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Environmental noise mapping and the status of EU END in The Netherlands

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ABSTRACT

Also in The Netherlands, as one of the first member states, the European Noise Directive is implemented in the national legislation. Strategic noise maps are generated and now the first ideas for action plans come up. This paper will give the latest information and the status of these activities.

The topics of this paper are the general results of the noise mapping procedure and the observed problems and solutions. Also the management of the procedures is a topic.

With a view to the near future some ideas and some of the experiences with the communication to the public and the expected targets for noise levels are discussed. In relation to this are also the environmental policy of local authorities and the compensative authorities of the 'large noise sources' for noise measures. The noise measures can be based on either bare legal requirements or 'best practice' to become interesting for the future action plans.

Especially in The Netherlands, with a relative long tradition on noise legislations and legal limits, the discussion is a possible 'law of diminishing returns'

1 INTRODUCTION

Too many people in Europe, and also in The Netherlands are exposed to high noise levels in their environment. Sometimes in such a way that it affects the quality of the environment negatively and is considered to be a danger to public health. In short this is the reason why it is necessary to map the environmental noise levels, to manage noise issues and effects and to reduce noise if necessary. EU Directive 2002/49/EC [1] gives a framework for three instruments for an approach on environmental noise: strategic noise maps, action plans and public consultation.

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2 THE DUTCH IMPLEMENTATION

The implementation into the Dutch national legislation was done according the EU regulations in 2004, just within the timeframe given by the EU regulations [2], [3] and [4]. The complex aspect within the implementation is taking into account the already existing noise abatement legislation. This relatively old noise abatement legislation was established at the end of the seventies/beginning of the eighties.

One of the issues of discussion was the delimitation of the agglomerations. It was decided that the definition of the agglomerations was in line with the definitions of the (six) agglomerations for the reports on air quality investigations. Another issue was the designation of the competent bodies. Decided was that the responsibility for the agglomeration maps lies with the 63 municipalities in these agglomerations. For the major roads the 12 provinces and the Ministry of Transport are responsible. This Ministry also makes the noise maps for the major railways and Schiphol Airport. The Ministry of Environment (VROM) gave financial support to the amount of 14 million euros for the development of the strategic noise maps and the action plans. Also a special guideline was produced by the Ministry of Environment [5].

There is a special attendance from the Ministry of Environment by using a project organisation. This organisation (named Polka) gives guidance on the process by meetings, giving information, and to monitor the progress of mapping. The website is www.polka.org, and a helpdesk is available. Polka also gives guidance on the planning as below.

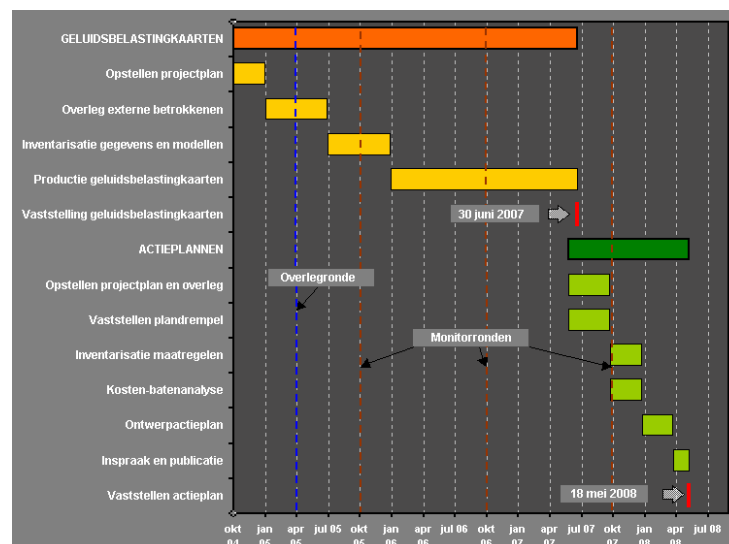


Figure 1 Initially planning for the END activities

Beside the information from Polka also the good practice guide [6] on strategic noise mapping from the European working group Assessment and Evaluation on Noise gave some help for situations where things were unclear.

