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City and environment Health Impact Assessment:

An instrument for designing a healthy living environment

New homes, new roads, new businesses. In a municipality that is moving forward, the next project presents itself before the last one has been completed. How do municipalities take account of the wishes of their inhabitants? How much odour nuisance will a particular initiative cause? And how much noise or air pollution? How many fine particle emissions? And what about the safety risks? But above all, what impact will it have on public health? The City and Environment Health Impact Assessment (HIA) is an instrument which allows the impact of environmental factors on public health to be assessed using a simple, integrated and standardised method. Applying the HIA at the planning stage promotes a healthy living environment.

What is the City and Environment Health Impact Assessment?

The City and Environment Health Impact Assessment (HIA) is an instrument that provides advance insight into the various factors that can affect the health of a city's residents. An HIA provides a clear picture of health-related problems and opportunities with regard to urban development projects, changes in spatial planning or infrastructure, and national restructuring projects.

The health and environment ministries commissioned the development of the HIA for municipal health services (GGDs). The HIA method was devised in 2000. In 2006 the third update was introduced, incorporating the latest insights in the field.

Why is a City and Environment HIA necessary?

An HIA can be a very valuable investment in many urban projects and plans, enabling healthier design of the living environment, avoidance of future problems and, in the long term, considerable savings. Its aim is to provide an insight into the relevant environmental health effects of, for example, an urban development plan, making it possible to take maximum account of the health impact when developing the plan further. In the Netherlands there are standards based on EU or national legislation for most environmental factors. Usually, only these statutory standards are taken into account in drafting urban development plans. For a number of factors, however, health effects may occur at levels below the statutory thresholds, which can generate potential for a health dividend. For example, a certain noise source may fall below the standard level but still generate severe nuisance and disruption of sleep. The HIA also shows up exposure below the statutory standard, thus providing a more differentiated picture of quality in terms of environment and health, and making it clear where a health dividend can be achieved.

The HIA report can be used to render account to municipal administrators and in communications with current or potential residents and other interested parties on environmental health aspects of the plan.

The HIA method: environmental health quality and HIA score

The City and Environment HIA assesses the public health effects of exposure to air pollution, noise, odour and electromagnetic fields, and external safety risks. All relevant sources such as businesses, roads, railways, shipping, aircraft and overhead power lines are taken into account. In addition, the health impact of soil pollution is assessed. On the basis of dose-response relationships the exposure for each environmental factor is expressed in an environmental health value and an HIA score. These vary from 'very good' (HIA score 0) to 'very unsatisfactory' (HIA score 8). A Maximum Permissible Risk is determined for various air pollutants, noise and odour from various sources, safety risks and electromagnetic fields. This limit is given an HIA score of 6 (unsatisfactory environmental health quality) for all environmental factors. This enables the health impact of exposure to these environmental factors to be compared.

