

VALUING ENVIRONMENTAL HEALTH IMPACT OF TRAFFIC CIRCULATION PLAN IN THE HAGUE

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Background and aims: Within the framework of Integrated Assessment of Health Risks of Environmental Stressors in Europe (INTARESE), the impact of the traffic circulation plan (VCP) in The Hague during 2007-2010, was assessed. Our aim was to provide an overview of the relevant costs and benefits of different health endpoints related to the traffic exposure of this transport intervention.

Methods: The impact of VCP was quantified by selecting traffic-related exposure and health endpoints, modelling of population exposure, selecting exposure-effect relations, estimating the number of attributable cases, and assessing these outcomes in terms of Euros. By applying the “revealed-preference” method using the existing market prices for cardio- and respiratory diseases, the perceived depreciation of property, and the aggregated health indicator for mortality, we derived economic values for persons with a certain disease/health end-point attributable to road traffic noise exposure or exposure to air pollution.

Results: Some 90,000 people live in the study area which covers about 8 km². The benefit of discounted mortality in the period between 2010 and 2115, which is the expected life period of a birth cohort in 2010, is approximately projected to be €7 million for 467.4 life years gained with the implementation of VCP. The annual gains in terms of less hospital admissions for cardiovascular- and respiratory diseases are circa €3,000. A reduction of noise to 50 dB and 55 dB increases the property values with approximately a range of between €120,000 and €105,000 annually in the housing areas influenced by VCP.

Conclusions: In the period up to 2020, the monetary value of the total health benefits from VCP implementation is projected to be approximately 1.5 to 2 million euros. Two thirds of this would be due to health benefits from noise reduction, while one third from cleaner air. For a longer time span, e.g. 2030, the benefits from cleaner air would be greater than from noise reduction.