

## European Symposium

“ Prevention and management of noise in the city :  
Overview of good practices in European cities ”



# Abstracts of the programm



Thursday November 29<sup>th</sup> 2012



## Morning

### 09:25 – Round Table : Assesment of the END situation and prospects of evolution

- **Mr Marco Paviotti**, European Commission, DG Environment
- **Mr Colin Nuget**, European Environment Agency
- **Mr Pascal Valentin**, French Ministry of ecology
- **Mr Henk Wolfert**, WGN chairman ; EURO CITIES
- **Ms Miriam Weber**, DCMR, City of Rotterdam
- **Ms Fanny Mietlicki**, Bruitparif, Ile-de-France Region

#### Marco Paviotti

Excessive environmental noise levels produce on human health, in the EU – approx. 2 million healthy life years lost each year, and 10-20.000 premature deaths, affecting approximately 30% of EU population.

- At the EU level, our main instruments include the END (2002/49/EC) and legislation to abate noise levels at source, for example relating to vehicle or machinery.
- The 2002 END is a relatively recent legal act (compared for example with Air Quality legislation). Whilst it does not set binding limit values, it has put the noise topic on the EU agenda and generated useful action across the EU Member States.
- It is at present mainly requiring that Member States map, assess, and manage noise actively informing and involving the citizens according to EU wide criteria; it consists of a 5 years cycle.
- Commission main focus at present is on establishing Common Noise Assessment Methods as soon as possible. That is because, indeed, there remains substantial differences across the MS in the way noise is assessed hence leaving us with a relatively poor knowledge base at the EU level to promote further action. Discussions were already held in the past years amongst the Member States and the Commission. Based on these discussions the Commission is now working on finalising these methods that will be proposed by the Commission for adoption by the Noise Regulatory Committee as soon as possible (provisionally early 2014).
- In parallel, we have been conducting a first review of the END based on current implementation experience. Whilst no date has been set yet for a formal revision of the Environmental Noise Directive we are consulting on its possible future features.
- Elements we are considering include the introduction of trigger or target values, means to improve the collection of EU wide comparable data, and further possible measures on noise source reduction.
- The Commission expects a more realistic assessment of the environmental noise exposure in the Union, after the second round of noise mapping (end of 2012), and will base further actions, in the

frame of the review, on conclusions based on these results. Still, the Commission has identified that Member States are far from having implemented correctly the END, and are tacking formal actions against Member States, while at the same time trying to provide them guidelines and methodologies (like CNOSSOS-EU for the noise assessment, the Reporting Mechanism for the collection and reporting of data, guidelines on the definition of quiet areas and possibly guidelines on the development and implementation of action plans) to minimise the work-load for Member States.

## Colin Nugent

The European Environment Agency is an independent EU body charged with making assessments of the state of the environment in Europe at least every five years. In order to do this, the Agency is required to utilise the most up to date data available on key environmental themes. One of these thematic areas is noise and the obligations within Directive 2002/49/EC represent an important source of information that may be used to assess the state of the noise environment. As such, the Agency assists the European Commission by receiving, collating and quality checking data reported by countries in accordance with the Directive. To date only one round of noise mapping and action planning has been implemented, but to varying degrees. With the second round of noise maps due to be reported within a few weeks, what can we tell about the state of Europe's noise environment and the actions being taken to improve it?

## Pascal Valentin

### Bilan de la mise en œuvre dressé par l'Etat

La France a longtemps affiché un retard significatif dans la mise en œuvre de la directive 2002/49/CE relative à l'évaluation et à la gestion du bruit dans l'environnement.

Cette situation a conduit la Commission Européenne à initier une procédure pré-contentieuse à l'encontre de la France en octobre 2011.

### I A Cartes de bruit et plans relevant de la responsabilité de l'Etat

- L'ensemble des départements a publié les cartes de bruit pour les grandes infrastructures ferroviaires, mais 1 n'a toujours pas publié celles pour les grandes infrastructures routières (Départements 2B,);
- II B Cartes de bruit et PPBE des grandes agglomérations
- 69% des communes concernées ont publié leurs cartes de bruit, 20% sont signalées en cours de réalisation, mais 11% n'ont toujours rien initié (liste des communes donnée en pièce jointe) ;

12 PPBE de grande agglomération ont été publiés (couvrant 15% des communes)

### 2. Réalisation des cartes de bruit de deuxième échéance (publication exigée par la directive pour juin 2012)

- 35% des communes ont réalisé leurs cartes de bruit, et seulement 17% les ont approuvées ;
- 15% sont signalées en cours de réalisation,

**De nouvelles instructions destinées à mobiliser les autorités compétentes, notamment au sein des agglomérations, seront adressées aux préfets dans les prochains jours**

## Miriam Weber

Future of END: from the Rotterdam perspective

Although the Netherlands has noise legislation in place since the late 1970s, the implementation of the EU Environmental Noise Directive led to significant changes and adjustments in noise policy planning at all governmental levels. The traditional Dutch approach consists of assessing noise exposure of spatial and infrastructural plans against preferred noise limits and maximum allowed limits. This concerns noise from road traffic, railway traffic, industrial areas as well as aviation. As such noise problems are prevented and an optimum in spatial and environmental planning is sought. In addition dwellings with high noise exposure levels are insulated, financed via state budgets in a programme that runs already since several decades.

