Method to estimate the road traffic noise exposure distribution in Europe

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Road traffic at the Catharijnesingel in the inner city of Utrecht, The Netherlands (free of copyright)

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Executive summary

In the Noise in Europe 2014 (EEA, 2014) report it was identified that about 90% of the health impact of transport and industrial noise is related to road traffic noise and that it is likely that the END assessments may reflect only 20-35% of the total impact of road traffic noise in Europe. Given the potential size of this underestimation, efforts have been undertaken to estimate the complete exposure distribution of road traffic noise in Europe. We focused on road traffic noise since from the four sources (road, rail, aircraft and industry) it contributes the most to the total health impact of environmental noise.

The key messages from this report are:

- We successfully extended our earlier prediction model for road traffic noise in Europe based on population density with predictors for the road network density derived from the Global Roads Inventory project (GRIP version 3).

- For the EEA-32 it was provisionally estimated that 232 million inhabitants (45% of the total population) are exposed to road traffic noise levels equal or above 55 dB L_{den} and 153 million inhabitants (30%) to levels equal or above 50 dB L_{night}. 55 dB L_{den} and 50 dB L_{night} are the lowest noise levels for the noise mapping in the framework of the European Noise Directive (END).

- We projected that 382 million inhabitants (75%) are exposed to levels equal or above 50 dB L_{den} and 423 million inhabitants (83%) to levels equal or above 40 dB L_{night}. We consider a level of 50 dB L_{den} as interim health based guideline value for the 24 hour period and 40 dB L_{night} for the night-time.

- We conclude from a comparison between the reported and predicted fraction of the population in agglomerations exposed to levels equal or above 55 dB L_{den} that the reported data on road traffic noise in agglomerations in the framework of the second round of noise mapping in 2012 is not comparable between countries.

1 Introduction

We explored in 2016 whether it is feasible to use a European population density grid for the estimation of the distribution of road traffic noise in Europe (Blanes et al., 2016). We assessed the relation between population density and road traffic noise with country wide road traffic noise data from the Netherlands and Switzerland.
It appeared that the estimation of the distribution of road traffic noise in Europe is possible and that, depending of the health endpoint, information about the noise exposure outside the END assessment areas could contribute 50 to 75% to the total health impact of road traffic noise. However, the transferability from the Netherlands and Switzerland to other countries in Europe is unclear. As improvement, it was suggested to add more predictors to the statistical model. Moreover, the transferability could be assessed better if more countries are included in a comparison study.

The following activities have been carried out in order to improve the estimations done in 2016:

1. We assessed whether the prediction model could be improved by adding additional information that is European wide available.
2. We have made inquiries about the availability of other country wide road traffic noise data to include these datasets in the statistical analyses.
3. We estimated the European road traffic noise exposure distributions for L_{den} and L_{night} with new statistical derived relations for END agglomerations and for the areas outside END agglomerations.
4. We calculated provisional road traffic noise exposure distributions for L_{den} and L_{night} per decibel and per country. A risk assessment and/or health impact assessment can be carried out with this information when WHO regional office for Europe publishes their Environmental Noise Guidelines for the European Region (expected in 2018).
5. We explored whether it is feasible to apply a similar methodology for other sources of community noise.

2 Data and methodology

2.1 Introduction

As indicated in the Introduction, additional predictors may increase the transferability of the method to assess the road traffic noise distribution to other countries in Europe. The population density data has already been used as predictor. In addition, it is expected that data on traffic intensity (for example road length, vehicle density, etc.) could be of value as additional predictor (strength of the emission source) for the road traffic noise exposure distribution. From the propagation perspective, the acoustic absorption of the terrain surface may also contribute to the prediction.
Section 2.2 describes the dataset that were used in this report. In section 2.3 we address the statistical analysis. Section 2.4 describes how we predicted the noise exposure distribution in Europe making use of the various datasets and the results from the statistical analyses. Lastly, we describe the rationale of the presentation of the results in this report.

2.2 Data sets

We had a preference to use data that is already collected in a European-wide framework, since this insures that the data is standardised and documented and this will contribute to the acceptability of the method. The identified datasets are described in the following sections.

2.2.1 Grid 1x1 km

The EEA reference grid for Europe (1 km): the grid is based on proposal at the 1st European Workshop on Reference Grids in 2003 and later INSPIRE geographical grid systems.

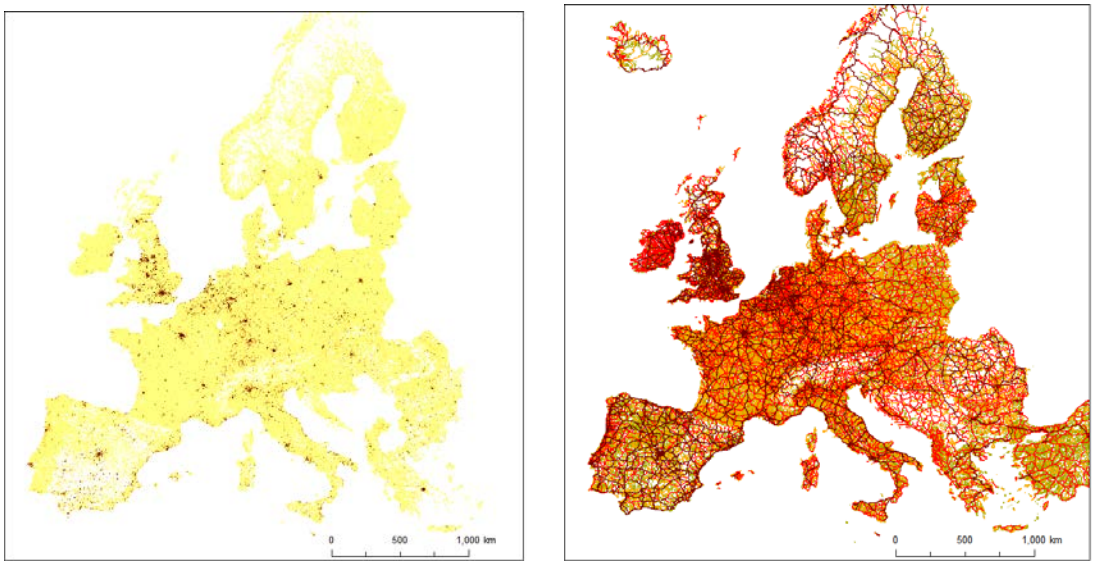
2.2.2 Population density grid

The GEOSTAT 1 km^2 population grid 2011 has been used as source for the population (Table 2.1 and Figure 2.1).

Table 2.1 Features of the GEOSTAT 2011 population density dataset

Population 2011 v2	CY, IS, disaggregated data available
Feature type	Polygon / Table
Format	Shapefile / csv
Period	2011
Coordinate reference system	ETRS89 / LAEA
Version date	01/02/2016
Website	http://ec.europa.eu/eurostat/web/gisco/geodata/reference-data/population-distribution-demography/geostat#geostat11
Files to download	GEOSTAT-grid-POP-1K-2011-V2-0-1.zip

Figure 2.1 The GEOSTAT 2011 population density grid (left) and road density data (right)



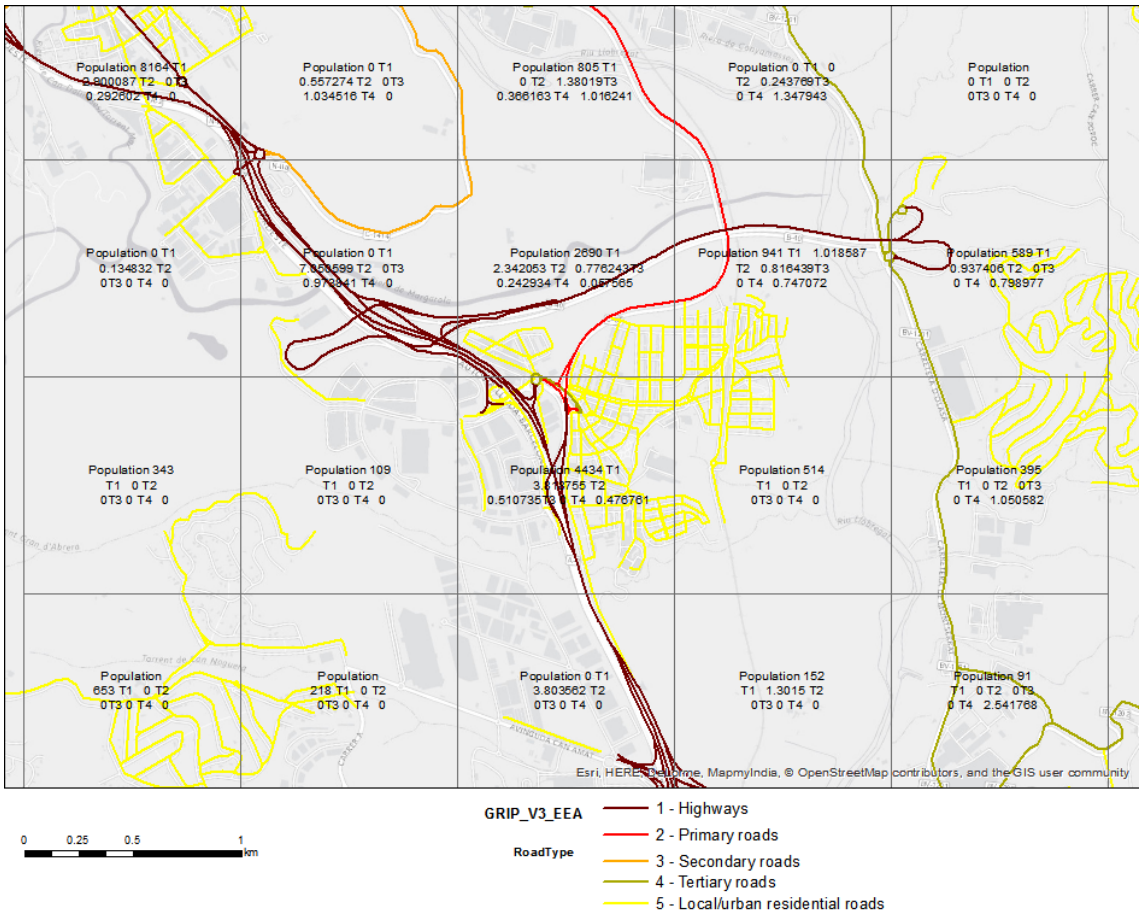
2.2.3 Road density data

We identified as most promising opportunity the road densities of the Global Roads Inventory Project (GRIP version 3). The road density raster datasets are derived from the Global Roads Inventory Project vector dataset. The raster datasets contain the kilometres of road per 5 arc minute grid cell (about 10 to 6 km) and are available for the total amount (all roads equal) and per road type: highways/motorways (1), primary roads (2), secondary roads (3), tertiary roads (4) and local/urban roads (5).
The (GRIP) database was created to provide a more recent and accurate global roads database compared to the well-known but outdated DCW/VMAP datasets. GRIP is based on data that was collected from many (50+) mainly publicly available sources, for instance National Spatial Data Infrastructures, topographic agencies, NGOs, Universities, UN agencies, etc. Also, parts of GRIP are derived from data created by the Open Street Map project. (www.openstreetmap.org).
The GRIP database had been refined by the Netherlands Assessment Agency to 1 by 1 km grid for EEA activities (see Figure 2.1).
Selection of the road type categories used in the analysis are:

- Highway density in a grid
- Primary road density in a grid
- Secondary road density in a grid
- Tertiary road density in a grid

An example of the road density grid in shown in Figure 2.2.

Figure 2.2 An example of the road density grid combined with population grid



2.2.4 Terrain surface

The acoustic absorption of the terrain surface can contribute to the overall noise prediction since the composition of the terrain plays an important role in horizontal sound propagation. Information about the acoustic absorption of the terrain was derived from Corine land cover classes.

As first step, the Corine land cover classes per 100 by 100 m is reclassified into one of the eight ground type categories defined by CNOSSOSS (European Commission, 2015) (type A-H). The conversion table is given in Annex 1.

CNOSSOS expresses the acoustic absorption for each ground type in a dimensionless coefficient G, between 0 (hard) and 1 (soft). The mean acoustic absorption G was calculated for each 1 by 1 km grid.

2.2.5 Noise data from the Netherlands and from Switzerland

Road traffic noise data was available from the Netherlands and from Switzerland. In addition, the availability of data from Denmark and Sweden has been explored. Unfortunately the format of the data was not suitable for the model used in this study.

In the Netherlands STAMINA (Standard Model Instrumentation for Noise Assessments) is used to calculate the road traffic noise exposure for the whole of the country (Schreurs et al.,

2010). The model uses the standard Dutch Calculation method for traffic and industrial noise (the Dutch 'Standaard Karteringsmethode') which is used to implement the European Environmental Noise Directive (European Commission, 2002). The output of the Stamina noise model are detailed noise maps for the year 2011. The spatial resolution of the noise maps depends on the distance between source and observation point. The lowest resolution is 80 x 80 m, and close to the source, the level of detail is the highest, with a resolution of 10 x 10 m.
For the Netherlands, the following information in tabular and GIS files format has been used in the analysis:

- Noise maps of 2011
- Building data at household level
- Population data at postcode level

In Switzerland, the emission model sonROAD and the transmission model according to ISO 9613 is used to calculate exposure to the road traffic noise for the whole of Switzerland. The source model determines the emitted sound power of a single vehicle as a function of vehicle type, speed, grade of the road and surface type (Heutschi, 2004). The outcome of the model is a raster map with a spatial resolution of 10 x 10 m and was calculated for year 2012 (BAFU 2009 and 2014).
For Switzerland the following information in tabular and GIS files format has been used in the analysis:

- Noise maps of 2012
- Households at country level with noise values (without people)
- Population density map
- Excel file with the total number of people exposed for L_{den}, L_{dn} and L_{night}. Average number of people per household for Switzerland (7.9 is the average number of people per household for Switzerland).

2.3 Statistical analysis

The road traffic noise level was aggregated from the noise maps of the Netherlands and Switzerland to a 1 by 1 km grid (EEA). We calculated per 1 by 1 km grid cell the number of inhabitants in ten 5 dB L_{den} exposure categories, ranging from smaller than 35 dB up to larger or equal to 75 dB. The average number of inhabitants per occupied dwelling was in the Netherlands based on information from the census about the total number of inhabitants per 6 digit postal code. On average, there are about 15-20 dwellings and about 50 inhabitants per 6 digit postal code. For Switzerland, the average number of inhabitants per building was available on national level for four exposure bands (<55, 55-65, 65-75 and ≥75 dB L_{den}). Since the national average might not reflect the local situation, we calibrated per 1 by 1 km grid cell the number of inhabitants per building with use of the total number of inhabitants from the GEOSTAT population density grid.

Also, the information about the potential predictors was available for the same 1 by 1 km grid cells:

- Total number of inhabitants according to the GEOSTAT population grid
- Total number of km highways
- Total number of km primary roads
- Total number of km secondary roads
- Total number of km tertiary roads

- The mean acoustic absorption G on a scale from 0 to 1.

The data was analysed using an ordered logistic regression. This is a special case of a multinomial logistical model that is used to predict the probabilities of different possible outcomes of a categorically distributed dependent variable. In this case, the dependent variable is ordinal (the noise exposure categories from low to high). In an ordered logistic regression an underlying score is estimated as a linear function of the independent variables and a set of cut points (equal to the number of categories minus one). The probability of belonging to a certain exposure category corresponds to the probability that the estimated linear function is within the range of the cut points estimated for the various exposure categories.

As independent variables, we considered attributes of the same cell (population density, road density and acoustic absorption as described above) and attributes of the surrounding cells. To take into account attributes of surrounding cells, we aggregated or summarised information about population density, road density and acoustic absorption in areas or in donuts ("bands around the central cell"). This is illustrated by 49 grid cells in a 7 by 7 km square.

11	12	13	14	15	16	17
21	22	23	24	25	26	27
31	32	33	34	35	36	37
41	42	43	44	45	46	47
51	52	53	54	55	56	57
61	62	63	64	65	66	67
71	72	73	74	75	76	77

The central cell is number 44 (area of 1 by 1 km).

We defined areas with a radius of (about):
- 1 km (1 central cell: 44),
- 2 km (9 cells: 33-35, 43-45 and 53-55),
- 3 km (25 cells: 22-26, 32-36, 42-46, 52-56 and 62-66), and
- 4 km (45 cells: 12-16, 21-27, 31-37, 41-47, 51-57, 61-67 and 72-76).

We also defined "bands" around the central cell:
- Donut 1 (8 cells: 33-35, 43, 44, 53-55),
- Donut 2 (16 cells: 22-26, 32, 36, 42, 46, 52, 56, 62-66), and
- Donut 3 (20 cells: 12-16, 21, 27, 31, 37, 41, 47, 51, 57, 61 and 72-76).

The population and the kilometres of roads in the grids were summed to get a total for the areas or the donuts. The acoustic absorption was averaged over the areas or donuts.

We fitted fractional polynomials for the potential predictors since they provide flexible parameterisation for continuous variables (Royston and Altman, 1994; Sauerbrei and Royston, 1999). For the total population in areas and donuts we applied a logarithmic (log10) transformation first since it improved the speed of the statistical analysis. Also the statistical model had difficulties to fit the data at low population densities. Therefore we introduced in

the analysis a categorical variable at low population levels: the noise exposure distribution is modelled as constant for areas with low population density.

We considered a large number of predictors. We started with fitting variables for the population density for different areas and combinations of donuts. After we had an initial model with population density as predictor, we added the various predictors for road traffic density. After we had a statistical model with a combination of predictors for population density and for road traffic density, we added predictors for acoustic absorption. Subsequently, we started again with population density to check whether in this more saturated model other population density variables could improve the prediction.

The criteria for the inclusion of a predictor in the (final) statistical model was that an increase in the population density or road length should lead to a shift of the exposure distribution to higher noise levels and a raise in acoustic absorption should result in a shift of the exposure distribution to lower noise levels.

It is difficult to express the explanatory power of ordered logistic regression in a single and interpretable variable. We therefore carried out a linear regression analysis with the population averaged L_{den} per grid cell as dependent variable. We used the predictors in the final ordered logistic regression models as predictors in the linear regression analysis to calculate the root mean square error (RMSE) of the prediction and the explained variance by the linear regression model.

2.4 Prediction and data extrapolation

With the obtained statistical models based on data from the Netherlands and from Switzerland and using the European wide available data on population density, road length and acoustic absorption, we predicted for each 1 by 1 km grid cell in Europe the noise exposure distribution per 5 dB L_{den} twice.

It was our primary objective to use the dataset for the estimation of the health risks of road traffic noise on a European level. For this we needed in addition to the L_{den} also the L_{night}. The difference between the L_{den} and the L_{night} differs between urban and rural areas. Also to calculate the L_{night}, we needed for the exposure distribution a resolution of 1 dB. Therefore we applied a number of transformations to the predicted exposure distributions.

As first step, we calculated from the predicted exposure distributions per grid cell and the population per grid cell the expected 5 dB exposure distributions in L_{den} for each of the European countries separately for END agglomerations and for all other areas in a country not part of END agglomerations.

As second step, we transferred the 5 dB in 1 dB exposure distribution using the methodology of Van Den Hout et al. (Van Den Hout et al., 2011) with minor modifications. In brief, the distribution consists of ten numbers, N1-N10, the percentages of inhabitants exposed to <35, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74 and ≥75 dB L_{den}, respectively. The width of the intervals is 5 dB. It is assumed that the highest interval is 75 - 79 dB. It is also assumed that the lowest interval (<35 dB) consists of two 5 dB intervals (25-29 and 30-34 dB) with 75% of the population in the 30-34 dB and 25% of the population in the 25-29 dB category.

For each 5 dB interval the mean gradient dN/dL (in % per dB) is given by:

$$(dN/dL)= 1/2 * [\ 1/5 *(N_{j+1} - N_j)+ 1/5 * (N_j - N_{j-1})\ ]$$

Next, the distribution is refined by replacing each 5 dB interval by five 1 dB intervals:

$$N_{j,k} = 1/5 * [N_j + (dN/dL)_j * (k-3)\ ]$$

where index k = 1, 2, to 5 runs over the five 1 dB intervals in 5 dB interval j.
Negative percentages in the refined distribution are avoided by applying an upper limit to the gradients.

As third step, we shifted the refined 1 dB L_{den} distribution predicted by the statistical model obtained using the Swiss dataset with 1 dB to a lower L_{den} level. The reason for this shift is described in section 3.3.

As fourth step, we combined the 1 dB distributions predicted by the two statistical models to one L_{den} distribution with a resolution of 1 dB (range 24-79 dB L_{den}). We weighted the fractions predicted by the two models based on Dutch and on Swiss data according to the uncertainties of the models for the mean L_{den}. The $fraction_{1dB}$ is:

$$(1/RMSE_{NL}\text{^}2)*Fraction_{1dB,NL}+(1/RMSE_{CH}\text{^}2)*Fraction_{1dB,CH}$$
divided by
$$Sqrt((1/RMSE_{NL}\text{^}2)+(1/RMSE_{CH}\text{^}2))$$

The assessment was carried out per country for agglomerations and non-agglomerations separately.

As last step, we derived the L_{night} distribution by shifting the 1 dB L_{den} distribution. We applied a difference of 8 dB between L_{den} and L_{night} for the areas outside the END agglomerations. For the END agglomeration we used a difference of 9 dB. The rationale for these values is described in Annex 2.

2.5 Exposure, risk and health impact assessment

It was expected that the WHO regional office for Europe (WHO/Europe) would have completed their Environmental Noise Guidelines for the European Region in the course of 2017. The derived noise exposure distribution in this report could then be used to carry out a risk assessment (how many people in Europe are exposed above a harmful level for road traffic noise?) or a health impact assessment (how many inhabitants are affected by health effects of road traffic noise?). Unfortunately the WHO report was not yet available when this report was prepared.

We decided to describe the exposure distribution with a high resolution. In this way it is possible to address the question quick “How many people in Europe are exposed above a harmful level for road traffic noise?” when the WHO report is published.

Also during the course of the project, it was agreed that a health impact assessment using the new insights of WHO will be carried out in 2018. Again, it was not seen as useful to generate

new estimates for the burden of disease to road traffic noise that could be out dated within a few months.

3 Results

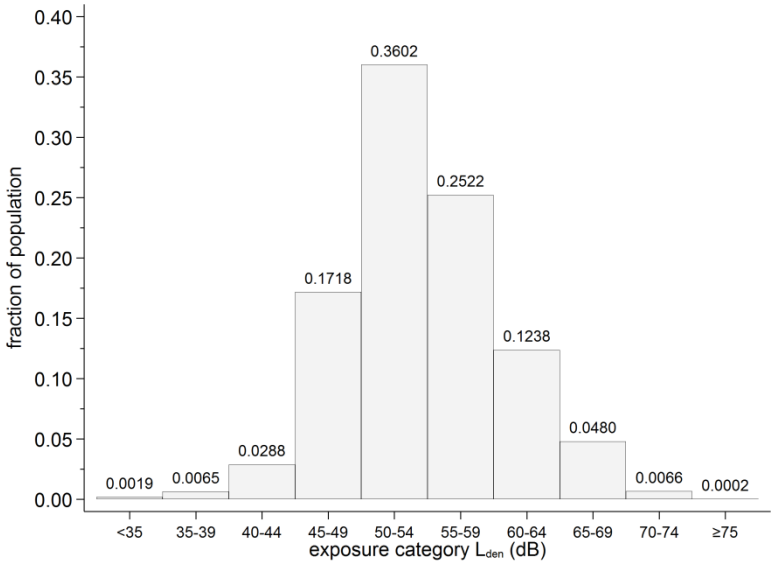
3.1 Introduction

This chapter will describe in section 3.2 and 3.3 the relations that were derived using the road traffic noise data from the Netherlands and from Switzerland respectively. In section 3.4 the distributions for road traffic noise are given as a result of the application of these relations in each of the European countries. Lastly, it is described what potential information or activities were undertaken for other sources of noise in Europe.

3.2 Relation predictors and noise distribution based on Dutch data

In Figure 3.2 the Dutch 5 dB L_{den} distribution is given that was used as input for the statistical analysis. The largest exposure category in the Netherlands is 50-54 dB L_{den}.

Figure 3.1 Dutch 5 dB L_{den} distribution expressed as fraction of the total population that was used as input for the statistical analysis



During the process of the statistical analysis it became clear that the influence of the population density and road density network was limited to the predictors in the central grid cells itself and partially to predictors in nearby surrounding areas or donuts. The influence of the acoustic absorption was small in comparison with the influence of the population and traffic predictors. Also, the impact of acoustic absorption was not in the expected direction or addition of acoustic absorption predictors in the models affected the impact of some of the traffic predictors (no longer in the expected direction). Therefore we decided to exclude acoustic absorption predictors from the final statistical model.

The interpretation of the estimates of an ordered logistic regression model is not easy. We therefore choose to present the outcomes of the final statistical model graphically in Figure 3.2. As mentioned in section 2.3 an underlying score is estimated as a linear function of the independent variables. In Figure 3.2 we have plotted the contribution of the predictors to the underlying score of the ordered logistic regression on the y axis (xb) as function of the predictor on the x-axis.

