THE ENVIRONMENTAL BENEFITS OF eWORK

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Haven't we largely solved this problem?

Trends of key air pollutants in Minnesota

Sources: MPCA Air Quality Index; Carbon Dioxide Information Analysis Center, http://cdiac.ornl.gov; and MPCA air monitoring data.

Not out of the woods

Minnesota ozone trends — 1994–2007
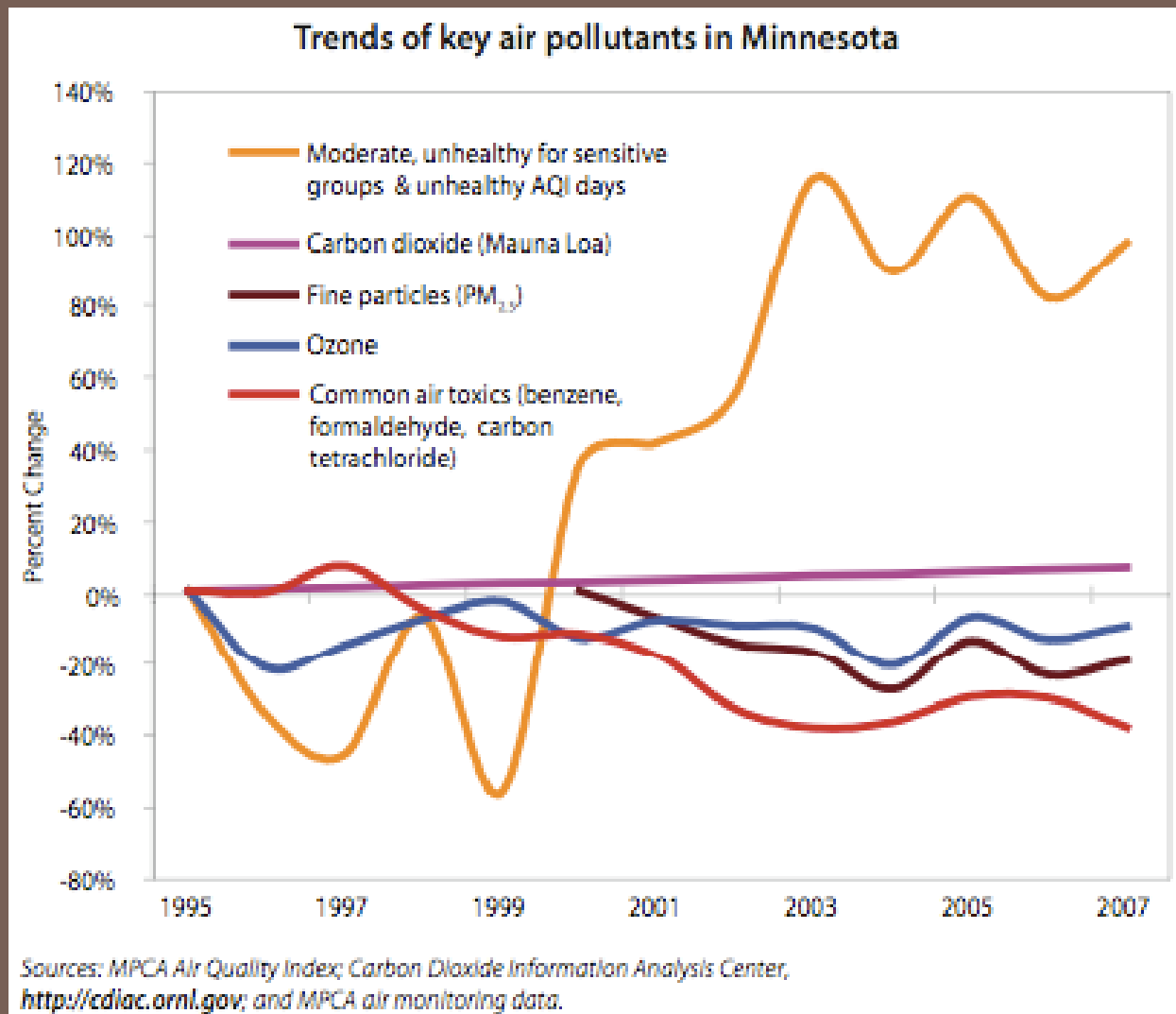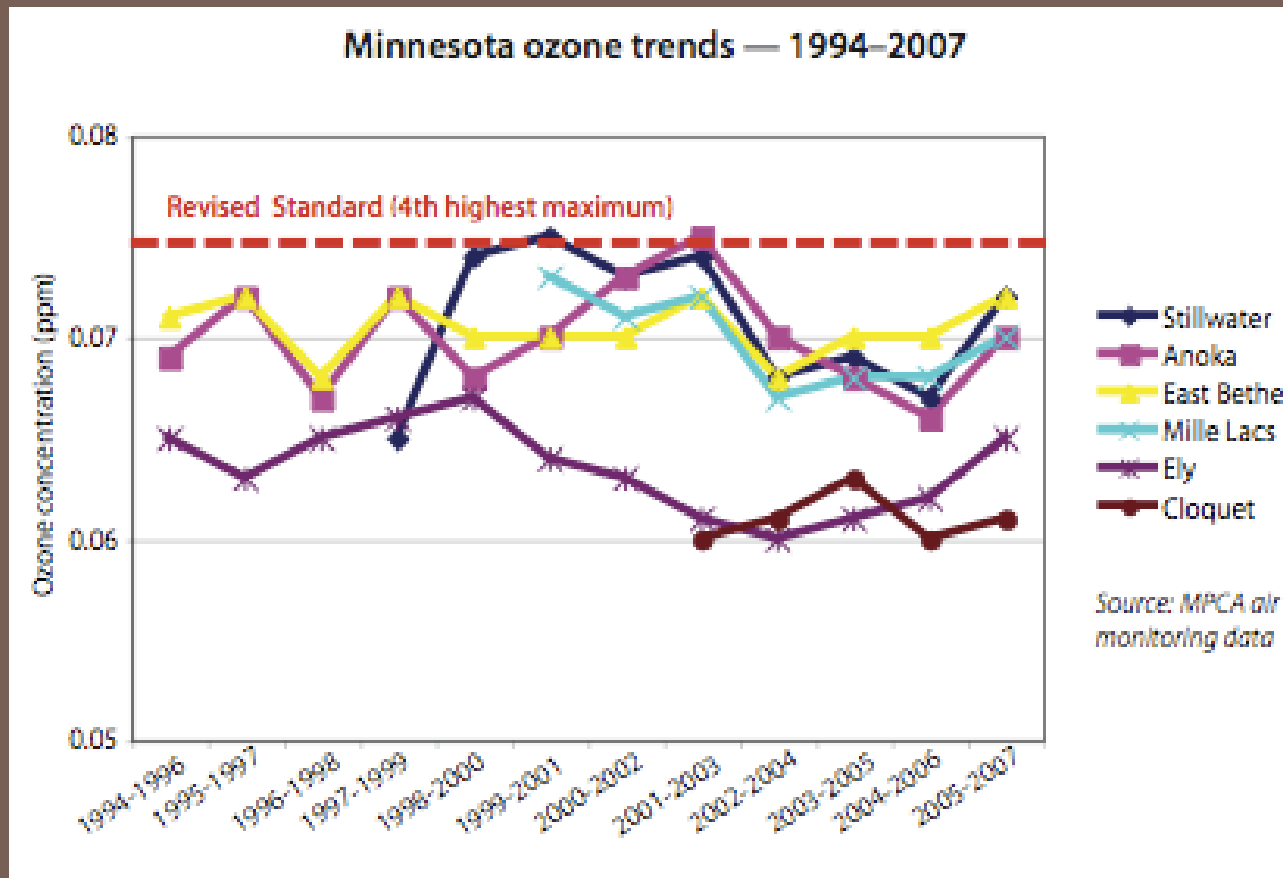