The END added new elements to the Dutch noise policy practice, by way of requiring strategic noise maps and noise action plans to be drafted by municipalities being part of an agglomeration, such as Rotterdam.

In 2006 first steps were made, and currently we are evaluating the results of the first round of noise mapping and action planning – drafting the Rotterdam action plan 2013-2018. More details on content and lessons learned will be topic of the next round table of this conference. In this session I would like to give some reflections on future challenges at European Commission level.

Last week I heard Marco Paviotti from the Commission uttering a rather bold statement during a soundscape workshop in Vitoria Gasteiz. He stated the following: "EU noise source policy will not result in any significant reduction of noise emission levels for the next 20 years.....".

Experts, policy officers and lobbyists, when asked for their opinion, will underline this message, sadly. As many examples have and will demonstrate that specifically stringent EU noise policy is a necessity for improving acoustic environments and the wellbeing and health of the EU population. To illustrate this an example from Rotterdam: one of the approaches defined in the noise action plan of 2007 was to apply low noise pavement in order to decrease the number of noise exposed and annoyed persons. During the last 3 years in total 5.150 meter of roads have been layered with low noise pavement which equals a reduction of 276 annoyed or 137 highly annoyed persons. Or rather, less than 1 % of the number of citizens being annoyed by municipal road traffic. These are rather depressing figures, more so if we take into account the budgets needed for implementing these noise abatement measures. The annual budget for road maintenance in Rotterdam is € 30 million; this budget had to be increased by € 750.000 per year in order to invest in low noise pavement. This equals an increase in current budgets of 25%.

The story though gets even more disillusioning: during the last years in which the noise action plan was implemented Rotterdam had to build new residential areas and houses as well. Due to economic and societal changes, such as an increase of people moving to cities, of 1- or 2-person households and of elder people living healthier longer and on their own, requires us to provide more houses in compact cities. The effect on noise policy ambitions is perfectly illustrated in Rotterdam, where 3790 additional people are annoyed compared to the noise mapping exercise in 2007! This figure is 13 times as high as the reduction of annoyed persons achieved through implementation of low noise road surfaces!

What to conclude? Cities are in urgent need for stringent noise source policy in order to address the noise problem adequately and in a cost-effective way. The toolbox at local administrative level needs to be filled with EU policy instruments.

One other topic I would like to shortly address in this session concerns noise modelling and calculations. The European Commission is obliged to develop a common and harmonised approach in calculating noise exposure, which is addressed in the CNOSSOS initiative. Although I underline the need to develop such tools in order to deliver sound, uniform and transparent data for EU policy, I urge for attention being paid to the negative implementation effects of such a tool at local governments. Changing modelling techniques, software as well as data accuracies results in differences in the outcome that are almost impossible to assess and explain to politicians and other decision-makers. Although we used recommended and approved models and software during the first and the second round of noise mapping, differences between the former and the current approaches are enormous. At the lower noise exposure bands for road traffic noise we calculated approximately 25 % more persons being annoyed than in 2007. At the higher exposure levels we had a decrease of approximately 50% of annoyed persons. I can honestly state here that these effects are NOT due to the measures taken according to the noise action plan.....

Another example of the impact of changing calculation methods proved the recent adaptation of the Dutch standard calculation method. Measurements during recent years showed that noise emission levels from highways are 2 dB higher than calculated. Consequently this summer the calculation methods have been revised. The effect though is that for Rotterdam the number of people being annoyed by highway traffic increased with 70%. In terms of costs for additional insulation measures this equals around € 80 million!

To conclude, in developing a EU harmonised approach the European Commission and Parliament should not underestimate the implementation effect at local level in terms of political and societal feasibility and acceptability of the CNOSSOS instrument.

## Henk Wolfert

The Environmental Noise Directive (END) has been crucial in assessing the extent of noise burden all over Europe, and in triggering measures through action plans. The END is part of an overall EU policy framework and should complement effective policies to reduce noise emissions at their source, including vehicles, air traffic, rolling stock and machinery. No binding noise limit values should be imposed on member states until source policies, in particular on vehicle noise, are strengthened and revisions of source policies have proven their effectiveness.

EUROCITIES has developed a number of suggestions to improve the implementation of the END, including through more time between noise mapping and action planning, additional noise indicators, and more work on quiet and grey areas.