Figure 3.2 Relation between predictors and their contribution to the underlying score (xb) of the ordered logistic regression (based on Dutch data)

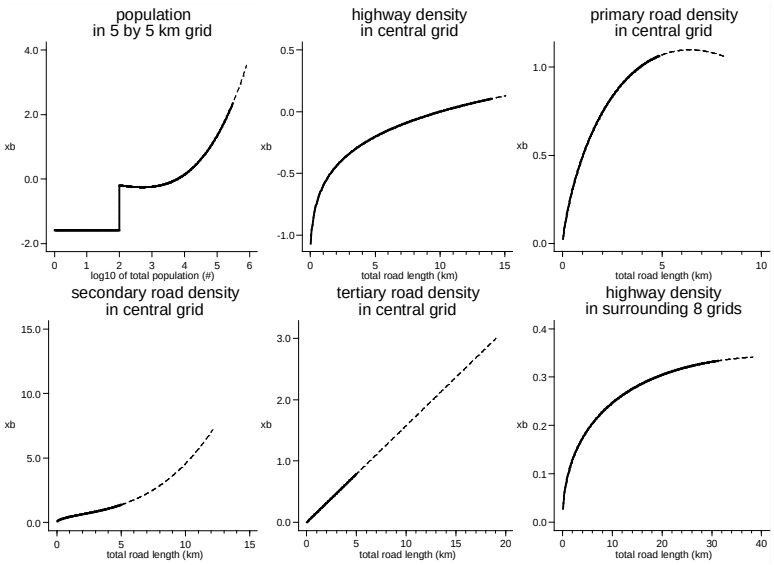


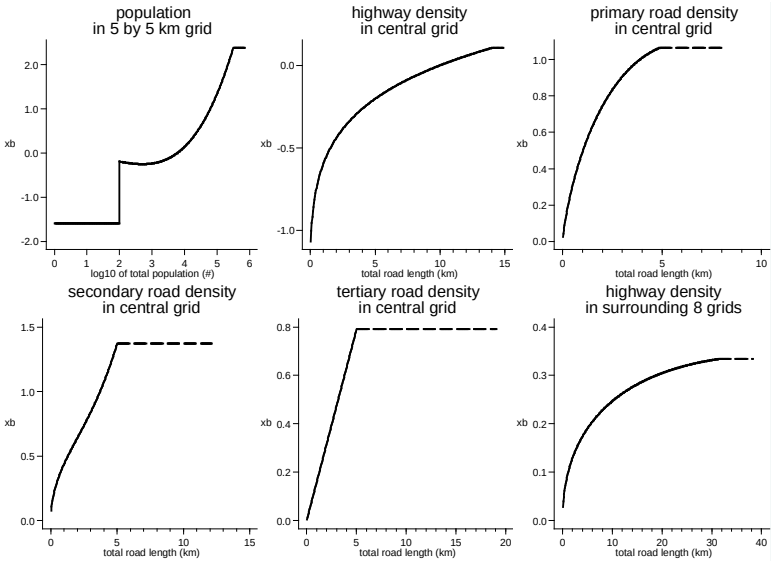
Figure 3.2 indicates that the population in a 5 by 5 km grid, the total km of highways, the total km of primary roads, the total km of secondary roads, the total km of tertiary roads in the central grid and the total km of highways in the donut around the central grid contribute to the prediction of the exposure distribution in the central grid cell. The explained variance of these predictors in a linear regression model was 46% with a root mean square of 2.85 dB.

The solid line in Figure 3.2 is the fitted relation over the range of values of the predictor in the Netherlands in grids where a population is present. The dotted line is the extrapolation of the relation to the full range of values of the predictor in grids in all countries in Europe where a population is present.

The range of the underlying score xb can be compared between the predictors. The range of the xb's is the largest for the population in a 5 by 5 km grid and the total km of secondary roads. To overcome difficulties with the fit of the relation for the population density, we assumed no influence below a population size of 100 inhabitants per 5 by 5 km.

From Figure 3.2 it becomes clear that extrapolation of the relations to values of the predictors outside the range present in the Netherlands could have a large impact on the xb. The impact is relative large for the total km of secondary roads. For the primary roads, the xb is declining when the length is larger than 7 km. To avoid unrealistic exposure due to extrapolation beyond the range of the original relations, we maximised the relation to the highest xb within the original range of the predictor. The applied relations for the prediction of the exposure distribution in all European countries are plotted in Figure 3.3.

Figure 3.3 Applied relations between predictors and their contribution to the score (xb) for the prediction of the fraction of the exposure categories (based on Dutch data)



About 2.1 million 1 by 1 grid cells in Europe are inhabited. Only in a limited number of cells, the maximum value of the fitted relation was applied: for the population in a 5 by 5 km grid 648 times (0.03% of the cells), for the total km of highways 1 time, for the total km of primary roads 99 times, for the total km of secondary roads 123 times, for the total km of tertiary roads 643 times and for the total km of highways in the donut around the central grid 14 times. The consequence of maximising the range of the predictors for the modelled exposure distribution seems therefore limited.

In Figure 3.4 the original and the modelled 5 dB L_{den} distributions are shown for the Netherlands. The agreement between the two distributions on country level is high.

Figure 3.4 Original and modelled Dutch 5 dB L_{den} distribution expressed as fraction of the total population

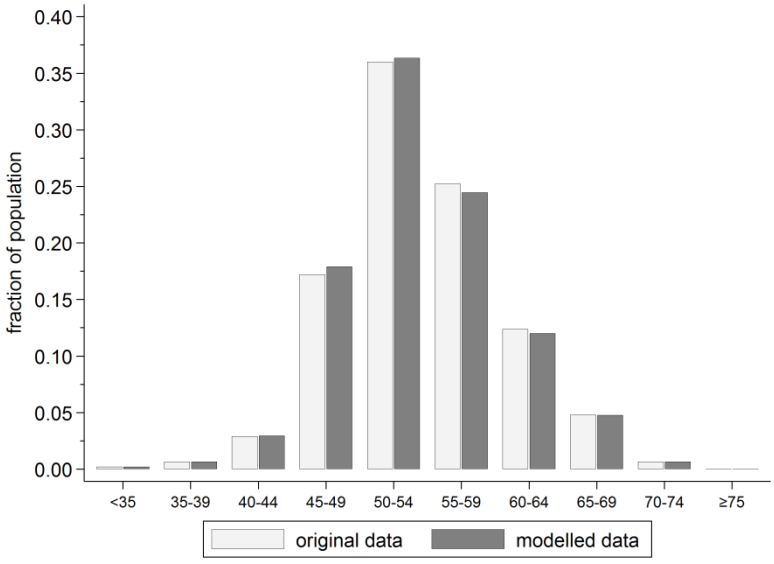


Table 3.1 gives insight in the importance of the predictors for the noise exposure distribution in Europe. We calculated for all predictors the population weighted mean and the interquartile range of their xb using the distribution of the predictors in the European population and the applied relations of Figure 3.3. From the population weighted mean xb, we subtracted the minimum value of xb to obtain the mean score.

Table 3.1 Influence of predictors on the underlying score (xb) of the ordered logistic function

Predictor	Mean score	Interquartile range
population in a 5 by 5 km grid	2.18	1.08
highways	0.146	0
primary roads	0.178	0.413
secondary roads	0.229	0.442
tertiary roads	0.211	0.3323
highways in the donut around the central grid	0.073	0.159

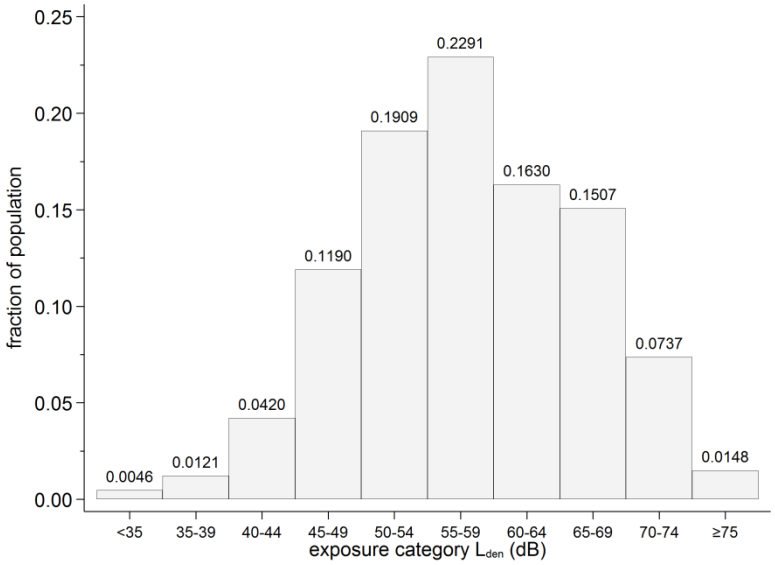
The results in Table 3.1 reveal that the population in a 5 by 5 km grid is the most important predictor in the statistical model for the noise exposure population in Europe. The mean score is almost 10 times larger than the second ranked predictor (secondary roads). Also, the interquartile range of the mean score is the largest for the population predictor. This means that differences in exposure distributions within and between countries will mainly be driven by variation in the population density when the "Dutch relations" are applied.

The estimates of the predictors and the set of cut off points of the final statistical model are given in Annex 3. Also is explained how the noise exposure distribution can be derived from these estimates and cut off points.

3.3 Relation predictors and noise distribution based on Swiss data

Figure 3.5 describes the Swiss 5 dB L_{den} distribution that was used as input for the statistical analysis. In largest exposure category in Switzerland is 55-59 dB L_{den}.

Figure 3.5 Swiss 5 dB L_{den} distribution expressed as fraction of the total population that was used as input for the statistical analysis



As described in section 2.4, we estimated the population per building since this information was not available in the dataset. We checked whether the estimated distribution per 5 dB was in agreement with the reported 2012 1 dB distribution for Switzerland (BAFU 2014). The two cumulative exposure distributions are shown in Figure 3.6 from 40 dB onwards.

Figure 3.6 Comparison between Swiss 5 dB L_{den} distribution used as input for the statistical analysis and reported 1 dB L_{den} distribution 2012

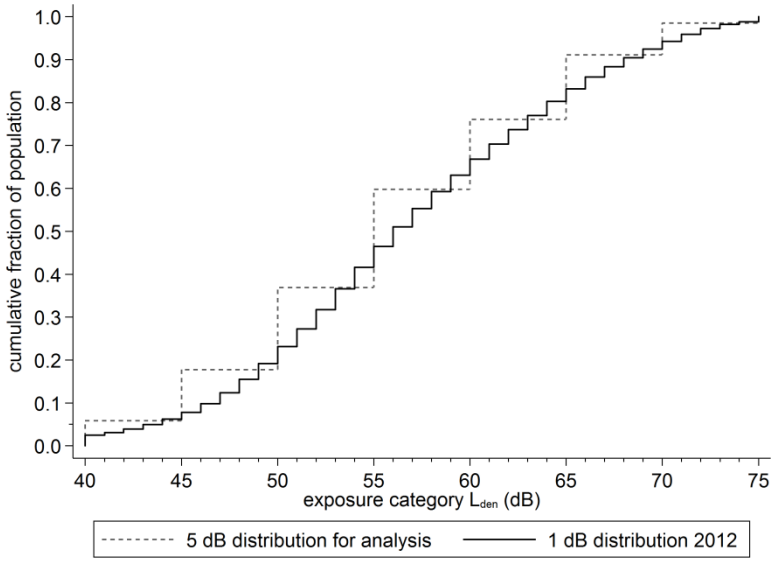
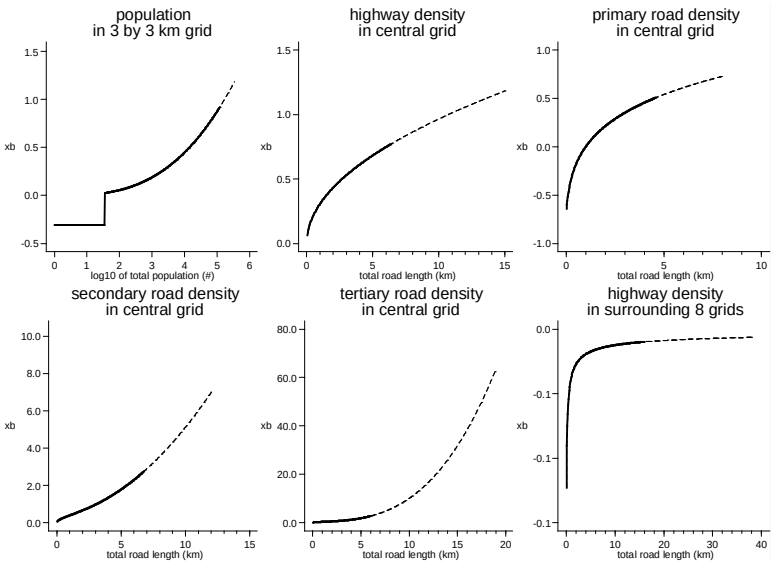


Figure 3.6 indicates that the estimated 5 dB distribution is slightly shifted to a higher exposure in comparison with the reported 1 dB distribution. From the graph it appears that the shift is about 1 dB at 55, 60, 65, 70 and 75 dB L_{den}. At 50 dB L_{den} the estimated shift is about 0.5 dB and at 45 dB the cumulative distribution are almost equal. Based on these results we decided to apply a post correction of 1 dB. One dB will be subtracted from predicted results based on relations derived from the estimated 5 dB distribution in Switzerland (see section 3.4). The results reported in this section are unadjusted.

Similar as described in the previous section, the influence of the population size and the length of roads was limited to the predictors in the central grid cells itself and to predictors in nearby surrounding areas or donuts. Also in the process of the statistical analysis of the Swiss data, acoustic absorption was excluded since the derived relations for absorption were not in the expected direction.

In Figure 3.6 we describe the results of the final statistical model by plotting the contribution of the predictors to the underlying score of the ordered logistic regression on the y axis (xb) as function of the predictor (x-axis).

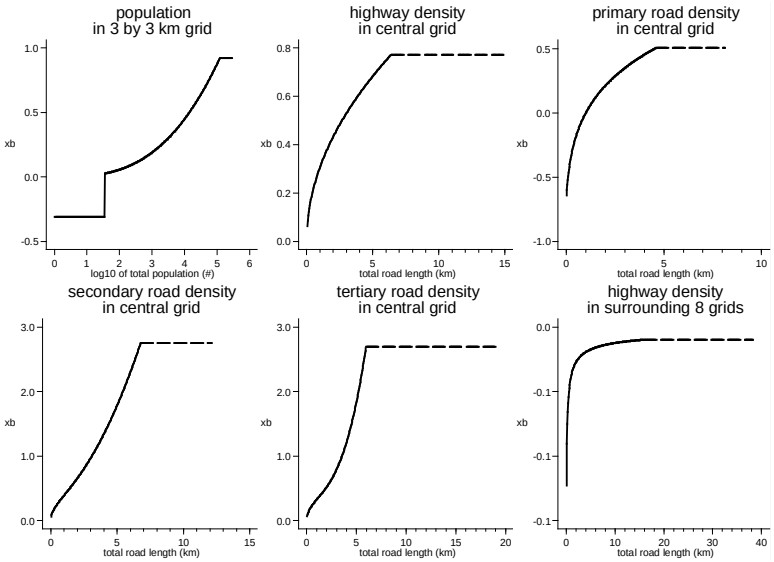
Figure 3.7 Relation between predictors and their contribution to the underlying score (xb) of the ordered logistic regression (based on Swiss data)



In the statistical analyses with the Swiss data the same predictors were found as in the Dutch data, with the exception of the predictor for the population. In the Swiss dataset, the best predictor was the population in a 3 by 3 km grid instead of in a 5 by 5 km grid for the Dutch dataset. The explained variance in a linear regression model of the six predictors in Figure 3.6 was 42% with a root mean scare of 3.39 dB. This fit is less than found in the Dutch dataset.

The solid line in Figure 3.6 is range of the fitted relation based on the range the predictor in Switzerland. The dotted line is extrapolated relation to the full range of the predictor all countries in Europe. Extrapolation of the fitted relations for the secondary and the tertiary road network might result in unrealistic high exposures in other countries in Europe since these relations are rather steep. As in the previous section, we maximised the relation to the highest xb within the original range of the predictor. The applied relations for the prediction of the exposure distribution in all European countries are plotted in Figure 3.7.

Figure 3.8 Applied relations between predictors and their contribution to the score (xb) for the prediction of the fraction of the exposure categories (based on Swiss data)



Again, only in a limited number of cells, the maximum value of the fitted relation was applied: for the population in a 3 by 3 km grid 1,516 times (0.07% of the grid cells with population in Europe), for the total km of highways 409 time, for the total km of primary roads 144 times, for the total km of secondary roads 25 times, for the total km of tertiary roads 331 times and for the total km of highways in the donut around the central grid 1,604 times. The consequence of maximising the range for the predicted exposure distribution seems therefore limited.

In Figure 3.9 the original estimated 5 dB L_{den} distribution and the modelled 5 dB distributions based on the relations shown in Figure 3.7 and the set of predictors in Switzerland are shown. The agreement between the distributions is high.

Figure 3.9 Original and modelled Swiss 5 dB L_{den} distribution expressed as fraction of the total population

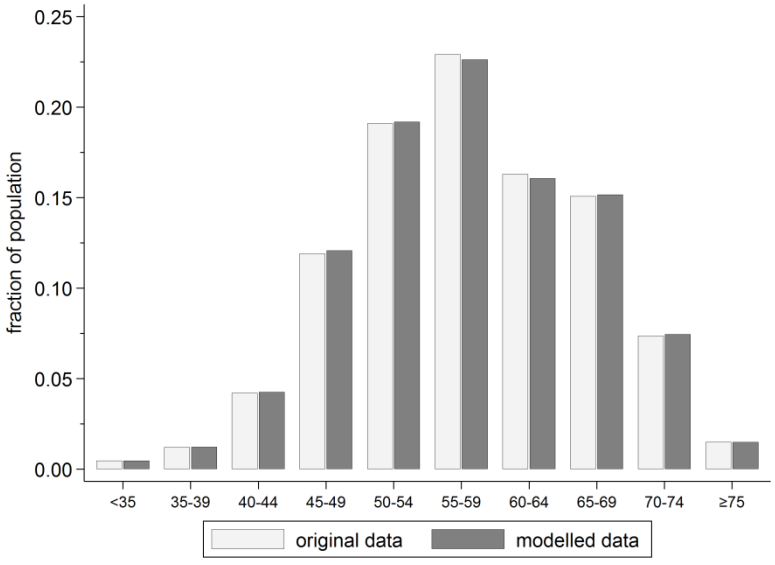


Table 3.2 describes the importance of the predictors in the statistical model based on Swiss data for the noise exposure distribution in Europe.

Table 3.2 Influence of predictors on the underlying score (xb) of the ordered logistic function

Predictor	Mean score	Interquartile range
population in a 3 by 3 km grid	0.784	0.035
highways	0.068	0
primary roads	0.336	0.426
secondary roads	0.222	0.399
tertiary roads	0.247	0.368
highways in the donut around the central grid	0.118	0.279

The results indicate that the importance of the population is much smaller compared to the traffic related predictors than is the case in the statistical model based on the Dutch data. Also, the variation in the predicted noise exposure distribution within or between countries will mainly be a result of the variation in the traffic predictors and less influenced by the variation in the population when the "Swiss relations" are applied.

The estimates of the predictors and the set of cut off points of the final statistical model are given in Annex 4.

3.4 Estimates of the European noise distribution

We applied the relations based on Dutch and Swiss data to all cells of the EEA grid (EEA-32 countries). The correlation between the two predicted mean exposures per grid cell (based on 5 dB categories) according the two different models is 0.91. The population weighted average exposure over all EEA-32 countries is 53.8 dB (Dutch data) and 56.7 dB (adjusted, Swiss data). The correlation between the estimated mean noise level indicate that the spatial agreement between the two models is excellent. The results also show that there is a systematic difference between the two models, after adjustment for population and traffic network density. Since the models use the same predictors, it is not likely that the systematic difference is introduced by the results of the statistical modelling. It seems more likely that the difference of 3 dB reflects a systematic difference between the modelling of road traffic noise in Switzerland and the Netherlands. Since we consider both models as valid, we "averaged" the results since this reflects the best estimator of the European noise distribution.

We aggregated the fractions per 5 dB exposure category per grid cell to a (population weighted) country 5 dB distribution, for agglomerations and for rural areas (areas outside agglomerations). After refinement of the 5 dB to a 1 dB distribution and adjusting the Swiss data with 1 dB, we averaged the predicted fractions per 1dB exposure class by the two sets of equations. Based on the uncertainties of the models for the mean L_{den}, we have given in the process of averaging more weight to the fractions predicted by the Dutch data (about 60% of the weight) than by the Swiss data (about 40% of the weight). From the 1 dB L_{den} distribution, we derived a 1 dB L_{night} distribution per country, for agglomerations and for rural areas separately.

We summarised the results in the Tables 3.3 – 3.5 for the EEA-32 and in the Tables 3.6 – 3.7 for the EU28. The results for individual countries of the EEA-32 are given in Annex 5.

The estimated road traffic noise distribution is given per decibel for a range of 40-70 dB L_{den} and for a range of 30-60 dB $L_{night,}$ for non END agglomerations, for END agglomerations and for the total population separately. The tables can be used for risk assessment when WHO regional office for Europe publishes their Environmental Noise Guidelines for the European Region.

Table 3.3 Estimated cumulative road traffic noise distribution per decibel for 40-70 dB L_{den} and 30-60 dB L_{night} for non END agglomerations in EEA-32

dB	*L_{den}*		*L_{night}*	
	Population (million)	*Fraction*	*Population (million)*	*Fraction*
30			327.9	0.988
31			326.5	0.984
32			324.8	0.979
33			323.6	0.975
34			321.0	0.967
35			316.9	0.955
36			311.5	0.939
37			304.1	0.917
38			292.2	0.881
39			278.6	0.840
40	324.8	0.979	263.3	0.793
41	323.6	0.975	246.2	0.742
42	321.0	0.967	227.3	0.685
43	316.9	0.955	205.7	0.620
44	311.5	0.939	184.3	0.555
45	304.1	0.917	163.1	0.492
46	292.2	0.881	142.1	0.428
47	278.6	0.840	121.2	0.365
48	263.3	0.793	105.5	0.318
49	246.2	0.742	91.3	0.275
50	227.3	0.685	78.5	0.237
51	205.7	0.620	67.2	0.202
52	184.3	0.555	58.4	0.176
53	163.1	0.492	50.4	0.152
54	142.1	0.428	43.4	0.131
55	121.2	0.365	37.2	0.112
56	105.5	0.318	31.8	0.096
57	91.3	0.275	26.6	0.080
58	78.5	0.237	21.7	0.065
59	67.2	0.202	17.2	0.052
60	58.4	0.176	13.2	0.040
61	50.4	0.152		
62	43.4	0.131		
63	37.2	0.112		
64	31.8	0.096		
65	26.6	0.080		
66	21.7	0.065		
67	17.2	0.052		
68	13.2	0.040		
69	9.7	0.029		
70	7.3	0.022		

Table 3.4 Estimated cumulative road traffic noise distribution per decibel for 40-70 dB L_{den} and 30-60 dB L_{night} for END agglomerations in EEA-32

dB	*L_{den}*		*L_{night}*	
	Population (million)	*Fraction*	*Population (million)*	*Fraction*
30			178.4	0.993
31			178.1	0.991
32			177.9	0.990
33			177.3	0.987
34			176.4	0.982
35			175.2	0.975
36			173.4	0.965
37			171.2	0.953
38			168.2	0.936
39			164.4	0.915
40	178.1	0.991	159.9	0.890
41	177.9	0.990	154.5	0.860
42	177.3	0.987	147.0	0.818
43	176.4	0.982	138.9	0.773
44	175.2	0.975	130.2	0.725
45	173.4	0.965	121.0	0.674
46	171.2	0.953	111.0	0.618
47	168.2	0.936	101.5	0.565
48	164.4	0.915	92.2	0.513
49	159.9	0.890	83.0	0.462
50	154.5	0.860	74.0	0.412
51	147.0	0.818	65.8	0.366
52	138.9	0.773	58.4	0.325
53	130.2	0.725	51.4	0.286
54	121.0	0.674	44.8	0.249
55	111.0	0.618	38.7	0.215
56	101.5	0.565	32.4	0.180
57	92.2	0.513	26.7	0.149
58	83.0	0.462	21.5	0.119
59	74.0	0.412	16.7	0.093
60	65.8	0.366	12.4	0.069
61	58.4	0.325		
62	51.4	0.286		
63	44.8	0.249		
64	38.7	0.215		
65	32.4	0.180		
66	26.7	0.149		
67	21.5	0.119		
68	16.7	0.093		
69	12.4	0.069		
70	9.0	0.050		

