

# LISBOA 2010 16th World Meeting

MAY 25/28



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**Director**

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# Measuring the Benefits of Roads

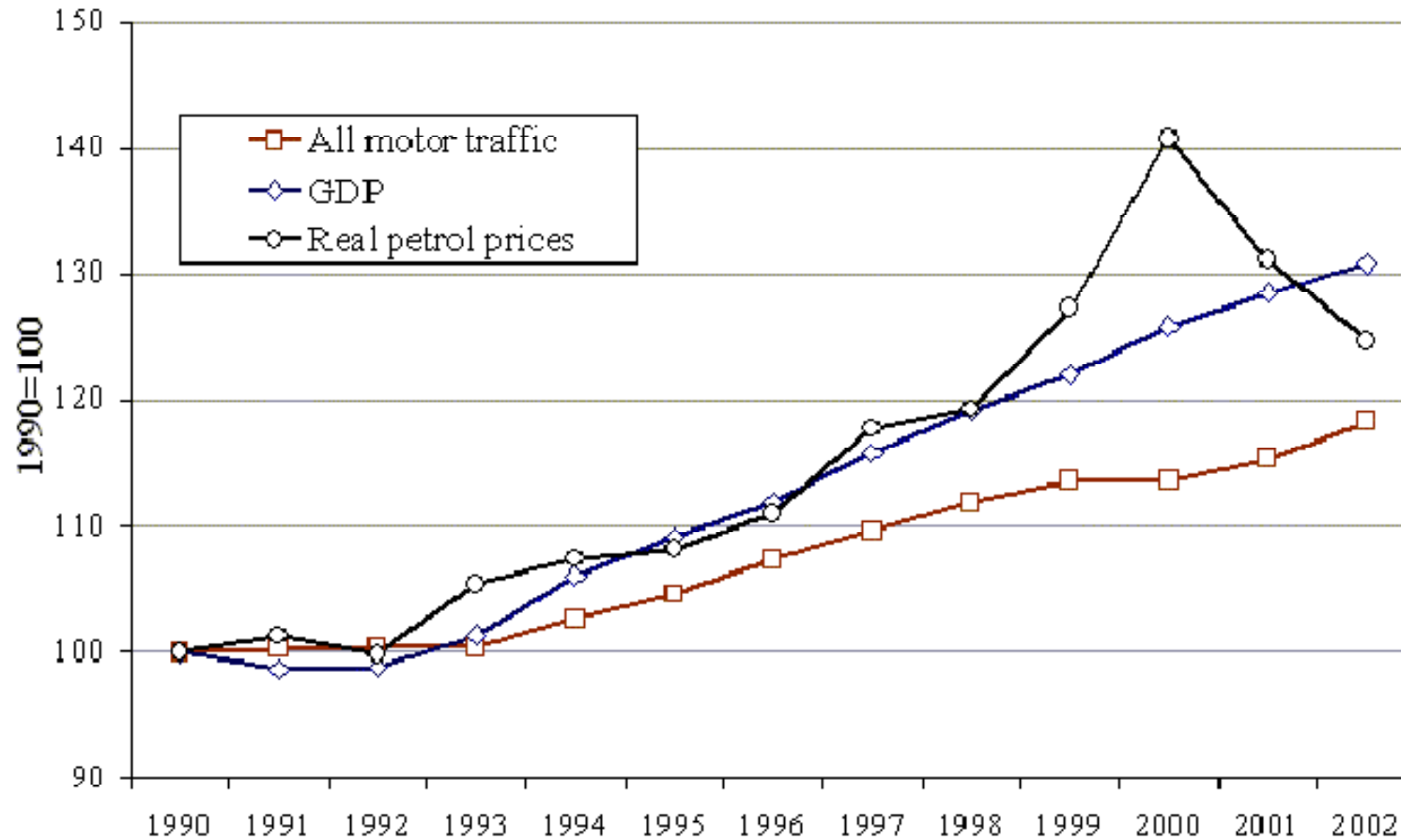
A UK perspective



## Benefits & Costs:

- **Macro-economic**
  - **Micro-economic**
  - **Households & individuals**
  - **Environmental**
  - **Safety**
- 
- **Overall Cost : Benefit**