- Role of the END in noise policy - the END is part of an overall policy framework and should complement effective source policies
- END has been successful in giving us better insight into the noise situation in cities, and in triggering measures through action plans
- No binding noise limit values should be imposed on member states until source policies, in particular on vehicle noise, are strengthened and revisions of source policies have proven their

effectiveness. As we see in the case of EU air quality legislation, binding limit values for member states without effective source policies are neither cost-efficient nor do they lead to the desired results.

- Implementation could be improved, including through more time between mapping and action planning (2 years)
- Cities should be free to use simple or more complex noise propagation models, and to use lower reporting bands or not
- Quiet and grey areas should become a more prominent part of the END and be defined more precisely
- Member States should be encouraged to use additional noise indicators other than the EU noise indicators for short events with high noise levels
- Noise action plans should be SMART
- The Good Practice Guide on Noise Mapping could be improved, for instance by including the recommendations of the NOME report, and it should also cover cross border noise pollution.
- It would be useful to produce not only noise maps on the current situation, as required by the END, but also to produce noise maps based on modelling, which would show the effects of measures on noise and of autonomous transport growth but also of other developments like densification, urbanisation, individualisation and more.
- Military sites should be included in the END because they can cause severe annoyance and sleep disturbance in surrounding areas.

## Fanny Mietlicki

Les points les plus importants pour le future

Les points les plus importants à améliorer et à préciser : les compétences pour la mise en œuvre de la directive : il faut obliger les Etats Membres à désigner une seule autorité ou organisme responsable de l'élaboration de la carte de bruit à l'échelle de chaque agglomération afin de simplifier la réalisation, garantir le respect des échéances et assurer l'homogénéité d'estimation des populations sur l'ensemble du territoire d'une agglomération. Dans un souci d'indépendance, il pourrait être logique que les autorités en charge de l'élaboration des plans d'actions ne soient pas celles qui sont en charge de l'élaboration des cartes de bruit afin de bien séparer les rôles et éviter qu'une collectivité ou un gestionnaire ne cherche à sous-estimer les nuisances sonores sur son territoire (ou le long de son réseau) en réalisant sa carte afin de ne pas devoir se lancer dans la mise en place d'actions. En ce sens, le concept d'observatoires indépendants du bruit au sein des agglomérations tel qu'il se développe en France pourrait être très intéressant à généraliser pour garantir cette neutralité dans la phase de diagnostic sous réserve que ces observatoires se voient dotés d'une compétence réglementaire de réalisation des cartographies stratégiques de bruit. Les collectivités locales et les gestionnaires d'infrastructures seraient quant à eux en charge d'élaborer des plans d'actions visant au respect des valeurs limites. - la nécessité de fixer des valeurs limites à l'échelle européenne qui soient les mêmes pour tous, la santé de tous les européens devant être garantie de la même manière.

- faire évoluer les indicateurs de manière à disposer d'une prise en compte de la fréquence et des caractéristiques des pics de bruit en plus des niveaux moyens - travailler à la mise en place d'indice grand public plus compréhensible (cf. projet en cours Life + Harmonica) - préciser les méthodes pour l'identification des zones calmes (cf. projet en cours Life + Quadmap) - inscrire un objectif de résultats dans les plans d'actions, pas seulement un objectif de moyens - développer l'information du public de manière plus large, y compris par la mise en place de réseaux indépendants de surveillance du bruit qui permettent de mettre à la disposition des habitants des informations précises plus proches de leur

ressenti car permettant de mettre en évidence les variations du bruit au cours du temps, les pics de bruit, les contributions des différentes sources de bruit...

## 11:00 - Presentation of the noise action plans of some major cities in Europe

- The City of Paris, a short presentation based on a political angle by **Mr René Dutrey**, Deputy Mayor
- The City of Barcelona, by **Ms Laura Zapata**, in charge of noise action plan
- The City of Rotterdam, by **Ms Miriam Weber**, Head of the noise department at DCMR
- Brussels capital, by **Ms Marie Poupé**, Head of the noise department at Brussels environment
- The City of Vienna, by **Mr Johannes Posch**

### **Laura Zapata** Managing Noise in Barcelona

Noise is one of the variables that is becoming increasingly important as a means of assessing city's quality of life. Like other European cities of similar characteristics, Barcelona has notable noise levels, mainly as a result of the type of urban fabric, which has a high population density, high traffic levels, its metropolitan dimension, its considerable attraction for tourists, the coexistence of different activities in one single space, etc. As a result and since acoustic pollution represents a significant environmental challenge, Barcelona City Council has worked hard over the last 20 years to revert the trend of growing noise levels. The Action Plan for the Reduction of Noise Pollution (2010 –2020), includes a set of 58 priority actions for the coming years aimed at reducing the number of zones in which noise limits are exceeded and preserving the quiet zones in accordance with Directive 2002/49. The action plan focuses mainly on the areas of mobility, planning, services and activities of all kind in the city. It is an integral, transversal, global and exemplifying plan that was drawn up with the participation of the various citizen agents.

