



PURPOSE

The purpose of this activity is for you to appreciate how realistic a simulation model can be in replicating traffic flow at a real signalized intersection.

LEARNING OBJECTIVES

- Assess the realism of a simulation environment by comparing it with a video of actual field operations
- Develop your ability to “see” and “observe” video and animation of traffic flow at a signalized intersection and relate these observations to traffic flow theory and principles

REQUIRED RESOURCE

- Movie file: A04.wmv

DELIVERABLE

- Prepare a document with your answers to the Critical Thinking Questions

CRITICAL THINKING QUESTIONS

As you begin this activity, consider the following questions. You will come back to these questions once you have completed the activity.

1. How realistic does the simulation appear to be? How realistic does a simulation model need to be? What is the basis of your conclusions?
2. Based on the information provided in the video, how do you know that a southbound vehicle has been detected?
3. Is the process of queue formation and clearance for the southbound approach similar or different to the description of traffic flow in Activity #1? Explain your answer.
4. Why does the phase end (or the display turn from green to yellow) for the southbound approach near the end of the video?

5. What other observations can you make that are relevant to the operation of the intersection?

INFORMATION

Not all models realistically duplicate traffic flow conditions found in the field. However, if a simulation model such as VISSIM is calibrated correctly, the results can closely approximate conditions that you would observe in the field. You will observe two videos, each of the intersection of State Highway 8 and Line Street in Moscow, Idaho. In this activity you will compare a field video with the simulation of the same intersection and conditions. When you start the movie file, your computer screen will look like Figure 26. The video on the left shows the VISSIM animation while the one on the right shows a video from the field showing traffic flow at the intersection.



Figure 26. Field validation video

Three detector status indicators and the phase 2 green indication are imprinted in black boxes on the video frames. When a detector is “ON,” the black text box corresponding to the detector is filled with the name of the detector. The detector names are indicated in parentheses in Figure 26. When the phase 2 green is “ON,” the corresponding black text box is filled with “P2,” for phase 2. In Figure 26, the two circled vehicles are queued in both fields of view and are calling for service on phase 2 as can be seen by the fact that the stop bar detector is on.

TASK 1

Open the movie file, A04.wmv.

TASK 2

Watch the video all the way through. Keeping in mind the Critical Thinking Questions for this activity, observe the traffic flow, detection information, and display status for both the southbound approach (upper left in both the video and animation) and the eastbound approach (bottom left). Phase 2 serves the southbound approach and phase 4 serves the eastbound approach. Make notes on your observations.

TASK 3

Based on the notes that you made during your observation of the video, prepare brief answers to the Critical Thinking Questions.