CE 474 – Class 09

September 14, 2015

TRANSPORTATION …. in the news

5 Things to Know About Driving on Marijuana

By THE ASSOCIATED PRESS

WASHINGTON — The legalization of recreational marijuana in two states — Colorado and Washington — and medical marijuana in more than 20 others has raised concern that there will be more drivers stoned behind the wheel. What's not clear is whether that will translate into an increase in fatal crashes.

The New York Times

CNN politics June 25, 2015

Although marijuana had a less dramatic effect than alcohol on drivers the study found it still impairs " one measure of driving performance." The drug reduced the drivers' peripheral vision giving them tunnel vision.

WHAT WE KNOW

While marijuana users can perform simple tasks well while they are high, brain imaging has shown that they have to use more of their brain to do so. Their reaction times are slower, peripheral vision is decreased and multitasking impeded. As a result, when sudden or surprising things occur to complicate those tasks — such as when a pedestrian steps in front of a car — they cannot respond as well. On the other hand, marijuana users tend to be aware they are impaired and try to compensate for it.

For next time…

- Review the following activities in preparation for class work:
  - A19
  - A20
  - A21

Class 09 (9.14)
Discuss: A15, A16 results
Mini-lecture: A17
Discuss: A17 CTQ
Do/Discuss: A18
Homework (due 9.16):

- Preview: A19, A20, A21

ACTIVITY 15

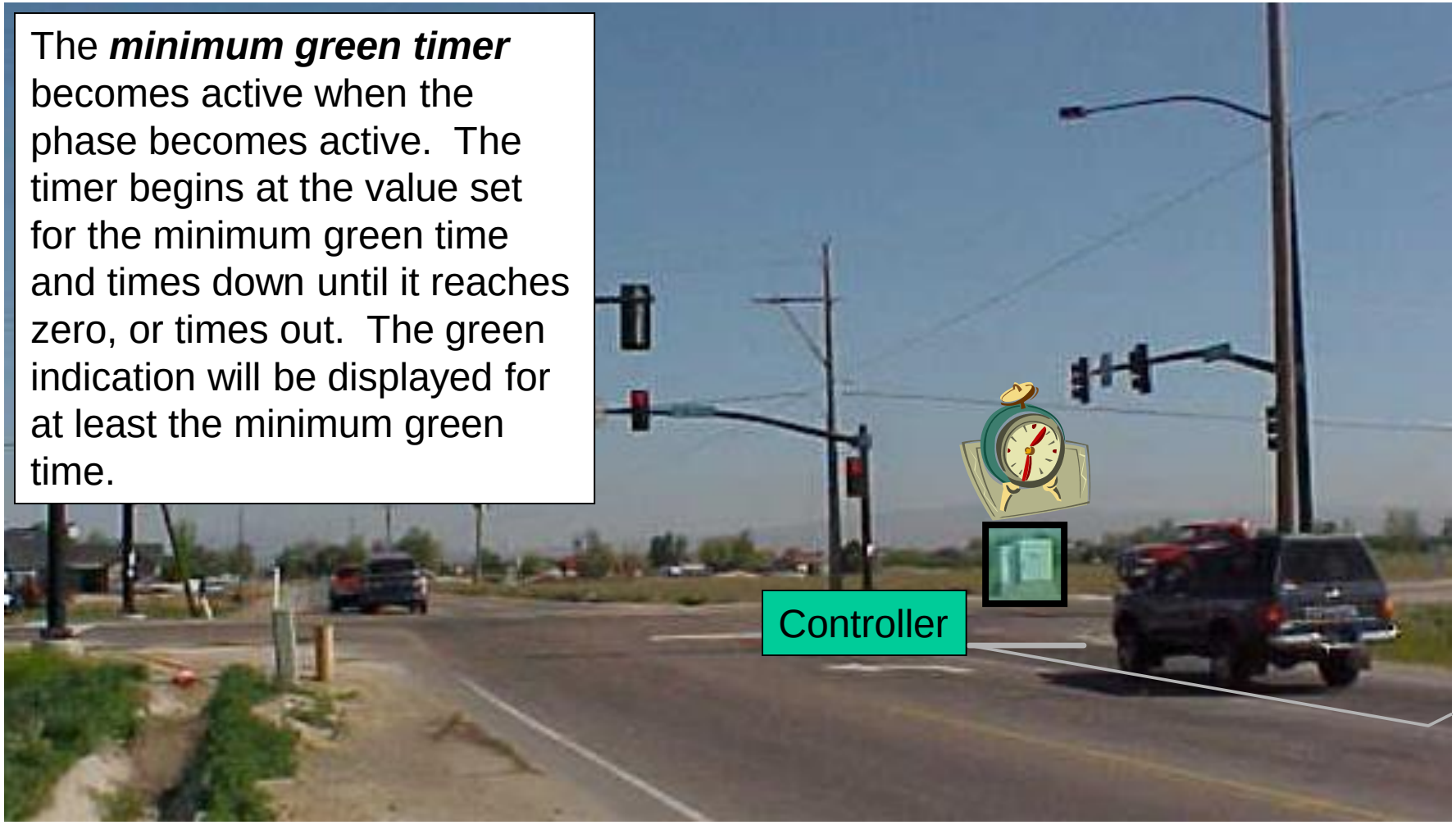
Verifying Ring Barrier Operation in the Field

