.0                                                                              | 95.0                                                                              |
| Total Split (%)         |                                                                                   | 20.8%                                                                             | 20.8%                                                                             | 100.0%                                                                            | 79.2%                                                                             | 79.2%                                                                             |
| Maximum Green (s)       |                                                                                   | 19.0                                                                              | 19.0                                                                              | 114.0                                                                             | 89.0                                                                              | 89.0                                                                              |
| Yellow Time (s)         |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |

Lanes, Volumes, Timings

3: North Access &amp; US 202

V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineering\Traffic Analysis\Synch

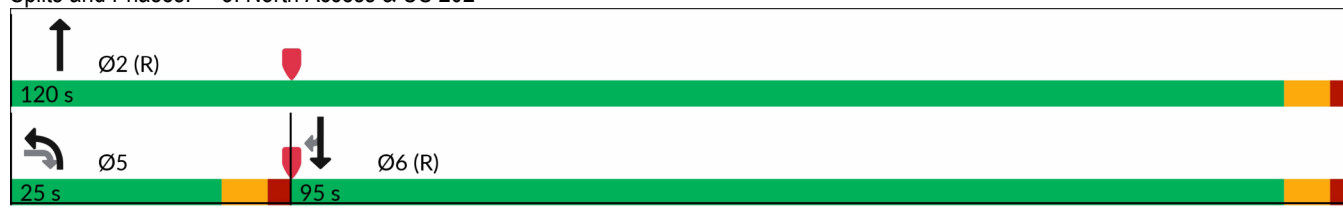
Bowman 2033 Future with Development Conditions Whole Site Shopping Center  
 3: North Access & US 202 Saturday Midday Peak Hour

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBR                                                                               | NBL                                                                               | NBT                                                                               | SBT                                                                               | SBR                                                                               |
| All-Red Time (s)        |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               |
| Lost Time Adjust (s)    |                                                                                   | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              |
| Total Lost Time (s)     |                                                                                   | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               | 5.0                                                                               |
| Lead/Lag                |                                                                                   | Lead                                                                              | Lead                                                                              |                                                                                   | Lag                                                                               | Lag                                                                               |
| Lead-Lag Optimize?      |                                                                                   | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               |
| Vehicle Extension (s)   |                                                                                   | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               | 3.0                                                                               |
| Recall Mode             |                                                                                   | Max                                                                               | Max                                                                               | C-Max                                                                             | C-Max                                                                             | C-Max                                                                             |
| Walk Time (s)           |                                                                                   |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |
| Flash Don't Walk (s)    |                                                                                   |                                                                                   |                                                                                   | 11.0                                                                              | 11.0                                                                              | 11.0                                                                              |
| Pedestrian Calls (#/hr) |                                                                                   |                                                                                   |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Act Effect Green (s)    |                                                                                   | 20.0                                                                              | 20.0                                                                              | 120.0                                                                             | 90.0                                                                              | 90.0                                                                              |
| Actuated g/C Ratio      |                                                                                   | 0.17                                                                              | 0.17                                                                              | 1.00                                                                              | 0.75                                                                              | 0.75                                                                              |
| v/c Ratio               |                                                                                   | 0.46                                                                              | 0.55                                                                              | 0.54                                                                              | 0.71                                                                              | 0.05                                                                              |
| Control Delay (s/veh)   |                                                                                   | 38.6                                                                              | 53.9                                                                              | 0.6                                                                               | 2.5                                                                               | 0.0                                                                               |
| Queue Delay             |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.8                                                                               | 0.0                                                                               |
| Total Delay (s/veh)     |                                                                                   | 38.6                                                                              | 53.9                                                                              | 0.7                                                                               | 3.3                                                                               | 0.0                                                                               |
| LOS                     |                                                                                   | D                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 |
| Approach Delay (s/veh)  | 38.6                                                                              |                                                                                   |                                                                                   | 4.9                                                                               | 3.2                                                                               |                                                                                   |
| Approach LOS            | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 | A                                                                                 |                                                                                   |
| Queue Length 50th (ft)  |                                                                                   | 71                                                                                | 117                                                                               | 0                                                                                 | 20                                                                                | 0                                                                                 |
| Queue Length 95th (ft)  |                                                                                   | 138                                                                               | 190                                                                               | 0                                                                                 | m26                                                                               | m0                                                                                |
| Internal Link Dist (ft) | 216                                                                               |                                                                                   |                                                                                   | 154                                                                               | 515                                                                               |                                                                                   |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   | 200                                                                               |                                                                                   |                                                                                   | 200                                                                               |
| Base Capacity (vph)     |                                                                                   | 299                                                                               | 295                                                                               | 3539                                                                              | 2654                                                                              | 1201                                                                              |
| Starvation Cap Reductn  |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 431                                                                               | 0                                                                                 |
| Spillback Cap Reductn   |                                                                                   | 0                                                                                 | 0                                                                                 | 564                                                                               | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       |                                                                                   | 0.46                                                                              | 0.55                                                                              | 0.64                                                                              | 0.85                                                                              | 0.05                                                                              |

#### Intersection Summary

Area Type: Other  
 Cycle Length: 120  
 Actuated Cycle Length: 120  
 Offset: 63 (53%), Referenced to phase 2:NBT and 6:SBT, Start of Green  
 Natural Cycle: 55  
 Control Type: Actuated-Coordinated  
 Maximum v/c Ratio: 0.71  
 Intersection Signal Delay (s/veh): 5.3 Intersection LOS: A  
 Intersection Capacity Utilization 64.6% ICU Level of Service C  
 Analysis Period (min) 15  
 m Volume for 95th percentile queue is metered by upstream signal.

Splits and Phases: 3: North Access & US 202



Lanes, Volumes, Timings

3: North Access & US 202

V:\314352 - Retail Sites, LLC\314352-01-002 (TRA) - Ridge Road TIS\Engineering\Traffic Analysis\Synch

## STUDY AND ANALYSIS INFORMATION

Municipality: Concord Township  
 County: Delaware County  
 PennDOT Engineering District: 6

Analysis Date: 10/31/2025  
 Conducted By: VSA  
 Agency/Company Name: Bowman

## Analysis Information

Data Collection Date: 3/1/2025  
 Day of the Week: Saturday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

## Major Street Information

Major Street Name and Route Number: Ridge Road

Major Street Approach #1 Direction: E-Bound

Major Street Approach #2 Direction: W-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach: 1 LANE(S)  
 Speed Limit or 85th Percentile Speed on the Major Street: 35 MPH

## Minor Street Information

Minor Street Name and Route Number: Shopping Center Accesses

Minor Street Approach #1 Direction: N-Bound

Minor Street Approach #2 Direction: S-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach: 1 LANE(S)

## TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

|                                               | Applicable? | Warrant Met? |
|-----------------------------------------------|-------------|--------------|
| Warrant 1, Eight-Hour Vehicular Volume        | Yes         | No           |
| Warrant 2, Four-Hour Vehicular Volume         | Yes         | No           |
| Warrant 3, Peak Hour                          | Yes         | No           |
| Warrant 4, Pedestrian Volume                  | No          | N/A          |
| Warrant 5, School Crossing                    | No          | N/A          |
| Warrant 6, Coordinated Signal System          | No          | N/A          |
| Warrant 7, Crash Experience                   | No          | N/A          |
| Warrant 8, Roadway Network                    | No          | N/A          |
| Warrant 9, Intersection Near a Grade Crossing | No          | N/A          |
| Warrant PA-1, ADT Volume Warrant              | No          | N/A          |
| Warrant PA-2, Midblock and Trail Crossings    | No          | N/A          |

| ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH |          |                                    |                                    |                       |                                    |                                    |
|--------------------------------------------------------|----------|------------------------------------|------------------------------------|-----------------------|------------------------------------|------------------------------------|
| Time Interval                                          |          | Major Street Approach #1 (E-Bound) | Major Street Approach #2 (W-Bound) | Major Street Combined | Minor Street Approach #1 (N-Bound) | Minor Street Approach #2 (S-Bound) |
| Begin At                                               | End Of   | Volume                             | Volume                             | Total Volume          | Volume                             | Volume                             |
| 12:00 AM                                               | 12:14 AM |                                    |                                    | 0                     |                                    |                                    |
| 12:15 AM                                               | 12:29 AM |                                    |                                    | 0                     |                                    |                                    |
| 12:30 AM                                               | 12:44 AM |                                    |                                    | 0                     |                                    |                                    |
| 12:45 AM                                               | 12:59 AM |                                    |                                    | 0                     |                                    |                                    |
| 1:00 AM                                                | 1:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 1:15 AM                                                | 1:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 1:30 AM                                                | 1:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 1:45 AM                                                | 1:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 2:00 AM                                                | 2:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 2:15 AM                                                | 2:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 2:30 AM                                                | 2:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 2:45 AM                                                | 2:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 3:00 AM                                                | 3:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 3:15 AM                                                | 3:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 3:30 AM                                                | 3:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 3:45 AM                                                | 3:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 4:00 AM                                                | 4:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 4:15 AM                                                | 4:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 4:30 AM                                                | 4:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 4:45 AM                                                | 4:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 5:00 AM                                                | 5:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 5:15 AM                                                | 5:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 5:30 AM                                                | 5:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 5:45 AM                                                | 5:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 6:00 AM                                                | 6:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 6:15 AM                                                | 6:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 6:30 AM                                                | 6:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 6:45 AM                                                | 6:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 7:00 AM                                                | 7:14 AM  | 23                                 | 44                                 | 67                    | 3                                  | 0                                  |
| 7:15 AM                                                | 7:29 AM  | 14                                 | 42                                 | 56                    | 3                                  | 0                                  |
| 7:30 AM                                                | 7:44 AM  | 24                                 | 45                                 | 69                    | 3                                  | 0                                  |
| 7:45 AM                                                | 7:59 AM  | 38                                 | 48                                 | 86                    | 3                                  | 0                                  |
| 8:00 AM                                                | 8:14 AM  | 64                                 | 54                                 | 118                   | 4                                  | 0                                  |
| 8:15 AM                                                | 8:29 AM  | 57                                 | 57                                 | 114                   | 4                                  | 0                                  |
| 8:30 AM                                                | 8:44 AM  | 50                                 | 50                                 | 100                   | 4                                  | 0                                  |
| 8:45 AM                                                | 8:59 AM  | 43                                 | 55                                 | 98                    | 4                                  | 1                                  |
| 9:00 AM                                                | 9:14 AM  | 38                                 | 60                                 | 98                    | 7                                  | 1                                  |
| 9:15 AM                                                | 9:29 AM  | 30                                 | 61                                 | 91                    | 7                                  | 2                                  |
| 9:30 AM                                                | 9:44 AM  | 34                                 | 57                                 | 91                    | 7                                  | 1                                  |
| 9:45 AM                                                | 9:59 AM  | 25                                 | 62                                 | 87                    | 7                                  | 1                                  |
| 10:00 AM                                               | 10:14 AM | 34                                 | 83                                 | 117                   | 11                                 | 2                                  |
| 10:15 AM                                               | 10:29 AM | 34                                 | 81                                 | 115                   | 11                                 | 3                                  |
| 10:30 AM                                               | 10:44 AM | 33                                 | 89                                 | 122                   | 11                                 | 1                                  |
| 10:45 AM                                               | 10:59 AM | 36                                 | 81                                 | 117                   | 11                                 | 2                                  |
| 11:00 AM                                               | 11:14 AM | 31                                 | 94                                 | 125                   | 15                                 | 2                                  |
| 11:15 AM                                               | 11:29 AM | 38                                 | 106                                | 144                   | 15                                 | 5                                  |
| 11:30 AM                                               | 11:44 AM | 39                                 | 101                                | 140                   | 15                                 | 5                                  |
| 11:45 AM                                               | 11:59 AM | 45                                 | 96                                 | 141                   | 15                                 | 4                                  |

# Traffic Signal Warrant Analysis Workbook

12/23/2025

| ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH |          |                                          |                                          |                          |                                          |                                          |
|--------------------------------------------------------|----------|------------------------------------------|------------------------------------------|--------------------------|------------------------------------------|------------------------------------------|
| Time Interval                                          |          | Major Street<br>Approach #1<br>(E-Bound) | Major Street<br>Approach #2<br>(W-Bound) | Major Street<br>Combined | Minor Street<br>Approach #1<br>(N-Bound) | Minor Street<br>Approach #2<br>(S-Bound) |
| Begin At                                               | End Of   | Volume                                   | Volume                                   | Total Volume             | Volume                                   | Volume                                   |
| 12:00 PM                                               | 12:14 PM | 52                                       | 123                                      | 175                      | 18                                       | 2                                        |
| 12:15 PM                                               | 12:29 PM | 43                                       | 109                                      | 152                      | 18                                       | 4                                        |
| 12:30 PM                                               | 12:44 PM | 40                                       | 117                                      | 157                      | 18                                       | 4                                        |
| 12:45 PM                                               | 12:59 PM | 41                                       | 122                                      | 163                      | 18                                       | 2                                        |
| 1:00 PM                                                | 1:14 PM  | 40                                       | 110                                      | 150                      | 18                                       | 4                                        |
| 1:15 PM                                                | 1:29 PM  | 37                                       | 106                                      | 143                      | 18                                       | 0                                        |
| 1:30 PM                                                | 1:44 PM  | 37                                       | 108                                      | 145                      | 18                                       | 3                                        |
| 1:45 PM                                                | 1:59 PM  | 33                                       | 114                                      | 147                      | 18                                       | 5                                        |
| 2:00 PM                                                | 2:14 PM  | 32                                       | 99                                       | 131                      | 17                                       | 8                                        |
| 2:15 PM                                                | 2:29 PM  | 34                                       | 100                                      | 134                      | 17                                       | 4                                        |
| 2:30 PM                                                | 2:44 PM  | 44                                       | 125                                      | 169                      | 17                                       | 4                                        |
| 2:45 PM                                                | 2:59 PM  | 42                                       | 125                                      | 167                      | 17                                       | 3                                        |
| 3:00 PM                                                | 3:14 PM  | 73                                       | 114                                      | 187                      | 17                                       | 2                                        |
| 3:15 PM                                                | 3:29 PM  | 43                                       | 104                                      | 147                      | 17                                       | 5                                        |
| 3:30 PM                                                | 3:44 PM  | 32                                       | 99                                       | 131                      | 17                                       | 4                                        |
| 3:45 PM                                                | 3:59 PM  | 40                                       | 111                                      | 151                      | 17                                       | 3                                        |
| 4:00 PM                                                | 4:14 PM  | 44                                       | 117                                      | 161                      | 17                                       | 3                                        |
| 4:15 PM                                                | 4:29 PM  | 46                                       | 110                                      | 156                      | 17                                       | 3                                        |
| 4:30 PM                                                | 4:44 PM  | 46                                       | 118                                      | 164                      | 17                                       | 7                                        |
| 4:45 PM                                                | 4:59 PM  | 44                                       | 124                                      | 168                      | 17                                       | 5                                        |
| 5:00 PM                                                | 5:14 PM  | 36                                       | 119                                      | 155                      | 18                                       | 6                                        |
| 5:15 PM                                                | 5:29 PM  | 38                                       | 111                                      | 149                      | 18                                       | 1                                        |
| 5:30 PM                                                | 5:44 PM  | 43                                       | 117                                      | 160                      | 18                                       | 13                                       |
| 5:45 PM                                                | 5:59 PM  | 37                                       | 110                                      | 147                      | 18                                       | 3                                        |
| 6:00 PM                                                | 6:14 PM  |                                          |                                          | 0                        |                                          |                                          |
| 6:15 PM                                                | 6:29 PM  |                                          |                                          | 0                        |                                          |                                          |
| 6:30 PM                                                | 6:44 PM  |                                          |                                          | 0                        |                                          |                                          |
| 6:45 PM                                                | 6:59 PM  |                                          |                                          | 0                        |                                          |                                          |
| 7:00 PM                                                | 7:14 PM  |                                          |                                          | 0                        |                                          |                                          |
| 7:15 PM                                                | 7:29 PM  |                                          |                                          | 0                        |                                          |                                          |
| 7:30 PM                                                | 7:44 PM  |                                          |                                          | 0                        |                                          |                                          |
| 7:45 PM                                                | 7:59 PM  |                                          |                                          | 0                        |                                          |                                          |
| 8:00 PM                                                | 8:14 PM  |                                          |                                          | 0                        |                                          |                                          |
| 8:15 PM                                                | 8:29 PM  |                                          |                                          | 0                        |                                          |                                          |
| 8:30 PM                                                | 8:44 PM  |                                          |                                          | 0                        |                                          |                                          |
| 8:45 PM                                                | 8:59 PM  |                                          |                                          | 0                        |                                          |                                          |
| 9:00 PM                                                | 9:14 PM  |                                          |                                          | 0                        |                                          |                                          |
| 9:15 PM                                                | 9:29 PM  |                                          |                                          | 0                        |                                          |                                          |
| 9:30 PM                                                | 9:44 PM  |                                          |                                          | 0                        |                                          |                                          |
| 9:45 PM                                                | 9:59 PM  |                                          |                                          | 0                        |                                          |                                          |
| 10:00 PM                                               | 10:14 PM |                                          |                                          | 0                        |                                          |                                          |
| 10:15 PM                                               | 10:29 PM |                                          |                                          | 0                        |                                          |                                          |
| 10:30 PM                                               | 10:44 PM |                                          |                                          | 0                        |                                          |                                          |
| 10:45 PM                                               | 10:59 PM |                                          |                                          | 0                        |                                          |                                          |
| 11:00 PM                                               | 11:14 PM |                                          |                                          | 0                        |                                          |                                          |
| 11:15 PM                                               | 11:29 PM |                                          |                                          | 0                        |                                          |                                          |
| 11:30 PM                                               | 11:44 PM |                                          |                                          | 0                        |                                          |                                          |
| 11:45 PM                                               | 11:59 PM |                                          |                                          | 0                        |                                          |                                          |
| Approach Totals:                                       |          | 1727                                     | 4078                                     | 5805                     | 580                                      | 128                                      |

## MUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

| Number of Lanes for Moving Traffic on Each Approach |        |
|-----------------------------------------------------|--------|
| Major Street:                                       | 1 Lane |
| Minor Street:                                       | 1 Lane |

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street? | No |
|-----------------------------------------------------------------------------------------------|----|

