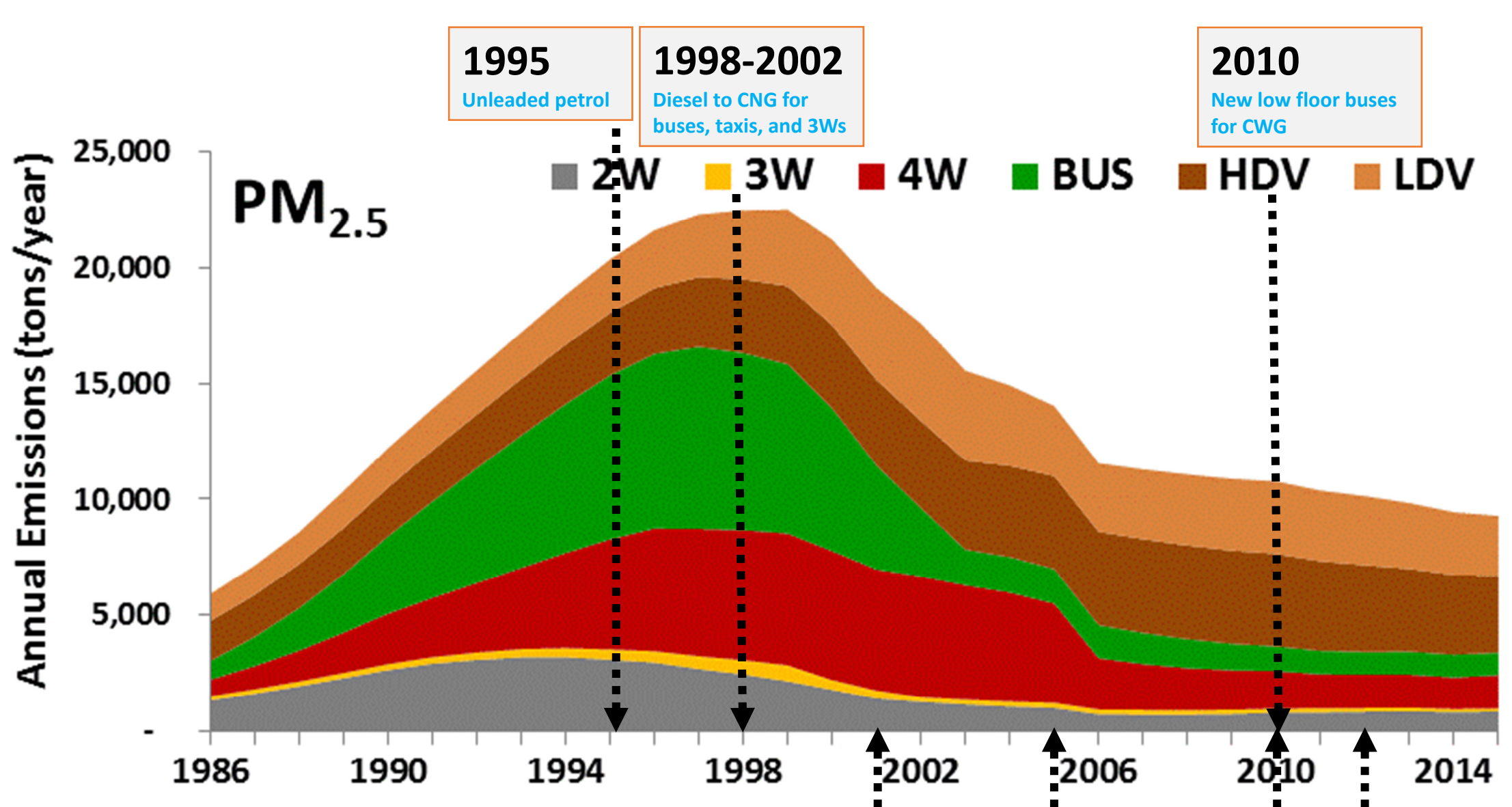
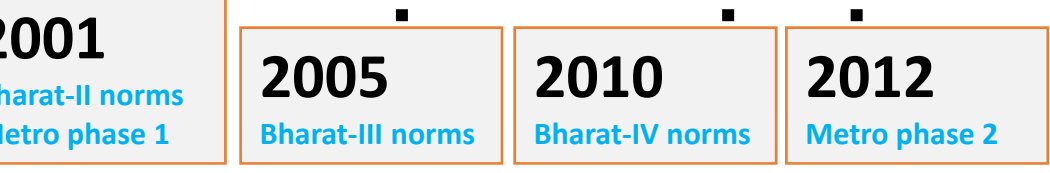


