We modeled the transportation of smoke particles from a wildfire and the presence of fog particles on a highway to determine the degree of decreased visibility for automobile drivers. Accidental wildfires and prescribed burns produce large PM2.5(smoke particle) concentrations that travel to highways and lead to major motor vehicle accidents as a result of driver impairment, especially when fog exists. We studied the concentration of PM2.5 and fog particles in the driving view of automobiles on the highway by using numerical and analytic methods to solve diffusion-advection partial differential equations. The final concentration of smoke and fog particles after a period of wildfire burning was compared to a visibility range chart to determine the level of visual impairment for drivers on the highway. (Received September 18, 2012)