### **Miriam Weber**

#### **Noise action plan Rotterdam: reflections**

As mentioned in the earlier session on the future of the EU Environmental Noise Directive many cities, being part of an agglomeration, had to implement new tasks regarding strategic noise mapping and

action planning during the last years. Despite the decades of experience of assessing noise exposure in spatial and infrastructural planning, these EU requirements were rather new and challenging. We can see this adoption of new ways of working and integration of existing practices for example in the contents of the action plans. The pillars defined in the Rotterdam action plan of 2008 illustrate this mixture of old and new practices nicely. Traditional noise policy approaches that are still adhered to are prevention of noise problems via integration of noise policy in spatial planning decisions and, secondly, insulation of dwellings with highest noise exposure levels. New is the focus on low noise road surfaces as noise abatement measure for areas where noise exposure levels are above the threshold that has been defined according to the END. And finally, similar to other European cities, we see a shift in paradigm from the traditional noise abatement approach to preservation of good acoustic quality areas and soundscape approaches.

Although thresholds of 68 dB Lden for the city centre and 65 dB Lden for the other areas had been set, and hotspots and possible measures were defined, the Rotterdam noise action plan 2008 was more a first sketch than a SMART work programme to be implemented during the following years. This line is continued in the so-called Rotterdam Approach for Noise policy of 2009, restating the pillar approach of the noise action plan. In addition attention and action is proposed regarding noise sources that are known for causing high percentages of noise annoyance but not being part of the END, such as scooters, outdoor events, cafes and bars and construction noise.

The strategic noise maps this year showed the limited success achieved during the last three years. Explanatory reasons are several, as I mentioned earlier this morning, such as the new dwellings that were recently built and the cuts in the road maintenance budgets. The evaluation of the first noise action plan learned as well that the linkage between the road maintenance programme of the Rotterdam infrastructure department and the noise action plan was weak or even missing. Although the noise map and noise action plan defined the roads where noise emission levels were above the threshold limit and noise abatement measures were needed, these roads were not considered in the road maintenance programme. The latter is purely based upon the traditional way of working; depending upon the age and the technical quality of the existing road surface roads were selected for maintenance work. Without specific checks regarding selecting specific lower noise types of road surfaces. A missed opportunity in our opinion; and fortunately in the opinion of our colleagues of the road department.

Taking all these considerations and lessons learned into account the noise action plan 2013-2018 will again be based upon the pillars of prevention, insulation, low noise road surfaces, addressing noise annoyance and preserving areas with good acoustic environments. In practice though some current practices have to be changed or strengthened such as the integration of noise in spatial planning, the selection of roads for lower noise pavements based upon cost-effectiveness criteria aligned with noise policy, and the identification of quiet urban areas. In addition other policy instruments are needed in order to attain the noise and environmental goals set in Rotterdam. Examples are the development of low noise pavements that are specifically suitable for municipal traffic, research into the implementation of environmental zones including noise limits, stimulation of e-vehicles and e-scooters, and a strong lobby in Brussels for more stringent noise source policy.

The question might arise whether the END has led to any change or success. When considering the effects in terms of reduction of noise exposure and increase of quality of life and health, the answer might be fairly negative. But, on the other hand, the END has certainly positive side effects at societal



and political level in gaining far more attention for noise pollution and environmental health than we had for many years or even decades. Rotterdam's elderman Mrs Alexandra van Huffelen was the first local politician since many years that set real ambitious policy targets, in that by the end of 2013 15.000 citizens of Rotterdam will have 3 dB lower noise levels within their houses. That we will need all our efforts, creativity and persistence in order to attain this goal is evident; but at least firm political power and vision is in place in contrast to many other governmental tiers in many European member states.....

Challenges that we have to address in multi-level governance approaches; the local administrative level is not able to solve the problem by itself and needs the national and European governments aligning their activities and responsibilities. An interesting recent example concerns the national government in the person of the Minister of Infrastructure and Environment. One of her political ambitions is to increase the speed at highways from 80 km/h to 100 km/h around cities and from 120 km/h to 130 km/h. We all know the effects in terms of an increase of air pollution and noise levels, and thus a negative effect on public health. On the other hand, this minister is investing in a noise barrier along Rotterdam and consequently helping the local politician in realising the noise policy target as this barrier will reduce noise levels by 3 dB for approximately 3.000 inhabitants. Note this is 20% of the number of citizens that was defined in the target.....You will probably now have got some idea of the discussions and negotiations we prepare for high political meetings.

