**I-41 Traffic and Engineering Study**
Existing (2018) AM Peak Hour
I-41 NB, between WIS 441 and CTH N (Site 440103)
Determination of Number of Model Seeds

Initial Runs Worksheet

Run Number	Seed	Volume
1	199	3054.7
2	409	3000.1
3	619	2995.0
4	829	3020.9
5	1039	3025.3
6	1249	3013.4
7	1459	3011.0

Average (Mean):	3017.2
Margin of Error (E):	38.00
Tolerance % Used:	1.3%
$Z_{critical}$ (95% CI):	1.96
Standard Deviation (σ):	19.7
Estimated Number of Runs:	2

Bureau of Traffic Operations
10/12/2017
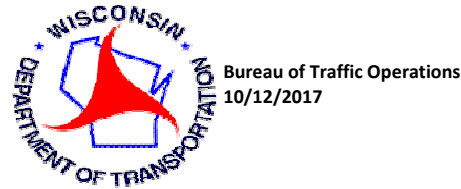
Instructions:

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	2,670.0
2	2,819.0
3	2,924.0
4	2,895.0
5	2,713.0
6	2,906.0
7	2,753.0
8	2,813.0
9	2,925.0
10	2,893.0
11	2,846.0
12	2,846.0
13	2,844.0
14	2,861.0
15	2,887.0
16	2,705.0
17	2,759.0
18	2,866.0
19	2,734.0
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Average (Mean):	2,824.2
Margin of Error (E):	35.61
Tolerance error percentage (e):	1.3%
$Z_{critical}$ (95% CI):	1.96
Standard Deviation:	79.20
Sample Size:	19

Field Data Notes

Location:	
Dates:	
Times:	
Sources:	

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