The presentation

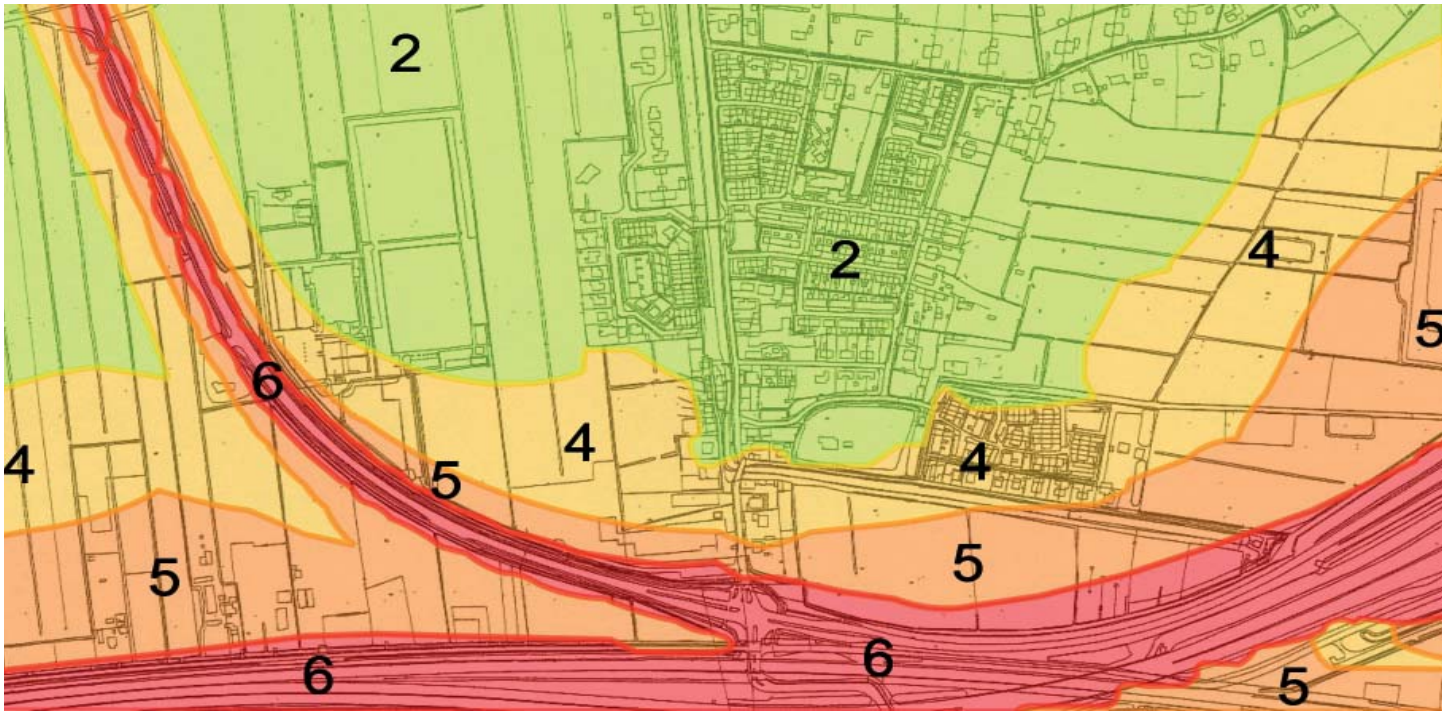
The various HIA scores are shown on the development plan map per environmental factor as coloured contour segments.
The colours run from green (HIA score 0) through yellow, orange and red to purple (HIA score 8). This shows at a glance where the problems lie and where a health dividend can be achieved. In addition, a graph or table shows the number of residents together with the various environmental health values and HIA scores.