## Marie Poupé

Brussels' role as a regional, national and European center has led to demographic growth and ever-increasing mobility needs. The many economic or leisure activities, both day and night, can generate coexistence problems in residential areas. At the same time, with a surface area of only 160 km<sup>2</sup>, noise pollution and solutions to the problem often exceed regional competences. Through a global approach, Brussels is proving to be a pioneer in its desire to take into account noise in urban management; it already started setting up numerous measures in 1997 to better identify and control the problem of noise. The first Plan to Fight Noise in Urban Environments was adopted in 2000, followed by a second plan in 2009. Ce dernier est basé sur les constats et l'analyse des mesures du premier Plan Bruit. Comme lui, il repose essentiellement sur une expertise technique et s'attaque à toutes les sources de bruit. Les principes d'actions du plan précédent sont réaffirmés. Ce second plan permet aussi d'ajuster un certain nombre de procédures. Il intègre l'évolution des dispositions réglementaires en particulier au niveau européen. Il met l'accent sur les initiatives pouvant directement être prises en charge par les pouvoirs publics. Il vise enfin à développer des synergies avec les autres plans régionaux et accorde une attention particulière à l'interaction de ces mesures avec les autres plans. A côté des nombreuses actions devenues récurrentes, particulièrement dans le domaine du bruit des transports, il prévoit que certaines mesures soient renforcées, notamment concernant la lutte contre le bruit des sources ponctuelles, l'amélioration du confort acoustique des logements et la gestion des plaintes.

Le Plan est structuré en 10 axes reprenant chacun une cible particulière d'actions contre le bruit :

Un cadre de référence de plus en plus précis, à savoir l'harmonisation et la définition de nouveaux indicateurs, la mise à jour des cadastres de bruit, le suivi des stations de mesures.

Une gestion adaptée et coordonnée de la plainte, à savoir l'instauration d'un observatoire de suivi des plaintes et la poursuite de la gestion ciblée de la plainte.

Un territoire préservé, à savoir les mesures en matière d'urbanisme et d'aménagement du territoire et l'interaction avec les plans d'aménagement, dont le PRAS.

Une circulation routière modérée, à savoir l'interaction avec le Plan Iris des Déplacements et la poursuite des actions d'assainissement des points noirs.

Des transports en commun plus silencieux, à savoir la poursuite des collaborations avec les gestionnaires de réseaux.

Un trafic aérien sous surveillance, à savoir l'élaboration d'un schéma d'exploitation stable visant à réduire, dans une ville dense, le nombre de personnes touchées et la conclusion d'un accord de coopération entre les entités fédérales et régionales concernées.  
Des sources ponctuelles mieux ciblées, à savoir une réglementation adaptée et un renforcement des contrôles.  
Une responsabilisation individuelle accrue, à savoir la poursuite des actions de sensibilisation, en particulier auprès des jeunes.  
La promotion de nouvelles technologies, à savoir en particulier l'utilisation de matériaux et de techniques respectueux de l'environnement.  
Des outils pour isoler les bâtiments, à savoir la poursuite des actions et des mesures visant à améliorer le confort acoustique.  
Plus d'informations (FR) : <http://www.bruxellesenvironnement.be/Templates/etat/informer.aspx?id=3082&langtype=2060&detail=tab3>

## Johannes Posch

### **Vienna's Noise Action Planning Process 2012-2013**

The noise action planning process in Vienna focuses on information, stakeholder cooperation, public dialogue and coproduction. In the coalition agreement of the socialist and the green party in Vienna, an increased public involvement in the process is demanded, which is aimed by the following project components.

#### **Comprehensible traffic noise maps**

The Noise Maps of 2007 and 2012 are not comparable, partly because of more precise data, partly as a matter of changed method of calculation. This also makes a negative impact on noise emission at lower traffic speed.

Both facts are neither understandable nor smart to communicate. The obligatory noise maps are not aiming on public communication.

That's why for stakeholder dialogues we have designed two aggregated noise maps which show traffic, tram, rail noise during 24 hours (day evening night) and during night. In addition we gave them a more intuitive colour system. The aggregated noise figures are precise and near to the individual noise perception, which has been proved by many individual measurements.

This map in fact shows a main aspect of our approach to the noise action planning process – the individual perception of noise. It is the key factor for interest and understanding and a precondition for people to contribute to noise reducing solutions.

#### **Online Information Tools**

The main information medium is LOIS (online noise information system) which at the moment is updated and will provide user focused information concerning all kinds of noise. The noise action plan will be integrated not as a static document but as an ongoing process tool which is monitored and will show targets, planned measures as well as successful measures. So it will be updated periodically, not only every five years. LOIS will also contain dialoge features and participation offers on certain topics, regions or cases.