- MPCA seeks to reduce levels of NOx by 30 percent and VOC levels by 20 percent from 2002 levels by 2012.
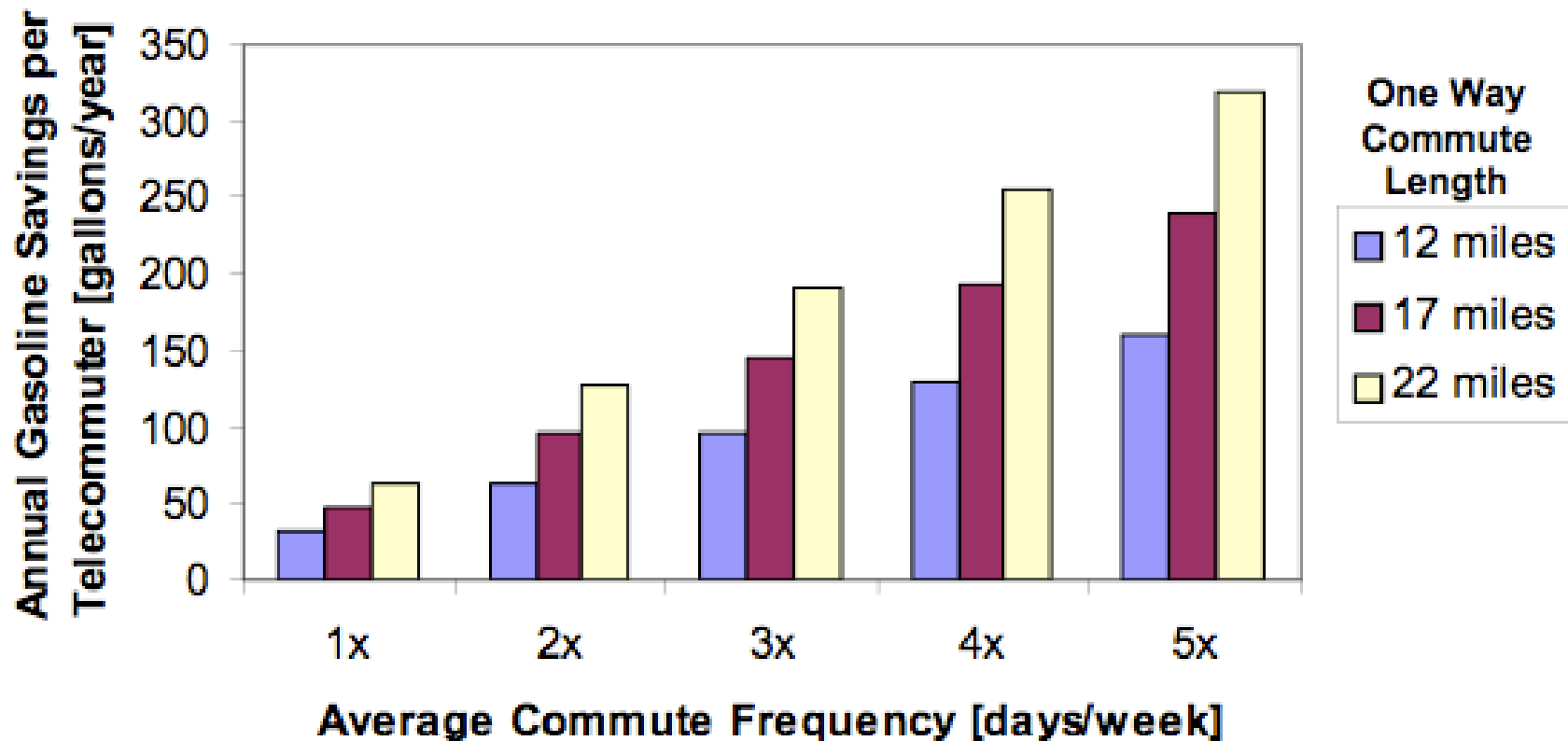
Sources of benefits:
1. Less vehicle travel

