Towards Quieter Cities – Measures for Reducing Transport Noise - Mary Stevens
Our vision:
A cleaner, quieter, healthier world

Goal: To promote integrated policies and practices that encourage the effective management and control of noise

Aims:
To maintain and increase the profile of noise in the UK
To maintain and increase the profile of noise in European and international policy
To maintain and increase the profile of noise in UK policy making
To encourage the development and implementation of appropriate and workable legislation and guidance
Why reduce traffic noise in London?

• > 27% of Londoners exposed to road traffic noise over the current World Health Organisation guideline
• many green spaces blighted
• around 500 cases of ischaemic heart disease per annum attributable to road traffic noise in Greater London
How Noisy are City Streets?

Rough Guide to noise levels in modes of transport

<table>
<thead>
<tr>
<th>Mode of transport</th>
<th>dB (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking/cycling</td>
<td>74</td>
</tr>
<tr>
<td>Car</td>
<td>74</td>
</tr>
<tr>
<td>Motorcycle</td>
<td>82</td>
</tr>
<tr>
<td>Bus</td>
<td>77</td>
</tr>
<tr>
<td>Train/tram</td>
<td>77</td>
</tr>
<tr>
<td>Underground</td>
<td>80</td>
</tr>
</tbody>
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Passchier-vermeer 1993
Why reduce traffic noise in London?

Legislative drivers

• EU Environmental Noise Directive 2002/49/EC (END) sets out to ‘avoid, prevent or reduce on a prioritised basis the harmful effects, including annoyance, due to exposure to environmental noise.’

• Noise Action Planning – Defra thinking to date
  “To promote good health and a good quality of life through the management of noise within the context of sustainable development”
Public Attitudes to Traffic Noise

- 19% of people are bothered by noise from cars/motorbikes in their neighbourhoods in England (MORI, 2008)
- 5% of Londoners say they have no quiet areas near their home (1% average)
- London residents are significantly more likely than average to say their quality of life is affected by noise (53% vs. 45%) (MORI 2007)
- Tendency not to complain about traffic noise
- Perception nothing can be done……
Traffic Noise Reduction
— some measures

1. Speed Reduction
2. Traffic Management
3. Quiet Traffic Calming
4. Quieter Road Surfaces
5. Quieter Public Transport
6. Reducing night traffic
7. Freight Distribution Centres
8. Quieter Vehicles
9. Quieter Tyres
10. Planning and Design
11. Driver Behaviour
Traffic Noise Reduction

Speed Reduction

- Bristol City Council – modelling work shows realistic speed reduction on M32 urban motorway could reduce noise
- LIFE funded work in Graz, Austria – reduction from 50kh to 30kh reduced noise 2.5 decibels in residential area
- Residential 20 mph zones
- Variable signs more effective than static signs
- Enforcement required
- Air quality and safety benefits too
Traffic Noise Reduction

Traffic Management

- **Remove the source**
  - Parking policies
  - improved public transport
  - pedestrianisation
  eg New Road, Brighton

- **Improve traffic flows**
  Eg co-ordinating traffic lights on hills found to reduce stop start and aggressive starts in Barcelona
Traffic Noise Reduction

Quieter Traffic Calming

Designed to reduce speed – should reduce noise

- Road humps can increase truck noise by up to 8dBLeq
  (poor design, driver behaviour)
- Chicanes can lead to aggressive driving
- Mini roundabouts – more successful – reduce speed and acceleration
- These measures studied in EU SILENCE project
Traffic Noise Reduction

Quieter Road Surfaces

- Can reduce noise up to 6dB
- Greatest benefit on higher speed roads
- Maintain quality of road surfaces (eg repeated excavation and poor patching doesn’t help!)
Traffic Noise Reduction

Quieter Public Transport

- After heavy goods vehicles, buses have the highest noise emissions in traffic
- Increasing bus use should reduce individual vehicle journeys
- Renewing fleets should can reduce noise
- Eg CNG buses introduced in Barcelona on highest noise routes proved popular – 25% of fleet by 2005
Traffic Noise Reduction

Reducing Night Delivery Noise

- Quieter Deliveries
  - Noise Abatement Society ‘Silent Approach’
  - based on Dutch Piek Scheme
- Wandsworth LB and Sainsburys – successful project
  - requires firm management to retain benefits
- Research into managing night time freight noise
  - 2008 – TRL looked at the London Lorry Control Scheme for TfL
  - Concluded in service testing LGVs best way forward, and carried out feasibility study of calculation model for noise and sleep disturbance
Traffic Noise Reduction

Freight Distribution Centres

- Managing freight distribution reduces noise and other impacts
  Eg Genoa in Italy, uses a centralised hub served by electric vehicles, reducing noise and air quality impacts in the city centre

- London
  “New freight centre cuts emissions and lorry trips by 70 per cent
  18 August 2006
  People around Bermondsey are enjoying cleaner air and less traffic after a unique construction distribution centre has successfully cut emissions and lorry trips by 70 per cent in just six months, slashing journey times by two hours and reducing congestion.

Local people are seeing significantly less traffic on the roads
The London Construction Consolidation Centre (LCCC) is a two year pilot study and was launched in January this year in Stockholm Road, Bermondsey”
Traffic Noise Reduction

Quieter Vehicles

- Engines, exhausts, acceleration, braking
- Room for improvement in EU standards
- Work underway for test to include stop start
- Use of electric and hybrid service vehicles in city fleets
Traffic Noise Reduction

Quieter Tyres

- Tyre rolling noise major source above 30 mph
- Reducing tyre noise more cost effective than sound insulation, noise barriers, road surfacing
- Quieter tyres are coming – regulation on quieter tyres and tyre labelling to include a ‘low noise mark’
- Environmental Protection UK plan to encourage procurement of quieter tyres
Traffic Noise Reduction

Planning and design

- Careful planning and good design can minimise noise impact
- Barriers, landscaping, non sensitive facades at roadside
- Bad design can cause noise impact
- Noise should be considered in any new development
  - below recent development on A23 leaving Brighton....
  - noise insulation in historic Copenhagen street
Traffic Noise Reduction

Education

- Vehicles are noisy – we all use them
- We can all make a difference
- Driver education essential
  - eco driving also quieter driving – widely promoted programme in The Netherlands
- Choose and use quieter transport
● Annual Awareness Raising Campaign
(established over ten years)
● 18 – 22 May 2009

Aims to:
● promote practical solutions to everyday noise problems
● promote communication and consideration between neighbours
● educate and inform noise makers and noise sufferers about the impact noise has on our everyday lives
● encourage everyone to take a quiet moment to think about noise
Noise Action Week

- Noise levels are increasing
- Noise affects the quality of life and potentially the health of everyone
- Everyone makes noise and all are affected by it
- NAW 2008 – Walk to School – Sound Detectives
- NAW 2009 – Defra funded Survey on transport noise attitudes
- Opportunity to raise awareness of transport (and other) noise issues
Find out More

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More Information
http://www.silence-ip.org/site/
www.tfl.gov.uk/freight