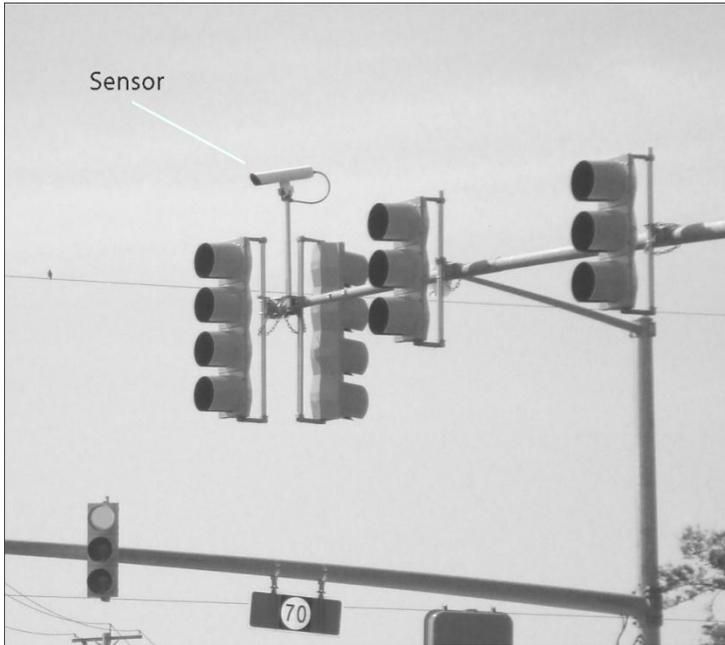


## Traffic Light Sensors

We face them almost every day. Traffic lights. You hate them on the days you're in a hurry because you're running late and you only seem to get all reds. But you bless them on other days when they all



seem to change to green as you pull up.

But what really drives you nuts is when the light doesn't change at all or if it does, it changes so quickly only one car could get through. This is especially true at turn arrows.

What gives? How does a traffic light detect that you've pulled up to a red light, and know to change it in a few seconds so you're not waiting there ALL DAY?

Every traffic light has some sort of timer

or sensor in it to dictate the flow up traffic.

First, some lights don't even have any sort of detectors. They simply, and always, operate on timers.

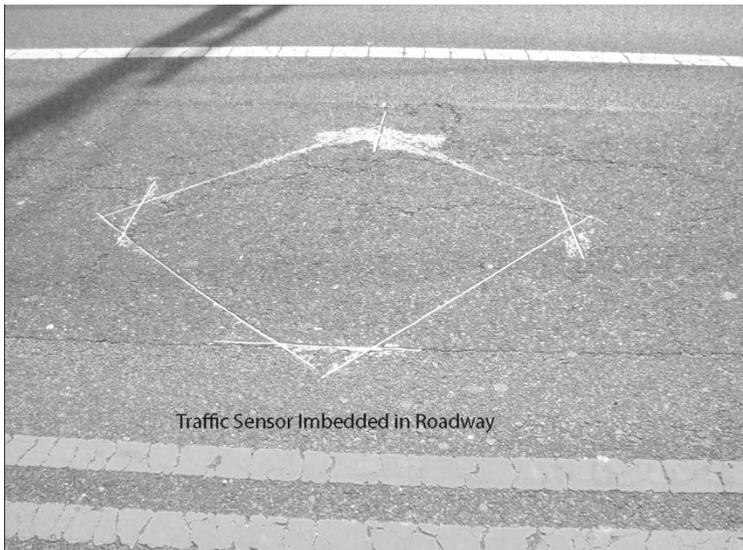
You'll find these more often in larger cities and busy intersections, where cars are traveling around the clock.

In our area, however, detectors are common. Because traffic flow is less consistent, timing is less important than just letting the fewer cars through in less time. These lights may detect when a car arrives at an intersection, when too many cars are stacked up at an intersection (to control the length of the light), or when cars have entered a turn lane (in order to activate the arrow light).

There are all sorts of technologies for detecting when a car has approached the intersection. By far the most common technique is the inductive loop. What's an inductive loop? Glad you asked. An inductive loop is simply a coil of wire embedded in the road's surface. To install the loop, they lay the asphalt and then come back and cut a groove in the asphalt with a saw. The wire is placed in the groove and sealed with a rubbery compound. You can often see these big rectangular or triangular loops cut in the pavement because the compound is visually obvious. But don't look too close. You ARE driving after all. These

sensors do not detect the weight of a vehicle, but rather sense how much it disturbs an electromagnetic field. However, they cannot detect your car if you do not move up to the line and are not over them.

The other types are infrared detectors and microwave detectors. Passive infrared traffic detectors sense the slightest changes in thermal radiation contrasts against the background that result from any moving object or body in the field of view. Microwave traffic detectors emit focused high-frequency signals within a specified frequency band. A vehicle moving into or through the detection area reflects the signals back to the detector.



So, when you come up to a light, move up to the line so the sensors can sense or 'see' you. Also, if you are in line for a turning lane do not leave too big a gap between you and the car in front of you so the camera or radar sensor knows how many cars are in the lane and will keep the arrow on longer. When the light changes move out quickly, you may be

the first or second car and you know you will get through, but the cars behind you would like to make the light also. So if you don't want the drivers behind you blowing their horn and giving you the Jersey salute, (not that I would ever do that) pay attention and move up to the line.