Table 3.5 Estimated cumulative road traffic noise distribution per decibel for 40-70 dB L_{den} and 30-60 dB L_{night} for EEA-32

dB	*L_{den}*		*L_{night}*	
	Population (million)	*Fraction*	*Population (million)*	Fraction
30			506.3	0.990
31			504.6	0.987
32			502.7	0.983
33			500.9	0.979
34			497.4	0.973
35			492.1	0.962
36			484.9	0.948
37			475.3	0.929
38			460.4	0.900
39			443.0	0.866
40	502.9	0.983	423.1	0.827
41	501.5	0.981	400.7	0.783
42	498.3	0.974	374.2	0.732
43	493.3	0.965	344.6	0.674
44	486.7	0.952	314.5	0.615
45	477.5	0.934	284.1	0.556
46	463.4	0.906	253.1	0.495
47	446.8	0.874	222.7	0.436
48	427.7	0.836	197.7	0.387
49	406.1	0.794	174.3	0.341
50	381.8	0.746	152.5	0.298
51	352.6	0.690	133.0	0.260
52	323.2	0.632	116.8	0.228
53	293.3	0.574	101.8	0.199
54	263.1	0.514	88.2	0.172
55	232.3	0.454	75.8	0.148
56	207.0	0.405	64.3	0.126
57	183.5	0.359	53.3	0.104
58	161.5	0.316	43.1	0.084
59	141.2	0.276	33.9	0.066
60	124.2	0.243	25.6	0.050
61	108.8	0.213		
62	94.8	0.185		
63	82.0	0.160		
64	70.5	0.138		
65	59.1	0.115		
66	48.4	0.095		
67	38.7	0.076		
68	29.9	0.059		
69	22.1	0.043		
70	16.3	0.032		

Table 3.6 Estimated cumulative road traffic noise distribution per decibel for 40-70 dB L_{den} and 30-60 dB L_{night} for non END agglomerations in EU-28

dB	*L_{den}*		*L_{night}*	
	Population (million)	*Fraction*	*Population (million)*	*Fraction*
30			318.5	0.988
31			317.1	0.984
32			315.5	0.979
33			314.3	0.975
34			311.7	0.967
35			307.8	0.955
36			302.5	0.939
37			295.3	0.916
38			283.8	0.881
39			270.5	0.839
40	315.5	0.979	255.6	0.793
41	314.3	0.975	239.0	0.742
42	311.7	0.967	220.6	0.685
43	307.8	0.955	199.6	0.619
44	302.5	0.939	178.8	0.555
45	295.3	0.916	158.3	0.491
46	283.8	0.881	137.9	0.428
47	270.5	0.839	117.6	0.365
48	255.6	0.793	102.4	0.318
49	239.0	0.742	88.6	0.275
50	220.6	0.685	76.2	0.236
51	199.6	0.619	65.2	0.202
52	178.8	0.555	56.6	0.176
53	158.3	0.491	48.9	0.152
54	137.9	0.428	42.1	0.131
55	117.6	0.365	36.0	0.112
56	102.4	0.318	30.9	0.096
57	88.6	0.275	25.8	0.080
58	76.2	0.236	21.0	0.065
59	65.2	0.202	16.7	0.052
60	56.6	0.176	12.8	0.040
61	48.9	0.152		
62	42.1	0.131		
63	36.0	0.112		
64	30.9	0.096		
65	25.8	0.080		
66	21.0	0.065		
67	16.7	0.052		
68	12.8	0.040		
69	9.5	0.029		
70	7.0	0.022		

Table 3.7 Estimated cumulative road traffic noise distribution per decibel for 40-70 dB L_{den} and 30-60 dB L_{night} for END agglomerations in EU-28

dB	*L_{den}*		*L_{night}*	
	Population (million)	*Fraction*	*Population (million)*	*Fraction*
30			174.9	0.993
31			174.5	0.991
32			174.3	0.990
33			173.7	0.987
34			172.9	0.982
35			171.6	0.975
36			170.0	0.965
37			167.8	0.953
38			164.8	0.936
39			161.1	0.915
40	174.5	0.991	156.7	0.890
41	174.3	0.990	151.4	0.860
42	173.7	0.987	144.1	0.818
43	172.9	0.982	136.1	0.773
44	171.6	0.975	127.7	0.725
45	170.0	0.965	118.7	0.674
46	167.8	0.953	108.9	0.619
47	164.8	0.936	99.5	0.566
48	161.1	0.915	90.4	0.514
49	156.7	0.890	81.4	0.463
50	151.4	0.860	72.6	0.413
51	144.1	0.818	64.6	0.367
52	136.1	0.773	57.3	0.325
53	127.7	0.725	50.4	0.286
54	118.7	0.674	44.0	0.250
55	108.9	0.619	37.9	0.215
56	99.5	0.566	31.8	0.181
57	90.4	0.514	26.2	0.149
58	81.4	0.463	21.0	0.120
59	72.6	0.413	16.4	0.093
60	64.6	0.367	12.2	0.069
61	57.3	0.325		
62	50.4	0.286		
63	44.0	0.250		
64	37.9	0.215		
65	31.8	0.181		
66	26.2	0.149		
67	21.0	0.120		
68	16.4	0.093		
69	12.2	0.069		
70	8.9	0.050		

Table 3.8 Estimated cumulative road traffic noise distribution per decibel for 40-70 dB L_{den} and 30-60 dB L_{night} for EU-28

dB	*L_{den}*		*L_{night}*	
	Population (million)	*Fraction*	*Population (million)*	*Fraction*
30			493.3	0.990
31			491.6	0.987
32			489.8	0.983
33			488.0	0.979
34			484.6	0.973
35			479.5	0.962
36			472.5	0.948
37			463.1	0.929
38			448.6	0.900
39			431.7	0.866
40	490.0	0.983	412.3	0.827
41	488.6	0.981	390.4	0.784
42	485.5	0.974	364.6	0.732
43	480.7	0.965	335.8	0.674
44	474.2	0.952	306.5	0.615
45	465.3	0.934	276.9	0.556
46	451.5	0.906	246.7	0.495
47	435.3	0.874	217.2	0.436
48	416.7	0.836	192.8	0.387
49	395.7	0.794	170.0	0.341
50	372.0	0.747	148.8	0.299
51	343.7	0.690	129.7	0.260
52	315.0	0.632	113.9	0.229
53	285.9	0.574	99.3	0.199
54	256.5	0.515	86.0	0.173
55	226.5	0.455	74.0	0.148
56	201.9	0.405	62.7	0.126
57	179.0	0.359	52.0	0.104
58	157.6	0.316	42.1	0.084
59	137.8	0.276	33.1	0.066
60	121.2	0.243	25.0	0.050
61	106.2	0.213		
62	92.5	0.186		
63	80.0	0.161		
64	68.8	0.138		
65	57.6	0.116		
66	47.2	0.095		
67	37.7	0.076		
68	29.2	0.059		
69	21.6	0.043		
70	15.9	0.032		

We summarised the tables for the EEA-32 in Table 3.9. In this table the population size exposed to levels above the noise levels that are used for the assessment areas of the END (55 dB L_{den} and 50 dB L_{night}) is described. We also used a level of 50 dB L_{den} as interim health based guideline value for the 24 hour period and 40 dB L_{night} for the night-time. Results from recent meta-analyses (Van Kempen and Babisch, 2012; Vienneau et al, 2013; Babisch, 2014) indicate that noise levels from 50-55 dB L_{den} onwards could increase the risk of hypertension and coronary heart disease. 40 dB L_{night} is the recommended guideline value in the 'Night noise guidelines for Europe' (WHO, 2009). This value is intended to protect the general population against sub clinical effects of night noise exposure.

Table 3.9 Population exposed to road traffic noise level above 50 and 55 dB L_{den} and 40 and 50 dB L_{night} in EEA-32 (in million)

	All areas	Agglomerations	Outside agglomerations
Total population	512	180	332
≥50 dB L_{den}	382 [373-394]	155 [150-157]	227 [216-243]
≥55 dB L_{den}	232 [193-287]	111 [105-119]	121 [87-169]
≥40 dB L_{night}	423 [422-424]	160 [155-162]	263 [259-269]
≥50 dB L_{night}	153 [110-211]	74 [64-88]	79 [47-124]

In Table 3.9, the separate estimations based on the "Dutch" and "Swiss" prediction formulas are found in brackets. At lower noise levels (50 dB L_{den} and 40 dB L_{night}) both estimations agree very well. At the higher noise levels, the deviation is up to 30% from the "mean" estimation.

3.5 Comparison with reported END data from agglomerations

In Figure 3.10 the reported and modelled fraction of the population above 55 dB L_{den} in agglomerations is compared with a linear regression. The comparison is restricted to the 417 END agglomerations that reported data for 2012. Agglomerations with imputed data were omitted.

Figure 3.10 Reported and modelled fraction of population above 55 dB L_{den} in END agglomerations (n=417)

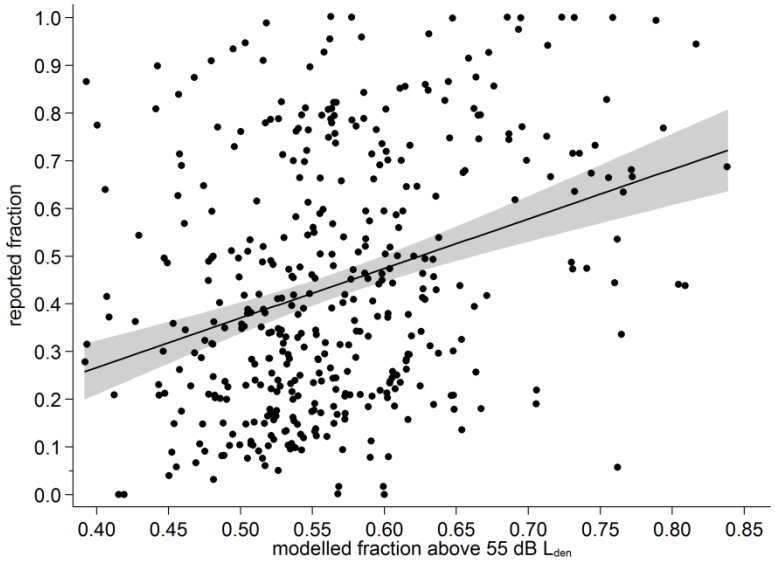


Figure 3.10 indicates that there is a weak correlation between the reported and modelled fraction. The correlation coefficient is 0.32 for the fraction above 55 dB L_{den} and 0.42 for the fraction above 50 dB L_{night} (not shown). The results indicate that the modelled exposure distributions are not a good predictor for individual agglomerations.
The explained variance of the regression model increases from 10 to 51% if we take into account in the statistical analysis that systematic differences between countries exist. This result means that, at a given modelled fraction above 55 dB L_{den}, the prediction for an agglomeration improves substantially if we would add or subtract a fixed fraction for each of the countries.
If we assume that the country differences are a random distribution with a mean of zero (random intercept model), the standard deviation of the country differences is 0.15. The minimum and maximum difference from zero is -0.26 and 0.27 (expressed as reported fraction above 55 dB L_{den}).
The Netherlands has a difference of -0.15 (rank 3 of 28 countries); the reported fraction above 55 dB L_{den} is lower than predicted based on the population and road network density. For Switzerland, the difference is 0.07 (rank 19 of 28 countries); the reported fraction for END agglomerations is slightly higher than predicted.
The difference for both countries is within one standard deviation which indicates that the noise assessment methods in both countries do not deviate substantially from the "average" European country.

3.6 Comparison with earlier results using population density grid

As mentioned in the Introduction, a similar methodology was carried out in 2016 to calculate the road traffic noise exposure in Europe (Blanes et al., 2016). In Table 3.10 we compare the results for L_{den} in this report with the results for L_{den} reported in 2016. In Table 3.11, the results for the L_{night} are compared.

In 2016 the END data for major roads outside the END agglomerations was enriched with road traffic noise data in rural areas using a grid approach based on population density data only. For the END agglomerations, we used in 2016 the reported, gap filled and extrapolated data.

Table 3.10 Population exposed to road traffic noise level above 50 and 55 dB L_{den} in EEA-32 according to different methods (in million)

Assessment area	≥50 dB L_{den}	≥55 dB L_{den}
Total EEA-32		
Combination of gap filled and extrapolated END data and grid approach 2016 (population density) (reported in 2016)	356	206
This report (population and road network density)	382	232
Outside agglomerations		
Combined results major roads and grid approach 2016 (population density)	229	133
This report (population and road network density)	227	121
END agglomerations		
Extrapolated and gap filled END-data (data reported in 2016)	128	73
This report (population and road network density)	155	111

Table 3.11 Population exposed to road traffic noise level above 40 and 50 dB L_{night} in EEA-32 according to different methods (in million)

Assessment area	≥40 dB L_{night}	≥50 dB L_{night}
Total EEA-32		
Combination of gap filled and extrapolated END data and grid approach 2016 (population density) (reported in 2016)	421	142
This report (population and road network density)	423	153
Outside agglomerations		
Combined results major roads and grid approach 2016 (population density)	261	91
This report (population and road network density)	263	79
END agglomerations		
Extrapolated and gap filled END-data (data reported in 2016)	160	52
This report (population and road network density)	160	74

The results in the tables 3.10 and 3.11 indicate similar results for the approach in 2016 and the results with the method described in this report.

For the L_{den} there is a slight increase in the estimated population above 55 dB in this report compared to Blanes et al. (2016): 232 versus 206 million (about +12%). This is also the case for the population above 50 dB L_{den}: +7%.
The reason for this small increase is the different approach in END agglomerations; making use of the prediction based on the population and road network density instead of the reported and gap filled END data increases the population above 55 dB L_{den} from 73 to 111 million (+52%). For the population above 50 dB L_{den} the increase is 21%. The results for the areas outside the END agglomerations are similar in 2016 and 2017 (-8% for above 55 dB).

A possible explanation could be that for the END there is no strict obligation to incorporated low flow roads in the calculations (WG-AEN, 2007). In situations where these roads are neglected this could lead to an underestimation of noise exposure for the END data.

For the night time exposure, the results for 2016 and in this report are almost identical for the population above 40 dB L_{night}. For the more exposed population (above 50 dB L_{night}) small differences were found for the total EEA-32 (142 million versus 153 million).

3.7 Comparison with previous studies

Recently, Alberts et al. (2016) explored whether it is possible to estimate how many inhabitants in Europe are exposed to road traffic noise, making use of the 2012 END data and additional sources of data. Their results are compared in Table 3.12 with the results in this report.

Table 3.12 Comparison of grid approach 2017 and Alberts et al. (2016): population exposed above 55 dB L_{den}

	Current method (EEA-32)	Alberts et al. (EU-30)
END-agglomerations	111	76
Outside END-agglomerations	121	64
Total exposure	232	140

Based on END data, Alberts et al. (2016) reported that 76 million inhabitants in agglomerations in the EU-30 are exposed above 55 dB L_{den}. For the exposure from roads outside END agglomerations, they estimated an exposed population of 64 million inhabitants above 55 L_{den}. They expected that there are approximately 36 million people living outside agglomerations that are exposed to noise levels from traffic on non-major roads with less than three million vehicles per year. This estimation was based on projection of road lengths of non-major roads in Europe divided in four different types of non-major roads, the distance of noise level contours along non-major roads outside agglomerations and the population density in inhabitants per square km outside agglomerations. An additional 28 million was exposed to noise levels of 55 dB L_{den} or more due to road traffic noise from major roads with more than three million vehicles per year.,
The total estimation (140 million) of Alberts et al. (2016) is much lower than reported in this report. The methods of Alberts et al. are much less detailed than the method applied in this report which might explain the difference.

In their underlying technical report Alberts et al. provided an overview of earlier estimations of the road traffic noise exposure distribution in Europe (Alberts, personal communication). A selection of the overview is given in Table 3.13.

Table 3.13 Estimation of road traffic noise exposed people in Europe from previous studies (Alberts, personal communication)

Source	Description	Result
EC, 1996	EU population exposed to continuous day-time outdoor noise levels above 55 dB(A) caused by transport	250 million
Hooghwerff et al., 1998	Estimated exposure of the total EU-15 population to road traffic noise levels of 55 dB and more dB L_{dn}	120 million
EEA, 1999	People in the EU exposed to road traffic noise levels above 55 dB L_{dn}	120 million
Roovers et al., 2000	Inhabitants of EU exposed to road traffic noise exceeding 55 dB L_{dn}	251 million
CE, 2007	Population of the EU25 (EU27 except Cyprus and Malta) exposed to road traffic noise levels above 55 dB(A) in the year 2000.	210 million
CE, 2011	Number of people exposed to noise from roads above 55 dB L_{den} in 27 EU countries	138 million
Alberts et al., 2016	Population in EU-30 exposed above 55 dB L_{den}	140 million
This report	Population in EU-28 exposed above 55 dB L_{den} Population in EEA-32 exposed above 55 dB L_{den}	227 million 232 million

The results of this study are in the upper range of the results of earlier reported studies. The range of previous studies estimating the population in Europe exposed to transport, traffic or road traffic noise varied from 120 million up to 250 million. It should be noted that there are difference between the studies like the territory (ranging from EU-15 up to EEA-32), the noise indicator (L_{dn} or L_{den}) and the year.

3.8 Other sources of noise

3.8.1 Introduction

The method described in this report primarily focuses on noise exposure from road traffic. Although road traffic is also the primary source of noise exposure for the total population, noise from other sources can also lead to a health risk. This section explores the feasibility to develop methods to estimate the full noise exposure distribution of rail and aircraft noise.

3.8.2 Railway noise

For calculation of exposure to railways noise outside the areas covered by the END, it is expected that the current approach for road traffic noise will not be feasible when applied to railway noise. To our knowledge no relation is available between population density and railway noise exposure. In the absence of this relation a different approached should be applied. A possibility is the adoption of relatively simple acoustical models. This is only feasible in acoustical less complex situations such as rural areas outside the END agglomerations. For these acoustical simple models relevant input traffic data like speed, intensities and composition must be available in a relevant GIS format. Also, information on land use and building information are a prerequisite. CNOSSOS (European Commission, 2015) identifies the key elements to be considered:

- Source emission
- Type of vehicle
- Number of axes
- Brake type
- Track and support structure
- Rail roughness;
- Sound power emission
- Traffic flow
- Rolling noise

It is not possible to model these elements at a European level due to lack of available input data. A workaround is to simplify the source emission by the type of rail transport like, high speed, passenger trains, and freight trains (van Blokland and Lutzenberger, 2014).

Most environmental rail noise issues are caused by freight transport (de Vos, 2016). Freight trains are running more frequent in the 10 dB more sensitive night period and are about 10 times noisier than modern passenger trains. The noisiness of freight trains can be traced back to the type of braking system. The conventional cast iron brake blocks spoil the smoothness of the wheel surface, thus causing vibration and noise in the environment, even when running on completely flat rail surfaces.
Analyses of transportation data from EUROSTAT show that in 2016 almost 27% of the total rail transportation volume in Europe affected Germany. Poland in the second place has a share of rail freight volume of 12% and France in the third place has 9%. Concerning passenger transport, Germany has a 20% share and France 21%. Analyses of the noise mapping results show that the exposure is most prominent in France, Belgium, Luxembourg, the Netherlands, Austria and Switzerland. These two aspects are the reason why data, comments, available studies and national policy activities concentrate mostly on Central Europe and, in particular on the German speaking countries and the Netherlands.

Following the previous findings and the simplified methodology proposed by Canadian Transport Agency (2014), the extrapolation should be based on the following elements:

- Source. Type of trains will be simplified to the following classes: passenger, high speed and freight.
- Traffic. Number of trains by type of source.
- Roughness.
- Distribution of population (receptor).

The data needed for the above mentioned factors could be extracted from the following sources:

- Rail network
  - Euro-geographics
  - Country information.
- Traffic by rail network. There is information on traffic and type of traffic at NUTS3 level[1] that could be disaggregated, combined with country information.
- Additional information could be obtained from the International Union of Railways and Laboratoire Ville Mobilité Transport which holds a large dataset on railways in Europa and with which UAB has collaborated in different projects (e.g. ESPON FOCI[2]).
- Roughness. According to CNOSSOS each country should provide a roughness factor. These values will be used when available. If not, a European average will be considered.
- Population grid.

The logical steps would be:

- Select one or two countries where the information is available. Conduct a preliminary study on the feasibility to consolidate the methodology, in particular to define the emission and the propagation based on the distance to the source.
- Conduct an analysis on the disaggregation of NUTS3 data on rail transport if information is not available at country level.

Furthermore, as an first step, potential exposed areas can be identified by defining buffers around the (known) rail tracks and calculating the estimated population at risk by using the EEA population grid.

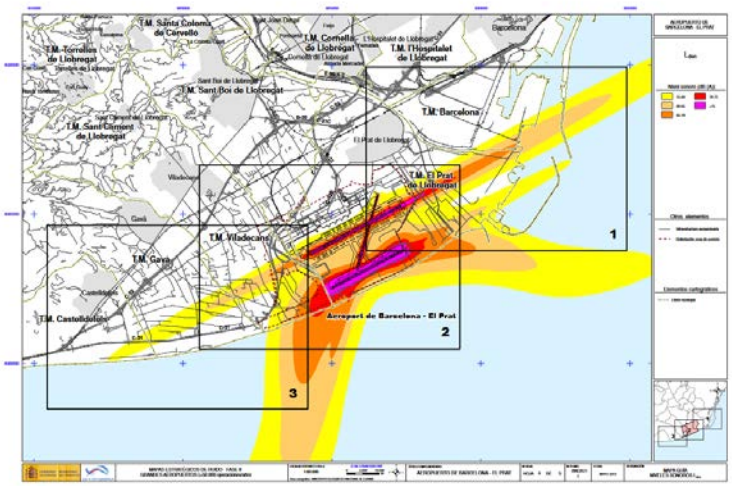
3.8.3 Aircraft noise

An important difference of aircraft noise compared to rail and road is its site-specificity as recognised in CNOSSOS-EU (European Commission, 2015). This is explained by the route taken by airplanes which requires the specific information for each airport. As an example, Figure 3.11 shows the noise contour map of the Barcelona airport. It could be seen that an important part of the noise contour bands are on the sea side to reduce the impact on neighbouring dwellings. It is also evident that the lanes could not be used as a proxy since the noise contour bands are modulated by the routes.

[1] http://ec.europa.eu/eurostat/statistics-explained/index.php/Freight_transport_statistics_-_modal_split
http://ec.europa.eu/eurostat/statistics-explained/index.php/Railway_freight_transport_statistics
[2] https://www.espon.eu/programme/projects/espon-2013/applied-research/foci-future-orientation-cities

In addition to that, there is not a significant correlation between air traffic and people exposed as reported in Blanes et al. (2015). This reflects the use of land planning as a noise abatement measure (EEA, 2014).

Figure 3.11 Noise contour map of the airport of Barcelona (L_{den}). Source: NOISE.



3.8.4 Industry noise

To our knowledge, no feasible method is available to estimate industry related noise exposure outside the areas covered by the END. Also information about specific sites is not available at an EU/EEA level.

4 Discussion

4.1 Quality of input data

The quality of the spatial data available for the implementation of the methodology has been assessed. We can distinguish between two types of input data. First, there is the noise data used to derive the formulas to calculate the noise exposure per grid cell and secondly, the data used to apply the formulas throughout Europe.

Road traffic noise data from Netherlands and Switzerland was used for the statistical analysis. Although we initially wanted to use detailed noise data from more countries, we did not have access to it.
As reported in section 3.4, the population weighted average exposure over all European countries was 53.8 dB (Dutch data) and 56.7 dB (adjusted, Swiss data). This is a systematic difference of 3 dB likely to be caused by systematic differences in the noise modelling practice in both countries. With data from more countries, we could have calculated a more valid "average" value for Europe. Fortunately from the comparison between the reported and modelled population fractions above 55 dB L_{den} in section 3.5 we learned that the reported fractions for agglomerations in the Netherlands and Switzerland do not deviate that much from an average European country. This gives assurance about the representativeness of the used Swiss and Dutch road traffic noise data for a Europe assessment. However, we consider the results as provisional, since the methodology is based on data from only two countries.

As starting point we needed a noise exposure value for every inhabited building and information about the number of inhabitants. In the Netherlands, the information about the number of inhabitants was available on a detailed level (average of about 15-20 homes). For Switzerland the available information was on 100 by 100 meter, but not fully covering all premises in the country. We therefore applied the average number of inhabitants per noise exposure category and calibrated the population on 1 by 1 km using the population density grid for Europe. The difference in linking the population to noise exposure values may explain why in the Netherlands the population has a larger contribution in the set of predictors than is the case in Switzerland. Despite this difference, the correlation between the two predicted mean exposures per grid cell (0.91) shows that the spatial agreement between the two models is excellent.

The noise map can be seen as a valid representation of the noise exposure over a longer period. Traffic may have increased on some of the larger roads (motorways, larger connecting roads, connecting roads to new neighbourhoods). The Good Practice Guide for Strategic Noise Mapping (WG-AEN, 2007) estimates the annual growth in traffic intensities for major roads on approximately 2%. This means that the increment in noise exposure due to increase in flow, in general, is limited to 1 dB over a period of 10 years.

Population grid and road density data was used for applying the formulas obtained in the previous step for every country in Europe. The used datasets on population and road network density and on terrain surface are the best information currently available at European level. Any improvements on the input data will further refine the results.

4.2 Transferability of results

The aim was to refine the method for the estimation of the exposure to road traffic noise as developed in Blanes et al. (2016). We added information about the road network density and about acoustic absorption of the terrain surface as prediction to the statistical model.
As expected the road traffic intensity improved the statistical model. The contribution of the road traffic intensity was limited to information about the road length in the central grid cell. Usually the radius of the noise modelling is limited to 500 meter distance of non-major roads, so the result of the statistical model is in line with this practise. For major roads often a larger radius is applied, which explains why the road length of highways in the surrounding cells also was found as predictor. The acoustic absorption did not show up as predictor in the statistical models. This was expected on forehand, since traffic intensity is of much more importance in noise modelling than the acoustic absorption of the terrain surface. The identified set of predictors are in line with was expected. This gives confidence in the derived formulas and their transferability to other areas in Europe.

Noise exposure is often assessed by applying noise models. These models estimate the noise level at locations by calculating the emission from road traffic sources and the transmission from source to receptor points. In many noise models the emission requires detail input data as information on the traffic flows, traffic composition, speed, road surface type, etc. Also for the calculation of the propagation detailed information about the surrounding is needed. Such detailed information is not yet available at European level. The applied methodology is a statistical approach that lacks the detailed input information of the noise models. Despite these restrictions, we expect that the method has led to a valid but provisional estimation of the road traffic noise exposure distribution in Europe.

In section 3.5 we compared the reported and modelled population fraction above 55 dB L_{den} and found out that adding country as predictor to the statistical model increased the explained variance from 10 to 50%. It is not possible to indicate the cause of the differences between countries. Difference could be related to for example systematic difference in the lay-out of the agglomerations, in the weather conditions, in the surface of the roads, in the composition of the traffic, since these factors influence the noise levels of road traffic. The difference could also relate to differences in the implementation of the assessment methods for the END. Non comparability of results have already identified for the first round of noise mapping in Europe (see for example De Vos and Licitra, 2013). The results in section 3.5 are a clear indication that the issue of non-comparability was not yet satisfactory solved in the second round of noise mapping.

Since the reported fractions for agglomerations in the Netherlands and Switzerland do not deviate that much from an average European country, we are assured about the quality of the input for the prediction formulas (Swiss and Dutch noise data) by the comparison of modelled and reported data. The prediction formulas seem to be a good starting point for the estimation of the European noise exposure distribution. However, the results clearly indicate that it is not recommended to estimate with the prediction formulas the noise exposure distribution in smaller geographical areas in countries Europe, like END agglomerations.

The results of this study are in the upper range of the results of earlier reported studies. The range of previous studies estimating the population in Europe exposed to transport, traffic or road traffic noise varied from 120 million up to 250 million. The provisional estimation of this study (about 230 million for EEA-32) is based on much more detailed information than

was available or used in the previous studies and is therefore seen as the best but still provisional estimation currently available.

4.3 Applications of the road traffic noise exposure distribution

The aim of the activities in this report was to refine the method for the estimation of the exposure to road traffic noise as described in Blanes et al. (2016). The calculations were carried out for 32 countries (EU28, Iceland, Liechtenstein, Norway and Switzerland) and were done on a country level.

We described in section 3.4 and Annex 5 the provisional road traffic noise exposure distributions for L_{den} and L_{night} per decibel for EEA-32, EU-28 and per country. A risk assessment and/or health impact assessment can be carried out with this information when WHO regional office for Europe publishes their Environmental Noise Guidelines for the European Region (expected in 2018).

An important remark is that, in contrast to noise maps of the END, the applied methodology is not suitable to be used on individual level. Also, the comparison with results of the END for agglomerations show that caution should be exercised when interpreting the result on a lower aggregated level (for instance below national or sub national level). Since the results of noise mapping in countries are not fully comparable, results obtained with the methodology applied in this report will, by definition, not comply with the results in all European countries.

The methodology can serve as a complement to the END and can be used in those situations where data from the END is not available. However, this method should on no account be seen a replacement of the END and can therefore not be used as such.

5 Conclusions

We successfully extended our earlier prediction model for road traffic noise in Europe with predictors about the road network density derived from the Global Roads Inventory project (GRIP version 3). The acoustic absorption of the terrain surface used in this study did not have added value for the prediction of the exposure distribution.

The prediction model was based on a country wide database with information on the road traffic noise exposure for dwellings from the Netherlands and from Switzerland. We did not succeed to collect similar information from other European countries.

For the EEA-32 it was provisionally estimated that 232 million inhabitants are exposed to road traffic noise level equal or above 55 dB L_{den}. This number is in the upper range of earlier estimates for the road traffic noise exposure in Europe.

We projected that 382 million inhabitants are exposed to level equal or above 50 dB L_{den}, 423 million inhabitants to level equal or above 40 dB L_{night} and 153 million inhabitants to level equal or above 50 dB L_{night}. To our knowledge this is the first time that European wide information is provided about the exposure to night time noise and about the noise exposure to lower levels.

From the comparison of the reported and predicted fraction of the population in END agglomerations that is exposed to road traffic noise level equal or above 55 dB L_{den} we conclude that the reported data on road traffic noise in agglomerations in the framework of the second round of noise mapping in 2012 is not comparable between countries.

We provide in this report provisional information about the road traffic noise exposure distributions for L_{den} and L_{night} per decibel, per country and for agglomerated and for rural areas. A risk assessment or health impact assessment can be carried out based on this information when WHO regional office for Europe publishes their publication on the Environmental Noise Guidelines for the European Region.

It is not recommended to develop a similar methodology for other sources of noise that are quantified in the framework of the END. For railway noise, information about the traffic intensity and other important predictors is lacking. The report describes steps that could be undertaken in a feasibility study to explore a possible methodology. The characteristics of aircraft and industry are very different from road traffic noise. Since the number of sources of aircraft and industry noise are limited, it is recommended to use make of results from source-specific noise models and to extrapolate the results to an exposure distribution in Europe based on assumptions about the source strength and the number of sources.

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Annex 1 Conversion of the Corine Land Cover classes into ground type

	CLC classes			Ground type
1	**Artificial surfaces**			
1.1	*Urban fabric*			G
		111	Continuous urban fabric	G
		112	Discontinuous urban fabric	G
1.2	*Industrial, commercial and transport units*			G
		121	Industrial or commercial units	G
		122	Road and rail networks and associated land	G
		123	Port areas	G
		124	Airports	G
1.3	*Mines, dump and construction sites*			G
		131	Mineral extraction sites	G
		132	Dump sites	G
		133	Construction sites	G
1.4	*Artificial non-agricultural vegetated areas*			
		141	Green urban areas	D
		142	Sport and leisure facilities	E
2	**Agricultural areas**			
2.1	*Arable Land*			
		211	Non-irrigated arable land	C
		212	Permanently irrigated land	C
		213	Rice fields	C
2.2	*Permanent Crops*			C
		221	Vineyards	C
		222	Fruit trees and berry plantations	C
		223	Olive groves	C
2.3	*Pastures*			D
		231	Pastures	D
2.4	*Heterogeneous agricultural areas*			
		241	Annual crops associated with permanent crops	C
		242	Complex cultivation patterns	C
		243	Agriculture land with significant areas of natural vegetation	D
		244	Agro-forestry areas	D
3	**Forests and semi-natural areas**			
3.1	*Forests*			D
		311	Broad-leaved forest	D
		312	Coniferous forest	D
		313	Mixed forest	D
3.2	*Shrub and/or herbaceous vegetation associations*			

		321	Natural grassland	C
		322	Moors and heathland	B
		323	Sclerophyllous vegetation	B
		324	Transitional woodland shrub	C
3.3	*Open spaces with little or no vegetation*			
		331	Beaches, dunes and sand plains	C
		332	Bare rock	H
		333	Sparsely vegetated areas	C
		334	Burnt areas	C
		335	Glaciers and perpetual snow	A
4	**Wetlands**			
4.1	*Inland wetlands*			H
		411	Inland marshes	H
		412	Peatbogs	H
4.2	*Coastal wetlands*			H
		421	Salt marshes	H
		422	Salines	H
		423	Intertidal flats	H
5	**Water bodies**			
5.1	*Inland waters*			H
		511	Water courses	H
		512	Water bodies	H
5.2	*Coastal waters*			H
		521	Coastal lagoons	H
		522	Estuaries	H
		523	Sea and ocean	H

Annex 2 Difference between L_{den} and L_{night}

To derive the night time exposure from the L_{den} distribution generated with the grid methodology additional information is needed about the difference between the average 24 hour exposure (L_{den}) and night period (L_{night}).
Night-time noise levels from road traffic are in agglomerations approximately 7-10 dB lower than day-time noise levels. Outside agglomerations this is approximately 8-11 dB. Since day-time and night-time levels are highly correlated (WG-AEN 2007), L_{night} exposures can be derived from L_{den} exposures by shifting the L_{den} exposure distribution to lower levels.

The Reference Centres were contacted in 2016 to collect information about the difference between L_{den} and L_{night} for rural areas. However since not all Reference Centres provided information an overall picture for Europe was missing. In the END-data separate information is available about the L_{den} and L_{night} for agglomerations and for major roads. We considered the major road data as representative for rural areas.

In the framework of the ETC/AM report, we refined L_{den} and L_{night} in agglomerations and around major roads from 5 dB to 1 dB classes. Subsequently we calculated the cumulative population distribution per decibel. Comparing both cumulative exposure distributions, we assessed the corresponding L_{den} level at 50 dB L_{night} to estimate the shift between L_{den} and L_{night}. The averaged results per country are shown in the table below.

country	Shift major roads	Shift agglomerations	country	Shift major roads	Shift agglomerations
Austria	9	9	Liechtenstein	9	-
Belgium	9	9	Lithuania	8	10
Bulgaria	8	7	Luxembourg	8	10
Croatia	7	9	Malta	9	-
Cyprus	7	-	Netherlands	9	10
Czech Republic	8	9	Norway	9	8
Denmark	8	9	Poland	7	10
Estonia	9	9	Portugal	8	8
Finland	8	7	Romania	2	9
France	8	9	Slovakia	8	9
Germany	11	9	Slovenia	8	10
Hungary	8	9	Spain	9	8
Iceland	8	7	Sweden	9	9
Ireland	9	9	Switzerland	10	10
Italy	7	10	UK	8	8
Latvia	9	-	Average	8	9

On average, the difference (the shift) between the L_{den} and the L_{night} in END-data around major roads is 8 dB and varies between 7 dB in Poland and 11 dB in Germany. For the agglomerations, on average the difference between the L_{den} and the L_{night} in END-data is 9 dB. It varies between 7 dB in Bulgaria, Finland and Iceland up to 10 dB in several member states. The average of 8 dB for rural areas and 9 dB for agglomerations was confirmed by the available information from the National Reference Centres for Noise.

Annex 3 Prediction model based on Dutch data

To avoid unrealistic exposures when the relations are applied outside the range of the predictors, we maximised the upper range of the predictors.

For the relations derived from Dutch data, the applied maximum value is given in the table below.

Predictor	**Maximum value**
population in a 5 by 5 km grid	
- as log10	5.493365
- untransformed	311,433
Highways in grid cell	14.006
primary roads in grid cell	4.869
secondary roads in grid cell	5.015
tertiary roads in grid cell	5.016
highways in the donut around the central grid	31.319

When a predictors has a higher value than the maximum value, the values of predictors has to be transformed into the maximum value.

Definition of predictors

tot_p_012_NL	(maximised) total number of inhabitants in 5 by 5 km grid
rt1_0_NL	(maximised) total km highways in grid cel
rt2_0_NL	(maximised) total km primary roads in grid cel
rt3_0_NL	(maximised) total km secondary roads n grid cel
rt4_0_NL	(maximised) total km tertiary roads in grid cel
rt1_1_NL	(maximised) total km highways in donut around the central grid

It is necessary to make three variables for population (pop1, pop2, pop3) before calculating the linear prediction equation

We use the expression “gen” (from generate) to calculate a new variable.

```
gen pop1_NL=0
replace pop1_NL=1 if tot_p_012_NL<=99
gen pop2_NL=log10(tot_p_012_NL)^3
replace pop2_NL=0 if tot_p_012_NL<=99
gen pop3_NL=log10(tot_p_012_NL)^3*ln(log10(tot_p_012_NL))
replace pop3_NL=0 if tot_p_012_NL<=99
```

Calculate the score for the linear function for each predictor separately (since formula becomes too long)

```
Gen xb_pop_NL=(-1.5900783*(pop1_NL))+(-.05082678*(pop2_NL))+(.03826026*(pop3_NL))
gen xb_rt1_0_NL=(.30706817*(ln((rt1_0+.001)/10)))+(.02054043*(ln((rt1_0+.001)/10)^2))
gen xb_rt2_0_NL=(.49101455*(rt2_0+.001))+(-.17202582*((rt2_0+.001)*(ln(rt2_0+.001))))
gen xb_rt3_0_NL=(.43421414*((rt3_0+.001)^.5))+(.00318126*((rt3_0+.001)^3))
gen xb_rt4_0_NL=(-.00012798*((rt4_0+.001)^-1))+(.15769689*(rt4_0+.001))
gen xb_rt1_1_NL=(.32242053*(((rt1_1+.001)/10)^.5))+(-.0755859*((rt1_1+.001)/10))
```

Combine the scores of the predictors

```
gen xb_NL= xb_pop_NL+ xb_rt1_0_NL+ xb_rt2_0_NL+ xb_rt3_0_NL+ xb_rt4_0_NL+ xb_rt1_1_NL
```

Calculation of the probabilities for the exposure categories with use of the linear prediction equation and the cut-values from the ordered logistic regression

```
gen p00_34_NL=1/(1+exp(xb_NL--6.2037541))
gen p35_39_NL=1/(1+exp(xb_NL--4.6878199))-1/(1+exp(xb_NL--6.2037541))
gen p40_44_NL=1/(1+exp(xb_NL--3.1247793))-1/(1+exp(xb_NL--4.6878199))
gen p45_49_NL=1/(1+exp(xb_NL--1.0642511))-1/(1+exp(xb_NL--3.1247793))
gen p50_54_NL=1/(1+exp(xb_NL-.77558987))-1/(1+exp(xb_NL--1.0642511))
gen p55_59_NL=1/(1+exp(xb_NL-2.1857933))-1/(1+exp(xb_NL-.77558987))
gen p60_64_NL=1/(1+exp(xb_NL-3.5947334))-1/(1+exp(xb_NL-2.1857933))
gen p65_69_NL=1/(1+exp(xb_NL-5.7727051))-1/(1+exp(xb_NL-3.5947334))
gen p70_74_NL=1/(1+exp(xb_NL-9.1629009))-1/(1+exp(xb_NL-5.7727051))
gen p75_99_NL=1-1/(1+exp(xb_NL-9.1629009))
```

Annex 4 Prediction model based on Swiss data

To avoid unrealistic exposures when the relations are applied outside the range of the predictors, we maximised the upper range of the predictors.

For the relation derived from Swiss data, the applied maximum value is given in the table below.

Predictor	**Maximum value**
population in a 3 by 3 km grid	
- as log10	5.080728
- untransformed	120,428
Highways in grid cell	6.39
primary roads in grid cell	4.605
secondary roads in grid cell	6.774
tertiary roads in grid cell	5.969
highways in the donut around the central grid	16.01

When a predictors has a higher value than the maximum value, the values of predictors has to be transformed into the maximum value.

Definition of predictors

tot_p_01_CH	(maximised) total number of inhabitants in 3 by 3 km grid
rt1_0_CH	(maximised) total km highways in grid cel
rt2_0_CH	(maximised) total km primary roads in grid cel
rt3_0_CH	(maximised) total km secondary roads n grid cel
rt4_0_CH	(maximised) total km tertiary roads in grid cel
rt1_1_CH	(maximised) total km highways in donut around the central grid

It is necessary to make two variables for population (pop1, pop2) before calculating the linear prediction equation

We use the expression “gen” (from generate) to calculate a new variable.

```
gen pop1_CH=0
replace pop1_CH=1 if tot_p_01_CH<=35
gen pop2_CH=log10(tot_p_01_CH)^3
replace pop2_CH=0 if tot_p_01_CH<=35
```

Calculate the score for the linear function for each predictor separately (since formula becomes too long)

```
gen xb_pop_CH=(-.30953741*pop1)+(.00701694*pop2)
gen xb_rt1_0_CH=(-7.844e-08*((rt1_0+.001)^-2))+(.30530845*((rt1_0+.001)^.5))
gen xb_rt2_0_CH=(.28575478*(ln(rt2_0+.001)))+(.03095449*(ln(rt2_0+.001)^2))
gen xb_rt3_0_CH=(.3488503*((rt3_0+.001)^.5))+(.04013122*((rt3_0+.001)^2))
gen xb_rt4_0_CH=(.31420903*((rt4_0+.001)^.5))+(.00905193*((rt4_0+.001)^3))
gen xb_rt1_1_CH=(.00013024*(((rt1_1+.001)/10)^-1))+(-.01248268*(((rt1_1+.001)/10)^-.5))
replace xb_rt1_1_CH=-0.3 if rt1_1==0
```

Combine the scores of the predictors

gen xb_CH= xb_pop_CH+ xb_rt1_0_CH+ xb_rt2_0_CH+ xb_rt3_0_CH+ xb_rt4_0_CH+ xb_rt1_1_CH

Calculation of the probabilities for the exposure categories with use of the linear prediction equation and the cut-values from the ordered logistic regression

```
gen p00_34_CH=1/(1+exp(xb_CH--4.7968846))
gen p35_39_CH=1/(1+exp(xb_CH--3.4871386))-1/(1+exp(xb_CH--4.7968846))
gen p40_44_CH=1/(1+exp(xb_CH--2.1682493))-1/(1+exp(xb_CH--3.4871386))
gen p45_49_CH=1/(1+exp(xb_CH--.88880052))-1/(1+exp(xb_CH--2.1682493))
gen p50_54_CH=1/(1+exp(xb_CH-.15777331))-1/(1+exp(xb_CH--.88880052))
gen p55_59_CH=1/(1+exp(xb_CH-1.1537182))-1/(1+exp(xb_CH-.15777331))
gen p60_64_CH=1/(1+exp(xb_CH-1.9674026))-1/(1+exp(xb_CH-1.1537182))
gen p65_69_CH=1/(1+exp(xb_CH-3.2264092))-1/(1+exp(xb_CH-1.9674026))
gen p70_74_CH=1/(1+exp(xb_CH-5.1653122))-1/(1+exp(xb_CH-3.2264092))
gen p75_99_CH=1-1/(1+exp(xb_CH-5.1653122))
```

Please note that a post correction of 1 dB (to lower levels) has to be carried out after the set of formulas have applied.

Annex 5 Road traffic noise distributions

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} AT for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			5.7	0.988
31			5.7	0.983
32			5.6	0.978
33			5.6	0.974
34			5.6	0.965
35			5.5	0.952
36			5.4	0.935
37			5.3	0.911
38			5.0	0.872
39			4.8	0.827
40	5.6	0.978	4.5	0.778
41	5.6	0.974	4.2	0.723
42	5.6	0.965	3.8	0.663
43	5.5	0.952	3.4	0.595
44	5.4	0.935	3.1	0.529
45	5.3	0.911	2.7	0.464
46	5.0	0.872	2.3	0.400
47	4.8	0.827	1.9	0.337
48	4.5	0.778	1.7	0.292
49	4.2	0.723	1.4	0.250
50	3.8	0.663	1.2	0.214
51	3.4	0.595	1.1	0.182
52	3.1	0.529	0.9	0.158
53	2.7	0.464	0.8	0.136
54	2.3	0.400	0.7	0.117
55	1.9	0.337	0.6	0.100
56	1.7	0.292	0.5	0.085
57	1.4	0.250	0.4	0.071
58	1.2	0.214	0.3	0.058
59	1.1	0.182	0.3	0.046
60	0.9	0.158	0.2	0.035
61	0.8	0.136		
62	0.7	0.117		
63	0.6	0.100		
64	0.5	0.085		
65	0.4	0.071		
66	0.3	0.058		
67	0.3	0.046		
68	0.2	0.035		
69	0.1	0.026		
70	0.1	0.019		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} AT for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			2.6	0.995
31			2.6	0.993
32			2.6	0.992
33			2.6	0.990
34			2.6	0.986
35			2.6	0.981
36			2.5	0.974
37			2.5	0.965
38			2.5	0.952
39			2.4	0.936
40	2.6	0.993	2.4	0.916
41	2.6	0.992	2.3	0.892
42	2.6	0.990	2.2	0.859
43	2.6	0.986	2.1	0.822
44	2.6	0.981	2.0	0.781
45	2.5	0.974	1.9	0.737
46	2.5	0.965	1.8	0.689
47	2.5	0.952	1.7	0.639
48	2.4	0.936	1.5	0.590
49	2.4	0.916	1.4	0.540
50	2.3	0.892	1.3	0.489
51	2.2	0.859	1.2	0.442
52	2.1	0.822	1.0	0.397
53	2.0	0.781	0.9	0.353
54	1.9	0.737	0.8	0.311
55	1.8	0.689	0.7	0.270
56	1.7	0.639	0.6	0.228
57	1.5	0.590	0.5	0.188
58	1.4	0.540	0.4	0.152
59	1.3	0.489	0.3	0.119
60	1.2	0.442	0.2	0.088
61	1.0	0.397		
62	0.9	0.353		
63	0.8	0.311		
64	0.7	0.270		
65	0.6	0.228		
66	0.5	0.188		
67	0.4	0.152		
68	0.3	0.119		
69	0.2	0.088		
70	0.2	0.063		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} AT

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			8.3	0.990
31			8.3	0.986
32			8.2	0.982
33			8.2	0.979
34			8.1	0.972
35			8.1	0.961
36			7.9	0.947
37			7.8	0.928
38			7.5	0.897
39			7.2	0.861
40	8.2	0.983	6.9	0.821
41	8.2	0.980	6.5	0.776
42	8.2	0.973	6.1	0.724
43	8.1	0.963	5.6	0.666
44	8.0	0.949	5.1	0.608
45	7.8	0.930	4.6	0.549
46	7.5	0.901	4.1	0.490
47	7.3	0.866	3.6	0.431
48	6.9	0.827	3.2	0.384
49	6.6	0.783	2.9	0.340
50	6.2	0.734	2.5	0.300
51	5.7	0.677	2.2	0.263
52	5.2	0.620	1.9	0.232
53	4.7	0.563	1.7	0.203
54	4.2	0.505	1.5	0.177
55	3.7	0.447	1.3	0.153
56	3.4	0.400	1.1	0.130
57	3.0	0.356	0.9	0.108
58	2.6	0.315	0.7	0.087
59	2.3	0.278	0.6	0.068
60	2.1	0.246	0.4	0.052
61	1.8	0.217		
62	1.6	0.190		
63	1.4	0.165		
64	1.2	0.143		
65	1.0	0.120		
66	0.8	0.099		
67	0.7	0.079		
68	0.5	0.061		
69	0.4	0.045		
70	0.3	0.033		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} BE for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			8.2	0.989
31			8.2	0.985
32			8.2	0.981
33			8.1	0.978
34			8.1	0.971
35			8.0	0.960
36			7.9	0.945
37			7.7	0.924
38			7.4	0.890
39			7.1	0.852
40	8.2	0.981	6.7	0.807
41	8.1	0.978	6.3	0.758
42	8.1	0.971	5.8	0.702
43	8.0	0.960	5.3	0.636
44	7.9	0.945	4.7	0.571
45	7.7	0.924	4.2	0.505
46	7.4	0.890	3.7	0.440
47	7.1	0.852	3.1	0.374
48	6.7	0.807	2.7	0.325
49	6.3	0.758	2.3	0.281
50	5.8	0.702	2.0	0.241
51	5.3	0.636	1.7	0.205
52	4.7	0.571	1.5	0.178
53	4.2	0.505	1.3	0.153
54	3.7	0.440	1.1	0.131
55	3.1	0.374	0.9	0.112
56	2.7	0.325	0.8	0.096
57	2.3	0.281	0.7	0.080
58	2.0	0.241	0.5	0.065
59	1.7	0.205	0.4	0.051
60	1.5	0.178	0.3	0.039
61	1.3	0.153		
62	1.1	0.131		
63	0.9	0.112		
64	0.8	0.096		
65	0.7	0.080		
66	0.5	0.065		
67	0.4	0.051		
68	0.3	0.039		
69	0.2	0.029		
70	0.2	0.021		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} BE for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			2.6	0.994
31			2.6	0.993
32			2.6	0.991
33			2.6	0.989
34			2.6	0.984
35			2.6	0.978
36			2.5	0.970
37			2.5	0.960
38			2.5	0.946
39			2.4	0.929
40	2.6	0.993	2.4	0.907
41	2.6	0.991	2.3	0.882
42	2.6	0.989	2.2	0.846
43	2.6	0.984	2.1	0.806
44	2.6	0.978	2.0	0.764
45	2.5	0.970	1.9	0.717
46	2.5	0.960	1.8	0.667
47	2.5	0.946	1.6	0.615
48	2.4	0.929	1.5	0.564
49	2.4	0.907	1.3	0.513
50	2.3	0.882	1.2	0.463
51	2.2	0.846	1.1	0.415
52	2.1	0.806	1.0	0.370
53	2.0	0.764	0.9	0.328
54	1.9	0.717	0.8	0.287
55	1.8	0.667	0.7	0.248
56	1.6	0.615	0.5	0.208
57	1.5	0.564	0.4	0.171
58	1.3	0.513	0.4	0.137
59	1.2	0.463	0.3	0.107
60	1.1	0.415	0.2	0.079
61	1.0	0.370		
62	0.9	0.328		
63	0.8	0.287		
64	0.7	0.248		
65	0.5	0.208		
66	0.4	0.171		
67	0.4	0.137		
68	0.3	0.107		
69	0.2	0.079		
70	0.1	0.056		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} BE

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			10.8	0.991
31			10.8	0.987
32			10.8	0.983
33			10.7	0.980
34			10.7	0.974
35			10.5	0.964
36			10.4	0.951
37			10.2	0.932
38			9.9	0.904
39			9.5	0.870
40	10.8	0.984	9.1	0.831
41	10.7	0.981	8.6	0.788
42	10.7	0.975	8.1	0.737
43	10.6	0.966	7.4	0.677
44	10.4	0.953	6.7	0.617
45	10.2	0.935	6.1	0.556
46	9.9	0.907	5.4	0.494
47	9.6	0.874	4.7	0.432
48	9.2	0.837	4.2	0.383
49	8.7	0.794	3.7	0.337
50	8.2	0.745	3.2	0.294
51	7.5	0.687	2.8	0.256
52	6.9	0.627	2.5	0.224
53	6.2	0.567	2.1	0.195
54	5.5	0.506	1.8	0.169
55	4.9	0.445	1.6	0.145
56	4.3	0.395	1.3	0.123
57	3.8	0.349	1.1	0.102
58	3.4	0.306	0.9	0.082
59	2.9	0.267	0.7	0.065
60	2.6	0.235	0.5	0.049
61	2.2	0.205		
62	2.0	0.178		
63	1.7	0.154		
64	1.4	0.132		
65	1.2	0.111		
66	1.0	0.090		
67	0.8	0.072		
68	0.6	0.056		
69	0.4	0.041		
70	0.3	0.030		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} BG for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			4.8	0.988
31			4.8	0.984
32			4.8	0.979
33			4.8	0.975
34			4.7	0.966
35			4.7	0.954
36			4.6	0.938
37			4.5	0.915
38			4.3	0.879
39			4.1	0.839
40	4.8	0.979	3.9	0.793
41	4.8	0.975	3.6	0.742
42	4.7	0.966	3.4	0.687
43	4.7	0.954	3.1	0.625
44	4.6	0.938	2.8	0.564
45	4.5	0.915	2.5	0.504
46	4.3	0.879	2.2	0.444
47	4.1	0.839	1.9	0.385
48	3.9	0.793	1.7	0.339
49	3.6	0.742	1.5	0.297
50	3.4	0.687	1.3	0.260
51	3.1	0.625	1.1	0.226
52	2.8	0.564	1.0	0.199
53	2.5	0.504	0.9	0.175
54	2.2	0.444	0.7	0.153
55	1.9	0.385	0.7	0.133
56	1.7	0.339	0.6	0.116
57	1.5	0.297	0.5	0.099
58	1.3	0.260	0.4	0.082
59	1.1	0.226	0.3	0.067
60	1.0	0.199	0.3	0.053
61	0.9	0.175		
62	0.7	0.153		
63	0.7	0.133		
64	0.6	0.116		
65	0.5	0.099		
66	0.4	0.082		
67	0.3	0.067		
68	0.3	0.053		
69	0.2	0.040		
70	0.2	0.031		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} BG for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			2.5	0.996
31			2.5	0.995
32			2.5	0.994
33			2.5	0.992
34			2.5	0.989
35			2.4	0.985
36			2.4	0.979
37			2.4	0.973
38			2.4	0.963
39			2.4	0.949
40	2.5	0.995	2.3	0.933
41	2.5	0.994	2.3	0.912
42	2.5	0.992	2.2	0.883
43	2.5	0.989	2.1	0.850
44	2.4	0.985	2.0	0.813
45	2.4	0.979	1.9	0.772
46	2.4	0.973	1.8	0.727
47	2.4	0.963	1.7	0.678
48	2.4	0.949	1.6	0.629
49	2.3	0.933	1.4	0.579
50	2.3	0.912	1.3	0.529
51	2.2	0.883	1.2	0.480
52	2.1	0.850	1.1	0.434
53	2.0	0.813	1.0	0.389
54	1.9	0.772	0.9	0.346
55	1.8	0.727	0.8	0.304
56	1.7	0.678	0.6	0.260
57	1.6	0.629	0.5	0.219
58	1.4	0.579	0.5	0.182
59	1.3	0.529	0.4	0.147
60	1.2	0.480	0.3	0.114
61	1.1	0.434		
62	1.0	0.389		
63	0.9	0.346		
64	0.8	0.304		
65	0.6	0.260		
66	0.5	0.219		
67	0.5	0.182		
68	0.4	0.147		
69	0.3	0.114		
70	0.2	0.086		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} BG

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			7.3	0.991
31			7.3	0.988
32			7.2	0.984
33			7.2	0.981
34			7.2	0.974
35			7.1	0.965
36			7.0	0.952
37			6.9	0.935
38			6.7	0.907
39			6.5	0.876
40	7.2	0.984	6.2	0.840
41	7.2	0.981	5.9	0.800
42	7.2	0.975	5.5	0.753
43	7.1	0.966	5.2	0.701
44	7.0	0.954	4.8	0.648
45	6.9	0.937	4.4	0.594
46	6.7	0.911	4.0	0.539
47	6.5	0.880	3.6	0.483
48	6.2	0.846	3.2	0.437
49	5.9	0.806	2.9	0.392
50	5.6	0.763	2.6	0.350
51	5.2	0.712	2.3	0.311
52	4.9	0.660	2.0	0.278
53	4.5	0.608	1.8	0.247
54	4.1	0.555	1.6	0.218
55	3.7	0.500	1.4	0.191
56	3.3	0.453	1.2	0.164
57	3.0	0.409	1.0	0.139
58	2.7	0.367	0.9	0.116
59	2.4	0.328	0.7	0.094
60	2.2	0.294	0.5	0.074
61	1.9	0.262		
62	1.7	0.232		
63	1.5	0.205		
64	1.3	0.179		
65	1.1	0.153		
66	0.9	0.128		
67	0.8	0.105		
68	0.6	0.084		
69	0.5	0.065		
70	0.4	0.050		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CH for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			6.1	0.991
31			6.1	0.987
32			6.0	0.983
33			6.0	0.981
34			6.0	0.974
35			5.9	0.964
36			5.8	0.951
37			5.7	0.932
38			5.5	0.903
39			5.3	0.868
40	6.0	0.983	5.1	0.828
41	6.0	0.981	4.8	0.782
42	6.0	0.974	4.5	0.730
43	5.9	0.964	4.1	0.667
44	5.8	0.951	3.7	0.604
45	5.7	0.932	3.3	0.540
46	5.5	0.903	2.9	0.476
47	5.3	0.868	2.5	0.411
48	5.1	0.828	2.2	0.360
49	4.8	0.782	1.9	0.314
50	4.5	0.730	1.7	0.272
51	4.1	0.667	1.4	0.233
52	3.7	0.604	1.2	0.203
53	3.3	0.540	1.1	0.176
54	2.9	0.476	0.9	0.151
55	2.5	0.411	0.8	0.130
56	2.2	0.360	0.7	0.111
57	1.9	0.314	0.6	0.093
58	1.7	0.272	0.5	0.076
59	1.4	0.233	0.4	0.060
60	1.2	0.203	0.3	0.046
61	1.1	0.176		
62	0.9	0.151		
63	0.8	0.130		
64	0.7	0.111		
65	0.6	0.093		
66	0.5	0.076		
67	0.4	0.060		
68	0.3	0.046		
69	0.2	0.034		
70	0.2	0.025		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CH for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.7	0.995
31			1.7	0.993
32			1.7	0.992
33			1.7	0.990
34			1.7	0.986
35			1.7	0.980
36			1.7	0.972
37			1.7	0.963
38			1.6	0.949
39			1.6	0.931
40	1.7	0.993	1.6	0.910
41	1.7	0.992	1.5	0.884
42	1.7	0.990	1.5	0.847
43	1.7	0.986	1.4	0.806
44	1.7	0.980	1.3	0.762
45	1.7	0.972	1.2	0.714
46	1.7	0.963	1.2	0.662
47	1.6	0.949	1.1	0.610
48	1.6	0.931	1.0	0.558
49	1.6	0.910	0.9	0.507
50	1.5	0.884	0.8	0.456
51	1.5	0.847	0.7	0.408
52	1.4	0.806	0.6	0.364
53	1.3	0.762	0.6	0.323
54	1.2	0.714	0.5	0.283
55	1.2	0.662	0.4	0.246
56	1.1	0.610	0.4	0.207
57	1.0	0.558	0.3	0.172
58	0.9	0.507	0.2	0.140
59	0.8	0.456	0.2	0.110
60	0.7	0.408	0.1	0.083
61	0.6	0.364		
62	0.6	0.323		
63	0.5	0.283		
64	0.4	0.246		
65	0.4	0.207		
66	0.3	0.172		
67	0.2	0.140		
68	0.2	0.110		
69	0.1	0.083		
70	0.1	0.062		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CH

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			7.8	0.991
31			7.8	0.988
32			7.8	0.985
33			7.7	0.983
34			7.7	0.977
35			7.6	0.968
36			7.5	0.956
37			7.4	0.939
38			7.2	0.913
39			6.9	0.882
40	7.8	0.985	6.7	0.846
41	7.7	0.983	6.3	0.805
42	7.7	0.978	6.0	0.756
43	7.6	0.969	5.5	0.698
44	7.5	0.957	5.0	0.639
45	7.4	0.941	4.6	0.579
46	7.2	0.916	4.1	0.517
47	7.0	0.886	3.6	0.455
48	6.7	0.851	3.2	0.404
49	6.4	0.810	2.8	0.356
50	6.0	0.764	2.5	0.312
51	5.6	0.707	2.1	0.272
52	5.1	0.649	1.9	0.238
53	4.6	0.589	1.6	0.208
54	4.2	0.529	1.4	0.180
55	3.7	0.466	1.2	0.155
56	3.3	0.415	1.0	0.132
57	2.9	0.368	0.9	0.110
58	2.5	0.323	0.7	0.090
59	2.2	0.282	0.6	0.071
60	2.0	0.248	0.4	0.054
61	1.7	0.217		
62	1.5	0.189		
63	1.3	0.164		
64	1.1	0.141		
65	0.9	0.118		
66	0.8	0.097		
67	0.6	0.078		
68	0.5	0.060		
69	0.4	0.045		
70	0.3	0.033		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CY for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.6	0.981
31			0.5	0.974
32			0.5	0.965
33			0.5	0.958
34			0.5	0.945
35			0.5	0.926
36			0.5	0.901
37			0.5	0.868
38			0.5	0.814
39			0.4	0.755
40	0.5	0.965	0.4	0.693
41	0.5	0.958	0.4	0.625
42	0.5	0.945	0.3	0.554
43	0.5	0.926	0.3	0.484
44	0.5	0.901	0.2	0.418
45	0.5	0.868	0.2	0.356
46	0.5	0.814	0.2	0.296
47	0.4	0.755	0.1	0.241
48	0.4	0.693	0.1	0.202
49	0.4	0.625	0.1	0.169
50	0.3	0.554	0.1	0.140
51	0.3	0.484	0.1	0.117
52	0.2	0.418	0.1	0.101
53	0.2	0.356	0.0	0.085
54	0.2	0.296	0.0	0.072
55	0.1	0.241	0.0	0.061
56	0.1	0.202	0.0	0.052
57	0.1	0.169	0.0	0.043
58	0.1	0.140	0.0	0.035
59	0.1	0.117	0.0	0.027
60	0.1	0.101	0.0	0.020
61	0.0	0.085		
62	0.0	0.072		
63	0.0	0.061		
64	0.0	0.052		
65	0.0	0.043		
66	0.0	0.035		
67	0.0	0.027		
68	0.0	0.020		
69	0.0	0.015		
70	0.0	0.011		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CY for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.4	0.983
31			0.4	0.978
32			0.4	0.974
33			0.4	0.966
34			0.4	0.953
35			0.4	0.936
36			0.4	0.913
37			0.4	0.877
38			0.4	0.835
39			0.4	0.787
40	0.4	0.978	0.3	0.734
41	0.4	0.974	0.3	0.674
42	0.4	0.966	0.3	0.604
43	0.4	0.953	0.2	0.533
44	0.4	0.936	0.2	0.464
45	0.4	0.913	0.2	0.395
46	0.4	0.877	0.1	0.328
47	0.4	0.835	0.1	0.279
48	0.4	0.787	0.1	0.235
49	0.3	0.734	0.1	0.197
50	0.3	0.674	0.1	0.164
51	0.3	0.604	0.1	0.139
52	0.2	0.533	0.1	0.117
53	0.2	0.464	0.0	0.098
54	0.2	0.395	0.0	0.082
55	0.1	0.328	0.0	0.070
56	0.1	0.279	0.0	0.058
57	0.1	0.235	0.0	0.046
58	0.1	0.197	0.0	0.036
59	0.1	0.164	0.0	0.027
60	0.1	0.139	0.0	0.019
61	0.1	0.117		
62	0.0	0.098		
63	0.0	0.082		
64	0.0	0.070		
65	0.0	0.058		
66	0.0	0.046		
67	0.0	0.036		
68	0.0	0.027		
69	0.0	0.019		
70	0.0	0.014		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CY

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.0	0.982
31			1.0	0.976
32			1.0	0.969
33			1.0	0.961
34			1.0	0.948
35			0.9	0.930
36			0.9	0.906
37			0.9	0.872
38			0.8	0.823
39			0.8	0.770
40	1.0	0.971	0.7	0.711
41	1.0	0.965	0.7	0.647
42	1.0	0.954	0.6	0.576
43	1.0	0.938	0.5	0.506
44	0.9	0.917	0.4	0.439
45	0.9	0.888	0.4	0.373
46	0.9	0.842	0.3	0.310
47	0.8	0.791	0.3	0.258
48	0.7	0.735	0.2	0.217
49	0.7	0.674	0.2	0.181
50	0.6	0.607	0.2	0.151
51	0.5	0.538	0.1	0.127
52	0.5	0.470	0.1	0.108
53	0.4	0.404	0.1	0.091
54	0.3	0.340	0.1	0.077
55	0.3	0.280	0.1	0.065
56	0.2	0.236	0.1	0.054
57	0.2	0.198	0.0	0.044
58	0.2	0.166	0.0	0.035
59	0.1	0.138	0.0	0.027
60	0.1	0.118	0.0	0.020
61	0.1	0.100		
62	0.1	0.084		
63	0.1	0.070		
64	0.1	0.060		
65	0.1	0.050		
66	0.0	0.040		
67	0.0	0.031		
68	0.0	0.023		
69	0.0	0.017		
70	0.0	0.012		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CZ for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			7.3	0.988
31			7.3	0.984
32			7.3	0.979
33			7.2	0.976
34			7.2	0.968
35			7.1	0.956
36			7.0	0.939
37			6.8	0.916
38			6.5	0.879
39			6.2	0.836
40	7.3	0.979	5.8	0.788
41	7.2	0.976	5.4	0.735
42	7.2	0.968	5.0	0.675
43	7.1	0.956	4.5	0.608
44	7.0	0.939	4.0	0.542
45	6.8	0.916	3.5	0.476
46	6.5	0.879	3.0	0.412
47	6.2	0.836	2.6	0.348
48	5.8	0.788	2.2	0.301
49	5.4	0.735	1.9	0.259
50	5.0	0.675	1.6	0.221
51	4.5	0.608	1.4	0.188
52	4.0	0.542	1.2	0.164
53	3.5	0.476	1.0	0.141
54	3.0	0.412	0.9	0.121
55	2.6	0.348	0.8	0.104
56	2.2	0.301	0.7	0.089
57	1.9	0.259	0.5	0.074
58	1.6	0.221	0.4	0.060
59	1.4	0.188	0.4	0.048
60	1.2	0.164	0.3	0.037
61	1.0	0.141		
62	0.9	0.121		
63	0.8	0.104		
64	0.7	0.089		
65	0.5	0.074		
66	0.4	0.060		
67	0.4	0.048		
68	0.3	0.037		
69	0.2	0.027		
70	0.1	0.020		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CZ for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.0	0.992
31			3.0	0.989
32			3.0	0.988
33			3.0	0.984
34			2.9	0.978
35			2.9	0.969
36			2.9	0.957
37			2.8	0.940
38			2.8	0.918
39			2.7	0.892
40	3.0	0.989	2.6	0.861
41	3.0	0.988	2.5	0.824
42	3.0	0.984	2.3	0.774
43	2.9	0.978	2.2	0.721
44	2.9	0.969	2.0	0.666
45	2.9	0.957	1.8	0.608
46	2.8	0.940	1.6	0.546
47	2.8	0.918	1.5	0.491
48	2.7	0.892	1.3	0.438
49	2.6	0.861	1.2	0.388
50	2.5	0.824	1.0	0.339
51	2.3	0.774	0.9	0.297
52	2.2	0.721	0.8	0.260
53	2.0	0.666	0.7	0.225
54	1.8	0.608	0.6	0.194
55	1.6	0.546	0.5	0.166
56	1.5	0.491	0.4	0.138
57	1.3	0.438	0.3	0.112
58	1.2	0.388	0.3	0.089
59	1.0	0.339	0.2	0.069
60	0.9	0.297	0.2	0.051
61	0.8	0.260		
62	0.7	0.225		
63	0.6	0.194		
64	0.5	0.166		
65	0.4	0.138		
66	0.3	0.112		
67	0.3	0.089		
68	0.2	0.069		
69	0.2	0.051		
70	0.1	0.037		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} CZ

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			10.3	0.989
31			10.3	0.986
32			10.2	0.982
33			10.2	0.978
34			10.1	0.971
35			10.0	0.959
36			9.8	0.944
37			9.6	0.923
38			9.3	0.890
39			8.9	0.852
40	10.2	0.982	8.4	0.809
41	10.2	0.979	7.9	0.760
42	10.1	0.972	7.3	0.704
43	10.0	0.962	6.7	0.641
44	9.9	0.948	6.0	0.578
45	9.7	0.928	5.4	0.514
46	9.3	0.897	4.7	0.451
47	9.0	0.860	4.1	0.389
48	8.5	0.818	3.5	0.341
49	8.0	0.771	3.1	0.296
50	7.5	0.718	2.7	0.255
51	6.8	0.656	2.3	0.220
52	6.2	0.594	2.0	0.191
53	5.5	0.531	1.7	0.165
54	4.9	0.468	1.5	0.142
55	4.2	0.405	1.3	0.122
56	3.7	0.356	1.1	0.103
57	3.2	0.311	0.9	0.085
58	2.8	0.269	0.7	0.069
59	2.4	0.232	0.6	0.054
60	2.1	0.202	0.4	0.041
61	1.8	0.175		
62	1.6	0.151		
63	1.4	0.130		
64	1.2	0.111		
65	1.0	0.093		
66	0.8	0.075		
67	0.6	0.060		
68	0.5	0.046		
69	0.4	0.034		
70	0.3	0.025		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} DE for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			54.5	0.989
31			54.3	0.985
32			54.0	0.980
33			53.8	0.977
34			53.4	0.969
35			52.8	0.958
36			51.9	0.942
37			50.7	0.920
38			48.8	0.885
39			46.5	0.845
40	54.0	0.980	44.0	0.799
41	53.8	0.977	41.2	0.747
42	53.4	0.969	38.0	0.690
43	52.8	0.958	34.3	0.623
44	51.9	0.942	30.7	0.557
45	50.7	0.920	27.1	0.491
46	48.8	0.885	23.5	0.426
47	46.5	0.845	19.9	0.361
48	44.0	0.799	17.3	0.313
49	41.2	0.747	14.9	0.270
50	38.0	0.690	12.7	0.231
51	34.3	0.623	10.8	0.197
52	30.7	0.557	9.4	0.171
53	27.1	0.491	8.1	0.147
54	23.5	0.426	6.9	0.126
55	19.9	0.361	5.9	0.108
56	17.3	0.313	5.1	0.092
57	14.9	0.270	4.2	0.077
58	12.7	0.231	3.4	0.062
59	10.8	0.197	2.7	0.049
60	9.4	0.171	2.1	0.038
61	8.1	0.147		
62	6.9	0.126		
63	5.9	0.108		
64	5.1	0.092		
65	4.2	0.077		
66	3.4	0.062		
67	2.7	0.049		
68	2.1	0.038		
69	1.5	0.028		
70	1.1	0.021		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} DE for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			24.9	0.993
31			24.9	0.991
32			24.8	0.989
33			24.7	0.986
34			24.6	0.980
35			24.4	0.973
36			24.1	0.962
37			23.8	0.948
38			23.3	0.930
39			22.7	0.906
40	24.9	0.991	22.0	0.878
41	24.8	0.989	21.2	0.845
42	24.7	0.986	20.0	0.799
43	24.6	0.980	18.8	0.749
44	24.4	0.973	17.5	0.696
45	24.1	0.962	16.1	0.641
46	23.8	0.948	14.6	0.581
47	23.3	0.930	13.2	0.525
48	22.7	0.906	11.8	0.472
49	22.0	0.878	10.5	0.420
50	21.2	0.845	9.3	0.369
51	20.0	0.799	8.1	0.324
52	18.8	0.749	7.1	0.285
53	17.5	0.696	6.2	0.248
54	16.1	0.641	5.4	0.214
55	14.6	0.581	4.6	0.183
56	13.2	0.525	3.8	0.152
57	11.8	0.472	3.1	0.124
58	10.5	0.420	2.5	0.099
59	9.3	0.369	1.9	0.076
60	8.1	0.324	1.4	0.056
61	7.1	0.285		
62	6.2	0.248		
63	5.4	0.214		
64	4.6	0.183		
65	3.8	0.152		
66	3.1	0.124		
67	2.5	0.099		
68	1.9	0.076		
69	1.4	0.056		
70	1.0	0.041		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} DE

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			79.4	0.990
31			79.1	0.987
32			78.8	0.983
33			78.6	0.980
34			78.0	0.973
35			77.2	0.962
36			76.0	0.948
37			74.5	0.929
38			72.1	0.899
39			69.3	0.864
40	78.9	0.983	66.0	0.824
41	78.6	0.981	62.4	0.778
42	78.1	0.975	58.0	0.724
43	77.4	0.965	53.1	0.663
44	76.3	0.952	48.2	0.601
45	74.8	0.933	43.2	0.538
46	72.6	0.905	38.1	0.475
47	69.9	0.871	33.1	0.413
48	66.7	0.832	29.1	0.363
49	63.2	0.788	25.4	0.317
50	59.2	0.738	22.0	0.274
51	54.4	0.678	19.0	0.237
52	49.5	0.617	16.5	0.206
53	44.5	0.556	14.3	0.178
54	39.6	0.493	12.3	0.153
55	34.5	0.430	10.5	0.131
56	30.5	0.380	8.9	0.111
57	26.7	0.333	7.4	0.092
58	23.3	0.290	5.9	0.074
59	20.1	0.251	4.6	0.058
60	17.5	0.219	3.5	0.044
61	15.2	0.190		
62	13.2	0.164		
63	11.3	0.141		
64	9.7	0.120		
65	8.1	0.100		
66	6.6	0.082		
67	5.2	0.065		
68	4.0	0.050		
69	2.9	0.037		
70	2.2	0.027		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} DK for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.7	0.986
31			3.7	0.980
32			3.7	0.974
33			3.6	0.969
34			3.6	0.959
35			3.6	0.945
36			3.5	0.925
37			3.4	0.898
38			3.2	0.855
39			3.0	0.806
40	3.7	0.974	2.8	0.753
41	3.6	0.969	2.6	0.694
42	3.6	0.959	2.4	0.630
43	3.6	0.945	2.1	0.562
44	3.5	0.925	1.9	0.495
45	3.4	0.898	1.6	0.431
46	3.2	0.855	1.4	0.368
47	3.0	0.806	1.2	0.307
48	2.8	0.753	1.0	0.263
49	2.6	0.694	0.8	0.224
50	2.4	0.630	0.7	0.190
51	2.1	0.562	0.6	0.160
52	1.9	0.495	0.5	0.139
53	1.6	0.431	0.4	0.119
54	1.4	0.368	0.4	0.102
55	1.2	0.307	0.3	0.087
56	1.0	0.263	0.3	0.074
57	0.8	0.224	0.2	0.062
58	0.7	0.190	0.2	0.050
59	0.6	0.160	0.1	0.039
60	0.5	0.139	0.1	0.030
61	0.4	0.119		
62	0.4	0.102		
63	0.3	0.087		
64	0.3	0.074		
65	0.2	0.062		
66	0.2	0.050		
67	0.1	0.039		
68	0.1	0.030		
69	0.1	0.022		
70	0.1	0.016		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} DK for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.8	0.991
31			1.8	0.988
32			1.8	0.986
33			1.8	0.982
34			1.8	0.974
35			1.7	0.965
36			1.7	0.952
37			1.7	0.933
38			1.6	0.909
39			1.6	0.881
40	1.8	0.988	1.5	0.847
41	1.8	0.986	1.5	0.808
42	1.8	0.982	1.4	0.756
43	1.8	0.974	1.3	0.702
44	1.7	0.965	1.2	0.646
45	1.7	0.952	1.1	0.587
46	1.7	0.933	1.0	0.525
47	1.6	0.909	0.9	0.470
48	1.6	0.881	0.8	0.418
49	1.5	0.847	0.7	0.369
50	1.5	0.808	0.6	0.322
51	1.4	0.756	0.5	0.281
52	1.3	0.702	0.4	0.245
53	1.2	0.646	0.4	0.212
54	1.1	0.587	0.3	0.182
55	1.0	0.525	0.3	0.155
56	0.9	0.470	0.2	0.129
57	0.8	0.418	0.2	0.105
58	0.7	0.369	0.2	0.084
59	0.6	0.322	0.1	0.064
60	0.5	0.281	0.1	0.047
61	0.4	0.245		
62	0.4	0.212		
63	0.3	0.182		
64	0.3	0.155		
65	0.2	0.129		
66	0.2	0.105		
67	0.2	0.084		
68	0.1	0.064		
69	0.1	0.047		
70	0.1	0.035		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} DK