ACTIVITY 16

Phasing, Rings, and Barriers in Practice

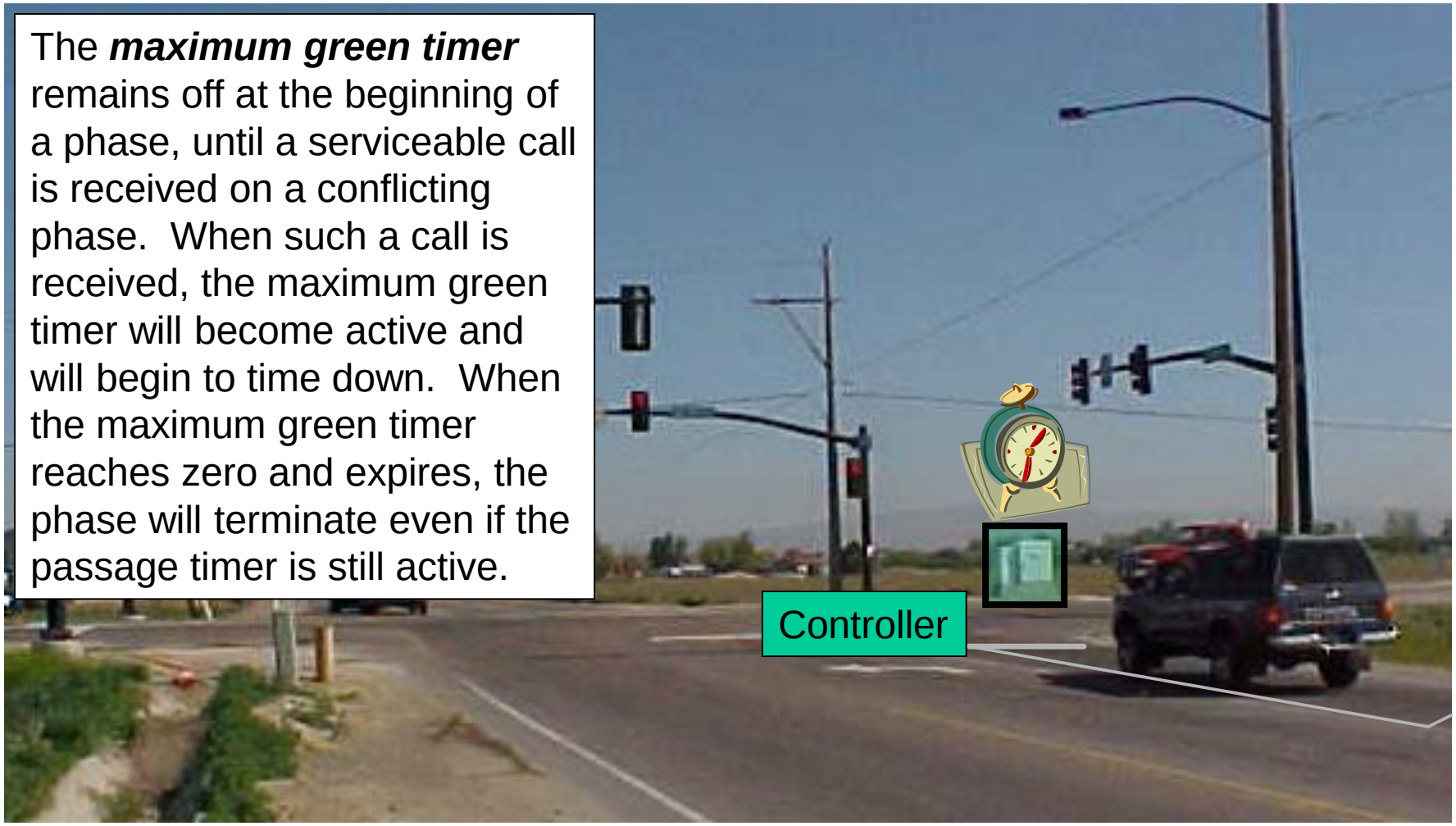
READING

1. What are the three basic actuated timing processes?
2. For each of these timing processes, describe:
   - When each process begins
   - How the timer functions