The calculation methods were prescribed, by using the Dutch national (existing) standard calculation methods. These methods are RMW-SRM1 and SRM2 for road traffic noise [10], RMR-SRM1 and SRM2 for road traffic noise [11], HRMI for industrial noise [12] and ECAC.CEAC Doc. 29 for aircraft noise [12]. Especially for the generation of the strategic noise maps for road traffic noise and railway traffic noise, the national standard calculation method was limited (for example by using only receivers at 4 m height) and was extended with a method for using scattering areas for densely build city regions. There is a study on Dutch national calculation methods in the relation to the interim methods from the END. This study demonstrates that the Dutch methods give equivalent results.

3 SOME RESULTS

By the middle of June it was expected that most of the maps would be ready in time (including the official approval). Below you can find an example of a noise map for 4 municipalities. This noise map is the consolidated noise level for road traffic, railway traffic, industrial noise and aircraft noise. (A remark is that the consolidated noise level is not required for the EU).

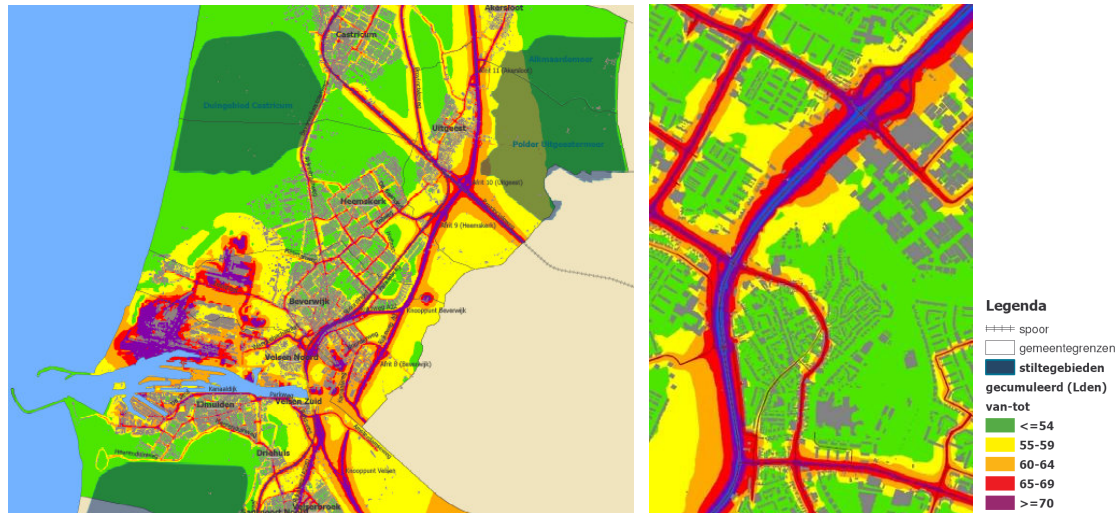


Figure 2a (left) Example of a noise map for 4 municipalities. This noise map is the consolidated noise level for road traffic, railway traffic, industrial noise and aircraft noise.

Figure 2b (right) Detail of a noise map.

4 PROBLEMS AND REMARKS

The first round of mapping was very useful. Dutch map makers were very enthusiastic. Even a number of not designated municipalities are producing noise maps. Autumn 2007 an evaluation will be held to yield the learning effects from the first mapping experiences. Some first problems and remarks are:

- Data collection. Special data on road traffic flow and the composition of the flow give some problems;
- Different calculation methods;
- Different competent bodies making noise maps for the same locations (For example for a highway, a directorate of the Ministry of Transport and a local authority);
- Level of detail for the presentation for separate dwellings, an example is given in figure 3. Some local authorities want to present the noise level for every separate dwelling or every separate address. The restriction and the contradiction of the requirement for making the calculation only for receivers at 4 m seems not restrain them from presenting results for every separate address;
- There is some small confusion about the noise map. The discussion is that the noise map shows the noise level in the street and not the level as façade level. Large red areas do not indicate large quantities of people exposed to high noise levels;
- Legend of the noise levels of the maps and the effect on the first impression by non-acousticians (see figure 4). There is a diversity of ideas and visions on these colours;
- Confusion on the “old” noise indicator and the new indicator (L_{den}). Especially for industrial noise.