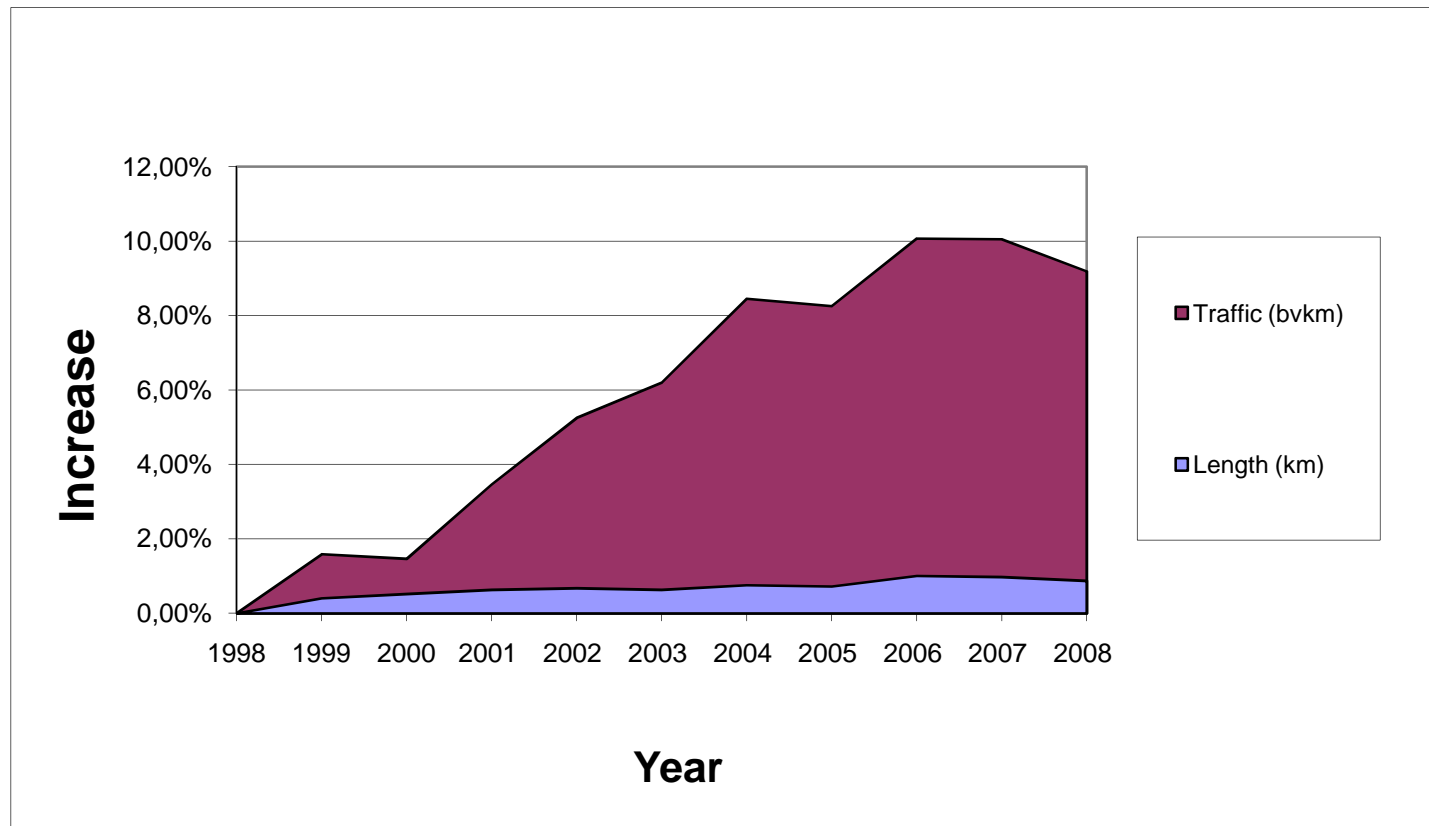
## Great Britain road traffic, GDP and real fuel prices



*Department for Transport (UK) National Transport Model*



# Growth in GB Major Road Network Length & Traffic



Source: RUA Road File 2010



## Passenger Cars per '000 population

Luxembourg	646
Italy	591
Germany	542
Austria	496
France	491
Belgium	464
Sweden	454
Spain	459
UK	447
Pre-enlarged EU avg	491



## EU passenger transport; passenger km by mode.

Country.	Car	M/cycle	Bus & Coach	Tram & Metro	Rail
France	83.9	0.3	5.2	1.5	9.1
Germany	83.9	0.6	6.4	1.5	7.6
Italy	80.7	1.2	12.0	0.7	5.4
Netherlands	83.5	0.6	6.8	0.8	8.3
Spain	80.7	0.9	11.7	1.5	5.2
UK	86.5	0.2	6.3	1.1	5.9
EU27	81.8	0.5	9.3	1.5	6.8