Combination of Conditions A and B Necessary?\*: No

*\*Only applicable for Warrant 1 if after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems. See Section 4C.02 of the 2009 MUTCD for application.*

| Condition A - Minimum Vehicular Volume              |              |                                                              |     |     |     |                                                                               |     |     |     |
|-----------------------------------------------------|--------------|--------------------------------------------------------------|-----|-----|-----|-------------------------------------------------------------------------------|-----|-----|-----|
| Number of lanes for moving traffic on each approach |              | Vehicles per hour on major street (total of both approaches) |     |     |     | Vehicles per hour on higher-volume minor street approach (one direction only) |     |     |     |
| Major Street                                        | Minor Street | 100%                                                         | 80% | 70% | 56% | 100%                                                                          | 80% | 70% | 56% |
| 1                                                   | 1            | 500                                                          | 400 | 350 | 280 | 150                                                                           | 120 | 105 | 84  |
| 2 or More                                           | 1            | 600                                                          | 480 | 420 | 336 | 150                                                                           | 120 | 105 | 84  |
| 2 or More                                           | 2 or More    | 600                                                          | 480 | 420 | 336 | 200                                                                           | 160 | 140 | 112 |
| 1                                                   | 2 or More    | 500                                                          | 400 | 350 | 280 | 200                                                                           | 160 | 140 | 112 |

| Condition B - Interruption of Continuous Traffic    |              |                                                              |     |     |     |                                                                               |     |     |     |
|-----------------------------------------------------|--------------|--------------------------------------------------------------|-----|-----|-----|-------------------------------------------------------------------------------|-----|-----|-----|
| Number of lanes for moving traffic on each approach |              | Vehicles per hour on major street (total of both approaches) |     |     |     | Vehicles per hour on higher-volume minor street approach (one direction only) |     |     |     |
| Major Street                                        | Minor Street | 100%                                                         | 80% | 70% | 56% | 100%                                                                          | 80% | 70% | 56% |
| 1                                                   | 1            | 750                                                          | 600 | 525 | 420 | 75                                                                            | 60  | 53  | 42  |
| 2 or More                                           | 1            | 900                                                          | 720 | 630 | 504 | 75                                                                            | 60  | 53  | 42  |
| 2 or More                                           | 2 or More    | 900                                                          | 720 | 630 | 504 | 100                                                                           | 80  | 70  | 56  |
| 1                                                   | 2 or More    | 750                                                          | 600 | 525 | 420 | 100                                                                           | 80  | 70  | 56  |

### Condition A Evaluation

Number of Unique Hours Met: 0 Condition A Satisfied? No

### Condition B Evaluation

Number of Unique Hours Met: 0 Condition B Satisfied? No

### Combination of Condition A and Condition B Evaluation

Number of Unique Hours Met for Condition A: N/A

Number of Unique Hours Met for Condition B: N/A

Combination of Condition A and Condition B Satisfied? N/A

## MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

| Number of Lanes for Moving Traffic on Each Approach |        |
|-----------------------------------------------------|--------|
| Major Street:                                       | 1 Lane |
| Minor Street:                                       | 1 Lane |

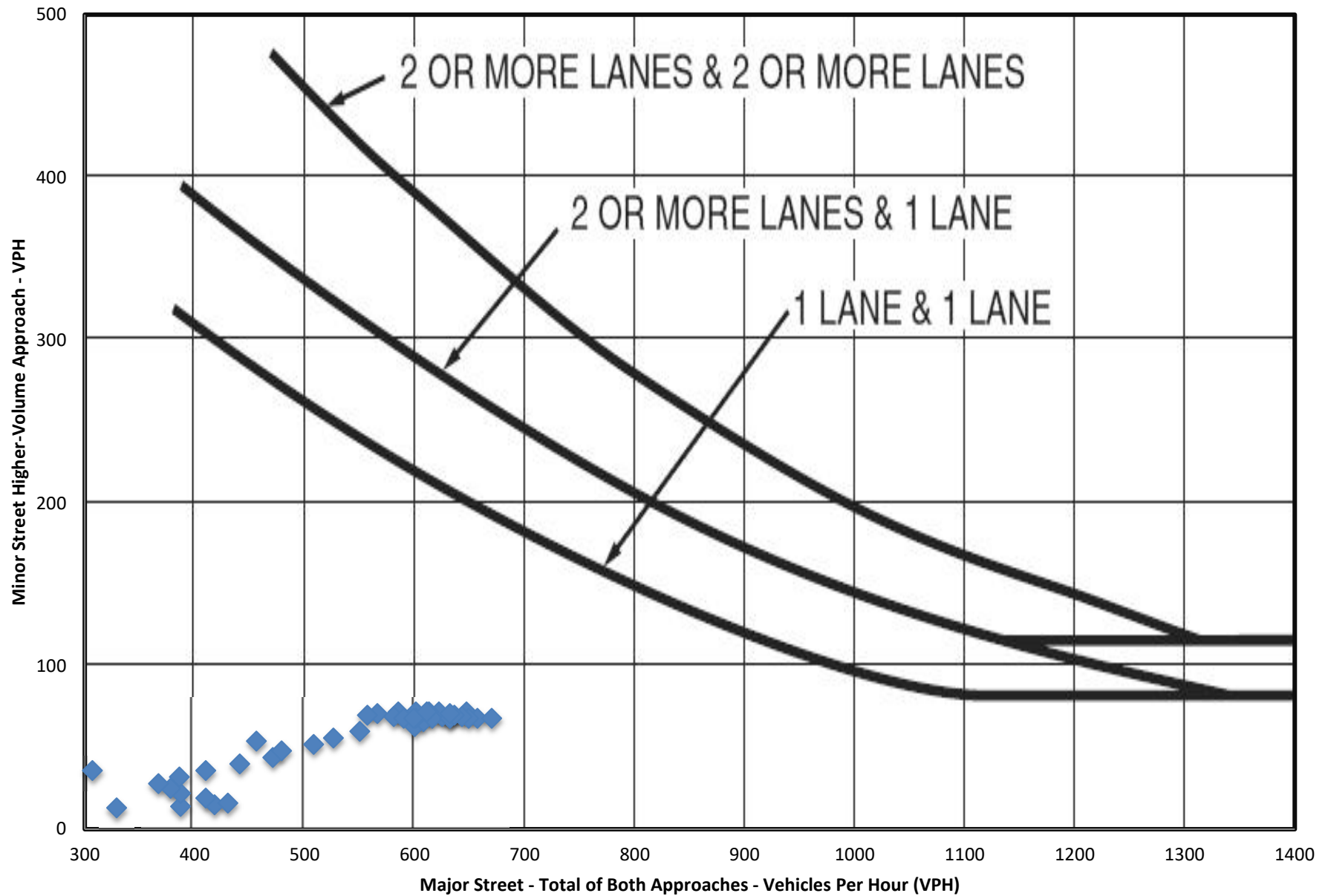
| Total Number of Unique Hours Met On Figure 4C-1 |
|-------------------------------------------------|
| 0                                               |

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street? | No |
|-----------------------------------------------------------------------------------------------|----|

