ACTIVITY
38 Actuated Traffic Control Processes

IN PRACTICE

Purpose

The purpose of this activity is to give you the opportunity to compare the results of your design work (Activities #36 and #37) to the range of values discussed in the *Traffic Signal Timing Manual*.

Learning Objective

- Contrast design values with those recommended in practice

Required Resource

- *Traffic Signal Timing Manual*

Deliverables

Prepare a document that includes

- Answers to the Critical Thinking Question
- Completed Concept Map

Link to Practice

Read the section on "Phase Intervals and Basic Parameters" and "Actuating Timing Parameters" from the *Traffic Signal Timing Manual* as assigned by your instructor.

Critical Thinking Question

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

1. Describe the differences between your selected passage time value and the value ranges described in the *Traffic Signal Timing Manual*.

In My Practice...

by Tom Urbanik

In practice, you must resolve theoretical calculations with the realities of drivers and the technology that is deployed. The practical goal is efficient control without generating complaints or trouble calls due to an occasional short-timing of a phase. The activities that you have completed in this chapter included the issue of a slow truck causing a phase to gap out. In practice an inattentive driver could also fail to reset the passage timer in a detector design using small area (e.g., 6' by 6' loop) detection. This could occur if the detection zone was between two cars and the second car did not move over the detection zone before the passage timer expired. While this problem is largely overcome by using presence detection, it is still possible for the detection zone to be located between the two vehicles.

Although partially addressed in Activity #37 for two lanes, the complexity of multi-lane detection which sends the detector call to a single phase timer, makes selection of the passage time problematic. The passage time model you considered in Activity #36 was for a single lane. It does not account for calls on two or more lanes. Straggling cars in three lanes may look like closely spaced cars in a single lane. The partial solution is to adjust the passage time down (which could result in the phase occasionally running too short) or using a single lane value which can result in extending the phase even though the flow rate is much less than saturation flow.

So, the traffic signal timing engineer has to balance these practical issues in application of the model by making adjustments to the ideal passage setting or using advanced features. While not extensively used (unfortunately), there are advanced features to address these issues. Although these advanced features are not included in this course, they can be found in the *Traffic Signal Timing Manual*.

Concept Map

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

call	occupancy time	maximum allowable headway	h	t_o
detection zone	recall		L_d	t_u
interval	unoccupancy time		L_v	v

Student Notes: