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Summary:

Road Package Drammen - People's experience of the environment in 1998/1999

In the town of Drammen years of increased traffic and extensive industrial and housing development has resulted in an overload of the road system in central town areas. In order to improve traffic environment and to alleviate the situation for the town's inhabitants the highway authorities will carry out a comprehensive development of the traffic system, the "Road Package Drammen". The most important elements are two tunnels, the Strømsø and Bragernes tunnels which reroute traffic to a new ring road system around the town centre.

In order to monitor the environmental effects during the various stages of development in Drammen, a series of environmental surveys are to be carried out. The purpose of the surveys is to analyse the environmental impacts from the traffic changes, how the population react to the changes, and the effect of traffic upon the everyday life and health of the residents.

The first of these surveys was carried out in June 1998 and 1999. In all, some 1400 residents in various parts of the Drammen area were interviewed. Traffic counts were undertaken and the mean (24 hour equivalent) noise level measured in decibels (dBA) was calculated in front of the most exposed façade according to the Nordic calculation method. This method adds 3dB to the calculated free field values to account for reflection from the façade. Indicators of air pollution were given by outdoor concentrations of NO_2, PM_{10} and $PM_{2.5}$. Both the period mean, the maximum values and the 98 percentiles were calculated. The estimation model AIRQUIZ that was employed, takes all pollution sources in the area into consideration along with actual wind and dispersion conditions.

The survey is a before study, and functions as a benchmark against which later studies can evaluate the effects of the various traffic and other measures. This report document results from this first study in the series.

Road traffic is by far the major problem for the residents in the area we have investigated. 54 percent of the respondents mention "road traffic" spontaneously when asked what they experience as the negative about the living environment where they live. 43 percent say that the traffic is annoying, and 18 percent are highly annoyed.

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When asked to give a reason for why road traffic is annoying, most of the subjects answer “noise”. 43 percent of all the interviewed experienced the level of noise from road traffic outside their own house as annoying and 32 percent were annoyed by road traffic noise when they are indoors.Close to construction sites as many as 33 percent of the subjects were highly annoyed by the noise from traffic to and from the construction sites.

Few of the subjects (4 percent in the most polluted areas) where exposed to air pollution levels above the existing European hourly limit values for NO_2 at 400 ?g/m^3. The high number of people who considered air pollution as annoying might indicate that this limit value is too lax. 37 percent of the subjects were annoyed by dust/grime from road traffic inside their dwelling, and 26 percent were annoyed when they were just outside of their house. The main inconvenience caused by air pollution is that windows, window sills and curtains get stained and dirty.

Road traffic is not just noisy and smelly, it can also contribute negatively to the visual aesthetic properties of an environment. In the area with the most traffic 42 percent of the subjects judge their immediate surroundings as ugly, whereas only 13 percent of the respondents from the whole study area awarded their neighbourhood such a low mark. The result does not imply that a causal relationship between road traffic and visual aesthetics has been established. Only that there is an association between high levels of road traffic and perceived ugliness even by those who have chosen to live in the urban environment in question.