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 AM                | 0                       | 0                             |           |
| 12:15 AM                | 0                       | 0                             |           |
| 12:30 AM                | 0                       | 0                             |           |
| 12:45 AM                | 0                       | 0                             |           |
| 1:00 AM                 | 0                       | 0                             |           |
| 1:15 AM                 | 0                       | 0                             |           |
| 1:30 AM                 | 0                       | 0                             |           |
| 1:45 AM                 | 0                       | 0                             |           |
| 2:00 AM                 | 0                       | 0                             |           |
| 2:15 AM                 | 0                       | 0                             |           |
| 2:30 AM                 | 0                       | 0                             |           |
| 2:45 AM                 | 0                       | 0                             |           |
| 3:00 AM                 | 0                       | 0                             |           |
| 3:15 AM                 | 0                       | 0                             |           |
| 3:30 AM                 | 0                       | 0                             |           |
| 3:45 AM                 | 0                       | 0                             |           |
| 4:00 AM                 | 0                       | 0                             |           |
| 4:15 AM                 | 0                       | 0                             |           |
| 4:30 AM                 | 0                       | 0                             |           |
| 4:45 AM                 | 0                       | 0                             |           |
| 5:00 AM                 | 0                       | 0                             |           |
| 5:15 AM                 | 0                       | 0                             |           |
| 5:30 AM                 | 0                       | 0                             |           |
| 5:45 AM                 | 0                       | 0                             |           |
| 6:00 AM                 | 0                       | 0                             |           |
| 6:15 AM                 | 67                      | 3                             |           |
| 6:30 AM                 | 123                     | 6                             |           |
| 6:45 AM                 | 192                     | 9                             |           |
| 7:00 AM                 | 278                     | 12                            |           |
| 7:15 AM                 | 329                     | 13                            |           |
| 7:30 AM                 | 387                     | 14                            |           |
| 7:45 AM                 | 418                     | 15                            |           |
| 8:00 AM                 | 430                     | 16                            |           |
| 8:15 AM                 | 410                     | 19                            |           |
| 8:30 AM                 | 387                     | 22                            |           |
| 8:45 AM                 | 378                     | 25                            |           |
| 9:00 AM                 | 367                     | 28                            |           |
| 9:15 AM                 | 386                     | 32                            |           |
| 9:30 AM                 | 410                     | 36                            |           |
| 9:45 AM                 | 441                     | 40                            |           |
| 10:00 AM                | 471                     | 44                            |           |
| 10:15 AM                | 479                     | 48                            |           |
| 10:30 AM                | 508                     | 52                            |           |
| 10:45 AM                | 526                     | 56                            |           |
| 11:00 AM                | 550                     | 60                            |           |
| 11:15 AM                | 600                     | 63                            |           |
| 11:30 AM                | 608                     | 66                            |           |
| 11:45 AM                | 625                     | 69                            |           |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 PM                | 647                     | 72                            |           |
| 12:15 PM                | 622                     | 72                            |           |
| 12:30 PM                | 613                     | 72                            |           |
| 12:45 PM                | 601                     | 72                            |           |
| 1:00 PM                 | 585                     | 72                            |           |
| 1:15 PM                 | 566                     | 71                            |           |
| 1:30 PM                 | 557                     | 70                            |           |
| 1:45 PM                 | 581                     | 69                            |           |
| 2:00 PM                 | 601                     | 68                            |           |
| 2:15 PM                 | 657                     | 68                            |           |
| 2:30 PM                 | 670                     | 68                            |           |
| 2:45 PM                 | 632                     | 68                            |           |
| 3:00 PM                 | 616                     | 68                            |           |
| 3:15 PM                 | 590                     | 68                            |           |
| 3:30 PM                 | 599                     | 68                            |           |
| 3:45 PM                 | 632                     | 68                            |           |
| 4:00 PM                 | 649                     | 68                            |           |
| 4:15 PM                 | 643                     | 69                            |           |
| 4:30 PM                 | 636                     | 70                            |           |
| 4:45 PM                 | 632                     | 71                            |           |
| 5:00 PM                 | 611                     | 72                            |           |
| 5:15 PM                 | 456                     | 54                            |           |
| 5:30 PM                 | 307                     | 36                            |           |
| 5:45 PM                 | 147                     | 18                            |           |
| 6:00 PM                 | 0                       | 0                             |           |
| 6:15 PM                 | 0                       | 0                             |           |
| 6:30 PM                 | 0                       | 0                             |           |
| 6:45 PM                 | 0                       | 0                             |           |
| 7:00 PM                 | 0                       | 0                             |           |
| 7:15 PM                 | 0                       | 0                             |           |
| 7:30 PM                 | 0                       | 0                             |           |
| 7:45 PM                 | 0                       | 0                             |           |
| 8:00 PM                 | 0                       | 0                             |           |
| 8:15 PM                 | 0                       | 0                             |           |
| 8:30 PM                 | 0                       | 0                             |           |
| 8:45 PM                 | 0                       | 0                             |           |
| 9:00 PM                 | 0                       | 0                             |           |
| 9:15 PM                 | 0                       | 0                             |           |
| 9:30 PM                 | 0                       | 0                             |           |
| 9:45 PM                 | 0                       | 0                             |           |
| 10:00 PM                | 0                       | 0                             |           |
| 10:15 PM                | 0                       | 0                             |           |
| 10:30 PM                | 0                       | 0                             |           |
| 10:45 PM                | 0                       | 0                             |           |
| 11:00 PM                | 0                       | 0                             |           |

MUTCD Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



## MUTCD WARRANT 3, PEAK HOUR

| Number of Lanes for Moving Traffic on Each Approach |        |
|-----------------------------------------------------|--------|
| Major Street:                                       | 1 Lane |
| Minor Street:                                       | 1 Lane |

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street? | No |
|-----------------------------------------------------------------------------------------------|----|

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?

No

**Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present\***

|                                                                                                                                                                                                                                              |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach? | N/A |
| Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?                                                   | N/A |
| Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?                                | N/A |
| <i>*If applicable, attach all supporting calculations and documentation.</i>                                                                                                                                                                 |     |

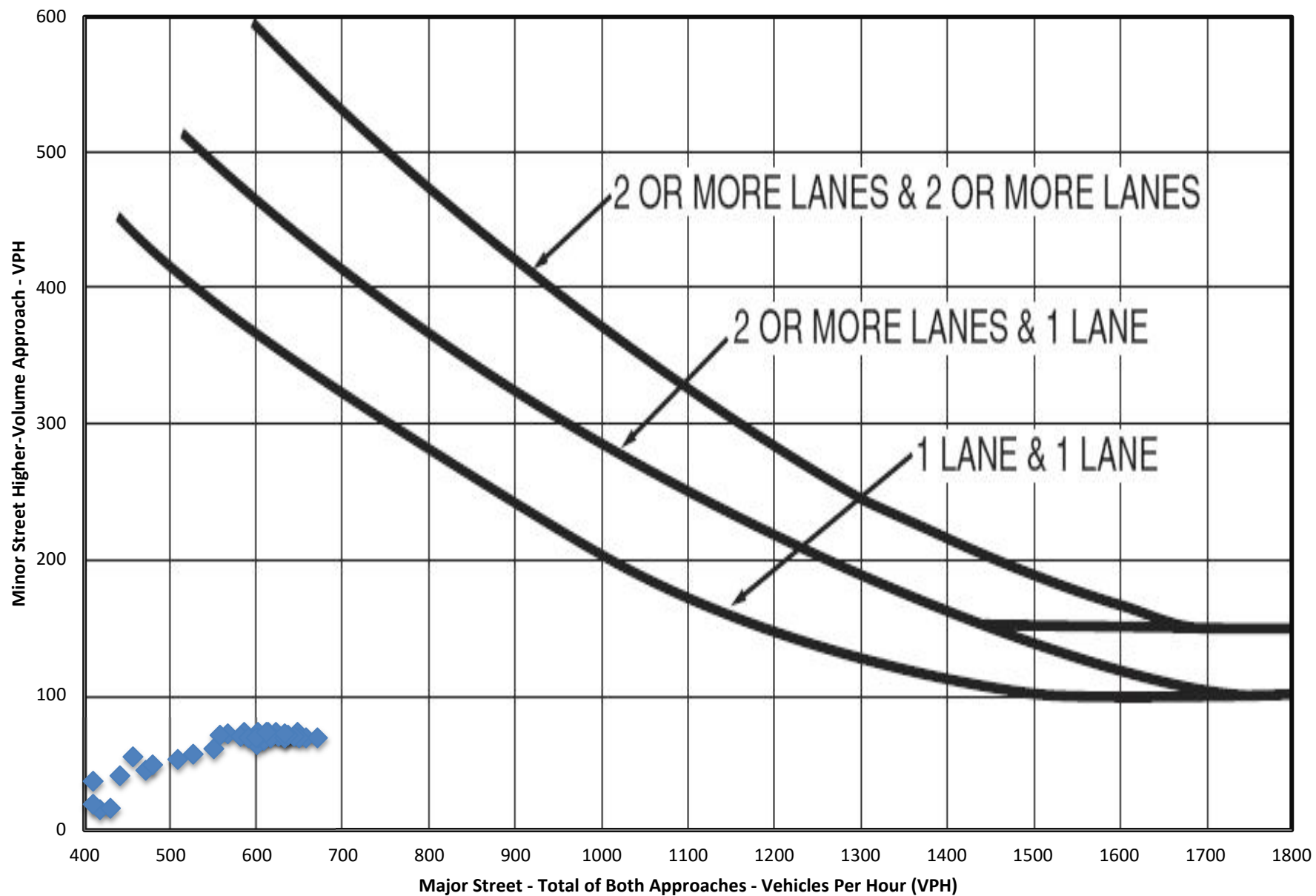
|                                                 |
|-------------------------------------------------|
| Total Number of Unique Hours Met On Figure 4C-3 |
| <b>0</b>                                        |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 AM                | 0                       | 0                             |           |
| 12:15 AM                | 0                       | 0                             |           |
| 12:30 AM                | 0                       | 0                             |           |
| 12:45 AM                | 0                       | 0                             |           |
| 1:00 AM                 | 0                       | 0                             |           |
| 1:15 AM                 | 0                       | 0                             |           |
| 1:30 AM                 | 0                       | 0                             |           |
| 1:45 AM                 | 0                       | 0                             |           |
| 2:00 AM                 | 0                       | 0                             |           |
| 2:15 AM                 | 0                       | 0                             |           |
| 2:30 AM                 | 0                       | 0                             |           |
| 2:45 AM                 | 0                       | 0                             |           |
| 3:00 AM                 | 0                       | 0                             |           |
| 3:15 AM                 | 0                       | 0                             |           |
| 3:30 AM                 | 0                       | 0                             |           |
| 3:45 AM                 | 0                       | 0                             |           |
| 4:00 AM                 | 0                       | 0                             |           |
| 4:15 AM                 | 0                       | 0                             |           |
| 4:30 AM                 | 0                       | 0                             |           |
| 4:45 AM                 | 0                       | 0                             |           |
| 5:00 AM                 | 0                       | 0                             |           |
| 5:15 AM                 | 0                       | 0                             |           |
| 5:30 AM                 | 0                       | 0                             |           |
| 5:45 AM                 | 0                       | 0                             |           |
| 6:00 AM                 | 0                       | 0                             |           |
| 6:15 AM                 | 67                      | 3                             |           |
| 6:30 AM                 | 123                     | 6                             |           |
| 6:45 AM                 | 192                     | 9                             |           |
| 7:00 AM                 | 278                     | 12                            |           |
| 7:15 AM                 | 329                     | 13                            |           |
| 7:30 AM                 | 387                     | 14                            |           |
| 7:45 AM                 | 418                     | 15                            |           |
| 8:00 AM                 | 430                     | 16                            |           |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 8:15 AM                 | 410                     | 19                            |           |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 8:30 AM                 | 387                     | 22                            |           |
| 8:45 AM                 | 378                     | 25                            |           |
| 9:00 AM                 | 367                     | 28                            |           |
| 9:15 AM                 | 386                     | 32                            |           |
| 9:30 AM                 | 410                     | 36                            |           |
| 9:45 AM                 | 441                     | 40                            |           |
| 10:00 AM                | 471                     | 44                            |           |
| 10:15 AM                | 479                     | 48                            |           |
| 10:30 AM                | 508                     | 52                            |           |
| 10:45 AM                | 526                     | 56                            |           |
| 11:00 AM                | 550                     | 60                            |           |
| 11:15 AM                | 600                     | 63                            |           |
| 11:30 AM                | 608                     | 66                            |           |
| 11:45 AM                | 625                     | 69                            |           |
| 12:00 PM                | 647                     | 72                            |           |
| 12:15 PM                | 622                     | 72                            |           |
| 12:30 PM                | 613                     | 72                            |           |
| 12:45 PM                | 601                     | 72                            |           |
| 1:00 PM                 | 585                     | 72                            |           |
| 1:15 PM                 | 566                     | 71                            |           |
| 1:30 PM                 | 557                     | 70                            |           |
| 1:45 PM                 | 581                     | 69                            |           |
| 2:00 PM                 | 601                     | 68                            |           |
| 2:15 PM                 | 657                     | 68                            |           |
| 2:30 PM                 | 670                     | 68                            |           |
| 2:45 PM                 | 632                     | 68                            |           |
| 3:00 PM                 | 616                     | 68                            |           |
| 3:15 PM                 | 590                     | 68                            |           |
| 3:30 PM                 | 599                     | 68                            |           |
| 3:45 PM                 | 632                     | 68                            |           |
| 4:00 PM                 | 649                     | 68                            |           |
| 4:15 PM                 | 643                     | 69                            |           |
| 4:30 PM                 | 636                     | 70                            |           |
| 4:45 PM                 | 632                     | 71                            |           |
| 5:00 PM                 | 611                     | 72                            |           |
| 5:15 PM                 | 456                     | 54                            |           |
| 5:30 PM                 | 307                     | 36                            |           |
| 5:45 PM                 | 147                     | 18                            |           |
| 6:00 PM                 | 0                       | 0                             |           |
| 6:15 PM                 | 0                       | 0                             |           |
| 6:30 PM                 | 0                       | 0                             |           |
| 6:45 PM                 | 0                       | 0                             |           |
| 7:00 PM                 | 0                       | 0                             |           |
| 7:15 PM                 | 0                       | 0                             |           |
| 7:30 PM                 | 0                       | 0                             |           |
| 7:45 PM                 | 0                       | 0                             |           |
| 8:00 PM                 | 0                       | 0                             |           |
| 8:15 PM                 | 0                       | 0                             |           |
| 8:30 PM                 | 0                       | 0                             |           |
| 8:45 PM                 | 0                       | 0                             |           |
| 9:00 PM                 | 0                       | 0                             |           |
| 9:15 PM                 | 0                       | 0                             |           |
| 9:30 PM                 | 0                       | 0                             |           |
| 9:45 PM                 | 0                       | 0                             |           |
| 10:00 PM                | 0                       | 0                             |           |
| 10:15 PM                | 0                       | 0                             |           |
| 10:30 PM                | 0                       | 0                             |           |
| 10:45 PM                | 0                       | 0                             |           |
| 11:00 PM                | 0                       | 0                             |           |

