The steps required to meet highway visibility safety standards are based on smoke density or sight distance along the travel route and then apply a "reduced visibility braking factor" similar to that required for braking in a foggy environment. This minimum acceptable visibility adjustment factor (AF) is 1.75 (California Highway Patrol, 1984). It is multiplied by the normal braking distance required for a vehicle to stop if traveling at a posted speed limit, given dry and clear (ideal) conditions.

Minimum Acceptable Visibility (MAV) is calculated using the **California Highway Patrol formula**:

$$MAV = (EB + FB)(AF) \text{ where}$$

MAV = minimum acceptable visibility at posted speed
EB   = Eye-to-brain reaction distance under clear conditions
FB   = Foot-to-brake reaction distance under clear conditions
EB + FB = Total distance traveled while braking under ideal conditions
AF   = 1.75 (constant)

Posted Speed Limit	(EB + FB) x (AF)	MAV (ft.)	MAV @ night or Simple Divided Rd
10	(10.5 + 6.6) x 1.75	28	56
15	(16.0 + 12.5) x 1.75	50	100
20	(21.5 + 22.2) x 1.75	76	152
25	(27.0 + 34.7) x 1.75	108	216
30	(32.5 + 50.0) x 1.75	144	288
35	(38.0 + 68.0) x 1.75	185	370
40	(43.5 + 88.9) x 1.75	232	464
45	(49.0 + 112.5) x 1.75	283	566
50	(54.5 + 138.9) x 1.75	338	676
55	(60.0 + 168.0) x 1.75	399	798
60	(65.5 + 200.0) x 1.75	465	930
65	(71.0 + 234.7) x 1.75	535	1070

The MAV should be doubled if smoke is present along the road at night. The MAV should also be doubled when the road is a simple divided highway, because there is an increased chance of head-on collisions. The visibility adjustment factor does not take into account a head-on encounter of two vehicles traveling in opposite directions.

Mitigating Reduced Visibility Situations
Take the following steps to mitigate for reduced visibility when a paved road is affected by smoke. These actions are presented in order of decreasing visibility; implementation of step 3, for example, means that steps 1 and 2 have been taken.
1. Post "Smoke on Road" signs when visibility is twice the MAV value or less: for example, the sight distance is reduced to 220 ft and the posted rate of speed is 25 mph (MAV = 108 ft).
2. Reduce posted speed limit when visibility is at MAV value, or less: for example, sight distance is 110 ft and the posted speed is 45 mph (MAV =283 ft); therefore, the posted speed limit must be reduced, to 25 mph or less.
3. Unless a lead car is on scene, stop traffic by closing the road to travel when the ratio of actual visibility to MAV is 1/2 or less: for example, the sight distance is 50 ft and the posted speed limit is 25 mph (MAV = 108 ft).
4. When the ratio of actual visibility to MAV is less than 115, close the road to all but administrative use.