

## **The Regional Transport Strategy role of Tramways & Light Rail**

### **15. “Oslo PM Report”:**

A  
Summary  
About Particulate Matters  
From  
Passenger Transport  
In Oslo,

("Svevestøv fra persontransport i Oslo.  
En beregning av mengder og  
kostnader"),  
By Otto Andersen  
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Summary translated by Roy Budmiger

[www.vestforsk.no/dok/samandrag/r14-98.asp](http://www.vestforsk.no/dok/samandrag/r14-98.asp)

Summary 19/98

Undertaken 1998 based on figures from 1996 and projected to  
date (2006)

Particles are divided into five main categories

1. Exhaust from combustion engines
2. Asphalt wear
3. Tyre wear
4. Brake wear
5. Fine grinding of larger particles already torn loose from the road surface

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1. Exhaust from combustion engines:

PM 2.5 + PM 10. 133 tons/year.

A total 75% (99.75tons/year) are from private cars,

and 25 (33.25ton/year) from buses and taxis.

A total of bus & taxi emissions of

332.5 tons by 2006

2. Asphalt wear:

PM 2.5+ PM 10: - 179 tons/year.

A total 93% (166.47tons) are from private cars, 12.53 tons (7%) from buses and taxis.

This type of emission is anticipated to drop, by 35-71% depending on how the modal split will be due to tyre dubs being banned or highly taxed in Oslo.

There will be no reduction in the bus calculation, as bus & trolley bus do not use dubbed tyres.  
A total of bus & taxi emissions of 125.3 tons by 2006



It wears out – where does it go?

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### 3. Tyre Wear.

The amount of airborne pollution caused by the wearing down of tyres amounts to a total of bus & taxi emissions of 81.20 tons by 2006

### 4. Brake Wear.

The amount of airborne pollution caused by the wearing down of brake pads and associated equipment amounts to PM2.5+PM 10: 55 tons/year.

5. Fine grinding of larger particles already torn loose from the road surface: PM2.5+PM 10: 78 tons/year.

A total 94% (73.32tons) are from private cars, 4.68tons (6%) from buses and taxis.

Photograph of 10mm. Stone Mastic Asphalt surface after years trafficking, aggregate is now exposed.



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### In conclusion

The total tonnage for clean bus & taxi in the urban area by 2006 are as follows: -

-Exhaust from combustion engines	332.5 tons
-Asphalt wear	125.3 tons
-Tyre wear tons	81.20
-Brake wear	55.0 tons
-Fine grinding of larger particles already torn loose from the road surface	46.80 tons
 Total Pollution	 <u>640.8 tons.</u>

This summary does not give separate figures for buses and taxis.

A separate report from 2003 shows that private cars in Oslo made 3212 million person-km compared to taxis 175 million.

Assuming the number of persons in private cars and taxis being the same and assuming

taxis pollute the same as private cars, then taxis should add 5.2% to the private car figures (and reduce the same from buses only).

The direct pro rata costs incurred of Bus & Taxi pollution are apparently not included in full when the Cost Benefit Ratio (s) are calculated by DFT.

This results in a bias toward bus based systems and not the level playing field that is currently claimed by the Department of Transport and the UK Government's statement that Trams & Light Rail are too expensive