# understanding road transport emissions in the Greater Delhi region

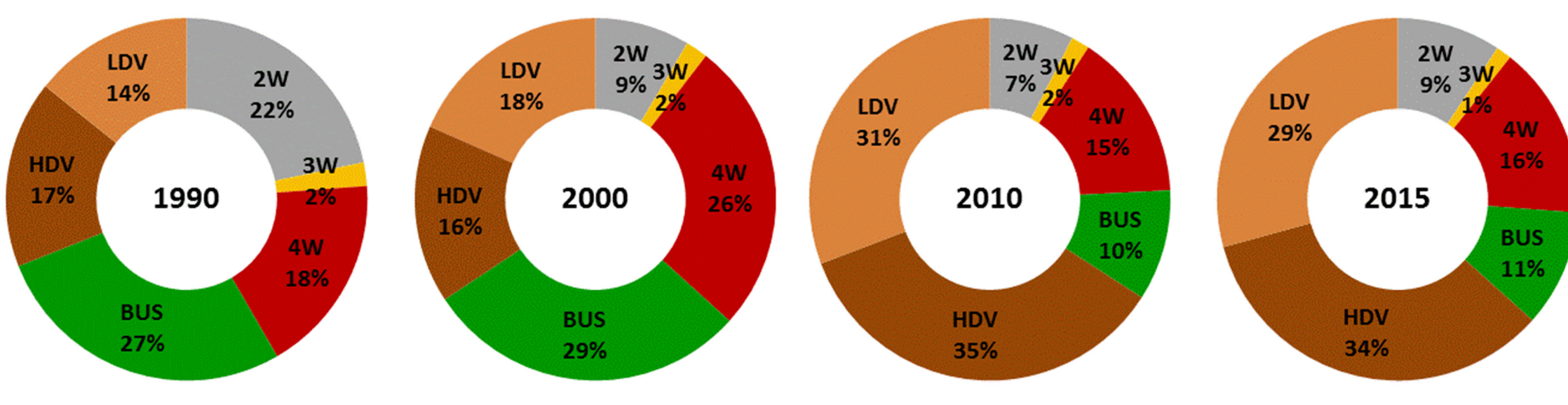


## modeled road transport emissions for the Greater Delhi region

including Delhi metropolitan area and its satellite cities covering an area of 80 km x 80 km