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			5.5	0.987
31			5.5	0.983
32			5.5	0.978
33			5.4	0.973
34			5.4	0.964
35			5.3	0.951
36			5.2	0.934
37			5.1	0.909
38			4.9	0.872
39			4.6	0.830
40	5.5	0.979	4.4	0.783
41	5.4	0.975	4.1	0.731
42	5.4	0.966	3.7	0.671
43	5.3	0.954	3.4	0.607
44	5.2	0.938	3.0	0.544
45	5.1	0.916	2.7	0.481
46	4.9	0.880	2.3	0.419
47	4.7	0.840	2.0	0.360
48	4.4	0.794	1.7	0.313
49	4.1	0.744	1.5	0.271
50	3.8	0.688	1.3	0.233
51	3.5	0.625	1.1	0.199
52	3.1	0.562	1.0	0.173
53	2.8	0.500	0.8	0.149
54	2.4	0.439	0.7	0.128
55	2.1	0.377	0.6	0.109
56	1.8	0.330	0.5	0.092
57	1.6	0.287	0.4	0.076
58	1.4	0.248	0.3	0.061
59	1.2	0.213	0.3	0.047
60	1.0	0.185	0.2	0.036
61	0.9	0.160		
62	0.8	0.137		
63	0.7	0.118		
64	0.6	0.100		
65	0.5	0.084		
66	0.4	0.068		
67	0.3	0.054		
68	0.2	0.041		
69	0.2	0.030		
70	0.1	0.022		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} EE for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.8	0.985
31			0.8	0.980
32			0.8	0.974
33			0.8	0.968
34			0.8	0.958
35			0.7	0.943
36			0.7	0.924
37			0.7	0.898
38			0.7	0.856
39			0.6	0.809
40	0.8	0.974	0.6	0.757
41	0.8	0.968	0.5	0.700
42	0.8	0.958	0.5	0.639
43	0.7	0.943	0.4	0.573
44	0.7	0.924	0.4	0.508
45	0.7	0.898	0.3	0.446
46	0.7	0.856	0.3	0.384
47	0.6	0.809	0.3	0.324
48	0.6	0.757	0.2	0.280
49	0.5	0.700	0.2	0.240
50	0.5	0.639	0.2	0.205
51	0.4	0.573	0.1	0.175
52	0.4	0.508	0.1	0.152
53	0.3	0.446	0.1	0.131
54	0.3	0.384	0.1	0.112
55	0.3	0.324	0.1	0.096
56	0.2	0.280	0.1	0.082
57	0.2	0.240	0.1	0.069
58	0.2	0.205	0.0	0.056
59	0.1	0.175	0.0	0.044
60	0.1	0.152	0.0	0.034
61	0.1	0.131		
62	0.1	0.112		
63	0.1	0.096		
64	0.1	0.082		
65	0.1	0.069		
66	0.0	0.056		
67	0.0	0.044		
68	0.0	0.034		
69	0.0	0.025		
70	0.0	0.018		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} EE for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.5	0.994
31			0.5	0.992
32			0.5	0.991
33			0.5	0.988
34			0.5	0.983
35			0.5	0.977
36			0.5	0.968
37			0.5	0.956
38			0.5	0.940
39			0.5	0.920
40	0.5	0.992	0.5	0.895
41	0.5	0.991	0.4	0.866
42	0.5	0.988	0.4	0.825
43	0.5	0.983	0.4	0.780
44	0.5	0.977	0.4	0.732
45	0.5	0.968	0.3	0.680
46	0.5	0.956	0.3	0.625
47	0.5	0.940	0.3	0.571
48	0.5	0.920	0.3	0.519
49	0.5	0.895	0.2	0.467
50	0.4	0.866	0.2	0.417
51	0.4	0.825	0.2	0.371
52	0.4	0.780	0.2	0.330
53	0.4	0.732	0.1	0.291
54	0.3	0.680	0.1	0.254
55	0.3	0.625	0.1	0.220
56	0.3	0.571	0.1	0.185
57	0.3	0.519	0.1	0.153
58	0.2	0.467	0.1	0.124
59	0.2	0.417	0.0	0.098
60	0.2	0.371	0.0	0.074
61	0.2	0.330		
62	0.1	0.291		
63	0.1	0.254		
64	0.1	0.220		
65	0.1	0.185		
66	0.1	0.153		
67	0.1	0.124		
68	0.0	0.098		
69	0.0	0.074		
70	0.0	0.055		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} EE

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.3	0.989
31			1.3	0.985
32			1.3	0.980
33			1.3	0.976
34			1.2	0.968
35			1.2	0.956
36			1.2	0.941
37			1.2	0.921
38			1.1	0.889
39			1.1	0.852
40	1.3	0.981	1.0	0.811
41	1.3	0.977	1.0	0.765
42	1.3	0.970	0.9	0.712
43	1.2	0.959	0.8	0.654
44	1.2	0.945	0.8	0.596
45	1.2	0.925	0.7	0.538
46	1.2	0.895	0.6	0.478
47	1.1	0.860	0.5	0.421
48	1.1	0.821	0.5	0.374
49	1.0	0.777	0.4	0.329
50	0.9	0.728	0.4	0.288
51	0.9	0.672	0.3	0.252
52	0.8	0.615	0.3	0.222
53	0.7	0.558	0.2	0.193
54	0.6	0.500	0.2	0.168
55	0.6	0.442	0.2	0.144
56	0.5	0.394	0.2	0.122
57	0.5	0.350	0.1	0.102
58	0.4	0.308	0.1	0.082
59	0.3	0.270	0.1	0.065
60	0.3	0.238	0.1	0.049
61	0.3	0.209		
62	0.2	0.182		
63	0.2	0.158		
64	0.2	0.136		
65	0.1	0.114		
66	0.1	0.094		
67	0.1	0.075		
68	0.1	0.059		
69	0.1	0.044		
70	0.0	0.033		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} EL for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			8.2	0.991
31			8.2	0.987
32			8.2	0.983
33			8.2	0.980
34			8.1	0.974
35			8.0	0.965
36			7.9	0.952
37			7.8	0.934
38			7.5	0.906
39			7.3	0.874
40	8.2	0.983	7.0	0.837
41	8.2	0.980	6.6	0.796
42	8.1	0.974	6.2	0.750
43	8.0	0.965	5.8	0.697
44	7.9	0.952	5.4	0.644
45	7.8	0.934	4.9	0.590
46	7.5	0.906	4.5	0.535
47	7.3	0.874	4.0	0.480
48	7.0	0.837	3.6	0.434
49	6.6	0.796	3.3	0.391
50	6.2	0.750	2.9	0.350
51	5.8	0.697	2.6	0.312
52	5.4	0.644	2.3	0.280
53	4.9	0.590	2.1	0.249
54	4.5	0.535	1.8	0.221
55	4.0	0.480	1.6	0.194
56	3.6	0.434	1.4	0.169
57	3.3	0.391	1.2	0.143
58	2.9	0.350	1.0	0.119
59	2.6	0.312	0.8	0.097
60	2.3	0.280	0.6	0.076
61	2.1	0.249		
62	1.8	0.221		
63	1.6	0.194		
64	1.4	0.169		
65	1.2	0.143		
66	1.0	0.119		
67	0.8	0.097		
68	0.6	0.076		
69	0.5	0.058		
70	0.4	0.043		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} EL for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			2.3	0.997
31			2.3	0.996
32			2.3	0.995
33			2.3	0.994
34			2.3	0.992
35			2.3	0.988
36			2.3	0.984
37			2.3	0.979
38			2.2	0.971
39			2.2	0.961
40	2.3	0.996	2.2	0.949
41	2.3	0.995	2.2	0.934
42	2.3	0.994	2.1	0.913
43	2.3	0.992	2.1	0.889
44	2.3	0.988	2.0	0.861
45	2.3	0.984	1.9	0.830
46	2.3	0.979	1.8	0.795
47	2.2	0.971	1.8	0.756
48	2.2	0.961	1.7	0.716
49	2.2	0.949	1.6	0.673
50	2.2	0.934	1.5	0.629
51	2.1	0.913	1.4	0.585
52	2.1	0.889	1.2	0.539
53	2.0	0.861	1.1	0.493
54	1.9	0.830	1.0	0.446
55	1.8	0.795	0.9	0.399
56	1.8	0.756	0.8	0.347
57	1.7	0.716	0.7	0.297
58	1.6	0.673	0.6	0.248
59	1.5	0.629	0.5	0.202
60	1.4	0.585	0.4	0.158
61	1.2	0.539		
62	1.1	0.493		
63	1.0	0.446		
64	0.9	0.399		
65	0.8	0.347		
66	0.7	0.297		
67	0.6	0.248		
68	0.5	0.202		
69	0.4	0.158		
70	0.3	0.118		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} EL

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			10.5	0.992
31			10.5	0.989
32			10.5	0.986
33			10.5	0.983
34			10.4	0.978
35			10.3	0.970
36			10.2	0.959
37			10.0	0.944
38			9.8	0.920
39			9.5	0.893
40	10.5	0.986	9.2	0.861
41	10.5	0.984	8.8	0.826
42	10.4	0.978	8.4	0.785
43	10.3	0.970	7.9	0.739
44	10.2	0.960	7.3	0.691
45	10.0	0.945	6.8	0.642
46	9.8	0.922	6.3	0.592
47	9.5	0.895	5.7	0.540
48	9.2	0.864	5.3	0.495
49	8.8	0.829	4.8	0.452
50	8.4	0.790	4.4	0.411
51	7.9	0.744	4.0	0.372
52	7.4	0.697	3.6	0.336
53	6.9	0.649	3.2	0.302
54	6.4	0.600	2.9	0.270
55	5.8	0.548	2.5	0.238
56	5.4	0.504	2.2	0.208
57	4.9	0.462	1.9	0.177
58	4.5	0.421	1.6	0.147
59	4.1	0.381	1.3	0.120
60	3.7	0.346	1.0	0.094
61	3.3	0.312		
62	3.0	0.280		
63	2.6	0.249		
64	2.3	0.219		
65	2.0	0.188		
66	1.7	0.158		
67	1.4	0.130		
68	1.1	0.104		
69	0.8	0.079		
70	0.6	0.059		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} ES for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			25.4	0.990
31			25.3	0.986
32			25.2	0.982
33			25.2	0.979
34			25.0	0.972
35			24.7	0.961
36			24.3	0.947
37			23.8	0.927
38			23.1	0.897
39			22.1	0.861
40	25.2	0.982	21.1	0.820
41	25.2	0.979	19.9	0.774
42	25.0	0.972	18.6	0.722
43	24.7	0.961	17.0	0.659
44	24.3	0.947	15.3	0.597
45	23.8	0.927	13.7	0.534
46	23.1	0.897	12.1	0.471
47	22.1	0.861	10.5	0.407
48	21.1	0.820	9.2	0.357
49	19.9	0.774	8.0	0.311
50	18.6	0.722	6.9	0.269
51	17.0	0.659	5.9	0.231
52	15.3	0.597	5.1	0.200
53	13.7	0.534	4.4	0.173
54	12.1	0.471	3.8	0.149
55	10.5	0.407	3.3	0.127
56	9.2	0.357	2.8	0.109
57	8.0	0.311	2.3	0.091
58	6.9	0.269	1.9	0.074
59	5.9	0.231	1.5	0.058
60	5.1	0.200	1.1	0.045
61	4.4	0.173		
62	3.8	0.149		
63	3.3	0.127		
64	2.8	0.109		
65	2.3	0.091		
66	1.9	0.074		
67	1.5	0.058		
68	1.1	0.045		
69	0.8	0.033		
70	0.6	0.024		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} ES for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			18.9	0.995
31			18.9	0.994
32			18.9	0.993
33			18.8	0.991
34			18.8	0.987
35			18.7	0.983
36			18.6	0.976
37			18.4	0.969
38			18.2	0.958
39			18.0	0.945
40	18.9	0.994	17.6	0.928
41	18.9	0.993	17.3	0.908
42	18.8	0.991	16.7	0.880
43	18.8	0.987	16.1	0.848
44	18.7	0.983	15.5	0.813
45	18.6	0.976	14.7	0.774
46	18.4	0.969	13.9	0.730
47	18.2	0.958	13.0	0.684
48	18.0	0.945	12.1	0.636
49	17.6	0.928	11.2	0.587
50	17.3	0.908	10.2	0.536
51	16.7	0.880	9.3	0.488
52	16.1	0.848	8.4	0.440
53	15.5	0.813	7.5	0.394
54	14.7	0.774	6.6	0.349
55	13.9	0.730	5.8	0.304
56	13.0	0.684	4.9	0.257
57	12.1	0.636	4.1	0.214
58	11.2	0.587	3.3	0.173
59	10.2	0.536	2.6	0.136
60	9.3	0.488	1.9	0.102
61	8.4	0.440		
62	7.5	0.394		
63	6.6	0.349		
64	5.8	0.304		
65	4.9	0.257		
66	4.1	0.214		
67	3.3	0.173		
68	2.6	0.136		
69	1.9	0.102		
70	1.4	0.073		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} ES

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			44.4	0.992
31			44.3	0.989
32			44.1	0.987
33			44.0	0.984
34			43.8	0.978
35			43.4	0.970
36			42.9	0.959
37			42.3	0.945
38			41.3	0.923
39			40.1	0.897
40	44.1	0.987	38.7	0.866
41	44.0	0.985	37.1	0.831
42	43.8	0.980	35.3	0.789
43	43.5	0.972	33.1	0.740
44	43.0	0.962	30.8	0.689
45	42.4	0.948	28.5	0.636
46	41.5	0.927	26.0	0.581
47	40.4	0.902	23.5	0.525
48	39.0	0.873	21.3	0.476
49	37.5	0.839	19.2	0.428
50	35.8	0.801	17.1	0.383
51	33.7	0.753	15.2	0.340
52	31.5	0.704	13.5	0.302
53	29.2	0.653	11.9	0.267
54	26.8	0.600	10.5	0.234
55	24.4	0.545	9.1	0.203
56	22.2	0.496	7.7	0.172
57	20.1	0.449	6.4	0.143
58	18.1	0.404	5.2	0.116
59	16.1	0.361	4.1	0.091
60	14.4	0.323	3.1	0.069
61	12.8	0.287		
62	11.3	0.253		
63	9.9	0.221		
64	8.6	0.192		
65	7.2	0.162		
66	6.0	0.133		
67	4.8	0.107		
68	3.7	0.083		
69	2.8	0.062		
70	2.0	0.045		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} FI for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.6	0.984
31			3.6	0.979
32			3.6	0.972
33			3.5	0.966
34			3.5	0.956
35			3.4	0.941
36			3.4	0.921
37			3.3	0.894
38			3.1	0.852
39			2.9	0.805
40	3.6	0.972	2.8	0.754
41	3.5	0.966	2.5	0.697
42	3.5	0.956	2.3	0.635
43	3.4	0.941	2.1	0.569
44	3.4	0.921	1.8	0.504
45	3.3	0.894	1.6	0.441
46	3.1	0.852	1.4	0.379
47	2.9	0.805	1.2	0.319
48	2.8	0.754	1.0	0.275
49	2.5	0.697	0.9	0.236
50	2.3	0.635	0.7	0.201
51	2.1	0.569	0.6	0.171
52	1.8	0.504	0.5	0.148
53	1.6	0.441	0.5	0.127
54	1.4	0.379	0.4	0.109
55	1.2	0.319	0.3	0.093
56	1.0	0.275	0.3	0.079
57	0.9	0.236	0.2	0.066
58	0.7	0.201	0.2	0.054
59	0.6	0.171	0.2	0.043
60	0.5	0.148	0.1	0.033
61	0.5	0.127		
62	0.4	0.109		
63	0.3	0.093		
64	0.3	0.079		
65	0.2	0.066		
66	0.2	0.054		
67	0.2	0.043		
68	0.1	0.033		
69	0.1	0.024		
70	0.1	0.018		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} FI for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.7	0.992
31			1.7	0.989
32			1.7	0.988
33			1.7	0.984
34			1.7	0.978
35			1.6	0.969
36			1.6	0.957
37			1.6	0.941
38			1.6	0.920
39			1.5	0.893
40	1.7	0.989	1.5	0.862
41	1.7	0.988	1.4	0.826
42	1.7	0.984	1.3	0.775
43	1.7	0.978	1.2	0.722
44	1.6	0.969	1.1	0.666
45	1.6	0.957	1.0	0.607
46	1.6	0.941	0.9	0.545
47	1.6	0.920	0.8	0.489
48	1.5	0.893	0.7	0.436
49	1.5	0.862	0.6	0.385
50	1.4	0.826	0.6	0.336
51	1.3	0.775	0.5	0.293
52	1.2	0.722	0.4	0.256
53	1.1	0.666	0.4	0.222
54	1.0	0.607	0.3	0.191
55	0.9	0.545	0.3	0.164
56	0.8	0.489	0.2	0.136
57	0.7	0.436	0.2	0.111
58	0.6	0.385	0.1	0.088
59	0.6	0.336	0.1	0.068
60	0.5	0.293	0.1	0.050
61	0.4	0.256		
62	0.4	0.222		
63	0.3	0.191		
64	0.3	0.164		
65	0.2	0.136		
66	0.2	0.111		
67	0.1	0.088		
68	0.1	0.068		
69	0.1	0.050		
70	0.1	0.037		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} FI

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			5.3	0.987
31			5.2	0.982
32			5.2	0.977
33			5.2	0.972
34			5.1	0.963
35			5.1	0.950
36			5.0	0.932
37			4.9	0.909
38			4.7	0.874
39			4.4	0.833
40	5.2	0.978	4.2	0.788
41	5.2	0.973	3.9	0.738
42	5.2	0.965	3.6	0.679
43	5.1	0.953	3.3	0.617
44	5.0	0.936	3.0	0.555
45	4.9	0.914	2.6	0.494
46	4.7	0.880	2.3	0.432
47	4.5	0.841	2.0	0.373
48	4.3	0.798	1.7	0.326
49	4.0	0.749	1.5	0.283
50	3.7	0.695	1.3	0.244
51	3.4	0.634	1.1	0.209
52	3.1	0.573	1.0	0.182
53	2.7	0.512	0.8	0.157
54	2.4	0.451	0.7	0.135
55	2.1	0.391	0.6	0.115
56	1.8	0.343	0.5	0.097
57	1.6	0.299	0.4	0.080
58	1.4	0.259	0.3	0.065
59	1.2	0.223	0.3	0.051
60	1.0	0.194	0.2	0.038
61	0.9	0.168		
62	0.8	0.145		
63	0.7	0.124		
64	0.6	0.106		
65	0.5	0.088		
66	0.4	0.072		
67	0.3	0.057		
68	0.2	0.044		
69	0.2	0.032		
70	0.1	0.024		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} FR for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			34.0	0.988
31			33.8	0.983
32			33.6	0.977
33			33.5	0.973
34			33.2	0.965
35			32.8	0.952
36			32.2	0.934
37			31.3	0.911
38			30.0	0.871
39			28.5	0.827
40	33.6	0.977	26.8	0.778
41	33.5	0.973	24.9	0.724
42	33.2	0.965	22.8	0.664
43	32.8	0.952	20.6	0.598
44	32.2	0.934	18.3	0.532
45	31.3	0.911	16.1	0.468
46	30.0	0.871	14.0	0.406
47	28.5	0.827	11.8	0.344
48	26.8	0.778	10.3	0.298
49	24.9	0.724	8.9	0.257
50	22.8	0.664	7.6	0.221
51	20.6	0.598	6.5	0.189
52	18.3	0.532	5.7	0.165
53	16.1	0.468	4.9	0.142
54	14.0	0.406	4.2	0.122
55	11.8	0.344	3.6	0.105
56	10.3	0.298	3.1	0.090
57	8.9	0.257	2.6	0.076
58	7.6	0.221	2.1	0.062
59	6.5	0.189	1.7	0.049
60	5.7	0.165	1.3	0.038
61	4.9	0.142		
62	4.2	0.122		
63	3.6	0.105		
64	3.1	0.090		
65	2.6	0.076		
66	2.1	0.062		
67	1.7	0.049		
68	1.3	0.038		
69	1.0	0.028		
70	0.7	0.021		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} FR for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			28.1	0.993
31			28.1	0.991
32			28.0	0.990
33			27.9	0.987
34			27.8	0.982
35			27.6	0.975
36			27.3	0.965
37			27.0	0.952
38			26.5	0.935
39			25.9	0.914
40	28.1	0.991	25.1	0.888
41	28.0	0.990	24.3	0.858
42	27.9	0.987	23.1	0.817
43	27.8	0.982	21.9	0.773
44	27.6	0.975	20.6	0.727
45	27.3	0.965	19.2	0.677
46	27.0	0.952	17.7	0.624
47	26.5	0.935	16.2	0.573
48	25.9	0.914	14.8	0.524
49	25.1	0.888	13.5	0.475
50	24.3	0.858	12.1	0.427
51	23.1	0.817	10.9	0.383
52	21.9	0.773	9.7	0.343
53	20.6	0.727	8.6	0.304
54	19.2	0.677	7.6	0.267
55	17.7	0.624	6.6	0.232
56	16.2	0.573	5.6	0.196
57	14.8	0.524	4.6	0.163
58	13.5	0.475	3.7	0.131
59	12.1	0.427	2.9	0.103
60	10.9	0.383	2.2	0.077
61	9.7	0.343		
62	8.6	0.304		
63	7.6	0.267		
64	6.6	0.232		
65	5.6	0.196		
66	4.6	0.163		
67	3.7	0.131		
68	2.9	0.103		
69	2.2	0.077		
70	1.6	0.056		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} FR

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			62.1	0.990
31			61.9	0.987
32			61.7	0.983
33			61.5	0.980
34			61.0	0.973
35			60.4	0.962
36			59.5	0.948
37			58.3	0.929
38			56.5	0.900
39			54.3	0.866
40	61.7	0.984	51.9	0.828
41	61.5	0.981	49.2	0.784
42	61.2	0.975	46.0	0.733
43	60.6	0.965	42.5	0.677
44	59.8	0.953	38.9	0.620
45	58.7	0.935	35.3	0.563
46	57.0	0.908	31.6	0.504
47	54.9	0.876	28.1	0.447
48	52.6	0.839	25.1	0.400
49	50.1	0.798	22.3	0.356
50	47.1	0.751	19.7	0.314
51	43.7	0.697	17.4	0.277
52	40.2	0.641	15.4	0.245
53	36.7	0.585	13.5	0.215
54	33.1	0.528	11.8	0.188
55	29.5	0.470	10.2	0.163
56	26.5	0.422	8.7	0.138
57	23.7	0.378	7.2	0.115
58	21.0	0.336	5.9	0.093
59	18.6	0.296	4.6	0.073
60	16.5	0.263	3.5	0.055
61	14.6	0.233		
62	12.8	0.204		
63	11.2	0.178		
64	9.7	0.154		
65	8.2	0.130		
66	6.7	0.107		
67	5.4	0.086		
68	4.2	0.067		
69	3.1	0.050		
70	2.3	0.037		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} HR for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.0	0.988
31			3.0	0.983
32			3.0	0.978
33			3.0	0.974
34			2.9	0.965
35			2.9	0.952
36			2.9	0.935
37			2.8	0.911
38			2.7	0.872
39			2.5	0.827
40	3.0	0.978	2.4	0.778
41	3.0	0.974	2.2	0.723
42	2.9	0.965	2.0	0.663
43	2.9	0.952	1.8	0.595
44	2.9	0.935	1.6	0.529
45	2.8	0.911	1.4	0.465
46	2.7	0.872	1.2	0.401
47	2.5	0.827	1.0	0.338
48	2.4	0.778	0.9	0.292
49	2.2	0.723	0.8	0.251
50	2.0	0.663	0.7	0.215
51	1.8	0.595	0.6	0.183
52	1.6	0.529	0.5	0.159
53	1.4	0.465	0.4	0.137
54	1.2	0.401	0.4	0.118
55	1.0	0.338	0.3	0.101
56	0.9	0.292	0.3	0.086
57	0.8	0.251	0.2	0.072
58	0.7	0.215	0.2	0.059
59	0.6	0.183	0.1	0.047
60	0.5	0.159	0.1	0.036
61	0.4	0.137		
62	0.4	0.118		
63	0.3	0.101		
64	0.3	0.086		
65	0.2	0.072		
66	0.2	0.059		
67	0.1	0.047		
68	0.1	0.036		
69	0.1	0.026		
70	0.1	0.020		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} HR for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.2	0.994
31			1.2	0.992
32			1.2	0.991
33			1.2	0.988
34			1.2	0.983
35			1.2	0.976
36			1.2	0.966
37			1.2	0.954
38			1.1	0.937
39			1.1	0.915
40	1.2	0.992	1.1	0.889
41	1.2	0.991	1.1	0.859
42	1.2	0.988	1.0	0.816
43	1.2	0.983	0.9	0.770
44	1.2	0.976	0.9	0.721
45	1.2	0.966	0.8	0.669
46	1.2	0.954	0.8	0.612
47	1.1	0.937	0.7	0.559
48	1.1	0.915	0.6	0.506
49	1.1	0.889	0.6	0.455
50	1.1	0.859	0.5	0.405
51	1.0	0.816	0.4	0.360
52	0.9	0.770	0.4	0.320
53	0.9	0.721	0.3	0.282
54	0.8	0.669	0.3	0.247
55	0.8	0.612	0.3	0.214
56	0.7	0.559	0.2	0.181
57	0.6	0.506	0.2	0.151
58	0.6	0.455	0.2	0.124
59	0.5	0.405	0.1	0.099
60	0.4	0.360	0.1	0.076
61	0.4	0.320		
62	0.3	0.282		
63	0.3	0.247		
64	0.3	0.214		
65	0.2	0.181		
66	0.2	0.151		
67	0.2	0.124		
68	0.1	0.099		
69	0.1	0.076		
70	0.1	0.057		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} HR