*Source: RUA Road File 2008/09*



## What drivers would miss most if they did not have a car

	1st mention	Other mentions	All mentions
• <b>Sense of freedom</b>	<b>42</b>	<b>19</b>	<b>61</b>
• <b>Ability to go shopping</b>	<b>12</b>	<b>29</b>	<b>41</b>
• <b>Ability to go to work</b>	<b>21</b>	<b>15</b>	<b>36</b>
• <b>Going to leisure activity</b>	<b>5</b>	<b>26</b>	<b>31</b>
• <b>Visiting relatives</b>	<b>5</b>	<b>20</b>	<b>25</b>
• <b>Going on holiday</b>	<b>1</b>	<b>9</b>	<b>10</b>
• <b>Taking children to school</b>	<b>2</b>	<b>7</b>	<b>9</b>

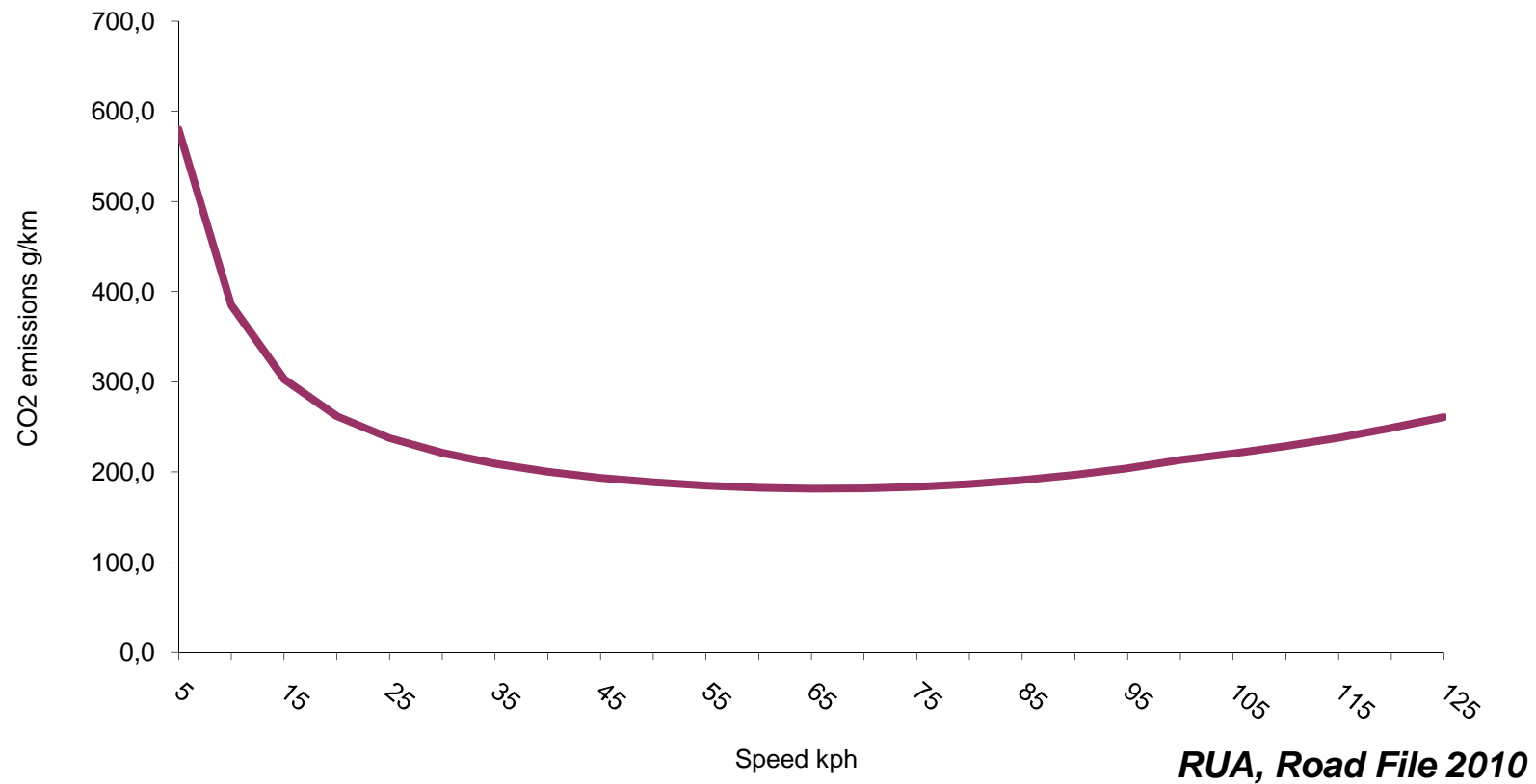
*Source: Lex Report on Motoring, 2001*

# Speed and Emissions

Speed(km/hr)	NOx	PM10	CO	NMHC	CO2
5	3.06	0.144	7.37	1.00	580.3
120	1.51	0.060	1.41	0.16	248.8

*Source: UK Highways Agency Local Authority Air Quality Management*

# CO<sub>2</sub> Emissions and Speed



# Safety

Travel on single carriageway trunk roads involves 6 times more risk than travel on motorways.