#### **Stakeholder Approach to the Planning Process**

The dialogue with the public has started with a series of interviews with all 23 district mayors of Vienna. They know all the main noise problems in their district area and have a good estimation of recent successes or promising new noise reduction cases. Last but not least they are important proponents in dialogues and cooperation with residents and noise stakeholders. This Vienna wide screening ist one important and vivid basis for a number of cooperative noise reduction action.

The other base is the expert (Fachexperte) planning process for the noise action plan, which is developed together with traffic planning experts and mobility stakeholders such as public transport enterprises. The cooperation between planning experts and environment experts works out well. This time the noise action plan ist to be finished earlier than the traffic master plan, which is quite a challenge.

### Participatory Processes in noise reduction Projects

Noise reducing actions have already been started, also inspired or accelerated by the various talks and workshops.

2013 a number of 3 to 5 participatory noise reduction projects will be started. The whole range of public participation intensity (information, cooperation, coproduction) is possible. It just depends on the cases, the involved stakeholders and the scope of action.

Vienna relies on good practice on those processes, made by a pilot project named SYLVIE which focussed on big city noise as a social issue. Technical solutions for noise reduction are often expensive and rarely have the success they are owed. As a result, most of the people do not feel any improvement at all. This is quite obviously a social issue which needs to be tackled and solved with the participation of the residents affected.

SYLVIE mediated between offenders and victims, i.e. between those who cause and those who suffer noise. The two sides have joined teams to find solutions for certain noise problems in relation to shops, traffic, neighbourhood businesses and leisure time activities.

One of the pilot projects was a noise protection wall which was a turnout of a participatory planning process with stakeholders and inhabitants of a big social housing area along the main road „Gürtel“. It combines technical noise reduction with photovoltaics and has changed the public space and living quality completely. Luckily at that time Vienna was able to finance this building. Since then residents are able to perceive noise from the neighbourhood...



Thursday November 29<sup>th</sup> 2012



Afternoon

14:00 - Roundtable “Best practices on noise management”

- **Mr Magnus Lindqvist**, City of Stockholm
- **Mr Jean-Laurent Simons**, planning officer at Brussels environment
- **Ms Nina Mahler**, BAFU, Switzerland
- **Mr Loek Van Laarhoven**, City of Oss
- **Ms Raffaella Bellomini**, City of Florence, Hush project

- **Mr Gaetano Licitra**, Lucca department of ARPAT, Tuscany
- **Mr Dick Botteldooren**, University of Gent, Hosanna and Oside projects

## Magnus Lindqvist

The work against noise must be done in different ways; protective actions, regulations, planning process and reduced noise at source. Our work in Stockholm have been concentrated to protective actions and design and location of housing. I will give two examples from our work:

1. Protective actions – Improved window insulation
2. Planning process – Sound quality score

### Improved window insulation

We have been working a lot to improve window insulation. The goal is to reduce noise indoors for those most exposed. The definition of “most exposed” is more than 63 dBA equivalent level for a 24 hour period. The work started in the late 1970’s. Since 1997 the process was improved due to more money from the city. Today only about 10 000 people remain, in the beginning it was around 75 000 inhabitants in need for better windows.

### Sound quality score

The building development structure is changing with more people living in urban areas. New dwellings are built in central areas and are often exposed to traffic noise and noise from other various activities. The goal for the city in coming years is to build 5000 new dwellings a year.

We think that it is possible to build dwellings with a good acoustic standard even in noisy city areas. For that reason we have developed a method called Sound quality score. The method is based on weighting different factors that affect the sound quality. Factors that increase the quality gives higher score, for example many rooms facing the quiet side of the building. Exposure to several sources of noise or single sided apartments gives less score.

## Jean Laurent Simons

Le réseau de station de mesures acoustiques et vibratoires de la Région de Bruxelles-Capitale a été initié par Bruxelles Environnement en 1995. Il comporte actuellement une vingtaine de stations de mesures qui surveillent en continu les niveaux de bruit auxquels est exposée la population bruxelloise. Ce réseau comporte des stations mesurant le bruit global de l'environnement et des stations dédiées à des sources spécifiques (avions, trains, voitures). L'ensemble de ces données sont traitées, archivées et mises à disposition du public via le site internet WebNoise. Les résultats sont présentés sous forme graphique ou cartographique pour différentes périodes (journalière, hebdomadaire, mensuelle ou annuelle) et pour différentes tranches horaires. Enfin ce réseau de mesures permet également de contrôler les bruits des différents types de transports par rapport à leurs valeurs limites et de calibrer les calculs des cadastres bruit.