3. Describe the condition or conditions that must be true for a phase to terminate.



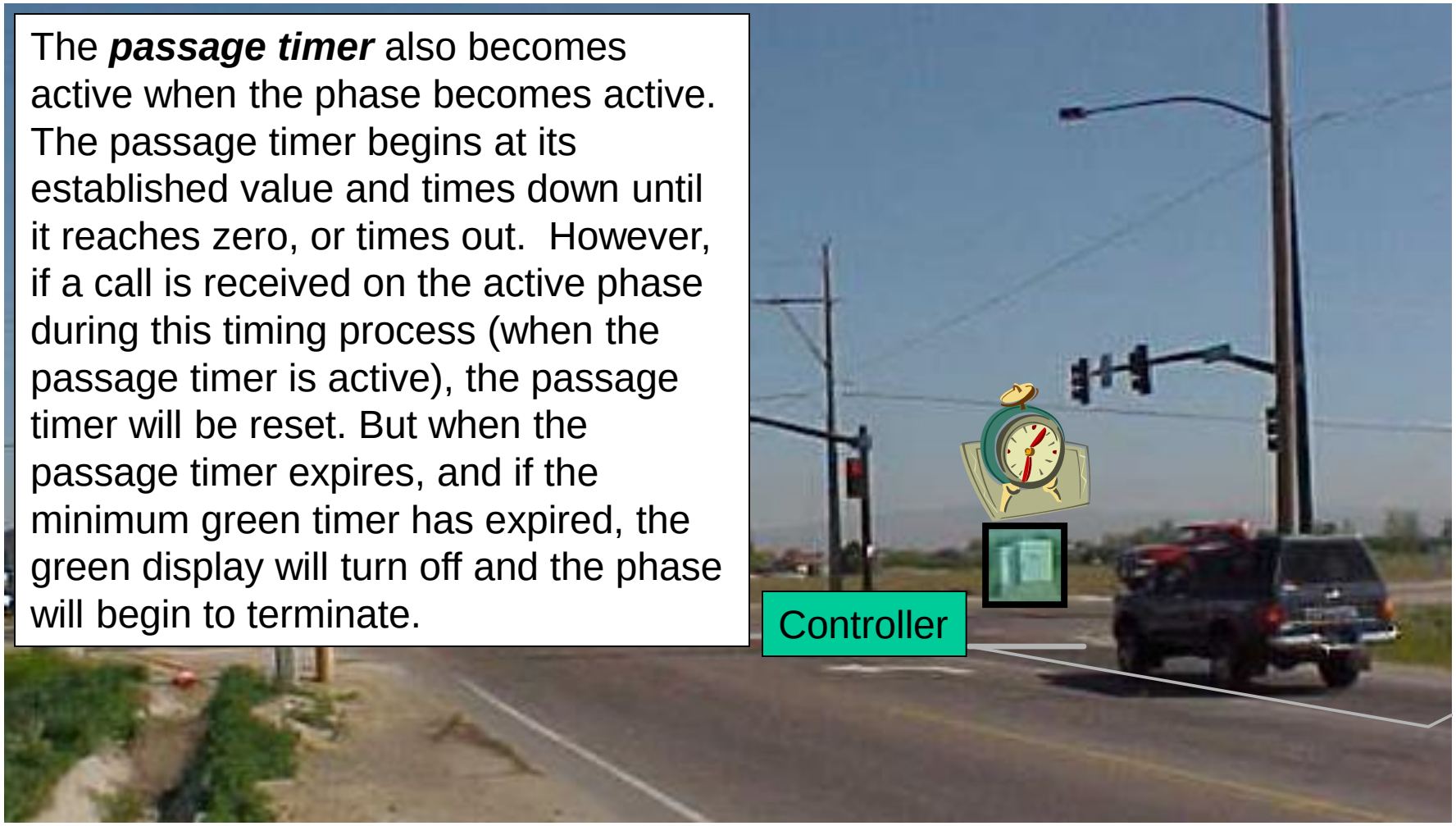
- Timers or timing processes
  - **Minimum green**
  - Maximum green
  - Vehicle extension/passage time/gap time