(EuroRAP 2009)

## Average cost benefit ratios for UK transport schemes

- Highways Agency Roads 4.66
- Local roads 4.23
- Heavy rail schemes 2.83
- Light rail schemes 2.14
- Local public transport schemes 1.71

*Source: Eddington Transport Study, 2006*



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## Evaluation of the Newbury Bypass 5 years after opening

	Predicted	Actual
Journey time savings	365.4	583.5
Vehicle operating costs	4.5	4.5
Accident savings	35.3	17
Present Value of Benefits	405.2	605.0
Present Value of Costs	74.9	104.5
Net Present Value	330.3	500.5

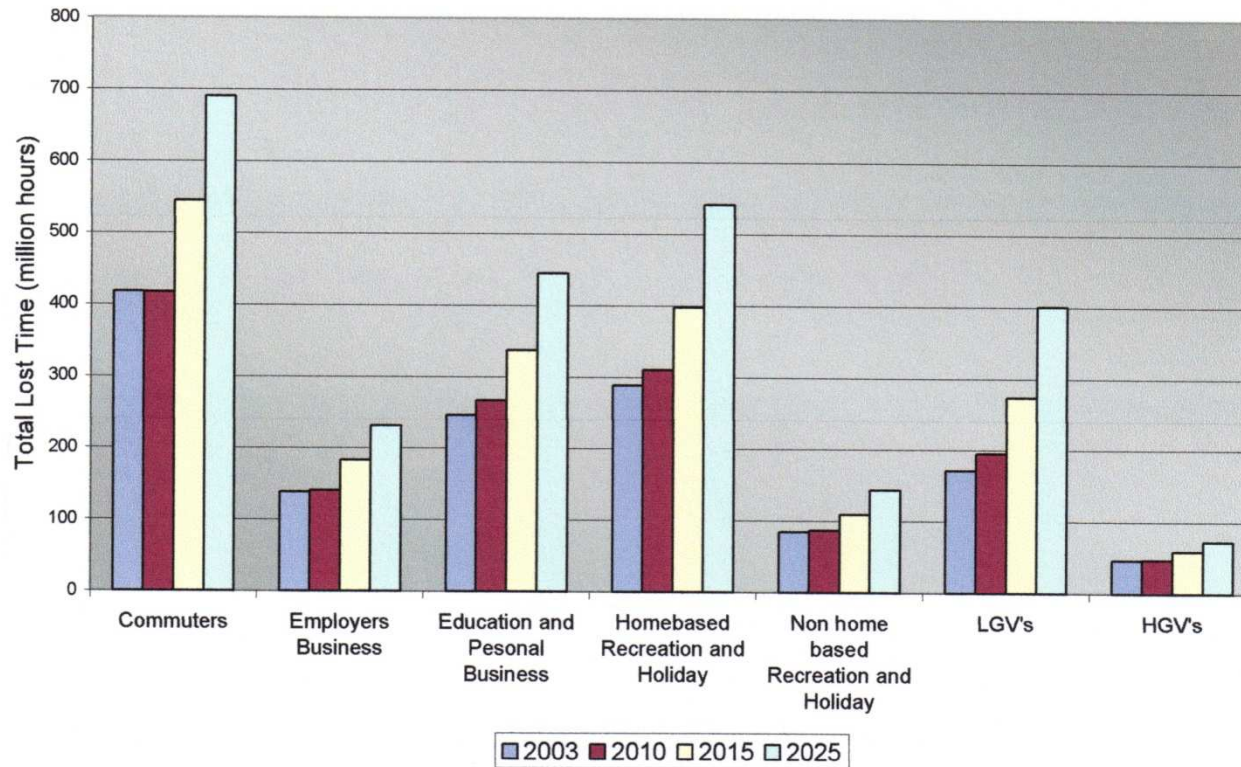
*Source: Atkins for the Highways Agency (UK), year*



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## UK Traffic Delays Forecast - by Dept for Transport





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