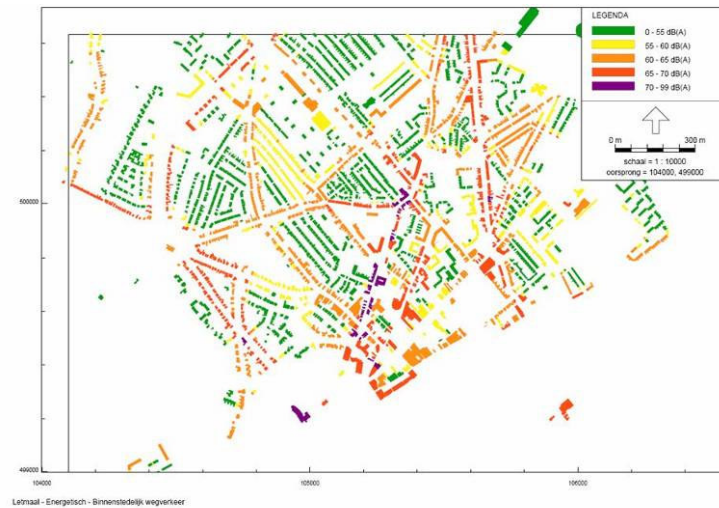


Figure 3 Example for the presentation of a (part of a) noise map where the actual noise level on the façade is presented.

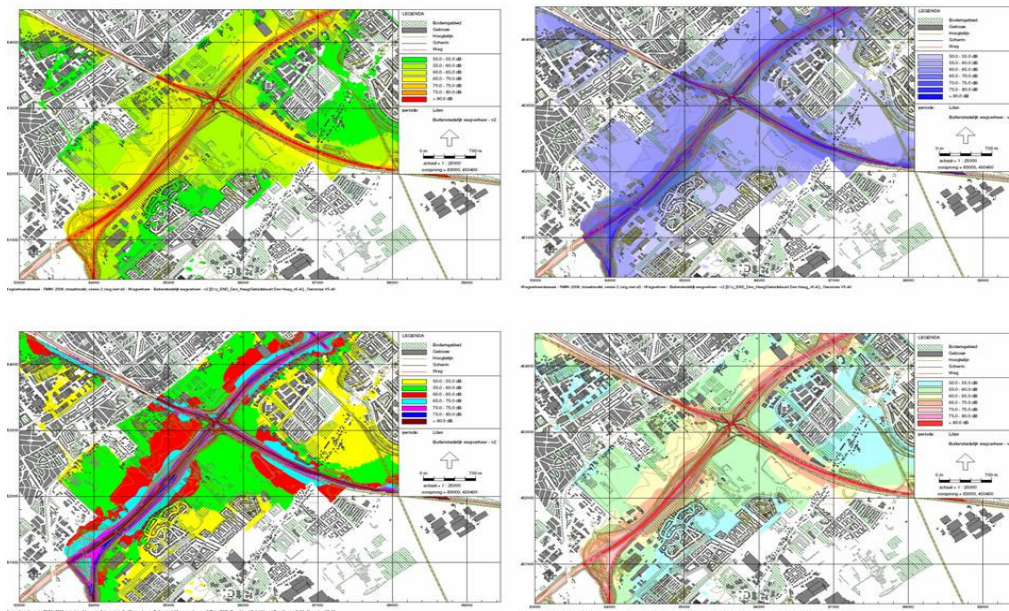


Figure 4 Four examples for the presentation of a (part of a) noise map and the impact for non-acousticians.

5 ACTION PLANS

5.1 Expectations

It is expected that most authorities will show no extra ambition on top of the existing legal requirements. They will execute the existing rules of the noise abatement act. Especially the on going catching-up programme (funded by the central government) will be the basis of their action plans. This programme has the intention to improve the noise situation for half a million dwellings, most of them by insulation, partly by noise screens. The Ministry of Transport has already announced to make an extra investment of € 650 million. In 2020 no dwellings alongside National Highways will be exposed to more then 65 dB L_{den} . For the

national railway system this value will be 70 dB L_{den} . This extra investment is however not directly connected to the European Noise Directive.

5.2 Law of diminishing returns

As already mentioned the ambition level of the local authorities is not so very high because the national noise legislations had already an high ambition when it was implemented 25 years ago. In practice there are considerable budget problems and in addition to this, the local authorities are bound by these rules in their local building and ground development activities. Newer versions of the nation noise act have a lower level of ambition.

The measures within the action plans are at the discretion of the competent authorities. In The Netherlands this is a law of diminishing returns because priorities are identified by the exceeding of any relevant limit value as is defined in the existing noise legislation. Only incidentally local noise policy shows higher ambitions.

