

# **1 Aggregate trends over the past 50 years**

- Travel by automobile has increased from 80 billion passenger miles to 700 billion passenger miles.
- Travel by “other” modes has declined from 180 billion passenger miles to 100 billion passenger miles.
- Total length of track declined from 30,000 km to 16,000 km.
- Total length of roads increased from 300,000 km to 400,000 km.

## **2 Public investments in the 1990's**

- Roads: \$4 billion annually.
- Rail: Increased from \$2 billion to \$4 billion annually.
- Rail rolling stock, ports, and airports less than \$1 billion annually.
- Operating costs of London underground are approximately double operating revenues.

### **3 Private expenditures in 2002/2003**

- Average motoring expenditures make up 12.5% of the average household budget.
- Average expenditures on other transport make up 2.1%.

## 4 Congestion in the 1990's

- Number of people entering London during morning peak increased from 800,000 to 900,000.
- Number entering by private car declined from 150,000 to 100,000.
- Traffic speeds roughly constant.
  - 10 mph in central area
  - 12 mph in inner area
  - 17 mph in outer areas

## 5 Air pollution in the 1990's

- $NO_2$  (nitrogen dioxide) emissions declined from 2.6 million tons to 1.6 million.
- $CO$  (carbon monoxide) emissions declined from 6.9 million tons to 3.2 million.
- $VOC$  (volatile organic carbons) emissions declined from 2.4 million tons to 1.4 million tons.
- Lead emissions declined from 2.3 million tons to 162,000 tons.
- $PM_{10}$  (particulates) declined from 298,000 tons to 161,000.

## **6 Passenger casualties**

- See table.