**POINTS TO PONDER:**

1. Normal range of yellow light timing is 3 to 6 seconds.
2. At speeds above 30 MPH, even 6 seconds total clearance time may not be enough to decelerate.
3. Most violations of the yellow change interval DO NOT result in crashes, due to “lost time” of 3 seconds per phase.
4. Longer change intervals are called for with higher approach speeds, regardless of the posted speed limit, therefore there is no such thing as merely “meeting standards” with yellow light timing.
5. Yellow intervals over 6 seconds may lead to increases in rear end crashes in some situations.
6. Photo enforcement can lead to increases in crashes due to inordinate driver focus on what the signal is doing, at the expense of everything else!

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### Institute of Transportation Engineers Formula for Calculating Vehicle Stopping (aka, Critical) Distance

\[
S = Vt + \frac{V^2}{2a} = 58.8 + \frac{58.8 \times 58.8}{2 \times 10 \text{ Ft/S}} = 58.8 + \frac{3457.44}{20} = 58.8 + 172.8 = 231.6
\]

- **S** = Stopping Distance in Feet
- **V** = Vehicle Speed, Feet Per Second, 40mph = 58.8 feet per second
- **t** = Perception-Reaction Time
- **a** = Deceleration Rate, 10 feet per second per second

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### ENgINEERINg vS. REaLITY

**I.T.E. Formula for the Time a Committed Driver Needs to Traverse the Critical Distance**

\[
Y = Vt + \frac{V}{2a} = 58.8 + \frac{58.8}{20} = 1 + 2.94 = 3.94 \text{ ITE Time to Decelerate 4 Seconds}
\]

2.8 Seconds Too Decelerate
Getting Back to Reality

1. **Credibility with the public** is the key to effective traffic control.
2. ITE and the engineering community should consider current driver population, vehicle mix, and distractions when setting standards for yellow light timing.
3. **Longer yellows** can be an effective countermeasure to red light crashes, particularly right angle crashes.
4. Combination of Yellow plus All Red interval can keep yellows from becoming too long.
5. Photo enforcement should not be considered a substitute for good traffic engineering practice.
6. Other countermeasures such as better signal visibility using back plates, better intersection definition with striping, and fewer distractions such as unnecessary signing, could reduce crashes without the need for photo enforcement.

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