

CE 572 – Spring 2015

Intersection Traffic Operations

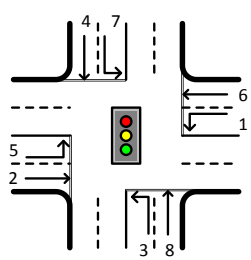
Class 14

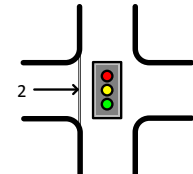
20 February 2015

Quiz

1. Define “flow ratio”
2. What is the importance of the flow ratio as part of the critical movement analysis?
3. What is the outcome of a critical movement analysis?
4. List the assumptions that you believe have been made about the signalized intersection (traffic flow, geometry, and signal control) when a critical movement analysis is conducted.

Scenarios

Signalized Intersection – Scenario #1	
Pretimed <input checked="" type="checkbox"/>	
Actuated <input type="checkbox"/>	
Demand < capacity	
Protected LTs	
Uniform arrivals	

Signalized Intersection – Scenario #2	
Pretimed <input checked="" type="checkbox"/>	
Actuated <input type="checkbox"/>	
Demand > capacity	
TH only	
Uniform arrivals	

Assignment 19

Complete analysis of intersection sufficiency of capacity using the critical movement analysis method given the following data:

- Two lanes on each approach, one exclusive LT lane and one TH lane.
 - $v_1 = 150$
 - $v_2 = 500$
 - $v_3 = 150$
 - $v_4 = 550$
 - $v_5 = 100$
 - $v_6 = 400$
 - $v_7 = 100$
 - $v_8 = 400$
 - Cycle length = 80 sec
 - Saturation flow rate = 1900 veh/hr/lane
 - Lost time per phase = 4 sec
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Assignment 20 - Reading

- Read "Signalized Intersection Module Excerpt: Uniform Delay" from the Resources page.
- Be ready to discuss (1) the uniform delay equation and (2) the graphical method for determining delay for the conditions that demand is less than capacity and greater than capacity.