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#### ABSTRACT

To be able to meet the environmental goals concerning energy consumption, carbon dioxide emissions, the impacts on health of air pollution and noise, etc., it is important that environmentally-sound ways of transportation, such as cycling, increases at the expense of car-based transport. Enhancing the winter maintenance service level of cycleways could be one way to promote cycling. It is also of great importance for the safety of cyclists.

According to accident data approximatey 40 % of bicycle fall accidents in Sweden (which represents more than 70 % of all bicycle accidents) are maintenance related, slippery surfaces above all. Icy roads and left over gravel from winter maintenance also has a great effect on the perceived safety of cyclists. In addition, the winter maintenance service level is significant for the decision to cycle, and is important in retaining existing cyclists and demonstrating that they are a prioritised group of road users. According to road maintenance administrators the most difficult conditions to manage in cycleway maintenance is thawing and freezing, resulting in slush followed by icy ruts and slipperiness.

In this paper winter maintenance of cycleways in Sweden will be discussed from various perspectives including effects on safety, accessibility and comfort of cyclists. The results presented summarize several studies performed at the Swedish Road and Transport Research Institute concerning cyclists and winter maintenance. The effects on safety related to winter maintenance is estimated using accident data based on reports from hospital emergency rooms in Sweden, gathered in the Swedish Traffic Accident Data Acquisition (STRADA). In total, almost 18000 bicycle accidents from 2003 to 2006 were analysed.

The paper will also present the opinion of cyclists concerning the importance of the winter road condition for their perceived safety, their travel time and the decision to cycle or not. The results are based on focus group studies performed in two Swedish cities, Linköping and Umeå, with different climate and daylight conditions. In total four groups were studied, two in each city and with the relative distinction being the participants cycling distance from residence to work. The similarities and discrepancies of the cyclists' opinion will also be compared to the perception of road maintenance administrators. Road maintenance administrators from 13 different municipalities in Sweden have been interviewed.