# I-41 Traffic and Engineering Study
## Existing (2018) AM Peak Hour
## I-41 NB, between WIS 125 and WIS 96 (Site 440105)
## Determination of Number of Model Seeds

**Initial Runs Worksheet**

| Run Number | Seed | Volume |
|---|---|---|
| 1 | 199 | ~~2585.3~~ |
| 2 | 409 | 2530.4 |
| 3 | 619 | 2527.0 |
| 4 | 829 | 2535.1 |
| 5 | 1039 | 2538.5 |
| 6 | 1249 | 2541.2 |
| 7 | 1459 | 2524.7 |

| | |
|---|---|
| Average (Mean): | 2540.3 |
| Margin of Error (E): | 25.80 |
| Tolerance % Used: | 1.0% |
| $Z_{critical}$ (95% CI) | 1.96 |
| Standard Deviation (σ): | 20.74 |
| Estimated Number of Runs: | 1 |
| Recalculated Mean: | 2532.8 |
| Recalculated E: | 25.70 |
| Recalculated σ: | 6.55 |

Bureau of Traffic Operations
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**Instructions:**

1). Enter the name of the Measure of Effectiveness (MOE) being examined into the yellow-highlighted cell with "MOE" in the Initial Runs Worksheet.

2). For the selected MOE, enter the field observations into the tan-highlighted cells in the Variability Analysis of Field Data Worksheet.

3). Using the seeds specified in the Initial Runs Worksheet, conduct seven initial model runs. Document the results for the specified MOE in the blue-highlighted cells .

4). Statistical outliers will be eliminated if they exist. The remaining non-outliers will be valid runs. If the "Estimated Number of Runs" is less than or equal to the number of valid runs, the cell displaying the estimated number of runs in the Initial Runs Worksheet will be highlighted in green, indicating that the criteria are met and no further model runs are required. However, if the estimated number of runs is greater than the number of valid runs, the cell will be highlighted in yellow, indicating that further runs are required. If this is the case, continue on to Step 5.

5). Using the seeds specified in the Additional Runs Worksheet, run the model until the required number of model runs is reached. Document the results for each model run with the specified seed in the purple-highlighted cells. If 30 model runs have been completed and the required number of model runs is not satisfied, please contact BTO to discuss further options. Note that the first seven runs should be the same as that reported in the initial runs worksheet.

**Additional Runs Worksheet**

| Run Number | Seed | Volume |
|---|---|---|
| 1 | 199 | |
| 2 | 409 | |
| 3 | 619 | |
| 4 | 829 | |
| 5 | 1039 | |
| 6 | 1249 | |
| 7 | 1459 | |
| 8 | 1669 | |
| 9 | 1879 | |
| 10 | 2089 | |
| 11 | 7 | |
| 12 | 157 | |
| 13 | 307 | |
| 14 | 457 | |
| 15 | 607 | |
| 16 | 757 | |
| 17 | 907 | |
| 18 | 5 | |
| 19 | 11 | |
| 20 | 17 | |
| 21 | 23 | |
| 22 | 29 | |
| 23 | 13 | |
| 24 | 103 | |
| 25 | 193 | |
| 26 | 283 | |
| 27 | 373 | |
| 28 | 463 | |
| 29 | 28657 | |
| 30 | 514229 | |

| | |
|---|---|
| Average (Mean): | N/A |
| Margin of Error (E): | N/A |
| Tolerance % Used: | N/A |
| $Z_{critical}$ (95% CI) | 1.96 |
| Standard Deviation (σ): | N/A |
| Required Number of Runs: | N/A |

**Variability Analysis of Field Data Worksheet**

**Field Observation (Measurement)**

| Observation # | Volume |
|---|---|
| 1 | 3,046.0 |
| 2 | 3,022.0 |
| 3 | 2,991.0 |
| 4 | 3,179.0 |
| 5 | 3,048.0 |
| 6 | 3,167.0 |
| 7 | 2,991.0 |
| 8 | 3,088.0 |
| 9 | 3,024.0 |
| 10 | 3,154.0 |
| 11 | 3,069.0 |
| 12 | 3,089.0 |
| 13 | 3,071.0 |
| 14 | 3,110.0 |
| 15 | 3,178.0 |
| 16 | 2,939.0 |
| 17 | 3,043.0 |
| 18 | 3,161.0 |
| 19 | 3,108.0 |
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| | |
|---|---|
| Average (Mean): | 3,077.8 |
| Margin of Error (E): | 31.21 |
| Tolerance error percentage (e): | 1.0% |
| $Z_{critical}$ (95% CI): | 1.96 |
| Standard Deviation: | 69.41 |
| Sample Size: | 19 |

| Field Data Notes | |
|---|---|
| Location: | |
| Dates: | |
| Times: | |
| Sources: | |

**DRAFT**