PURPOSE

The purpose of this activity is to help you to learn how the maximum green time is set in practice.

LEARNING OBJECTIVE

- Compare the maximum green time that you selected with the range of values used in practice

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 from the *Traffic Signal Timing Manual* on maximum green times as assigned by your instructor.

CRITICAL THINKING QUESTIONS

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

1. What is the function of the maximum green time?

2. What methods are used to set the maximum green time?

3. How do your design results from Activity #43 compare with the recommendations from the *Traffic Signal Timing Manual*?

IN MY PRACTICE...   *by Tom Urbanik*

The selection of the maximum green time starts with an understanding of the traffic volume, usually from a traffic count or traffic projection. These traffic volumes are only a snapshot of traffic conditions and may not reflect peak demand. Traffic at a school, for example, may have extreme peaking at the beginning or end of school, or following a special event like a football game. Typically, maximum green times will be increased to accommodate these extreme conditions. The main risk of larger than needed maximum green times includes extending the phase beyond saturation flow values if the passage time setting is large, thus driving the phase to maximum or in the case of detector failures, sending a continuous call which also extends the phase to maximum.

There are advanced controller features that can respond to fluctuations in traffic volumes. One example is the dynamic maximum which allows the controller to increase the maximum green time if the controller continues to "max out" rather than "gap out." The downside is you need cycle failures to increase the maximum green time.

Another feature which might not be thought of for increasing flexibility of fully actuated control to respond to fluctuations in volume is "soft recall." If the arterial is placed on soft recall, it only calls the arterial in the absence of calls on all other phases. So a large volume of traffic exiting a high school stadium is able to extend beyond its maximum green if there is no traffic on the arterial calling for service. Alternatively, if the arterial is on minimum recall, it will turn on the cross street maximum green timer every cycle even in the absence of traffic on the arterial, forcing the controller to cycle back to the arterial because of the recall.

CONCEPT MAP

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

cycle length (*C*)   uniform delay (d_1)   volume (*v*)

maximum green time   green time (*g*)

Student Notes: