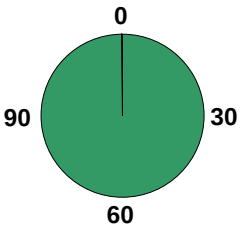
Information on
Signal Timing

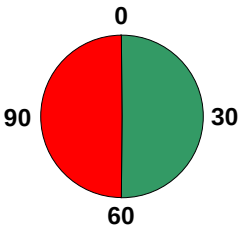
*Why is the **GREEN** light on the traffic signals so short? Why is the **RED** light on for so long?*
*Can the **YELLOW** light be made just a little bit longer?*

How do you time a traffic signal?

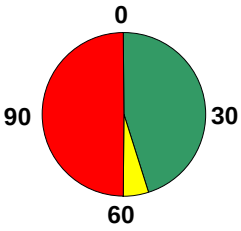
Traffic signal timing starts with knowing how much traffic is on the street. Many traffic counts are taken every year to provide data to signal timing specialists or experts. Let's use an example of a typical intersection: This intersection has leading left turns on each approach. For this example, we will use a two-minute (120 second) cycle length. A cycle length is the time from when you get a green indication until you get the next green indication.



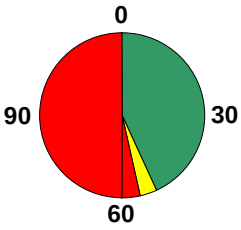
Two-minutes of green time sounds like a lot, but after it is broken up to all the needed phasing, it isn't.



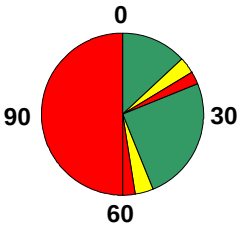
Assuming an even split in traffic, half of the green time goes to the east/west traffic, half to the north/south traffic.



The yellow, or clearance, time must be provided to notify traffic that the green signal will be ending.



Additional all-red time is added to prevent crashes between traffic starting up and vehicles going through the intersection late in the crossing yellow phase.



Adding a turn arrow takes away not only the time for the arrow, but also time for the yellow and all red phases that go with the arrow. You are now down to only 30 seconds of green time for your approach, enough time to move 12 cars per lane.

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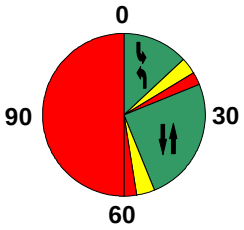
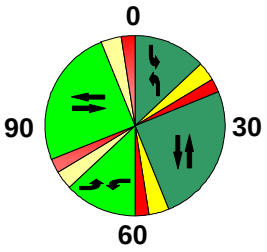


Pedestrian movements must also be accounted for when considering signal timings. The WALK interval gets people started across the street, the flashing DON'T WALK interval allows enough time for a person who just steps into the street to get all the way across at standard walking speed. The WALK and DON'T WALK intervals must be done during the through movement phase time.



As you can now see, the complete cycle length is divided up to give each direction time for the needed phases for each approach. As the cycle length is set, changing one phase can greatly impact another phase.

Why can't you simply make the cycle longer to allow more green time?

Another component to the traffic signal timing is coordination with the adjacent four other traffic signals (one on each approach). This coordination must take into account both the departing traffic from this traffic signal and the arriving traffic from the adjacent traffic signals. To make the coordination work, all the traffic signals need to be on the same cycle length.

How is the yellow time determined?

The yellow, or clearance, time is between 3.0 to 6.0 seconds long. It is determined based upon the posted speed of the roadway and the width of the intersection. This clearance time range is required to be used by the *Manual on Uniform Traffic Control Devices* (**MUTCD**).

What is the all-red time?

The all-red time is a phase, which is about 1 to 3 seconds, between movements to allow for the vehicles in the intersection to clear before another phase is given a green indication. The amount of time is also based on the posted speed limit on the roadway and the width of the intersection.

Want More Information?

This flyer is for general purposes only. For more information, please contact the Clark County Department of Public Works, Traffic Management Division at (702) 455-6000 or email **InTheWorks@ClarkCountyNV.gov**.

NOTE: The **MUTCD** is used throughout the country as the standard by which traffic control decisions are made. Nevada Revised Statute 484A.430 and County Code 14.12.070 require the County to use the **MUTCD** for placement of all traffic control devices. The complete **MUTCD** can be found at: **http://mutcd.fhwa.dot.gov/pdfs/2009/pdf-index.htm.**

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