MUTCD Figure 4C-3. Warrant 3, Peak Hour



## STUDY AND ANALYSIS INFORMATION

Municipality: East Coventry Township  
 County: Chester County  
 PennDOT Engineering District: 6

Analysis Date: 10/31/2025  
 Conducted By: VSA  
 Agency/Company Name: Bowman

## Analysis Information

Data Collection Date: 3/1/2025  
 Day of the Week: Saturday

Is the intersection in a built-up area of an isolated community of <10,000 population? No

## Major Street Information

Major Street Name and Route Number: Ridge Road

Major Street Approach #1 Direction: E-Bound

Major Street Approach #2 Direction: W-Bound

Number of Lanes for Moving Traffic on Each Major Street Approach: 1 LANE(S)  
 Speed Limit or 85th Percentile Speed on the Major Street: 35 MPH

## Minor Street Information

Minor Street Name and Route Number: Shopping Center Accesses

Minor Street Approach #1 Direction: N-Bound

Minor Street Approach #2 Direction: S-Bound

Number of Lanes for Moving Traffic on Each Minor Street Approach: 1 LANE(S)

## TRAFFIC SIGNAL WARRANT ANALYSIS FINDINGS

|                                               | Applicable? | Warrant Met? |
|-----------------------------------------------|-------------|--------------|
| Warrant 1, Eight-Hour Vehicular Volume        | Yes         | No           |
| Warrant 2, Four-Hour Vehicular Volume         | Yes         | No           |
| Warrant 3, Peak Hour                          | Yes         | No           |
| Warrant 4, Pedestrian Volume                  | No          | N/A          |
| Warrant 5, School Crossing                    | No          | N/A          |
| Warrant 6, Coordinated Signal System          | No          | N/A          |
| Warrant 7, Crash Experience                   | No          | N/A          |
| Warrant 8, Roadway Network                    | No          | N/A          |
| Warrant 9, Intersection Near a Grade Crossing | No          | N/A          |
| Warrant PA-1, ADT Volume Warrant              | No          | N/A          |
| Warrant PA-2, Midblock and Trail Crossings    | No          | N/A          |

| ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH |          |                                    |                                    |                       |                                    |                                    |
|--------------------------------------------------------|----------|------------------------------------|------------------------------------|-----------------------|------------------------------------|------------------------------------|
| Time Interval                                          |          | Major Street Approach #1 (E-Bound) | Major Street Approach #2 (W-Bound) | Major Street Combined | Minor Street Approach #1 (N-Bound) | Minor Street Approach #2 (S-Bound) |
| Begin At                                               | End Of   | Volume                             | Volume                             | Total Volume          | Volume                             | Volume                             |
| 12:00 AM                                               | 12:14 AM |                                    |                                    | 0                     |                                    |                                    |
| 12:15 AM                                               | 12:29 AM |                                    |                                    | 0                     |                                    |                                    |
| 12:30 AM                                               | 12:44 AM |                                    |                                    | 0                     |                                    |                                    |
| 12:45 AM                                               | 12:59 AM |                                    |                                    | 0                     |                                    |                                    |
| 1:00 AM                                                | 1:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 1:15 AM                                                | 1:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 1:30 AM                                                | 1:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 1:45 AM                                                | 1:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 2:00 AM                                                | 2:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 2:15 AM                                                | 2:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 2:30 AM                                                | 2:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 2:45 AM                                                | 2:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 3:00 AM                                                | 3:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 3:15 AM                                                | 3:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 3:30 AM                                                | 3:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 3:45 AM                                                | 3:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 4:00 AM                                                | 4:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 4:15 AM                                                | 4:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 4:30 AM                                                | 4:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 4:45 AM                                                | 4:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 5:00 AM                                                | 5:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 5:15 AM                                                | 5:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 5:30 AM                                                | 5:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 5:45 AM                                                | 5:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 6:00 AM                                                | 6:14 AM  |                                    |                                    | 0                     |                                    |                                    |
| 6:15 AM                                                | 6:29 AM  |                                    |                                    | 0                     |                                    |                                    |
| 6:30 AM                                                | 6:44 AM  |                                    |                                    | 0                     |                                    |                                    |
| 6:45 AM                                                | 6:59 AM  |                                    |                                    | 0                     |                                    |                                    |
| 7:00 AM                                                | 7:14 AM  | 9                                  | 9                                  | 18                    | 1                                  | 0                                  |
| 7:15 AM                                                | 7:29 AM  | 8                                  | 16                                 | 24                    | 1                                  | 0                                  |
| 7:30 AM                                                | 7:44 AM  | 12                                 | 15                                 | 27                    | 1                                  | 0                                  |
| 7:45 AM                                                | 7:59 AM  | 10                                 | 12                                 | 22                    | 1                                  | 0                                  |
| 8:00 AM                                                | 8:14 AM  | 20                                 | 26                                 | 46                    | 2                                  | 0                                  |
| 8:15 AM                                                | 8:29 AM  | 17                                 | 25                                 | 42                    | 2                                  | 0                                  |
| 8:30 AM                                                | 8:44 AM  | 22                                 | 21                                 | 43                    | 2                                  | 1                                  |
| 8:45 AM                                                | 8:59 AM  | 25                                 | 29                                 | 54                    | 2                                  | 2                                  |
| 9:00 AM                                                | 9:14 AM  | 23                                 | 50                                 | 73                    | 3                                  | 2                                  |
| 9:15 AM                                                | 9:29 AM  | 30                                 | 48                                 | 78                    | 3                                  | 1                                  |
| 9:30 AM                                                | 9:44 AM  | 31                                 | 53                                 | 84                    | 3                                  | 6                                  |
| 9:45 AM                                                | 9:59 AM  | 43                                 | 53                                 | 96                    | 3                                  | 4                                  |
| 10:00 AM                                               | 10:14 AM | 40                                 | 88                                 | 128                   | 6                                  | 1                                  |
| 10:15 AM                                               | 10:29 AM | 37                                 | 92                                 | 129                   | 6                                  | 1                                  |
| 10:30 AM                                               | 10:44 AM | 39                                 | 92                                 | 131                   | 6                                  | 3                                  |
| 10:45 AM                                               | 10:59 AM | 36                                 | 95                                 | 131                   | 6                                  | 4                                  |
| 11:00 AM                                               | 11:14 AM | 45                                 | 107                                | 152                   | 11                                 | 6                                  |
| 11:15 AM                                               | 11:29 AM | 38                                 | 96                                 | 134                   | 11                                 | 7                                  |
| 11:30 AM                                               | 11:44 AM | 44                                 | 108                                | 152                   | 11                                 | 6                                  |
| 11:45 AM                                               | 11:59 AM | 47                                 | 113                                | 160                   | 11                                 | 4                                  |

