



PURPOSE

The purpose of this activity is for you to observe how vehicles in the field respond to a change in signal displays and to describe this behavior.

LEARNING OBJECTIVE

- Describe driver behavior at the onset of the yellow interval

REQUIRED RESOURCE

- Data file: A54.xlsx

DELIVERABLE

- Prepare a spreadsheet that includes the following information:

Tab 1: Title page with activity number and title, authors, and date completed

Tab 2: Answer to the Critical Thinking Question

Tab 3: Aerial photo of intersection approach and distance grid

Tab 4: Field data and calculations from Table 25

Tab 5: Plot from Task 5

Tab 6: Probability analysis from Task 5

CRITICAL THINKING QUESTION

1. What conclusions can you make about the differences or similarities between the data that you collected in Activity #54 and this current activity?

TASK 1

Select one major street approach on your intersection. Using Google Earth (or another similar mapping tool), select an aerial view of the approach and identify points up to 300 feet upstream of the stop bar for that approach, in 50 foot increments. Print this aerial view with the “50 foot increment” points. An example of this aerial view with increments marked is shown in Figure 174.

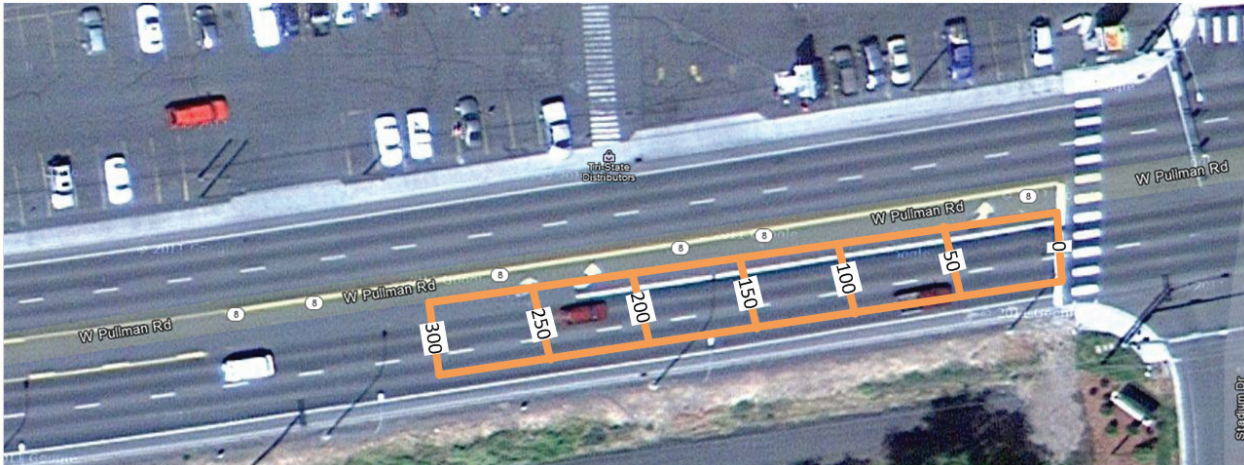


Figure 174. Example intersection approach showing 50 foot intervals upstream of the stop bar

TASK 2

Observe the operation of the traffic stream and signal displays on this approach for five minutes, giving particular attention to the “onset of yellow” period when vehicles will be making decisions to stop or not.

TASK 3

Using the aerial map that you prepared in Task 1, record the location of 20 vehicles that you observe at the beginning of the yellow interval by placing a number on the map corresponding to the location of each of the vehicles. When you select these 20 vehicles, make sure that there is no vehicle between them and the stop bar at the onset of yellow. Also, record (in Table 25) the response of the driver to the yellow display (either “Go” or “Stop”).

TASK 4

For each of these vehicles, record the following information in Table 25:

- Your estimate of the distance upstream from the stop bar
- The response of the driver to the yellow display (Go or Stop)
- Your estimate of the travel time from the observed location to the stop bar based on your estimated distance and the posted travel speed

TASK 5

Prepare a plot of the “time from the stop bar” (x-axis) and “distance from the stop bar” (y-axis) at the onset of yellow segregating the data according to whether the vehicle stopped or continued through the intersection. Compare this plot with the equivalent plot that you made in Task 2 of Activity #54. Again, compute the probability of “stopping or not stopping”, segregating the data into 50 foot intervals.

Table 25. Field observations and calculations

Vehicle number	Distance of vehicle from stop bar at onset of yellow	Response of driver to the yellow display (Go/Stop)	Estimated time for vehicle to travel to stop bar at onset of yellow
1			
2			
3			
4			
5			
6			
7			
8			
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