The ***maximum green timer*** remains off at the beginning of a phase, until a serviceable call is received on a conflicting phase. When such a call is received, the maximum green timer will become active and will begin to time down. When the maximum green timer reaches zero and expires, the phase will terminate even if the passage timer is still active.



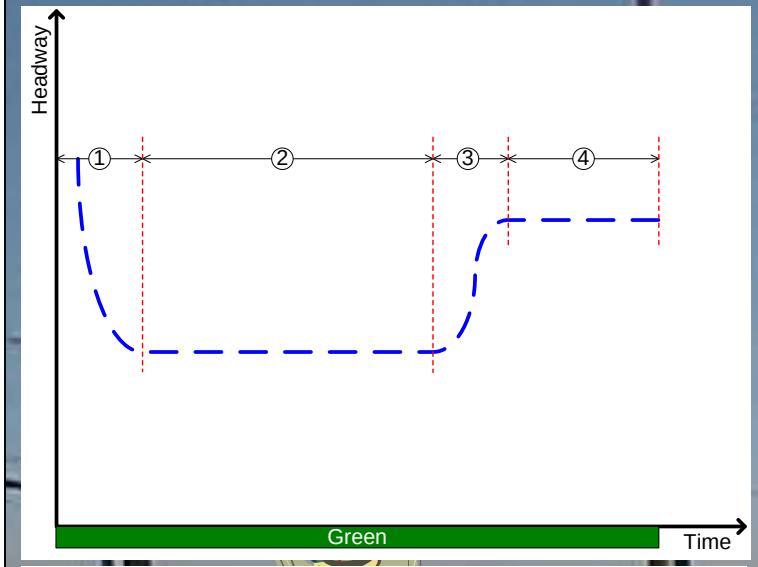
- Timers or timing processes
  - Minimum green
  - **Maximum green**
  - Vehicle extension/passage time/gap time

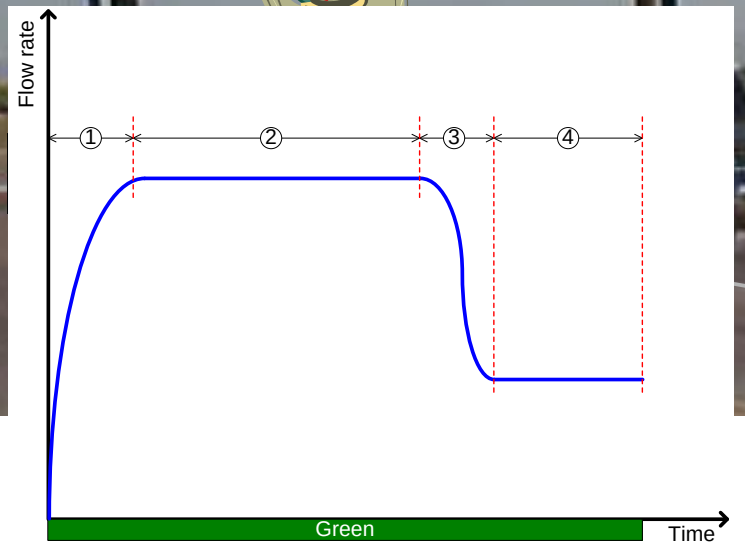
The ***passage timer*** also becomes active when the phase becomes active. The passage timer begins at its established value and times down until it reaches zero, or times out. However, if a call is received on the active phase during this timing process (when the passage timer is active), the passage timer will be reset. But when the passage timer expires, and if the minimum green timer has expired, the green display will turn off and the phase will begin to terminate.



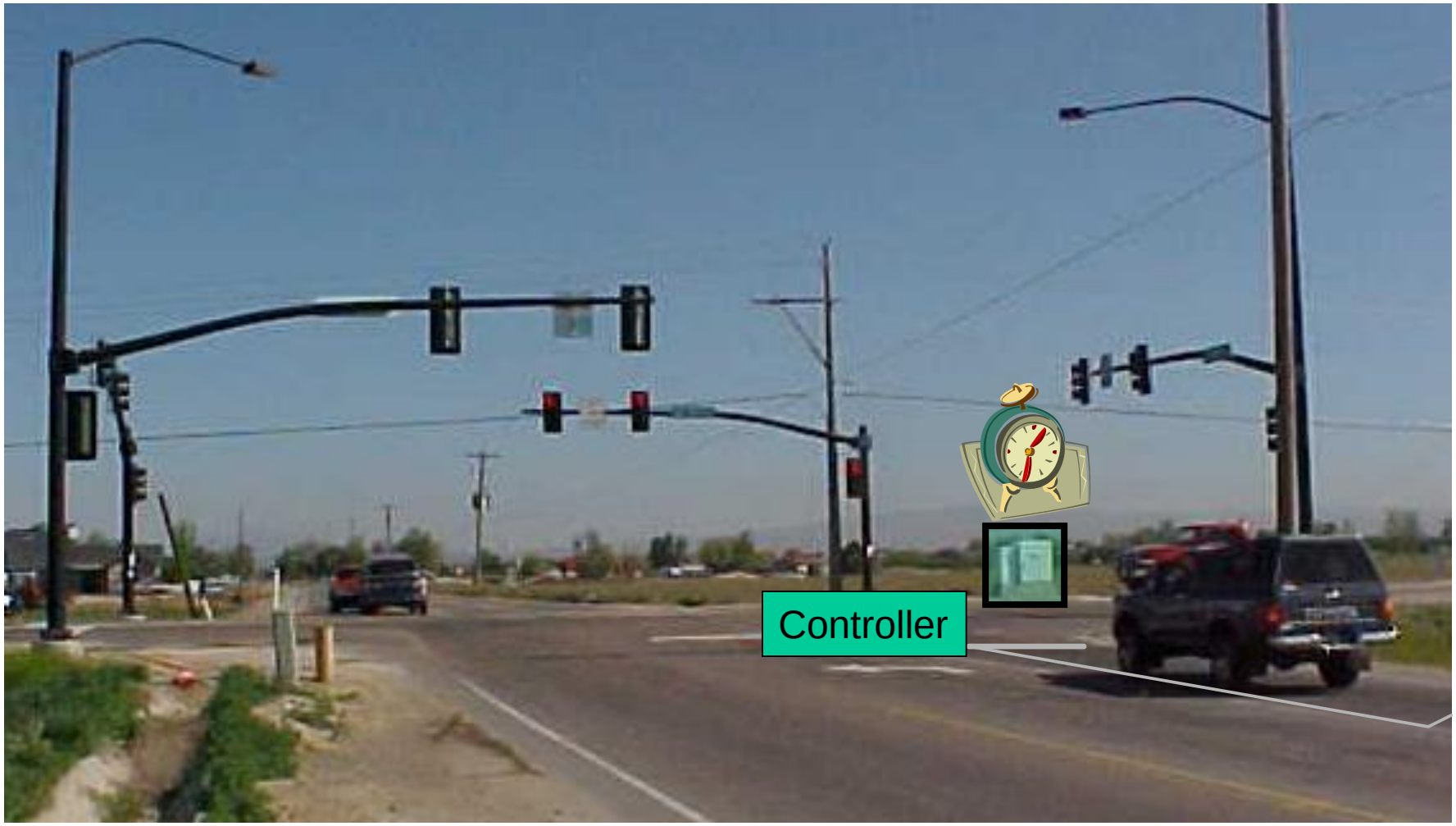
- Timers or timing processes
  - Minimum green
  - Maximum green
  - **Vehicle extension/passage time/gap time**

The ***passage timer*** also becomes active when the phase becomes active. The passage timer begins at its established value and times down until it reaches zero, or times out. However, if a call is received on the active phase during this timing process (when the passage timer is active), the passage timer will be reset. But when the passage timer expires, and if the minimum green timer has expired, the green display will turn off and the phase will begin to terminate.