## Nina Mahler

In the year 2000 265'000 people were affected by harmful or annoying railway noise in Switzerland. 89% of this people live in cities or urban agglomerations. A new Federal Act on Railways Noise Abatement was adopted in 2000 to reduce this number to one third until 2015. This action plan consists of improving the rolling stock, constructing noise barriers and if this is not sufficient, also installing

noise insulation windows. The noise abatement project was included in a bigger public transport supporting regulation. After 2015 the planned measures will concentrate more on the noise source. The focus will be on economical incentives and promotion of technological innovation of the rolling stock and the infrastructure.

nina.mahler@bafu.admin.ch

## Loek van Laarhoven

Noise in environmental legislation is based on electro-physical acoustics. The intention is to protect against hearing damage and to guarantee quality of life. If the impact of the psycho-acoustic factors is denied, civil servants will be faced with strong complaints in spite of their efforts to reduce noise pollution. This psychological gap in the existing legislation was our reason to begin research into other ways to measure noise pollution in urban situations.

A pilot project of 10 "smart" soundmonitors has been installed in downtown Oss to measure acoustic parameters and to calculate the innovative Laarhoven-index. This index defines the disturbance of the suitable acoustic climate in a street and can be expressed as the resulting skalar in a complex NDR-vectormodel ( N = normalization en exposure; D = dynamics, low frequency and fluctuations; R = response and acceptance).

The vectormodel blends the acoustics parameters and the psycho-social results of dynamic investigation. So the monitor shows continuous (every hour) the acoustic situation in the street equivalent to real life experience of the inhabitants. The index appears to :

- Be a good instrument for noise management in the city centre
- Have the possibility to cumulate sound of various sources
- Be suitable to set up future of various sources
- Results in fewer complaints about noise pollution

## Raffaella Bellomini

The presentation will focus on the practices put in place by the city for the management of environmental noise

Florence is a city of about 350,000 inhabitants, with an historical center enclosed by a boundary wall, characterized by a very strong local traffic, also determined by the absence of a ring road outside the city. The administration of Florence is very sensitive to noise problems.

The City of Florence has recently started to address the problem of noise, according to an integrated approach with other environmental problems. In particular, between the first and second round of noise mapping according to EU Noise Directive 2002/49/CE, an important transformation policy of road and traffic system has been carried out. The introduction of a big quiet pedestrian area covering most of the historical center, as well as low speed zones in some neighborhoods and the strengthening of public transport by means of a new tramway, has been produced.

The City of Florence, with technical support of the company Vie En.Ro.Se. Ingegneria, is also involved as coordinating beneficiary or partner in European projects on environmental noise, including the LIFE+ 2008 / 386 HUSH. Among particular HUSH project's objectives, one is to define a new development system (procedures and database) for action planning and test it in two pilot cases, in the city of Florence.

The methodology used for the design of noise reduction interventions in the two pilot cases was based on both quantitative data ("traditional" acoustic measurements) and on qualitative data (non acoustic data), such as annoyance perception, suggestions and proposals, in terms of desirable actions, expressed by stakeholders who have been involved in the earlier stages of the project.

In the presentation, interventions carried out in two critical areas selected by the city of Florence: the external area of "Don Minzoni" primary School and "Brozzi-Quaracchi" urban area, as well as the methodology provided for designing and the results of ante and post operam questionnaires will be shortly described.

## Gaetano Licitra

1) few words on Lucca Port and to deliver goods by electric vehicles

2) use of "super blocks" to create Q-zone: are possible, useful, real solutions? What we need?

In Vitoria they are working on modal shift, change the structure of the city and use the "superblocks" a system to create quiet zone.

Cityhush an European project that is going to finish and also, if I receive on time on Vitoria Gasteiz that is the Green European Capital of Europe.

In Lucca there are few electric vehicles for the good but they obtain a new project so I could speak about this new things and some benefit that they expect. What it is important is the idea that is possible to repeat everywhere. The new project involve more and more cities at different levels.

For Vitoria and other cities in Cityhush I will present again some evaluation and new ideas.

Only 15% of the cities presented an action plan until now for the first step of END and a lot of them put pavements, bus, low speed area, and so on, so nothing really new.

If in the evening you would like to speak about my skype is tato\_tanosergio.

I could present Tuscany actions and some figures (money spent, people exposed interested, types of actions, GIS, etc..)

## Dick Botteldooren

Although noise has been a point of concern in many cities, the sonic environment is only seldom part of urban design and planning. Careful design is nevertheless the most efficient way to mitigate unwanted sound and promote positive overall assessment of the neighborhood soundscape. This is particularly the case when it comes to using green and natural materials. Increasing the amount of green in the city has many advantages such as promoting bio-diversity, providing space for restoration, improving water management, local climate, and air pollution, etc. Noise reduction and soundscape improvement is an added benefit that could come at limited additional cost when designed carefully. In the HOSANNA project it was found that the choice of substrate for green roofs, green facades and small vegetated barriers, tree planting schemes in open space, ground roughening, terrain modifications and berms, etc. could indeed create this benefit. This "green" noise control is characterized by rather small A-weighted noise level reduction for every individual measure on itself, but it could result in a significant overall improvement. The visual aspect and the addition of natural sounds helps increasing the perceived effect. Of particular interest is the planning and preservation of tranquil space in urban area. This is often created by shielding them from noise sources using buildings. Sound reaches these shielded areas by multiple reflection and diffraction through openings between rows of buildings or over the roof. Green walls and roofs – their substrate in particular – can significantly damp these propagation paths

