ODOT Vehicle Clearance Time

Yellow Change Intervals

ODOT's minimum yellow change intervals are shown in Table 1 by approach speed. These yellow change intervals are based on Formula 1 from *Determining Vehicle Signal Change and Clearance Intervals,* Institute of Transportation Engineers (ITE), 1994. The ODOT Minimum Yellow change intervals shown in Table 1 may be used where grades do not exceed a downgrade of 3 percent. For grades exceeding 3 percent, the ITE formula should be used. Left turns may be treated as 25 mph approaches. ODOT's minimum yellow change interval is 3.5 seconds and maximum yellow is 5.0 seconds.

Formula 1: ITE Yellow Clearance Intervals

$$y = t + \frac{v}{2a + 2Gg}$$

Where:

y = length of the yellow interval, to the nearest 0.1 sec;
t = driver perception-reaction time, recommended as 1.0 sec;
v = velocity of approaching vehicle, in ft/sec (or m/sec);
a = deceleration rate, recommended as 10 ft / sec^2 (3.05 m/sec^2);
g = acceleration due to gravity, 32 ft / sec^2 (9.8 m/sec^2); and
G = grade of approach (3% downgrade would appear as -0.03)

Red Clearance Intervals

ODOT's minimum red clearance intervals are also shown in Table 1. These values may be lengthened at some intersections as deemed necessary by engineering judgment. Considerations may include intersection width, vehicle and pedestrian conflict points, and other factors.

Table 1: Minimum ODOT Yellow Change and Red Clearance Intervals

Posted Speed *(mph)*	**ODOT Minimum Yellow Change Intervals(1)(2)**	**ODOT Minimum Red Clearance(2)**
25	3.5	0.5
30	3.5	0.5
35	4.0	0.5
40	4.3	0.5
45	4.7	0.7
50	5.0(3)	1.0
55	5.0(3)	1.0

(1) Applies to approaches with a downgrade of 3% or less.
(2) Some intersections may require more than the minimum yellow and/or red clearance.
(3) ODOT limits the yellow change interval to 5 seconds. The sum of the yellow change and red clearance intervals shall exceed the ITE yellow calculated from Formula 1.