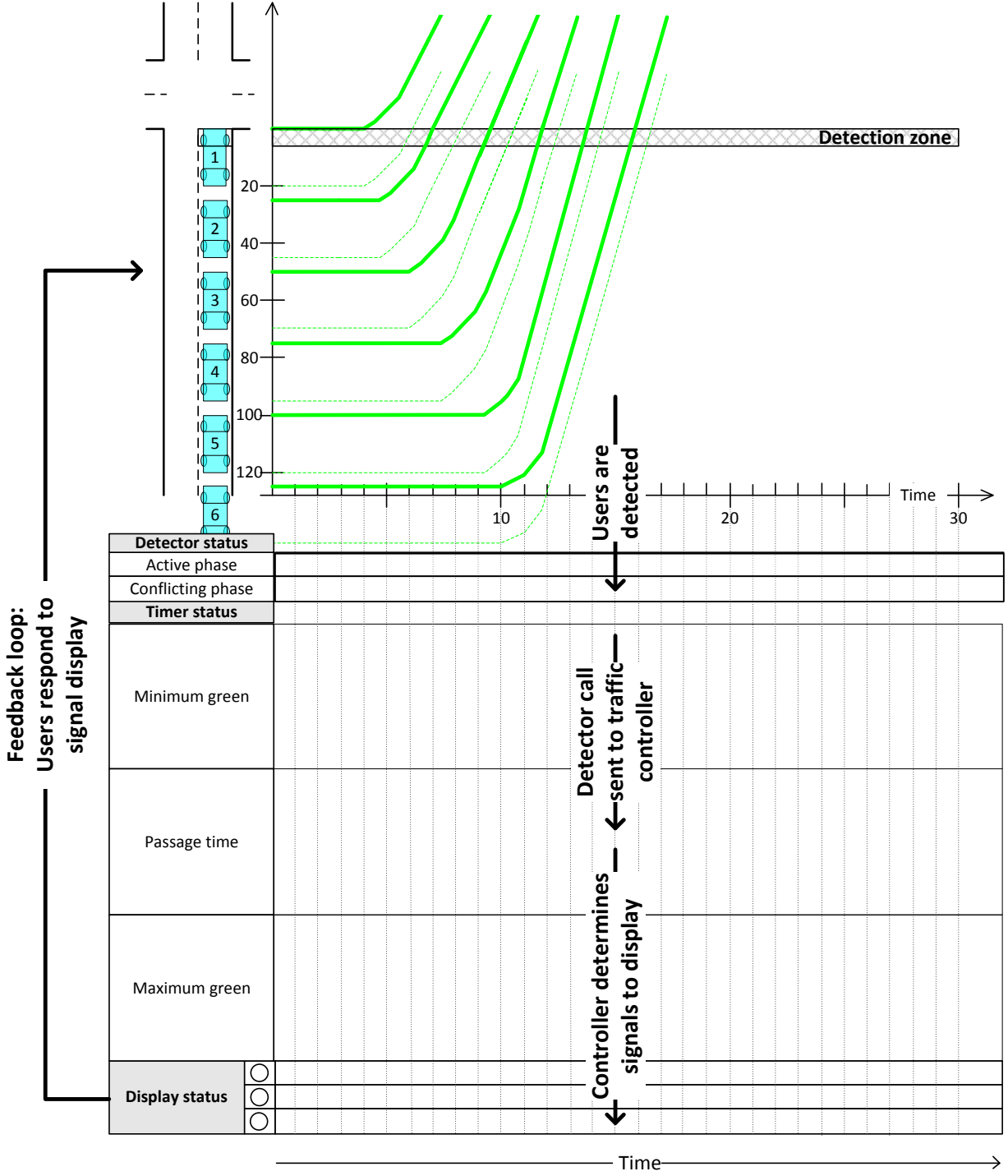


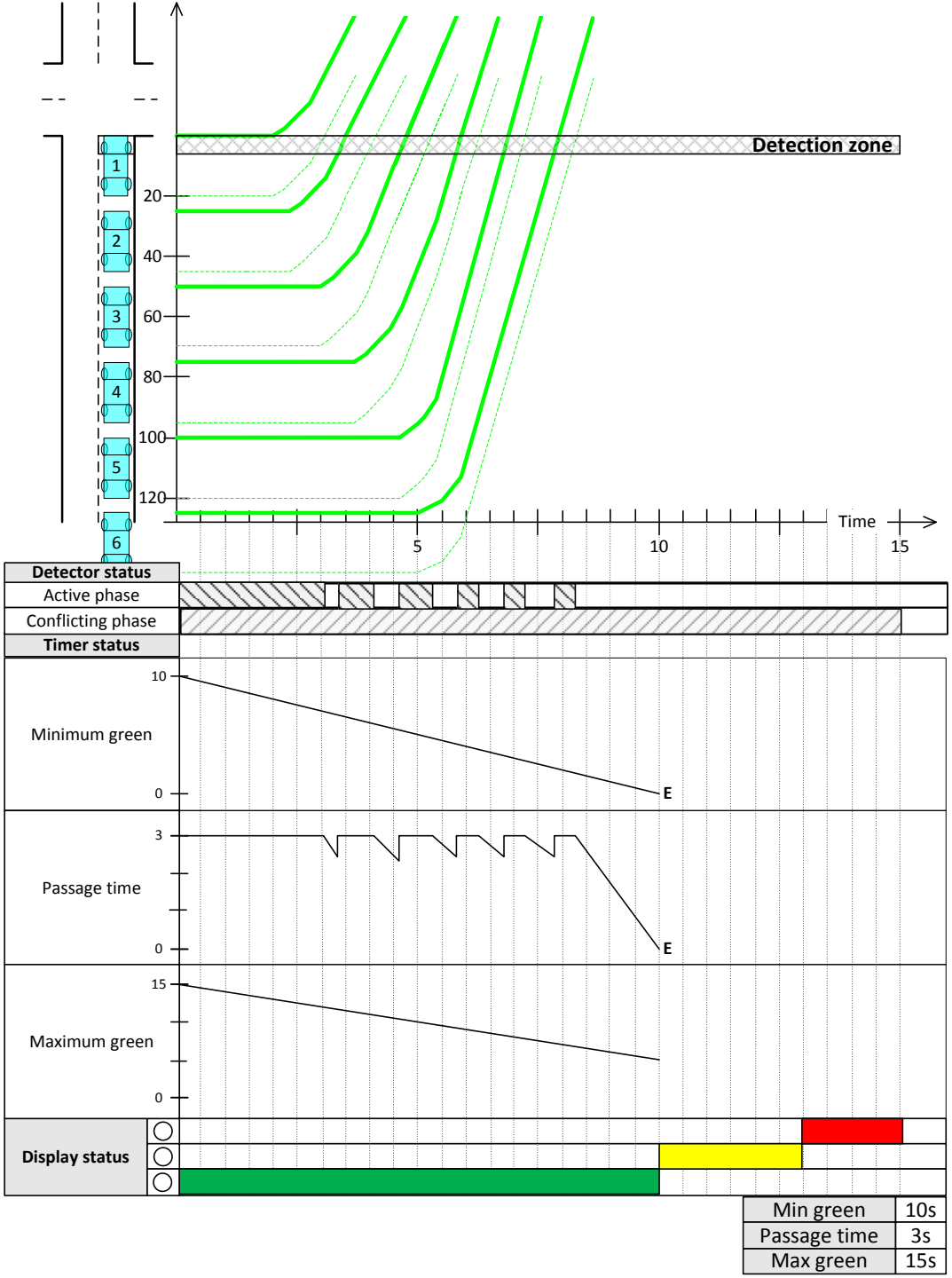


- Timers or timing processes
  - Minimum green
  - Maximum green
  - **Vehicle extension/passage time/gap time**



- Phase termination at isolated actuated controller
  - Gap out
  - Max out


Detection zone
1
2
3
4
5
6
20
40
60
80
100
120
Time
10
20
30
Users are detected
Detector status
Active phase
Conflicting phase
Timer status
Minimum green
Passage time
Maximum green
Display status
Detector call sent to traffic controller
Controller determines signals to display
Feedback loop: Users respond to signal display
Time



Min green	10s
Passage time	3s
Max green	15s

For next time…

Class 09 (9.14)

Discuss: A15, A16 results

Mini-lecture: A17

Discuss: A17 CTQ

Do/Discuss: A18

Homework (due 9.16):

- Preview: A19, A20, A21

Email to me: One question that you have on today's discussion on timing processes.