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			4.2	0.989
31			4.2	0.985
32			4.2	0.981
33			4.2	0.978
34			4.2	0.970
35			4.1	0.959
36			4.0	0.944
37			4.0	0.923
38			3.8	0.890
39			3.7	0.852
40	4.2	0.982	3.5	0.810
41	4.2	0.978	3.3	0.762
42	4.2	0.972	3.0	0.707
43	4.1	0.961	2.8	0.645
44	4.1	0.946	2.5	0.584
45	4.0	0.927	2.2	0.523
46	3.8	0.895	2.0	0.461
47	3.7	0.859	1.7	0.401
48	3.5	0.817	1.5	0.354
49	3.3	0.771	1.3	0.310
50	3.1	0.719	1.2	0.269
51	2.8	0.659	1.0	0.234
52	2.6	0.598	0.9	0.205
53	2.3	0.538	0.8	0.179
54	2.0	0.478	0.7	0.155
55	1.8	0.417	0.6	0.133
56	1.6	0.369	0.5	0.114
57	1.4	0.324	0.4	0.095
58	1.2	0.284	0.3	0.077
59	1.1	0.247	0.3	0.061
60	0.9	0.217	0.2	0.047
61	0.8	0.189		
62	0.7	0.165		
63	0.6	0.143		
64	0.5	0.123		
65	0.4	0.104		
66	0.4	0.085		
67	0.3	0.069		
68	0.2	0.054		
69	0.2	0.040		
70	0.1	0.030		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} HU for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			6.8	0.986
31			6.7	0.982
32			6.7	0.976
33			6.7	0.971
34			6.6	0.962
35			6.5	0.948
36			6.4	0.929
37			6.2	0.903
38			5.9	0.861
39			5.6	0.814
40	6.7	0.976	5.2	0.761
41	6.7	0.971	4.8	0.704
42	6.6	0.962	4.4	0.640
43	6.5	0.948	3.9	0.572
44	6.4	0.929	3.5	0.506
45	6.2	0.903	3.0	0.441
46	5.9	0.861	2.6	0.377
47	5.6	0.814	2.2	0.315
48	5.2	0.761	1.9	0.271
49	4.8	0.704	1.6	0.231
50	4.4	0.640	1.3	0.197
51	3.9	0.572	1.1	0.167
52	3.5	0.506	1.0	0.145
53	3.0	0.441	0.9	0.124
54	2.6	0.377	0.7	0.106
55	2.2	0.315	0.6	0.090
56	1.9	0.271	0.5	0.077
57	1.6	0.231	0.4	0.065
58	1.3	0.197	0.4	0.052
59	1.1	0.167	0.3	0.041
60	1.0	0.145	0.2	0.032
61	0.9	0.124		
62	0.7	0.106		
63	0.6	0.090		
64	0.5	0.077		
65	0.4	0.065		
66	0.4	0.052		
67	0.3	0.041		
68	0.2	0.032		
69	0.2	0.023		
70	0.1	0.017		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} HU for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.0	0.992
31			3.0	0.990
32			3.0	0.988
33			3.0	0.985
34			3.0	0.979
35			3.0	0.971
36			2.9	0.959
37			2.9	0.944
38			2.8	0.923
39			2.8	0.898
40	3.0	0.990	2.7	0.868
41	3.0	0.988	2.6	0.833
42	3.0	0.985	2.4	0.784
43	3.0	0.979	2.2	0.732
44	3.0	0.971	2.1	0.677
45	2.9	0.959	1.9	0.620
46	2.9	0.944	1.7	0.559
47	2.8	0.923	1.5	0.503
48	2.8	0.898	1.4	0.450
49	2.7	0.868	1.2	0.399
50	2.6	0.833	1.1	0.350
51	2.4	0.784	0.9	0.307
52	2.2	0.732	0.8	0.269
53	2.1	0.677	0.7	0.234
54	1.9	0.620	0.6	0.202
55	1.7	0.559	0.5	0.172
56	1.5	0.503	0.4	0.143
57	1.4	0.450	0.4	0.117
58	1.2	0.399	0.3	0.093
59	1.1	0.350	0.2	0.072
60	0.9	0.307	0.2	0.053
61	0.8	0.269		
62	0.7	0.234		
63	0.6	0.202		
64	0.5	0.172		
65	0.4	0.143		
66	0.4	0.117		
67	0.3	0.093		
68	0.2	0.072		
69	0.2	0.053		
70	0.1	0.039		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} HU

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			9.8	0.988
31			9.8	0.984
32			9.7	0.980
33			9.7	0.975
34			9.6	0.967
35			9.5	0.955
36			9.3	0.938
37			9.1	0.916
38			8.7	0.880
39			8.3	0.840
40	9.7	0.980	7.9	0.794
41	9.7	0.977	7.4	0.743
42	9.6	0.969	6.8	0.685
43	9.5	0.957	6.2	0.621
44	9.4	0.942	5.5	0.559
45	9.1	0.921	4.9	0.496
46	8.8	0.887	4.3	0.433
47	8.4	0.848	3.7	0.373
48	8.0	0.803	3.2	0.326
49	7.5	0.754	2.8	0.283
50	7.0	0.700	2.4	0.244
51	6.3	0.637	2.1	0.210
52	5.7	0.575	1.8	0.183
53	5.1	0.514	1.6	0.158
54	4.5	0.452	1.3	0.136
55	3.9	0.390	1.1	0.116
56	3.4	0.343	1.0	0.098
57	3.0	0.299	0.8	0.081
58	2.6	0.259	0.6	0.065
59	2.2	0.223	0.5	0.051
60	1.9	0.195	0.4	0.038
61	1.7	0.169		
62	1.4	0.145		
63	1.2	0.125		
64	1.1	0.107		
65	0.9	0.089		
66	0.7	0.072		
67	0.6	0.057		
68	0.4	0.044		
69	0.3	0.032		
70	0.2	0.024		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IE for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.1	0.986
31			3.1	0.981
32			3.1	0.975
33			3.1	0.970
34			3.1	0.961
35			3.0	0.947
36			3.0	0.928
37			2.9	0.902
38			2.7	0.861
39			2.6	0.815
40	3.1	0.975	2.4	0.763
41	3.1	0.970	2.2	0.707
42	3.1	0.961	2.1	0.645
43	3.0	0.947	1.8	0.579
44	3.0	0.928	1.6	0.514
45	2.9	0.902	1.4	0.450
46	2.7	0.861	1.2	0.388
47	2.6	0.815	1.0	0.327
48	2.4	0.763	0.9	0.283
49	2.2	0.707	0.8	0.243
50	2.1	0.645	0.7	0.208
51	1.8	0.579	0.6	0.177
52	1.6	0.514	0.5	0.154
53	1.4	0.450	0.4	0.133
54	1.2	0.388	0.4	0.114
55	1.0	0.327	0.3	0.098
56	0.9	0.283	0.3	0.084
57	0.8	0.243	0.2	0.070
58	0.7	0.208	0.2	0.057
59	0.6	0.177	0.1	0.046
60	0.5	0.154	0.1	0.035
61	0.4	0.133		
62	0.4	0.114		
63	0.3	0.098		
64	0.3	0.084		
65	0.2	0.070		
66	0.2	0.057		
67	0.1	0.046		
68	0.1	0.035		
69	0.1	0.026		
70	0.1	0.019		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IE for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.4	0.993
31			1.4	0.992
32			1.4	0.990
33			1.4	0.987
34			1.4	0.982
35			1.4	0.975
36			1.3	0.966
37			1.3	0.953
38			1.3	0.936
39			1.3	0.915
40	1.4	0.992	1.2	0.889
41	1.4	0.990	1.2	0.857
42	1.4	0.987	1.1	0.812
43	1.4	0.982	1.1	0.764
44	1.4	0.975	1.0	0.712
45	1.3	0.966	0.9	0.657
46	1.3	0.953	0.8	0.597
47	1.3	0.936	0.8	0.540
48	1.3	0.915	0.7	0.485
49	1.2	0.889	0.6	0.432
50	1.2	0.857	0.5	0.380
51	1.1	0.812	0.5	0.333
52	1.1	0.764	0.4	0.292
53	1.0	0.712	0.4	0.254
54	0.9	0.657	0.3	0.220
55	0.8	0.597	0.3	0.188
56	0.8	0.540	0.2	0.156
57	0.7	0.485	0.2	0.127
58	0.6	0.432	0.1	0.101
59	0.5	0.380	0.1	0.078
60	0.5	0.333	0.1	0.057
61	0.4	0.292		
62	0.4	0.254		
63	0.3	0.220		
64	0.3	0.188		
65	0.2	0.156		
66	0.2	0.127		
67	0.1	0.101		
68	0.1	0.078		
69	0.1	0.057		
70	0.1	0.042		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IE

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			4.5	0.988
31			4.5	0.984
32			4.5	0.980
33			4.5	0.976
34			4.4	0.967
35			4.4	0.955
36			4.3	0.939
37			4.2	0.918
38			4.0	0.884
39			3.9	0.845
40	4.5	0.980	3.7	0.801
41	4.5	0.976	3.4	0.753
42	4.4	0.969	3.2	0.696
43	4.4	0.958	2.9	0.635
44	4.3	0.942	2.6	0.574
45	4.2	0.922	2.3	0.513
46	4.1	0.889	2.1	0.452
47	3.9	0.852	1.8	0.392
48	3.7	0.809	1.6	0.344
49	3.5	0.762	1.4	0.300
50	3.2	0.710	1.2	0.260
51	3.0	0.650	1.0	0.224
52	2.7	0.590	0.9	0.196
53	2.4	0.530	0.8	0.170
54	2.1	0.470	0.7	0.146
55	1.9	0.409	0.6	0.125
56	1.7	0.361	0.5	0.106
57	1.4	0.317	0.4	0.088
58	1.3	0.276	0.3	0.071
59	1.1	0.239	0.3	0.055
60	1.0	0.209	0.2	0.042
61	0.8	0.181		
62	0.7	0.157		
63	0.6	0.135		
64	0.5	0.116		
65	0.4	0.096		
66	0.4	0.079		
67	0.3	0.063		
68	0.2	0.048		
69	0.2	0.035		
70	0.1	0.026		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IS for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.1	0.986
31			0.1	0.980
32			0.1	0.974
33			0.1	0.969
34			0.1	0.959
35			0.1	0.945
36			0.1	0.925
37			0.1	0.899
38			0.1	0.857
39			0.1	0.809
40	0.1	0.974	0.1	0.757
41	0.1	0.969	0.1	0.699
42	0.1	0.959	0.1	0.637
43	0.1	0.945	0.1	0.569
44	0.1	0.925	0.1	0.504
45	0.1	0.899	0.1	0.440
46	0.1	0.857	0.0	0.377
47	0.1	0.809	0.0	0.316
48	0.1	0.757	0.0	0.272
49	0.1	0.699	0.0	0.233
50	0.1	0.637	0.0	0.199
51	0.1	0.569	0.0	0.169
52	0.1	0.504	0.0	0.147
53	0.1	0.440	0.0	0.126
54	0.0	0.377	0.0	0.108
55	0.0	0.316	0.0	0.093
56	0.0	0.272	0.0	0.080
57	0.0	0.233	0.0	0.067
58	0.0	0.199	0.0	0.054
59	0.0	0.169	0.0	0.043
60	0.0	0.147	0.0	0.033
61	0.0	0.126		
62	0.0	0.108		
63	0.0	0.093		
64	0.0	0.080		
65	0.0	0.067		
66	0.0	0.054		
67	0.0	0.043		
68	0.0	0.033		
69	0.0	0.024		
70	0.0	0.018		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IS for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.2	0.992
31			0.2	0.989
32			0.2	0.988
33			0.2	0.984
34			0.2	0.978
35			0.2	0.969
36			0.2	0.957
37			0.2	0.940
38			0.2	0.917
39			0.2	0.889
40	0.2	0.989	0.2	0.856
41	0.2	0.988	0.2	0.818
42	0.2	0.984	0.2	0.764
43	0.2	0.978	0.1	0.708
44	0.2	0.969	0.1	0.650
45	0.2	0.957	0.1	0.590
46	0.2	0.940	0.1	0.526
47	0.2	0.917	0.1	0.471
48	0.2	0.889	0.1	0.419
49	0.2	0.856	0.1	0.370
50	0.2	0.818	0.1	0.324
51	0.2	0.764	0.1	0.284
52	0.1	0.708	0.1	0.249
53	0.1	0.650	0.0	0.218
54	0.1	0.590	0.0	0.189
55	0.1	0.526	0.0	0.163
56	0.1	0.471	0.0	0.137
57	0.1	0.419	0.0	0.113
58	0.1	0.370	0.0	0.092
59	0.1	0.324	0.0	0.072
60	0.1	0.284	0.0	0.054
61	0.1	0.249		
62	0.0	0.218		
63	0.0	0.189		
64	0.0	0.163		
65	0.0	0.137		
66	0.0	0.113		
67	0.0	0.092		
68	0.0	0.072		
69	0.0	0.054		
70	0.0	0.041		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IS

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.3	0.990
31			0.3	0.986
32			0.3	0.983
33			0.3	0.979
34			0.3	0.971
35			0.3	0.960
36			0.3	0.946
37			0.3	0.925
38			0.3	0.895
39			0.3	0.860
40	0.3	0.984	0.3	0.820
41	0.3	0.981	0.2	0.775
42	0.3	0.975	0.2	0.718
43	0.3	0.966	0.2	0.658
44	0.3	0.953	0.2	0.597
45	0.3	0.936	0.2	0.535
46	0.3	0.909	0.2	0.472
47	0.3	0.878	0.1	0.415
48	0.3	0.841	0.1	0.366
49	0.3	0.799	0.1	0.320
50	0.2	0.752	0.1	0.278
51	0.2	0.693	0.1	0.242
52	0.2	0.634	0.1	0.212
53	0.2	0.574	0.1	0.184
54	0.2	0.512	0.1	0.160
55	0.1	0.450	0.0	0.138
56	0.1	0.399	0.0	0.116
57	0.1	0.352	0.0	0.096
58	0.1	0.308	0.0	0.078
59	0.1	0.267	0.0	0.061
60	0.1	0.234	0.0	0.046
61	0.1	0.205		
62	0.1	0.178		
63	0.0	0.154		
64	0.0	0.133		
65	0.0	0.112		
66	0.0	0.092		
67	0.0	0.074		
68	0.0	0.058		
69	0.0	0.043		
70	0.0	0.032		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IT for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			47.0	0.989
31			46.8	0.985
32			46.6	0.980
33			46.4	0.977
34			46.1	0.970
35			45.5	0.958
36			44.8	0.943
37			43.8	0.922
38			42.2	0.888
39			40.3	0.849
40	46.6	0.980	38.3	0.805
41	46.4	0.977	35.9	0.756
42	46.1	0.970	33.3	0.701
43	45.5	0.958	30.2	0.637
44	44.8	0.943	27.2	0.573
45	43.8	0.922	24.2	0.509
46	42.2	0.888	21.1	0.445
47	40.3	0.849	18.1	0.382
48	38.3	0.805	15.8	0.333
49	35.9	0.756	13.7	0.288
50	33.3	0.701	11.8	0.248
51	30.2	0.637	10.1	0.212
52	27.2	0.573	8.8	0.184
53	24.2	0.509	7.6	0.159
54	21.1	0.445	6.5	0.137
55	18.1	0.382	5.6	0.117
56	15.8	0.333	4.7	0.100
57	13.7	0.288	4.0	0.083
58	11.8	0.248	3.2	0.068
59	10.1	0.212	2.5	0.054
60	8.8	0.184	2.0	0.041
61	7.6	0.159		
62	6.5	0.137		
63	5.6	0.117		
64	4.7	0.100		
65	4.0	0.083		
66	3.2	0.068		
67	2.5	0.054		
68	2.0	0.041		
69	1.4	0.030		
70	1.1	0.022		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IT for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			11.8	0.993
31			11.8	0.991
32			11.8	0.990
33			11.7	0.987
34			11.7	0.982
35			11.6	0.975
36			11.5	0.966
37			11.4	0.954
38			11.2	0.938
39			10.9	0.918
40	11.8	0.991	10.6	0.893
41	11.8	0.990	10.3	0.865
42	11.7	0.987	9.8	0.825
43	11.7	0.982	9.3	0.782
44	11.6	0.975	8.7	0.735
45	11.5	0.966	8.2	0.685
46	11.4	0.954	7.5	0.631
47	11.2	0.938	6.9	0.578
48	10.9	0.918	6.3	0.526
49	10.6	0.893	5.6	0.474
50	10.3	0.865	5.0	0.423
51	9.8	0.825	4.5	0.376
52	9.3	0.782	4.0	0.333
53	8.7	0.735	3.5	0.293
54	8.2	0.685	3.0	0.255
55	7.5	0.631	2.6	0.219
56	6.9	0.578	2.2	0.183
57	6.3	0.526	1.8	0.150
58	5.6	0.474	1.4	0.120
59	5.0	0.423	1.1	0.093
60	4.5	0.376	0.8	0.069
61	4.0	0.333		
62	3.5	0.293		
63	3.0	0.255		
64	2.6	0.219		
65	2.2	0.183		
66	1.8	0.150		
67	1.4	0.120		
68	1.1	0.093		
69	0.8	0.069		
70	0.6	0.050		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} IT

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			58.8	0.990
31			58.6	0.986
32			58.4	0.982
33			58.2	0.979
34			57.7	0.972
35			57.1	0.962
36			56.3	0.947
37			55.1	0.928
38			53.4	0.898
39			51.3	0.863
40	58.4	0.983	48.9	0.823
41	58.2	0.980	46.2	0.778
42	57.8	0.973	43.1	0.726
43	57.2	0.963	39.5	0.666
44	56.4	0.949	36.0	0.605
45	55.3	0.930	32.3	0.544
46	53.5	0.901	28.7	0.482
47	51.5	0.867	25.0	0.421
48	49.2	0.828	22.1	0.371
49	46.5	0.783	19.3	0.326
50	43.6	0.734	16.8	0.283
51	40.1	0.674	14.6	0.245
52	36.5	0.614	12.7	0.214
53	32.9	0.554	11.0	0.186
54	29.3	0.493	9.5	0.160
55	25.6	0.432	8.2	0.137
56	22.7	0.382	6.9	0.116
57	20.0	0.336	5.7	0.097
58	17.4	0.294	4.6	0.078
59	15.1	0.255	3.7	0.062
60	13.2	0.223	2.8	0.047
61	11.5	0.194		
62	10.0	0.168		
63	8.6	0.144		
64	7.4	0.124		
65	6.1	0.103		
66	5.0	0.084		
67	4.0	0.067		
68	3.1	0.052		
69	2.3	0.038		
70	1.7	0.028		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LI for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0,04	0.983
31			0,04	0.978
32			0,04	0.970
33			0,03	0.965
34			0,03	0.953
35			0,03	0.937
36			0,03	0.915
37			0,03	0.885
38			0,03	0.837
39			0,03	0.784
40	0,04	0.970	0,03	0.725
41	0,03	0.965	0,02	0.661
42	0,03	0.953	0,02	0.593
43	0,03	0.937	0,02	0.522
44	0,03	0.915	0,02	0.453
45	0,03	0.885	0,01	0.387
46	0,03	0.837	0,01	0.323
47	0,03	0.784	0,01	0.263
48	0,03	0.725	0,01	0.221
49	0,02	0.661	0,01	0.185
50	0,02	0.593	0,01	0.154
51	0,02	0.522	0,00	0.128
52	0,02	0.453	0,00	0.110
53	0,01	0.387	0,00	0.093
54	0,01	0.323	0,00	0.078
55	0,01	0.263	0,00	0.066
56	0,01	0.221	0,00	0.056
57	0,01	0.185	0,00	0.047
58	0,01	0.154	0,00	0.037
59	0,00	0.128	0,00	0.029
60	0,00	0.110	0,00	0.022
61	0,00	0.093		
62	0,00	0.078		
63	0,00	0.066		
64	0,00	0.056		
65	0,00	0.047		
66	0,00	0.037		
67	0,00	0.029		
68	0,00	0.022		
69	0,00	0.016		
70	0,00	0.012		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LI for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
There are no END agglomerations in Liechtenstein				

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LI

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0,04	0.983
31			0,04	0.978
32			0,04	0.970
33			0,03	0.965
34			0,03	0.953
35			0,03	0.937
36			0,03	0.915
37			0,03	0.885
38			0,03	0.837
39			0,03	0.784
40	0,04	0.970	0,03	0.725
41	0,03	0.965	0,02	0.661
42	0,03	0.953	0,02	0.593
43	0,03	0.937	0,02	0.522
44	0,03	0.915	0,02	0.453
45	0,03	0.885	0,01	0.387
46	0,03	0.837	0,01	0.323
47	0,03	0.784	0,01	0.263
48	0,03	0.725	0,01	0.221
49	0,02	0.661	0,01	0.185
50	0,02	0.593	0,01	0.154
51	0,02	0.522	0,00	0.128
52	0,02	0.453	0,00	0.110
53	00.2 ,01	0.387	0,00	0.093
54	0,01	0.323	0,00	0.078
55	0,01	0.263	0,00	0.066
56	0,01	0.221	0,00	0.056
57	0,01	0.185	0,00	0.047
58	0,01	0.154	0,00	0.037
59	0,00	0.128	0,00	0.029
60	0,00	0.110	0,00	0.022
61	0,00	0.093		
62	0,00	0.078		
63	0,00	0.066		
64	0,00	0.056		
65	0,00	0.047		
66	0,00	0.037		
67	0,00	0.029		
68	0,00	0.022		
69	0,00	0.016		
70	0,00	0.012		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LT for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.7	0.985
31			1.7	0.980
32			1.7	0.973
33			1.7	0.968
34			1.7	0.958
35			1.7	0.942
36			1.6	0.923
37			1.6	0.896
38			1.5	0.852
39			1.4	0.803
40	1.7	0.973	1.3	0.749
41	1.7	0.968	1.2	0.691
42	1.7	0.958	1.1	0.627
43	1.7	0.942	1.0	0.559
44	1.6	0.923	0.9	0.494
45	1.6	0.896	0.8	0.429
46	1.5	0.852	0.6	0.367
47	1.4	0.803	0.5	0.306
48	1.3	0.749	0.5	0.263
49	1.2	0.691	0.4	0.224
50	1.1	0.627	0.3	0.190
51	1.0	0.559	0.3	0.161
52	0.9	0.494	0.2	0.139
53	0.8	0.429	0.2	0.119
54	0.6	0.367	0.2	0.102
55	0.5	0.306	0.2	0.087
56	0.5	0.263	0.1	0.074
57	0.4	0.224	0.1	0.062
58	0.3	0.190	0.1	0.050
59	0.3	0.161	0.1	0.039
60	0.2	0.139	0.1	0.030
61	0.2	0.119		
62	0.2	0.102		
63	0.2	0.087		
64	0.1	0.074		
65	0.1	0.062		
66	0.1	0.050		
67	0.1	0.039		
68	0.1	0.030		
69	0.0	0.022		
70	0.0	0.016		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LT for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.3	0.993
31			1.2	0.991
32			1.2	0.990
33			1.2	0.986
34			1.2	0.981
35			1.2	0.974
36			1.2	0.964
37			1.2	0.951
38			1.2	0.933
39			1.1	0.911
40	1.2	0.991	1.1	0.885
41	1.2	0.990	1.1	0.855
42	1.2	0.986	1.0	0.813
43	1.2	0.981	1.0	0.768
44	1.2	0.974	0.9	0.720
45	1.2	0.964	0.8	0.669
46	1.2	0.951	0.8	0.613
47	1.2	0.933	0.7	0.560
48	1.1	0.911	0.6	0.507
49	1.1	0.885	0.6	0.456
50	1.1	0.855	0.5	0.406
51	1.0	0.813	0.5	0.360
52	1.0	0.768	0.4	0.318
53	0.9	0.720	0.4	0.279
54	0.8	0.669	0.3	0.242
55	0.8	0.613	0.3	0.208
56	0.7	0.560	0.2	0.174
57	0.6	0.507	0.2	0.143
58	0.6	0.456	0.1	0.114
59	0.5	0.406	0.1	0.088
60	0.5	0.360	0.1	0.065
61	0.4	0.318		
62	0.4	0.279		
63	0.3	0.242		
64	0.3	0.208		
65	0.2	0.174		
66	0.2	0.143		
67	0.1	0.114		
68	0.1	0.088		
69	0.1	0.065		
70	0.1	0.048		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LT