# Traffic Signal Warrant Analysis Workbook

12/23/2025

| ENTER VOLUME DATA PER 15 MINUTE INTERVAL, PER APPROACH |          |                                    |                                    |                       |                                    |                                    |
|--------------------------------------------------------|----------|------------------------------------|------------------------------------|-----------------------|------------------------------------|------------------------------------|
| Time Interval                                          |          | Major Street Approach #1 (E-Bound) | Major Street Approach #2 (W-Bound) | Major Street Combined | Minor Street Approach #1 (N-Bound) | Minor Street Approach #2 (S-Bound) |
| Begin At                                               | End Of   | Volume                             | Volume                             | Total Volume          | Volume                             | Volume                             |
| 12:00 PM                                               | 12:14 PM | 42                                 | 106                                | 148                   | 14                                 | 4                                  |
| 12:15 PM                                               | 12:29 PM | 42                                 | 111                                | 153                   | 14                                 | 5                                  |
| 12:30 PM                                               | 12:44 PM | 50                                 | 109                                | 159                   | 14                                 | 3                                  |
| 12:45 PM                                               | 12:59 PM | 40                                 | 115                                | 155                   | 14                                 | 5                                  |
| 1:00 PM                                                | 1:14 PM  | 52                                 | 114                                | 166                   | 18                                 | 7                                  |
| 1:15 PM                                                | 1:29 PM  | 40                                 | 114                                | 154                   | 18                                 | 3                                  |
| 1:30 PM                                                | 1:44 PM  | 48                                 | 112                                | 160                   | 18                                 | 4                                  |
| 1:45 PM                                                | 1:59 PM  | 48                                 | 115                                | 163                   | 18                                 | 2                                  |
| 2:00 PM                                                | 2:14 PM  | 43                                 | 109                                | 152                   | 18                                 | 4                                  |
| 2:15 PM                                                | 2:29 PM  | 51                                 | 105                                | 156                   | 18                                 | 4                                  |
| 2:30 PM                                                | 2:44 PM  | 56                                 | 110                                | 166                   | 18                                 | 2                                  |
| 2:45 PM                                                | 2:59 PM  | 52                                 | 106                                | 158                   | 18                                 | 6                                  |
| 3:00 PM                                                | 3:14 PM  | 43                                 | 123                                | 166                   | 19                                 | 8                                  |
| 3:15 PM                                                | 3:29 PM  | 44                                 | 116                                | 160                   | 19                                 | 9                                  |
| 3:30 PM                                                | 3:44 PM  | 45                                 | 149                                | 194                   | 19                                 | 6                                  |
| 3:45 PM                                                | 3:59 PM  | 39                                 | 177                                | 216                   | 19                                 | 2                                  |
| 4:00 PM                                                | 4:14 PM  | 51                                 | 104                                | 155                   | 20                                 | 2                                  |
| 4:15 PM                                                | 4:29 PM  | 35                                 | 93                                 | 128                   | 20                                 | 2                                  |
| 4:30 PM                                                | 4:44 PM  | 46                                 | 95                                 | 141                   | 20                                 | 1                                  |
| 4:45 PM                                                | 4:59 PM  | 133                                | 99                                 | 232                   | 20                                 | 3                                  |
| 5:00 PM                                                | 5:14 PM  | 51                                 | 97                                 | 148                   | 18                                 | 6                                  |
| 5:15 PM                                                | 5:29 PM  | 40                                 | 95                                 | 135                   | 18                                 | 5                                  |
| 5:30 PM                                                | 5:44 PM  | 27                                 | 89                                 | 116                   | 18                                 | 4                                  |
| 5:45 PM                                                | 5:59 PM  | 33                                 | 102                                | 135                   | 18                                 | 1                                  |
| 6:00 PM                                                | 6:14 PM  |                                    |                                    | 0                     |                                    |                                    |
| 6:15 PM                                                | 6:29 PM  |                                    |                                    | 0                     |                                    |                                    |
| 6:30 PM                                                | 6:44 PM  |                                    |                                    | 0                     |                                    |                                    |
| 6:45 PM                                                | 6:59 PM  |                                    |                                    | 0                     |                                    |                                    |
| 7:00 PM                                                | 7:14 PM  |                                    |                                    | 0                     |                                    |                                    |
| 7:15 PM                                                | 7:29 PM  |                                    |                                    | 0                     |                                    |                                    |
| 7:30 PM                                                | 7:44 PM  |                                    |                                    | 0                     |                                    |                                    |
| 7:45 PM                                                | 7:59 PM  |                                    |                                    | 0                     |                                    |                                    |
| 8:00 PM                                                | 8:14 PM  |                                    |                                    | 0                     |                                    |                                    |
| 8:15 PM                                                | 8:29 PM  |                                    |                                    | 0                     |                                    |                                    |
| 8:30 PM                                                | 8:44 PM  |                                    |                                    | 0                     |                                    |                                    |
| 8:45 PM                                                | 8:59 PM  |                                    |                                    | 0                     |                                    |                                    |
| 9:00 PM                                                | 9:14 PM  |                                    |                                    | 0                     |                                    |                                    |
| 9:15 PM                                                | 9:29 PM  |                                    |                                    | 0                     |                                    |                                    |
| 9:30 PM                                                | 9:44 PM  |                                    |                                    | 0                     |                                    |                                    |
| 9:45 PM                                                | 9:59 PM  |                                    |                                    | 0                     |                                    |                                    |
| 10:00 PM                                               | 10:14 PM |                                    |                                    | 0                     |                                    |                                    |
| 10:15 PM                                               | 10:29 PM |                                    |                                    | 0                     |                                    |                                    |
| 10:30 PM                                               | 10:44 PM |                                    |                                    | 0                     |                                    |                                    |
| 10:45 PM                                               | 10:59 PM |                                    |                                    | 0                     |                                    |                                    |
| 11:00 PM                                               | 11:14 PM |                                    |                                    | 0                     |                                    |                                    |
| 11:15 PM                                               | 11:29 PM |                                    |                                    | 0                     |                                    |                                    |
| 11:30 PM                                               | 11:44 PM |                                    |                                    | 0                     |                                    |                                    |
| 11:45 PM                                               | 11:59 PM |                                    |                                    | 0                     |                                    |                                    |
| Approach Totals:                                       |          | 1727                               | 3813                               | 5540                  | 520                                | 146                                |

## MUTCD WARRANT 1, EIGHT-HOUR VEHICULAR VOLUME

| Number of Lanes for Moving Traffic on Each Approach |        |
|-----------------------------------------------------|--------|
| Major Street:                                       | 1 Lane |
| Minor Street:                                       | 1 Lane |

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street? | No |
|-----------------------------------------------------------------------------------------------|----|

Combination of Conditions A and B Necessary?\*: No

*\*Only applicable for Warrant 1 if after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve the traffic problems. See Section 4C.02 of the 2009 MUTCD for application.*

| Condition A - Minimum Vehicular Volume              |              |                                                              |     |     |     |                                                                               |     |     |     |
|-----------------------------------------------------|--------------|--------------------------------------------------------------|-----|-----|-----|-------------------------------------------------------------------------------|-----|-----|-----|
| Number of lanes for moving traffic on each approach |              | Vehicles per hour on major street (total of both approaches) |     |     |     | Vehicles per hour on higher-volume minor street approach (one direction only) |     |     |     |
| Major Street                                        | Minor Street | 100%                                                         | 80% | 70% | 56% | 100%                                                                          | 80% | 70% | 56% |
| 1                                                   | 1            | 500                                                          | 400 | 350 | 280 | 150                                                                           | 120 | 105 | 84  |
| 2 or More                                           | 1            | 600                                                          | 480 | 420 | 336 | 150                                                                           | 120 | 105 | 84  |
| 2 or More                                           | 2 or More    | 600                                                          | 480 | 420 | 336 | 200                                                                           | 160 | 140 | 112 |
| 1                                                   | 2 or More    | 500                                                          | 400 | 350 | 280 | 200                                                                           | 160 | 140 | 112 |

| Condition B - Interruption of Continuous Traffic    |              |                                                              |     |     |     |                                                                               |     |     |     |
|-----------------------------------------------------|--------------|--------------------------------------------------------------|-----|-----|-----|-------------------------------------------------------------------------------|-----|-----|-----|
| Number of lanes for moving traffic on each approach |              | Vehicles per hour on major street (total of both approaches) |     |     |     | Vehicles per hour on higher-volume minor street approach (one direction only) |     |     |     |
| Major Street                                        | Minor Street | 100%                                                         | 80% | 70% | 56% | 100%                                                                          | 80% | 70% | 56% |
| 1                                                   | 1            | 750                                                          | 600 | 525 | 420 | 75                                                                            | 60  | 53  | 42  |
| 2 or More                                           | 1            | 900                                                          | 720 | 630 | 504 | 75                                                                            | 60  | 53  | 42  |
| 2 or More                                           | 2 or More    | 900                                                          | 720 | 630 | 504 | 100                                                                           | 80  | 70  | 56  |
| 1                                                   | 2 or More    | 750                                                          | 600 | 525 | 420 | 100                                                                           | 80  | 70  | 56  |

