



## PURPOSE

The purpose of this activity is to provide you with the opportunity to learn how the *Traffic Signal Timing Manual* addresses basic operational principles of traffic flow at signalized intersections.

## LEARNING OBJECTIVE

- Compare and contrast the traffic flow representations used in the *Traffic Signal Timing Manual* with those that you studied in the activities in this chapter

## REQUIRED RESOURCE

- *Traffic Signal Timing Manual*

## DELIVERABLES

Prepare a document that includes

- Answers to the Critical Thinking Questions
- Completed Concept Map

## LINK TO PRACTICE

Read the section of the *Traffic Signal Timing Manual* that covers the basic principles of traffic flow as assigned by your instructor.

## CRITICAL THINKING QUESTIONS

When you have completed the reading, prepare answers to the following questions:

1. Describe how the *Traffic Signal Timing Manual* represents traffic flow arriving at and departing from a signalized intersection.
  
  
  
  
  
  
  
  
  
  
2. Contrast these representations with those that you studied in the activities of this chapter. Identify the differences in these representations.

3. Are there any basic traffic flow concepts presented in the *Traffic Signal Timing Manual* which you have not encountered before? Briefly describe them.

## IN MY PRACTICE...

*by Tom Urbanik*

As you work through problems as an engineer, there is significant focus on the mathematics of traffic flow. It is important to understand that traffic theory is a tool to facilitate understanding. It should be understood that vehicles are driven by individuals with different characteristics. These human factors issues result in performance that is different than the orderly movement assumed in traffic models. In addition, drivers may not line up in lanes to facilitate overall orderly movement. They are making a trip which has an origin and a destination (which may change when they get a call to pick up some milk on the way home). These realities make traffic messier than our tools and models can replicate.

As a result of the realities of traffic flow, successful operations necessitates that the engineer journey out to the field to see if his or her analysis is functioning as designed. As the engineer acquires more field knowledge, future analysis will become better and “field tuning” modifications will, although always necessary, be more minor in their extent.

## CONCEPT MAP

*Terms and variables that should appear in your map are listed below.*

cumulative vehicle diagram

flow profile diagram

saturation flow rate

D/D/1 model

queue accumulation polygon

time space diagram



