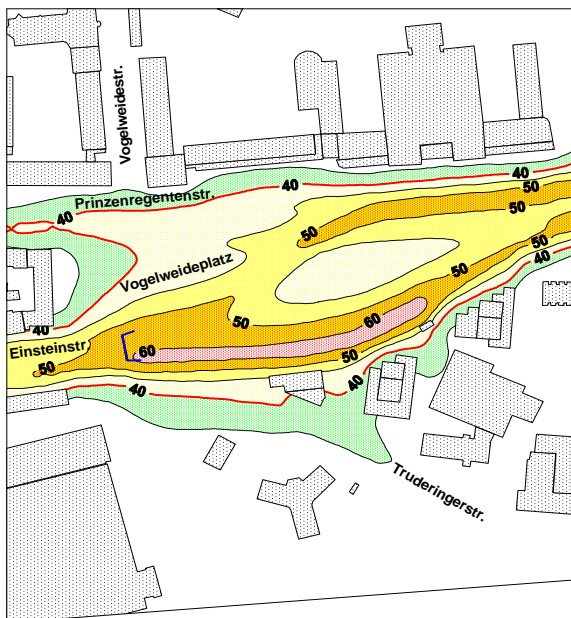


2010 annual mean value of NO₂ calculated with Gaussian model



2010 annual mean value of NO₂ calculated with numerical model MISKAM

Description

The Mittlerer Ring is one of the most important roads in Munich, covering one seventh of the total traffic in the Bavarian capital. Today and in the future, the Mittlerer Ring serves as a major distributor of the urban individual traffic. However, this leads to unfavourable effects for the neighbourhood:

- Noise and pollution
- Traffic overload
- Traffic jam at some critical locations
- Risks of accidents

In 1996, the city council began the planning of several road tunnels at the three most critical locations. In July 2002, the Petuelring Tunnel was opened. The procedures for approval for the Tunnel Südwest and Tunnel Ost were completed.

Services

HBI Haerter Consulting Engineers was responsible for the pollution-dispersion calculations for the three tunnels along the Mittlerer Ring. For most German tunnel projects, the environmental impact study is required in order to obtain the design approval. In this respect, the air pollution in the vicinity of the tunnel portals is of major importance.

For the densely populated and built area adjacent to the tunnels, HBI used two different mathematical models. In order to obtain an overall view of the area of the project, a Gaussian model was applied. Subsequently, the most critical areas were examined in detail by using MISKAM, a 3-dimensional numerical dispersion model which takes the outline of the buildings into account. By using the Gaussian model for the holistic view and the numerical model for the evaluation of the 'hot spots', this method offers a perfect combination of the advantages of the two dispersion models. Due to this procedure the planning reliability for the building owner could be significantly increased.