## 16:00 - Roundtable “Identifying and defining quiet areas in Europe”

- **Mr Francesco Borch**, Quadmap project first results
- **Ms Igone Garcia**, City of Bilbao, Tecnalia
- **Mr Kevin Ibtaten**, City of Paris

## Francesco Borchi

### **QUADMAP PROJECT (QUIET AREAS DEFINITION AND MANAGEMENT IN ACTION PLANS): GENERAL OVERVIEW AND FIRST RESULTS**

Current practices about selection, assessment and management of Quiet Areas in EU Countries, though regulated by the EU Directive 49/2002/CE on Environmental Noise, appear to be extremely fragmented and inhomogeneous. In fact, each country during past years adopted a set of strategies strictly related to their specific contexts.

Proposing a solution to overcome the lack of harmonized methodologies for Quiet Areas is the main aim of QUADMAP (QUIet Areas Definition and Management in Action Plans) project.

QUADMAP is contributed and co-financed by the European Commission into the LIFE+2010 Financial Programme.

The results of the project will facilitate urban planners to apply standard procedures for identification, delimitation and prioritization of UQAs.

The project has a high level of demonstrativeness guaranteed by the fact that proposed methodology will be tested on a number of case study areas. In particular, it will be tested in a set of pilot cases in Italy, Spain, and in the Netherlands.

The project started on 1st of September 2011 and lasts three years. In this presentation a general overview of the Quadmap project, as well as, the first results has been provided.

## Igone Garcia

The context of the QUADMAP LIFE + project, offers an opportunity to the city of Bilbao to transform urban public spaces in urban quiet areas, through the development of interventions. To respond to this opportunity, an acoustical diagnosis of the preoperational situation is needed. This analysis will allow identifying the acoustical challenges that must be satisfied with the intervention, so that the public space can meet the requirements for a quiet area. Considering the Bilbao City Council objectives, these challenges must consider, beyond the reduction of noise (understood as a minimum threshold criterion), also the improvement of the quality of the sonic atmosphere and the interaction between sound dimension and other design variables of the space . The presentation shows the results of a practical example of this approach that is carried out in a pilot area: General Latorre Square.

## Kevin Ibtaten

Concernant l'identification des zones calmes, concept qui peut s'avérer subjectif, il s'est avéré nécessaire d'en définir en premier lieu les caractéristiques.

Une journée de réflexion organisée en collaboration avec le Centre d'information et de documentation sur le bruit (CIDB), à l'Hôtel de Ville le 12 février 2010, a permis de passer en revue l'approche et les méthodes employées dans d'autres métropoles françaises et européennes.

Pour Paris, les quatre critères suivants ont été retenus à l'issue d'une large concertation avec les mairies d'arrondissement : une exposition sonore moyenne diurne aux bruits routiers et ferrés inférieure à 55 dB(A) couplée à un niveau sonore relatif par rapport au reste du quartier, une accessibilité aisée du public en termes de cheminement et d'horaires d'ouverture, l'absence de contre-indication majeure pouvant nuire au caractère agréable du site, un ressenti favorable et une volonté partagée de valoriser un espace remarquable. Une répartition homogène sur le territoire parisien a également été recherchée.



Pour la période 2013-2018, le croisement de tous ces critères ainsi que des visites et des échanges avec les mairies d'arrondissement ont permis d'établir une première liste de 90 (à finaliser) zones calmes de tailles variables (de 373 m<sup>2</sup> à 55 ha), chaque arrondissement en possédant au moins deux. Leur typologie est la suivante : 66 (recompter) espaces verts ouverts au public (municipaux, de l'Etat, privés, emprise ferroviaire désaffectée), 13 (recompter) espaces publics ou privés, 4 cimetières et les 2 bois parisiens.

Une fois cette liste établie, il s'agira pour la collectivité de préserver ces espaces d'une augmentation du bruit des transports, sans pour autant les sanctuariser.

Cela consistera par exemple à vérifier leur prise en compte dans les études d'impact des projets d'aménagement, à valoriser leur caractère « calme » dans les études de faisabilité d'aménagement et de conception des espaces verts publics, à mentionner leur existence dans le Plan local d'urbanisme PADD, à suivre leur évolution sonore à travers des campagnes de mesures périodiques et des enquêtes de perception, à les promouvoir auprès des structures locales dans le cadre de projets de quartiers.