- Current telecommuters have commutes that are 2x as long as typical

- A travel diary-based study of telecommuting:
  - Average one-way commuting distance on TC days was 22 miles
  - On TC days, work-related mileage decreases by about <u>75%</u>
  - On TC days, the number of other trips increased by about 20 percent

- Telecommuting decreases total vehicle miles traveled (VMT) by the telecommuter by more than **50%** on telecommuting days.

Source: TIAX, "The Energy and Greenhouse Gas Emissions Impact of Telecommuting and e-Commerce", July 2007
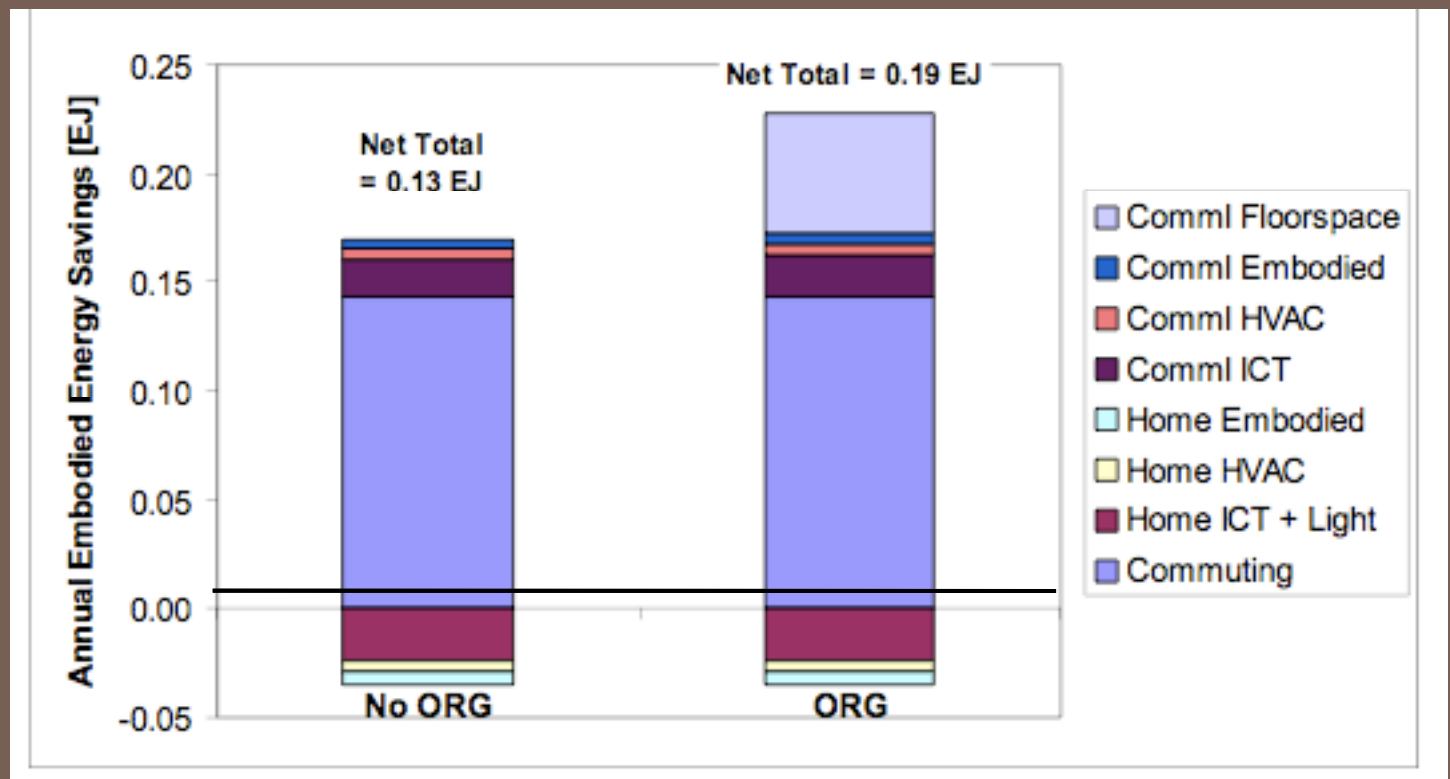
= less fuel use

Sources of benefits:
2. Building energy use

"Telecommuting energy savings increase dramatically when it reaches a scale sufficient for organizations to reduce office floor space."

Benefits build on each other:
Congestion rises/falls faster than traffic

- In 2008, US traffic congestion fell by historic amounts.
  - Urban congestion declined by 30 percent overall
  - Improved at every hour of the day.
  - The dramatic decline almost universal:
    down in 99 of 100 largest metro areas.

- Source of gains
  - On urban interstate highways, total vehicle miles traveled in the US declined by about 3 percent compared with 2007

- Source of data
  - INRIX: tens of billions of reports from GPS-equipped vehicles. (http://scorecard.inrix.com/scorecard/)

eWork is cheaper and faster

= greener

- $1 in TMA can absorb as much commute demand as $7 in new lane miles.
- Flexible
  - Can be started ASAP
  - Can be adjusted up and down to demand

= much less embodied energy

= not locked in to certain kind of energy/environmental impacts