### Condition A Evaluation

Number of Unique Hours Met: 0

Condition A Satisfied? No

### Condition B Evaluation

Number of Unique Hours Met: 0

Condition B Satisfied? No

### Combination of Condition A and Condition B Evaluation

Number of Unique Hours Met for Condition A: N/A

Number of Unique Hours Met for Condition B: N/A

Combination of Condition A and Condition B Satisfied? N/A

## MUTCD WARRANT 2, FOUR-HOUR VEHICULAR VOLUME

| Number of Lanes for Moving Traffic on Each Approach |        |
|-----------------------------------------------------|--------|
| Major Street:                                       | 1 Lane |
| Minor Street:                                       | 1 Lane |

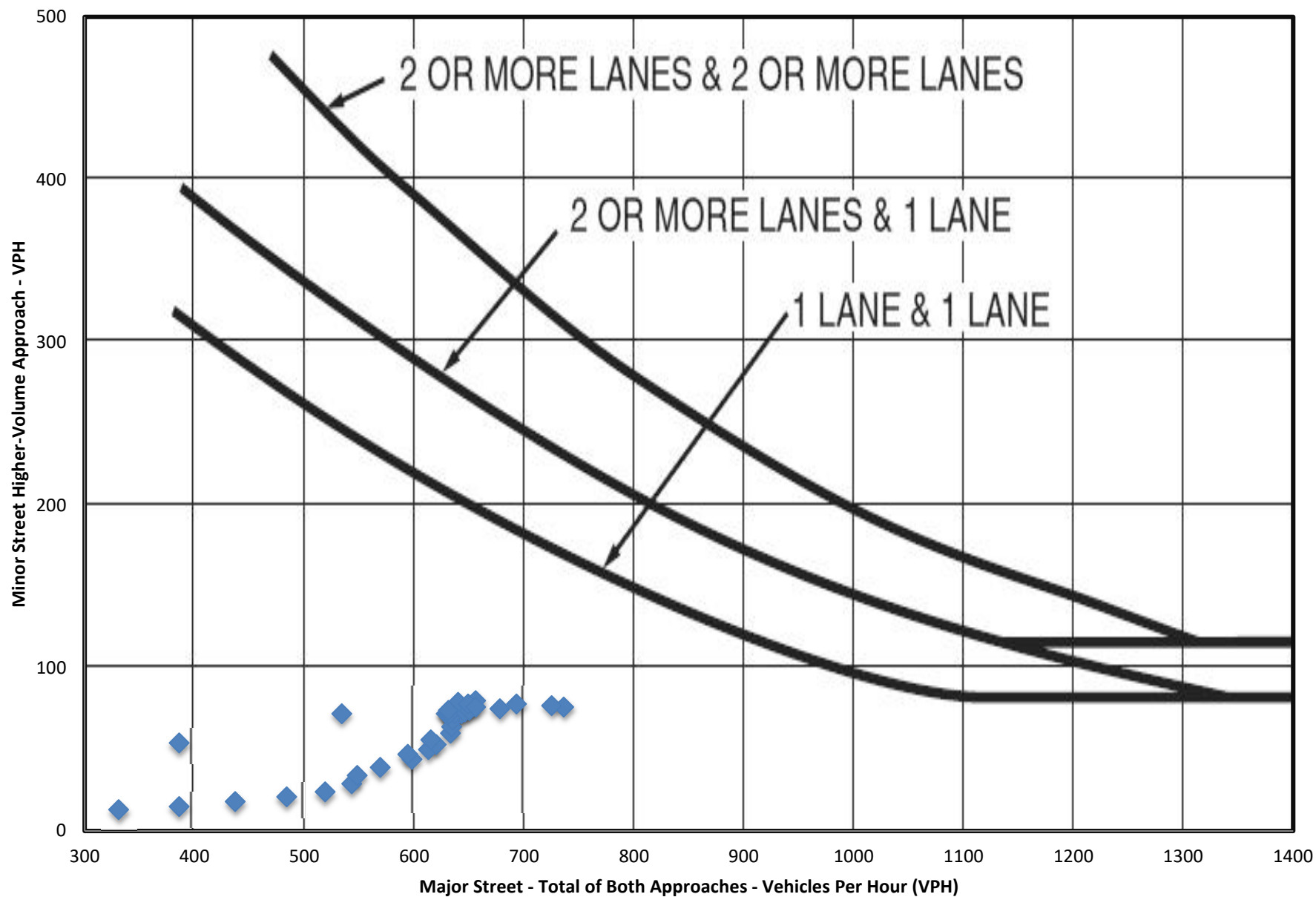
| Total Number of Unique Hours Met On Figure 4C-1 |
|-------------------------------------------------|
| 0                                               |

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street? | No |
|-----------------------------------------------------------------------------------------------|----|

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 AM                | 0                       | 0                             |           |
| 12:15 AM                | 0                       | 0                             |           |
| 12:30 AM                | 0                       | 0                             |           |
| 12:45 AM                | 0                       | 0                             |           |
| 1:00 AM                 | 0                       | 0                             |           |
| 1:15 AM                 | 0                       | 0                             |           |
| 1:30 AM                 | 0                       | 0                             |           |
| 1:45 AM                 | 0                       | 0                             |           |
| 2:00 AM                 | 0                       | 0                             |           |
| 2:15 AM                 | 0                       | 0                             |           |
| 2:30 AM                 | 0                       | 0                             |           |
| 2:45 AM                 | 0                       | 0                             |           |
| 3:00 AM                 | 0                       | 0                             |           |
| 3:15 AM                 | 0                       | 0                             |           |
| 3:30 AM                 | 0                       | 0                             |           |
| 3:45 AM                 | 0                       | 0                             |           |
| 4:00 AM                 | 0                       | 0                             |           |
| 4:15 AM                 | 0                       | 0                             |           |
| 4:30 AM                 | 0                       | 0                             |           |
| 4:45 AM                 | 0                       | 0                             |           |
| 5:00 AM                 | 0                       | 0                             |           |
| 5:15 AM                 | 0                       | 0                             |           |
| 5:30 AM                 | 0                       | 0                             |           |
| 5:45 AM                 | 0                       | 0                             |           |
| 6:00 AM                 | 0                       | 0                             |           |
| 6:15 AM                 | 18                      | 1                             |           |
| 6:30 AM                 | 42                      | 2                             |           |
| 6:45 AM                 | 69                      | 3                             |           |
| 7:00 AM                 | 91                      | 4                             |           |
| 7:15 AM                 | 119                     | 5                             |           |
| 7:30 AM                 | 137                     | 6                             |           |
| 7:45 AM                 | 153                     | 7                             |           |
| 8:00 AM                 | 185                     | 8                             |           |
| 8:15 AM                 | 212                     | 9                             |           |
| 8:30 AM                 | 248                     | 10                            |           |
| 8:45 AM                 | 289                     | 11                            |           |
| 9:00 AM                 | 331                     | 13                            |           |
| 9:15 AM                 | 386                     | 15                            |           |
| 9:30 AM                 | 437                     | 18                            |           |
| 9:45 AM                 | 484                     | 21                            |           |
| 10:00 AM                | 519                     | 24                            |           |
| 10:15 AM                | 543                     | 29                            |           |
| 10:30 AM                | 548                     | 34                            |           |
| 10:45 AM                | 569                     | 39                            |           |
| 11:00 AM                | 598                     | 44                            |           |
| 11:15 AM                | 594                     | 47                            |           |
| 11:30 AM                | 613                     | 50                            |           |
| 11:45 AM                | 620                     | 53                            |           |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 PM                | 615                     | 56                            |           |
| 12:15 PM                | 633                     | 60                            |           |
| 12:30 PM                | 634                     | 64                            |           |
| 12:45 PM                | 635                     | 68                            |           |
| 1:00 PM                 | 643                     | 72                            |           |
| 1:15 PM                 | 629                     | 72                            |           |
| 1:30 PM                 | 631                     | 72                            |           |
| 1:45 PM                 | 637                     | 72                            |           |
| 2:00 PM                 | 632                     | 72                            |           |
| 2:15 PM                 | 646                     | 73                            |           |
| 2:30 PM                 | 650                     | 74                            |           |
| 2:45 PM                 | 678                     | 75                            |           |
| 3:00 PM                 | 736                     | 76                            |           |
| 3:15 PM                 | 725                     | 77                            |           |
| 3:30 PM                 | 693                     | 78                            |           |
| 3:45 PM                 | 640                     | 79                            |           |
| 4:00 PM                 | 656                     | 80                            |           |
| 4:15 PM                 | 649                     | 78                            |           |
| 4:30 PM                 | 656                     | 76                            |           |
| 4:45 PM                 | 631                     | 74                            |           |
| 5:00 PM                 | 534                     | 72                            |           |
| 5:15 PM                 | 386                     | 54                            |           |
| 5:30 PM                 | 251                     | 36                            |           |
| 5:45 PM                 | 135                     | 18                            |           |
| 6:00 PM                 | 0                       | 0                             |           |
| 6:15 PM                 | 0                       | 0                             |           |
| 6:30 PM                 | 0                       | 0                             |           |
| 6:45 PM                 | 0                       | 0                             |           |
| 7:00 PM                 | 0                       | 0                             |           |
| 7:15 PM                 | 0                       | 0                             |           |
| 7:30 PM                 | 0                       | 0                             |           |
| 7:45 PM                 | 0                       | 0                             |           |
| 8:00 PM                 | 0                       | 0                             |           |
| 8:15 PM                 | 0                       | 0                             |           |
| 8:30 PM                 | 0                       | 0                             |           |
| 8:45 PM                 | 0                       | 0                             |           |
| 9:00 PM                 | 0                       | 0                             |           |
| 9:15 PM                 | 0                       | 0                             |           |
| 9:30 PM                 | 0                       | 0                             |           |
| 9:45 PM                 | 0                       | 0                             |           |
| 10:00 PM                | 0                       | 0                             |           |
| 10:15 PM                | 0                       | 0                             |           |
| 10:30 PM                | 0                       | 0                             |           |
| 10:45 PM                | 0                       | 0                             |           |
| 11:00 PM                | 0                       | 0                             |           |