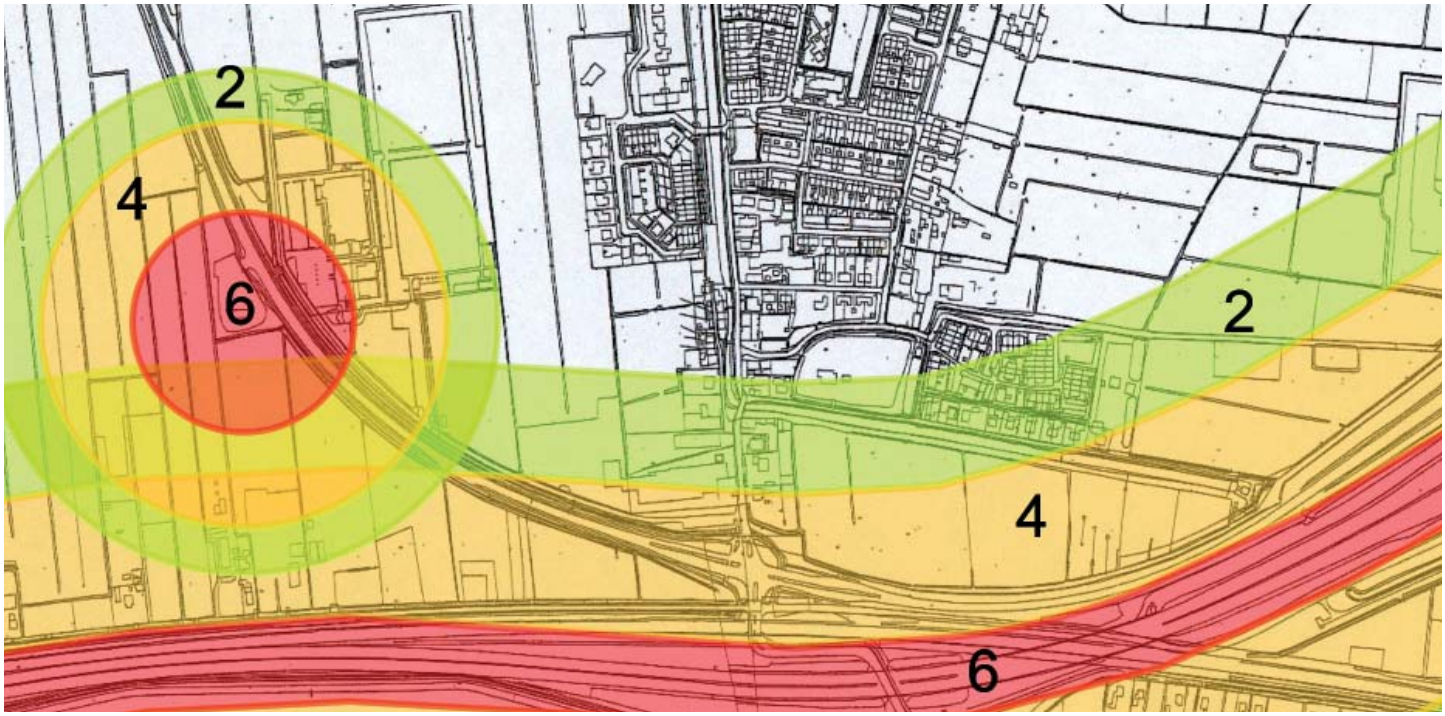
In this way, an HIA can make the effects of urban development more transparent. The assessment also helps to make the choices made in the planning process more visible, so that the environmental health effects of different variations of the plan can be compared. The clear presentation is also suitable for use in prov,iding information to residents and other stakeholders. That helps to ensure good reporting to municipal administrators and current and future residents.

For an urban development plan, the City and Environment Health Impact Assessment has been used to determine the health effects of exposure to air pollution and noise from the motorway and the risks relating to the storage and transport of dangerous substances. The HIA scores are shown on the development plan map. The table indicates the number of people involved in the various HIA scores. Noise from the motorway is the main factor that is detrimental to health.

Number of people

HIA score Environmental health value	**4 poor**	**5 very poor**	**6 unsatis-factory**
Environmental factor			
PM10	1950	186	55
Noise	3500	650	350
External safety	300		10





When should an HIA be conducted?

It is advisable to conduct an HIA when planning urban development projects. An HIA can be conducted at various levels: neighbourhood, municipal or regional. At neighbourhood level, it will primarily be conducted to assess the health impact of urban development plans. At municipal or regional level an HIA can also help determine the development potential of an area or priorities for policy.

It is important to conduct an HIA at the start of the planning process. There is then still time to make choices between alternatives and find solutions. An initial, very general qualitative inventory of sources can make it clear if it is worthwhile to conduct an HIA.

Experience so far

Municipal health services have conducted HIAs for a number of urban development plans at neighbourhood level which resulted in changes to the plans. These involved either changes to the spatial design of the neighbourhood (offices instead of homes in a certain zone), additional measures (extra provisions for noise control) or modifications to homes or buildings (bedrooms or ventilation inlets on the side away from a busy road).
It was essential to the effectiveness of the HIA that municipal administrators were prepared to take health effects into account in the decision-making process. In addition to health, a large number of other factors were also important, including economic value, green value and accessibility.

Data on sources that might affect the environment and public health are available from various bodies, including municipal departments, the Directorate-General for Public Works and Water Management (Rijkswaterstaat), environmental departments and provincial authorities. All of these bodies consult to conduct an HIA. This strengthens the integrated approach to planning and makes it easier to find solutions.

The HIA method has also been applied at provincial level. The results have been incorporated into provincial spatial planning policy and support the setting of priorities for environmental policy.

It takes the GGD an average of 15 to 20 days to perform an HIA, but this can frequently run to several months.

Dit is een publicatie van: **Ministerie van VROM**
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VROM 6400 / november 2006