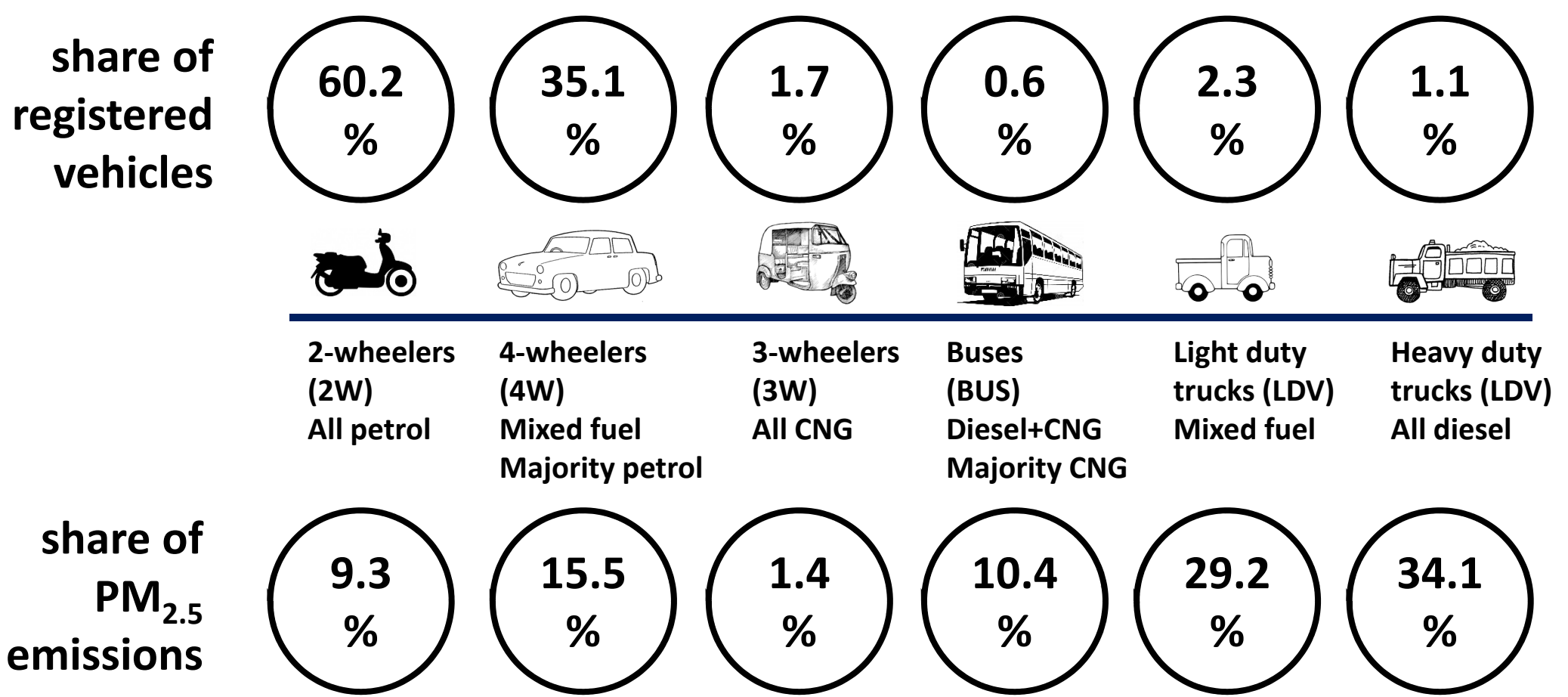


Source: Goel and Guttikunda, 2015, Atmospheric Environment



## 2015 road transport in numbers

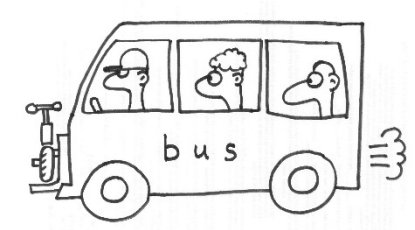
total registered number of vehicles **8.8 million**



## controlling road transport emissions

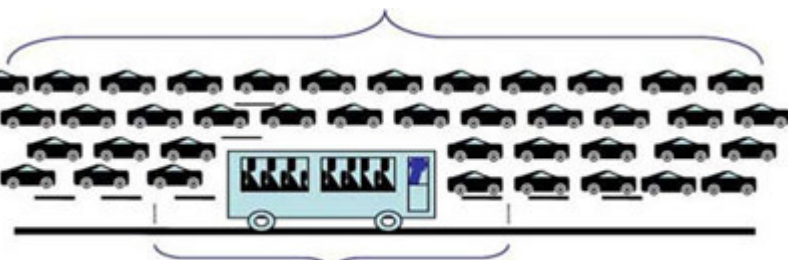
$$\text{emissions} = \text{\#vehicles} * \text{\#km traveled} * \text{\#emission rate}$$

reduce the number of vehicles on the road. This can be achieved via an improved and efficient bus, auto, and taxi systems; via incentives like free rides on buses and metro; by providing good walking and cycling infrastructure; via disincentives like congestion pricing, higher sales taxes, higher registration taxes on older vehicles, higher parking fees; by optimizing freight movement in the city



reduce the vehicle kilometers traveled by individual vehicles. This can be achieved via an improved and efficient bus, auto, and taxi systems; via incentives like free rides on buses and metro; by providing good walking and cycling infrastructure; via disincentives like congestion pricing, higher sales taxes, higher registration taxes on older vehicles, higher parking fees; by optimizing freight movement in the city

40 people driving alone, 60 feet between vehicles = 3000 feet (0.5 mile)



1 bus, 50 feet long, 50 passengers = 175 feet (with safe spacing)

Courtesy: bikeforum.com

reduce the fleet average emission rate. This can be achieved by cutting down the on-road idling times; by improving the fuel quality; by introducing alternate vehicles (hybrid or electric); by inspecting and maintaining for a good engine performance for long years; by reducing the wear and tear on the engine via traveling less; by introducing diesel particulate filters for heavy duty trucks and buses

**this document presents an understanding of road transport emissions, which is only a part of the air pollution problem in Delhi**

Others include power plants, residential cooking and heating, small and large scale industries, open waste burning, fugitive dust, and seasonal open fires