MUTCD Figure 4C-1. Warrant 2, Four-Hour Vehicular Volume



## MUTCD WARRANT 3, PEAK HOUR

| Number of Lanes for Moving Traffic on Each Approach |        |
|-----------------------------------------------------|--------|
| Major Street:                                       | 1 Lane |
| Minor Street:                                       | 1 Lane |

|                                                                                               |    |
|-----------------------------------------------------------------------------------------------|----|
| Built-up Isolated Community With Less Than 10,000 Population or Above 40 MPH on Major Street? | No |
|-----------------------------------------------------------------------------------------------|----|

Is this signal warrant being applied for an unusual case, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time?

No

**Indicate whether all three of the following conditions for the same 1 hour (any four consecutive 15-minute periods) of an average day are present\***

|                                                                                                                                                                                                                                              |     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| Does the total stopped time delay experienced by the traffic on one minor-street approach (one direction only) controlled by a STOP sign equal or exceed 4 vehicle-hours for a one-lane approach or 5 vehicle-hours for a two-lane approach? | N/A |
| Does the volume on the same minor-street approach (one direction only) equal or exceed 100 vehicles per hour for one moving lane of traffic or 150 vehicles per hour for two moving lanes?                                                   | N/A |
| Does the total entering volume serviced during the hour equal or exceed 650 vehicles per hour for intersection with three approaches or 800 vehicles per hour for intersections with four or more approaches?                                | N/A |
| <i>*If applicable, attach all supporting calculations and documentation.</i>                                                                                                                                                                 |     |

|                                                 |
|-------------------------------------------------|
| Total Number of Unique Hours Met On Figure 4C-3 |
| <b>0</b>                                        |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 12:00 AM                | 0                       | 0                             |           |
| 12:15 AM                | 0                       | 0                             |           |
| 12:30 AM                | 0                       | 0                             |           |
| 12:45 AM                | 0                       | 0                             |           |
| 1:00 AM                 | 0                       | 0                             |           |
| 1:15 AM                 | 0                       | 0                             |           |
| 1:30 AM                 | 0                       | 0                             |           |
| 1:45 AM                 | 0                       | 0                             |           |
| 2:00 AM                 | 0                       | 0                             |           |
| 2:15 AM                 | 0                       | 0                             |           |
| 2:30 AM                 | 0                       | 0                             |           |
| 2:45 AM                 | 0                       | 0                             |           |
| 3:00 AM                 | 0                       | 0                             |           |
| 3:15 AM                 | 0                       | 0                             |           |
| 3:30 AM                 | 0                       | 0                             |           |
| 3:45 AM                 | 0                       | 0                             |           |
| 4:00 AM                 | 0                       | 0                             |           |
| 4:15 AM                 | 0                       | 0                             |           |
| 4:30 AM                 | 0                       | 0                             |           |
| 4:45 AM                 | 0                       | 0                             |           |
| 5:00 AM                 | 0                       | 0                             |           |
| 5:15 AM                 | 0                       | 0                             |           |
| 5:30 AM                 | 0                       | 0                             |           |
| 5:45 AM                 | 0                       | 0                             |           |
| 6:00 AM                 | 0                       | 0                             |           |
| 6:15 AM                 | 18                      | 1                             |           |
| 6:30 AM                 | 42                      | 2                             |           |
| 6:45 AM                 | 69                      | 3                             |           |
| 7:00 AM                 | 91                      | 4                             |           |
| 7:15 AM                 | 119                     | 5                             |           |
| 7:30 AM                 | 137                     | 6                             |           |
| 7:45 AM                 | 153                     | 7                             |           |
| 8:00 AM                 | 185                     | 8                             |           |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 8:15 AM                 | 212                     | 9                             |           |

| Hourly Vehicular Volume |                         |                               |           |
|-------------------------|-------------------------|-------------------------------|-----------|
| Hour Interval           | Major Street Combined   | Highest Minor Street Approach | Hour Met? |
| Beginning At            | Vehicles Per Hour (VPH) | Vehicles Per Hour (VPH)       |           |
| 8:30 AM                 | 248                     | 10                            |           |
| 8:45 AM                 | 289                     | 11                            |           |
| 9:00 AM                 | 331                     | 13                            |           |
| 9:15 AM                 | 386                     | 15                            |           |
| 9:30 AM                 | 437                     | 18                            |           |
| 9:45 AM                 | 484                     | 21                            |           |
| 10:00 AM                | 519                     | 24                            |           |
| 10:15 AM                | 543                     | 29                            |           |
| 10:30 AM                | 548                     | 34                            |           |
| 10:45 AM                | 569                     | 39                            |           |
| 11:00 AM                | 598                     | 44                            |           |
| 11:15 AM                | 594                     | 47                            |           |
| 11:30 AM                | 613                     | 50                            |           |
| 11:45 AM                | 620                     | 53                            |           |
| 12:00 PM                | 615                     | 56                            |           |
| 12:15 PM                | 633                     | 60                            |           |
| 12:30 PM                | 634                     | 64                            |           |
| 12:45 PM                | 635                     | 68                            |           |
| 1:00 PM                 | 643                     | 72                            |           |
| 1:15 PM                 | 629                     | 72                            |           |
| 1:30 PM                 | 631                     | 72                            |           |
| 1:45 PM                 | 637                     | 72                            |           |
| 2:00 PM                 | 632                     | 72                            |           |
| 2:15 PM                 | 646                     | 73                            |           |
| 2:30 PM                 | 650                     | 74                            |           |
| 2:45 PM                 | 678                     | 75                            |           |
| 3:00 PM                 | 736                     | 76                            |           |
| 3:15 PM                 | 725                     | 77                            |           |
| 3:30 PM                 | 693                     | 78                            |           |
| 3:45 PM                 | 640                     | 79                            |           |
| 4:00 PM                 | 656                     | 80                            |           |
| 4:15 PM                 | 649                     | 78                            |           |
| 4:30 PM                 | 656                     | 76                            |           |
| 4:45 PM                 | 631                     | 74                            |           |
| 5:00 PM                 | 534                     | 72                            |           |
| 5:15 PM                 | 386                     | 54                            |           |
| 5:30 PM                 | 251                     | 36                            |           |
| 5:45 PM                 | 135                     | 18                            |           |
| 6:00 PM                 | 0                       | 0                             |           |
| 6:15 PM                 | 0                       | 0                             |           |
| 6:30 PM                 | 0                       | 0                             |           |
| 6:45 PM                 | 0                       | 0                             |           |
| 7:00 PM                 | 0                       | 0                             |           |
| 7:15 PM                 | 0                       | 0                             |           |
| 7:30 PM                 | 0                       | 0                             |           |
| 7:45 PM                 | 0                       | 0                             |           |
| 8:00 PM                 | 0                       | 0                             |           |
| 8:15 PM                 | 0                       | 0                             |           |
| 8:30 PM                 | 0                       | 0                             |           |
| 8:45 PM                 | 0                       | 0                             |           |
| 9:00 PM                 | 0                       | 0                             |           |
| 9:15 PM                 | 0                       | 0                             |           |
| 9:30 PM                 | 0                       | 0                             |           |
| 9:45 PM                 | 0                       | 0                             |           |
| 10:00 PM                | 0                       | 0                             |           |
| 10:15 PM                | 0                       | 0                             |           |
| 10:30 PM                | 0                       | 0                             |           |
| 10:45 PM                | 0                       | 0                             |           |
| 11:00 PM                | 0                       | 0                             |           |

MUTCD Figure 4C-3. Warrant 3, Peak Hour