5.3 The noise nuisance problems

The strategic noise map doesn't show the full picture. Not included are neighbour noise, the annoying noise made by mopeds, noise from pubs and bars or noise produced by building projects. To obtain a comprehensive insight into environmental noise it is necessary to put in the outcome of a population study.

During the analysis of the problem [14] at the first major meeting of the project team of the municipality of Amsterdam, the feed back group and the environmental officials (around 40 persons) a top 10 list of bottlenecks was drawn up.

Table 1: the top 10 list of bottlenecks

Order	Bottlenecks	effect (noise map/population study) and clarification
1	Noise from neighbours	Population study, Amsterdam is no source authority
2	Main road network	Noise map, linkup with Air Quality Action Plan possible
3	Trucks	Noise map; linkup with Air Quality Action Plan possible
4	Motorways, Amsterdam ring road	Noise map; linkup w. Air Quality Action Plan possible; no source authority
5	Mopeds	Population study; linkup with Air Quality Action Plan possible
6	Railway traffic, very locally	Effect in the noise map or in the population study; no source authority
7	Noise from restaurants & cafes	Population study
8	Public transport (trams, buses)	Noise map; linking with Air Quality Action Plan possible
9	Construction noise	Population study
10	Industrial activity sites	Noise map or in the population study

In Amsterdam Schiphol Airport is an important bottleneck but what can Amsterdam do about it using the Action Plan? It is a complex problem, and more actors and factors play a role and a clear approach has already been formulated and introduced based on the Environmental Policy Plan. That remains as such and it has been adopted as a noise reduction measure in the larger list of measures.

6 CONCLUSIONS - SUMMARY

The first round of mapping was very useful. Dutch map makers were very enthusiastic. Learn (on a national level but also on the EU-scale) from the experiences to make the second round in 2012 a bigger success. Make the results in 2007 and 2012 compatible so trends can be found.

7 REFERENCES

- [1] Directive 2002/49/EC of the European Parliament and of the Council of 25 June 2002 relating to the assessment and management of environmental noise.
- [2] Besluit van 6 juli 2004, houdende regels met betrekking tot de weergave en de beheersing van omgevingslawaai alsmede inwerkingtreding van de Wet van 30 juni 2004 tot wijziging van de Wet geluidhinder, de Wet luchtvaart en de Spoorwegwet in verband met de implementatie van de richtlijn omgevingslawaai (Besluit omgevingslawaai), Staatsblad van het Koninkrijk der Nederlanden 2004.
- [3] Wet van 30 juni 2004 tot wijziging van de Wet geluidhinder, de Wet luchtvaart en de Spoorwegwet in verband met de implementatie van richtlijn nr. 2002/49/EG van het Europees Parlement en de Raad van de Europese Unie van 25 juni 2002 inzake de evaluatie en de beheersing van omgevingslawaai, PbEG L 189 (geluidsbelastingskaarten en actieplannen), Staatsblad van het Koninkrijk der Nederlanden 2004.
- [4] Bijlage 3 behorende bij artikel 8 van de Regeling omgevingslawaai Karteringsvoorschriften weg- en railverkeerslawaai.
- [5] Handreiking omgevingslawaai VROM sept 2004.
- [6] The "Good practice guide on Strategic Noise mapping and the production of Associated Data on Noise mapping" (GPG), from the WG AEN, version 2, 2005.
- [7] Website www.polka.org.
- [8] Website www.harmonoise.org.
- [9] Website www.imagine-project.org.
- [10] "Reken- en meetvoorschrift wegverkeerslawaai 2002", Regeling als bedoeld in artikel 102, eerste en tweede lid, van de Wet geluidhinder. Ministerie van VROM.
- [11] Reken- en meetvoorschrift railverkeerslawaai 2005. Ministerie van VROM.
- [12] Handleiding meten en rekenen Industrielawaai, Ministerie van VROM, 1999, ISBN 90 422 0232 7.
- [13] Report on Standard Method of Computing Noise Contours around Civil Airports, ECAC.CEAC Doc. 29 1997.
- [14] Paul Donners, Michel van Kesteren and Hans van Leeuwen The Amsterdam Action Plan On Environmental Noise Proceedings Euronoise 2006 Tapere.