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.0	0.988
31			3.0	0.984
32			3.0	0.980
33			3.0	0.976
34			2.9	0.967
35			2.9	0.956
36			2.8	0.940
37			2.8	0.918
38			2.7	0.886
39			2.6	0.848
40	3.0	0.981	2.4	0.806
41	3.0	0.977	2.3	0.759
42	2.9	0.970	2.1	0.704
43	2.9	0.959	2.0	0.646
44	2.9	0.944	1.8	0.588
45	2.8	0.924	1.6	0.529
46	2.7	0.893	1.4	0.469
47	2.6	0.857	1.2	0.412
48	2.5	0.817	1.1	0.365
49	2.3	0.772	1.0	0.321
50	2.2	0.722	0.8	0.280
51	2.0	0.665	0.7	0.243
52	1.8	0.608	0.6	0.214
53	1.7	0.550	0.6	0.186
54	1.5	0.492	0.5	0.160
55	1.3	0.434	0.4	0.137
56	1.2	0.386	0.3	0.115
57	1.0	0.342	0.3	0.095
58	0.9	0.301	0.2	0.077
59	0.8	0.263	0.2	0.060
60	0.7	0.231	0.1	0.045
61	0.6	0.202		
62	0.5	0.176		
63	0.5	0.151		
64	0.4	0.130		
65	0.3	0.108		
66	0.3	0.089		
67	0.2	0.071		
68	0.2	0.054		
69	0.1	0.040		
70	0.1	0.029		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LU for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.4	0.991
31			0.4	0.988
32			0.4	0.985
33			0.4	0.983
34			0.4	0.977
35			0.4	0.968
36			0.4	0.955
37			0.4	0.937
38			0.4	0.909
39			0.4	0.876
40	0.4	0.985	0.3	0.837
41	0.4	0.983	0.3	0.792
42	0.4	0.977	0.3	0.742
43	0.4	0.968	0.3	0.678
44	0.4	0.955	0.3	0.614
45	0.4	0.937	0.2	0.549
46	0.4	0.909	0.2	0.484
47	0.4	0.876	0.2	0.417
48	0.3	0.837	0.2	0.366
49	0.3	0.792	0.1	0.319
50	0.3	0.742	0.1	0.275
51	0.3	0.678	0.1	0.236
52	0.3	0.614	0.1	0.205
53	0.2	0.549	0.1	0.178
54	0.2	0.484	0.1	0.153
55	0.2	0.417	0.1	0.132
56	0.2	0.366	0.0	0.113
57	0.1	0.319	0.0	0.094
58	0.1	0.275	0.0	0.077
59	0.1	0.236	0.0	0.061
60	0.1	0.205	0.0	0.047
61	0.1	0.178		
62	0.1	0.153		
63	0.1	0.132		
64	0.0	0.113		
65	0.0	0.094		
66	0.0	0.077		
67	0.0	0.061		
68	0.0	0.047		
69	0.0	0.035		
70	0.0	0.026		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LU for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.1	0.995
31			0.1	0.994
32			0.1	0.993
33			0.1	0.991
34			0.1	0.987
35			0.1	0.981
36			0.1	0.974
37			0.1	0.965
38			0.1	0.951
39			0.1	0.934
40	0.1	0.994	0.1	0.912
41	0.1	0.993	0.1	0.886
42	0.1	0.991	0.1	0.845
43	0.1	0.987	0.1	0.801
44	0.1	0.981	0.1	0.754
45	0.1	0.974	0.1	0.702
46	0.1	0.965	0.1	0.645
47	0.1	0.951	0.1	0.589
48	0.1	0.934	0.1	0.534
49	0.1	0.912	0.0	0.479
50	0.1	0.886	0.0	0.425
51	0.1	0.845	0.0	0.376
52	0.1	0.801	0.0	0.332
53	0.1	0.754	0.0	0.291
54	0.1	0.702	0.0	0.253
55	0.1	0.645	0.0	0.218
56	0.1	0.589	0.0	0.182
57	0.1	0.534	0.0	0.150
58	0.0	0.479	0.0	0.120
59	0.0	0.425	0.0	0.094
60	0.0	0.376	0.0	0.070
61	0.0	0.332		
62	0.0	0.291		
63	0.0	0.253		
64	0.0	0.218		
65	0.0	0.182		
66	0.0	0.150		
67	0.0	0.120		
68	0.0	0.094		
69	0.0	0.070		
70	0.0	0.052		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LU

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.5	0.992
31			0.5	0.989
32			0.5	0.986
33			0.5	0.984
34			0.5	0.979
35			0.5	0.970
36			0.5	0.959
37			0.5	0.943
38			0.5	0.918
39			0.5	0.887
40	0.5	0.986	0.4	0.852
41	0.5	0.985	0.4	0.811
42	0.5	0.980	0.4	0.762
43	0.5	0.971	0.4	0.702
44	0.5	0.960	0.3	0.641
45	0.5	0.944	0.3	0.579
46	0.5	0.920	0.3	0.516
47	0.5	0.891	0.2	0.451
48	0.4	0.856	0.2	0.399
49	0.4	0.816	0.2	0.350
50	0.4	0.770	0.2	0.305
51	0.4	0.711	0.1	0.264
52	0.3	0.651	0.1	0.230
53	0.3	0.589	0.1	0.200
54	0.3	0.527	0.1	0.173
55	0.2	0.462	0.1	0.149
56	0.2	0.410	0.1	0.126
57	0.2	0.361	0.1	0.105
58	0.2	0.315	0.0	0.085
59	0.1	0.274	0.0	0.068
60	0.1	0.239	0.0	0.051
61	0.1	0.208		
62	0.1	0.180		
63	0.1	0.155		
64	0.1	0.133		
65	0.1	0.112		
66	0.0	0.091		
67	0.0	0.073		
68	0.0	0.056		
69	0.0	0.041		
70	0.0	0.031		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LV for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.1	0.986
31			1.1	0.981
32			1.1	0.975
33			1.1	0.970
34			1.1	0.960
35			1.1	0.946
36			1.1	0.927
37			1.0	0.902
38			1.0	0.862
39			0.9	0.817
40	1.1	0.975	0.9	0.767
41	1.1	0.970	0.8	0.712
42	1.1	0.960	0.8	0.652
43	1.1	0.946	0.7	0.586
44	1.1	0.927	0.6	0.522
45	1.0	0.902	0.5	0.458
46	1.0	0.862	0.5	0.396
47	0.9	0.817	0.4	0.336
48	0.9	0.767	0.3	0.291
49	0.8	0.712	0.3	0.250
50	0.8	0.652	0.2	0.214
51	0.7	0.586	0.2	0.183
52	0.6	0.522	0.2	0.159
53	0.5	0.458	0.2	0.138
54	0.5	0.396	0.1	0.118
55	0.4	0.336	0.1	0.102
56	0.3	0.291	0.1	0.088
57	0.3	0.250	0.1	0.074
58	0.2	0.214	0.1	0.060
59	0.2	0.183	0.1	0.048
60	0.2	0.159	0.0	0.037
61	0.2	0.138		
62	0.1	0.118		
63	0.1	0.102		
64	0.1	0.088		
65	0.1	0.074		
66	0.1	0.060		
67	0.1	0.048		
68	0.0	0.037		
69	0.0	0.028		
70	0.0	0.021		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LV for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.9	0.992
31			0.9	0.989
32			0.9	0.988
33			0.9	0.984
34			0.9	0.977
35			0.9	0.968
36			0.9	0.956
37			0.9	0.939
38			0.8	0.917
39			0.8	0.890
40	0.9	0.989	0.8	0.859
41	0.9	0.988	0.8	0.822
42	0.9	0.984	0.7	0.772
43	0.9	0.977	0.7	0.720
44	0.9	0.968	0.6	0.665
45	0.9	0.956	0.6	0.607
46	0.9	0.939	0.5	0.546
47	0.8	0.917	0.5	0.492
48	0.8	0.890	0.4	0.440
49	0.8	0.859	0.4	0.389
50	0.8	0.822	0.3	0.341
51	0.7	0.772	0.3	0.299
52	0.7	0.720	0.2	0.262
53	0.6	0.665	0.2	0.228
54	0.6	0.607	0.2	0.197
55	0.5	0.546	0.2	0.169
56	0.5	0.492	0.1	0.141
57	0.4	0.440	0.1	0.115
58	0.4	0.389	0.1	0.092
59	0.3	0.341	0.1	0.071
60	0.3	0.299	0.0	0.053
61	0.2	0.262		
62	0.2	0.228		
63	0.2	0.197		
64	0.2	0.169		
65	0.1	0.141		
66	0.1	0.115		
67	0.1	0.092		
68	0.1	0.071		
69	0.0	0.053		
70	0.0	0.039		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} LV

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			2.1	0.988
31			2.0	0.984
32			2.0	0.980
33			2.0	0.976
34			2.0	0.968
35			2.0	0.956
36			2.0	0.940
37			1.9	0.918
38			1.8	0.886
39			1.8	0.849
40	2.0	0.981	1.7	0.808
41	2.0	0.977	1.6	0.761
42	2.0	0.970	1.5	0.705
43	2.0	0.960	1.3	0.645
44	2.0	0.945	1.2	0.585
45	1.9	0.926	1.1	0.524
46	1.9	0.896	1.0	0.463
47	1.8	0.861	0.8	0.405
48	1.7	0.821	0.7	0.356
49	1.6	0.777	0.6	0.312
50	1.5	0.727	0.6	0.270
51	1.4	0.668	0.5	0.234
52	1.3	0.609	0.4	0.205
53	1.1	0.550	0.4	0.178
54	1.0	0.490	0.3	0.153
55	0.9	0.429	0.3	0.131
56	0.8	0.380	0.2	0.111
57	0.7	0.334	0.2	0.092
58	0.6	0.292	0.2	0.074
59	0.5	0.253	0.1	0.058
60	0.5	0.221	0.1	0.044
61	0.4	0.193		
62	0.3	0.167		
63	0.3	0.144		
64	0.3	0.124		
65	0.2	0.103		
66	0.2	0.085		
67	0.1	0.068		
68	0.1	0.052		
69	0.1	0.039		
70	0.1	0.029		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} MT for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.1	0.992
31			0.1	0.989
32			0.1	0.986
33			0.1	0.984
34			0.1	0.979
35			0.1	0.971
36			0.1	0.959
37			0.1	0.943
38			0.1	0.918
39			0.1	0.888
40	0.1	0.986	0.1	0.852
41	0.1	0.984	0.1	0.810
42	0.1	0.979	0.1	0.762
43	0.1	0.971	0.1	0.699
44	0.1	0.959	0.1	0.635
45	0.1	0.943	0.1	0.570
46	0.1	0.918	0.1	0.504
47	0.1	0.888	0.1	0.436
48	0.1	0.852	0.0	0.383
49	0.1	0.810	0.0	0.334
50	0.1	0.762	0.0	0.290
51	0.1	0.699	0.0	0.249
52	0.1	0.635	0.0	0.216
53	0.1	0.570	0.0	0.187
54	0.1	0.504	0.0	0.162
55	0.1	0.436	0.0	0.139
56	0.0	0.383	0.0	0.119
57	0.0	0.334	0.0	0.100
58	0.0	0.290	0.0	0.082
59	0.0	0.249	0.0	0.065
60	0.0	0.216	0.0	0.050
61	0.0	0.187		
62	0.0	0.162		
63	0.0	0.139		
64	0.0	0.119		
65	0.0	0.100		
66	0.0	0.082		
67	0.0	0.065		
68	0.0	0.050		
69	0.0	0.037		
70	0.0	0.028		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} MT for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.3	0.995
31			0.3	0.993
32			0.3	0.992
33			0.3	0.990
34			0.3	0.985
35			0.3	0.980
36			0.3	0.972
37			0.3	0.962
38			0.3	0.949
39			0.3	0.931
40	0.3	0.993	0.3	0.909
41	0.3	0.992	0.3	0.883
42	0.3	0.990	0.2	0.843
43	0.3	0.985	0.2	0.800
44	0.3	0.980	0.2	0.753
45	0.3	0.972	0.2	0.703
46	0.3	0.962	0.2	0.647
47	0.3	0.949	0.2	0.591
48	0.3	0.931	0.2	0.535
49	0.3	0.909	0.1	0.481
50	0.3	0.883	0.1	0.427
51	0.2	0.843	0.1	0.377
52	0.2	0.800	0.1	0.333
53	0.2	0.753	0.1	0.291
54	0.2	0.703	0.1	0.252
55	0.2	0.647	0.1	0.216
56	0.2	0.591	0.1	0.180
57	0.2	0.535	0.0	0.147
58	0.1	0.481	0.0	0.118
59	0.1	0.427	0.0	0.091
60	0.1	0.377	0.0	0.067
61	0.1	0.333		
62	0.1	0.291		
63	0.1	0.252		
64	0.1	0.216		
65	0.1	0.180		
66	0.0	0.147		
67	0.0	0.118		
68	0.0	0.091		
69	0.0	0.067		
70	0.0	0.049		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} MT

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.4	0.994
31			0.4	0.992
32			0.4	0.990
33			0.4	0.988
34			0.4	0.984
35			0.4	0.977
36			0.4	0.968
37			0.4	0.957
38			0.4	0.940
39			0.4	0.918
40	0.4	0.991	0.4	0.892
41	0.4	0.990	0.4	0.861
42	0.4	0.987	0.3	0.819
43	0.4	0.981	0.3	0.770
44	0.4	0.974	0.3	0.718
45	0.4	0.963	0.3	0.663
46	0.4	0.949	0.3	0.604
47	0.4	0.931	0.2	0.545
48	0.4	0.908	0.2	0.490
49	0.4	0.880	0.2	0.437
50	0.4	0.847	0.2	0.386
51	0.3	0.800	0.1	0.339
52	0.3	0.751	0.1	0.298
53	0.3	0.699	0.1	0.260
54	0.3	0.644	0.1	0.225
55	0.2	0.584	0.1	0.193
56	0.2	0.529	0.1	0.162
57	0.2	0.476	0.1	0.133
58	0.2	0.424	0.0	0.107
59	0.2	0.374	0.0	0.083
60	0.1	0.329	0.0	0.062
61	0.1	0.290		
62	0.1	0.253		
63	0.1	0.219		
64	0.1	0.187		
65	0.1	0.156		
66	0.1	0.128		
67	0.0	0.102		
68	0.0	0.079		
69	0.0	0.058		
70	0.0	0.043		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} NL for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			9.1	0.991
31			9.1	0.988
32			9.0	0.984
33			9.0	0.981
34			8.9	0.975
35			8.9	0.966
36			8.7	0.952
37			8.6	0.934
38			8.3	0.905
39			8.0	0.871
40	9.0	0.984	7.6	0.831
41	9.0	0.981	7.2	0.786
42	8.9	0.975	6.7	0.734
43	8.9	0.966	6.1	0.670
44	8.7	0.952	5.6	0.606
45	8.6	0.934	5.0	0.541
46	8.3	0.905	4.4	0.476
47	8.0	0.871	3.8	0.409
48	7.6	0.831	3.3	0.358
49	7.2	0.786	2.9	0.311
50	6.7	0.734	2.5	0.268
51	6.1	0.670	2.1	0.230
52	5.6	0.606	1.8	0.199
53	5.0	0.541	1.6	0.172
54	4.4	0.476	1.4	0.148
55	3.8	0.409	1.2	0.127
56	3.3	0.358	1.0	0.108
57	2.9	0.311	0.8	0.091
58	2.5	0.268	0.7	0.074
59	2.1	0.230	0.5	0.058
60	1.8	0.199	0.4	0.045
61	1.6	0.172		
62	1.4	0.148		
63	1.2	0.127		
64	1.0	0.108		
65	0.8	0.091		
66	0.7	0.074		
67	0.5	0.058		
68	0.4	0.045		
69	0.3	0.033		
70	0.2	0.025		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} NL for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			7.4	0.993
31			7.3	0.991
32			7.3	0.990
33			7.3	0.987
34			7.3	0.982
35			7.2	0.975
36			7.2	0.965
37			7.1	0.953
38			6.9	0.935
39			6.8	0.913
40	7.3	0.991	6.6	0.887
41	7.3	0.990	6.3	0.855
42	7.3	0.987	6.0	0.809
43	7.3	0.982	5.6	0.760
44	7.2	0.975	5.2	0.708
45	7.2	0.965	4.8	0.653
46	7.1	0.953	4.4	0.593
47	6.9	0.935	4.0	0.537
48	6.8	0.913	3.6	0.482
49	6.6	0.887	3.2	0.429
50	6.3	0.855	2.8	0.378
51	6.0	0.809	2.5	0.331
52	5.6	0.760	2.2	0.291
53	5.2	0.708	1.9	0.253
54	4.8	0.653	1.6	0.219
55	4.4	0.593	1.4	0.187
56	4.0	0.537	1.2	0.155
57	3.6	0.482	0.9	0.127
58	3.2	0.429	0.8	0.101
59	2.8	0.378	0.6	0.078
60	2.5	0.331	0.4	0.057
61	2.2	0.291		
62	1.9	0.253		
63	1.6	0.219		
64	1.4	0.187		
65	1.2	0.155		
66	0.9	0.127		
67	0.8	0.101		
68	0.6	0.078		
69	0.4	0.057		
70	0.3	0.042		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} NL

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			16.5	0.992
31			16.4	0.989
32			16.4	0.987
33			16.3	0.984
34			16.2	0.978
35			16.1	0.970
36			15.9	0.958
37			15.6	0.942
38			15.2	0.919
39			14.8	0.890
40	16.4	0.987	14.2	0.856
41	16.3	0.985	13.5	0.817
42	16.3	0.981	12.7	0.768
43	16.1	0.973	11.8	0.710
44	16.0	0.962	10.8	0.652
45	15.7	0.948	9.8	0.591
46	15.4	0.926	8.8	0.528
47	14.9	0.900	7.7	0.466
48	14.4	0.868	6.9	0.414
49	13.8	0.831	6.0	0.364
50	13.1	0.788	5.3	0.317
51	12.1	0.732	4.6	0.275
52	11.2	0.675	4.0	0.240
53	10.2	0.616	3.5	0.208
54	9.2	0.555	3.0	0.180
55	8.1	0.491	2.5	0.154
56	7.3	0.438	2.1	0.129
57	6.4	0.388	1.8	0.107
58	5.6	0.340	1.4	0.086
59	4.9	0.296	1.1	0.067
60	4.3	0.258	0.8	0.050
61	3.7	0.225		
62	3.2	0.195		
63	2.8	0.168		
64	2.4	0.144		
65	2.0	0.120		
66	1.6	0.098		
67	1.3	0.078		
68	1.0	0.060		
69	0.7	0.044		
70	0.5	0.032		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} NO for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.2	0.986
31			3.2	0.981
32			3.2	0.975
33			3.1	0.970
34			3.1	0.961
35			3.1	0.946
36			3.0	0.928
37			2.9	0.902
38			2.8	0.862
39			2.6	0.816
40	3.2	0.975	2.5	0.765
41	3.1	0.970	2.3	0.709
42	3.1	0.961	2.1	0.648
43	3.1	0.946	1.9	0.581
44	3.0	0.928	1.7	0.516
45	2.9	0.902	1.5	0.451
46	2.8	0.862	1.3	0.388
47	2.6	0.816	1.1	0.327
48	2.5	0.765	0.9	0.282
49	2.3	0.709	0.8	0.242
50	2.1	0.648	0.7	0.206
51	1.9	0.581	0.6	0.175
52	1.7	0.516	0.5	0.152
53	1.5	0.451	0.4	0.131
54	1.3	0.388	0.4	0.112
55	1.1	0.327	0.3	0.096
56	0.9	0.282	0.3	0.082
57	0.8	0.242	0.2	0.069
58	0.7	0.206	0.2	0.056
59	0.6	0.175	0.1	0.044
60	0.5	0.152	0.1	0.034
61	0.4	0.131		
62	0.4	0.112		
63	0.3	0.096		
64	0.3	0.082		
65	0.2	0.069		
66	0.2	0.056		
67	0.1	0.044		
68	0.1	0.034		
69	0.1	0.025		
70	0.1	0.019		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} NO for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.7	0.991
31			1.6	0.989
32			1.6	0.987
33			1.6	0.983
34			1.6	0.976
35			1.6	0.967
36			1.6	0.954
37			1.6	0.937
38			1.5	0.914
39			1.5	0.886
40	1.6	0.989	1.4	0.854
41	1.6	0.987	1.4	0.816
42	1.6	0.983	1.3	0.765
43	1.6	0.976	1.2	0.711
44	1.6	0.967	1.1	0.655
45	1.6	0.954	1.0	0.597
46	1.6	0.937	0.9	0.535
47	1.5	0.914	0.8	0.481
48	1.5	0.886	0.7	0.428
49	1.4	0.854	0.6	0.379
50	1.4	0.816	0.6	0.331
51	1.3	0.765	0.5	0.290
52	1.2	0.711	0.4	0.254
53	1.1	0.655	0.4	0.220
54	1.0	0.597	0.3	0.190
55	0.9	0.535	0.3	0.162
56	0.8	0.481	0.2	0.135
57	0.7	0.428	0.2	0.110
58	0.6	0.379	0.1	0.088
59	0.6	0.331	0.1	0.067
60	0.5	0.290	0.1	0.049
61	0.4	0.254		
62	0.4	0.220		
63	0.3	0.190		
64	0.3	0.162		
65	0.2	0.135		
66	0.2	0.110		
67	0.1	0.088		
68	0.1	0.067		
69	0.1	0.049		
70	0.1	0.036		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} NO

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			4.8	0.988
31			4.8	0.984
32			4.8	0.979
33			4.8	0.974
34			4.7	0.966
35			4.7	0.953
36			4.6	0.937
37			4.5	0.914
38			4.3	0.879
39			4.1	0.840
40	4.8	0.980	3.9	0.795
41	4.8	0.976	3.7	0.745
42	4.7	0.968	3.4	0.688
43	4.7	0.957	3.1	0.625
44	4.6	0.941	2.8	0.563
45	4.5	0.920	2.5	0.501
46	4.4	0.887	2.2	0.438
47	4.2	0.849	1.9	0.379
48	4.0	0.806	1.6	0.332
49	3.7	0.758	1.4	0.288
50	3.5	0.705	1.2	0.249
51	3.2	0.644	1.1	0.214
52	2.9	0.582	0.9	0.187
53	2.6	0.521	0.8	0.161
54	2.3	0.459	0.7	0.138
55	2.0	0.398	0.6	0.118
56	1.7	0.349	0.5	0.100
57	1.5	0.305	0.4	0.083
58	1.3	0.265	0.3	0.067
59	1.1	0.228	0.3	0.052
60	1.0	0.199	0.2	0.039
61	0.8	0.173		
62	0.7	0.149		
63	0.6	0.128		
64	0.5	0.109		
65	0.4	0.091		
66	0.4	0.074		
67	0.3	0.059		
68	0.2	0.045		
69	0.2	0.033		
70	0.1	0.025		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} PL for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			26.7	0.986
31			26.6	0.981
32			26.4	0.975
33			26.3	0.971
34			26.1	0.961
35			25.7	0.947
36			25.2	0.928
37			24.5	0.903
38			23.3	0.861
39			22.1	0.815
40	26.4	0.975	20.7	0.763
41	26.3	0.971	19.2	0.706
42	26.1	0.961	17.5	0.645
43	25.7	0.947	15.7	0.578
44	25.2	0.928	13.9	0.513
45	24.5	0.903	12.2	0.450
46	23.3	0.861	10.5	0.388
47	22.1	0.815	8.9	0.327
48	20.7	0.763	7.7	0.283
49	19.2	0.706	6.6	0.243
50	17.5	0.645	5.6	0.207
51	15.7	0.578	4.8	0.177
52	13.9	0.513	4.2	0.154
53	12.2	0.450	3.6	0.132
54	10.5	0.388	3.1	0.114
55	8.9	0.327	2.6	0.097
56	7.7	0.283	2.3	0.083
57	6.6	0.243	1.9	0.070
58	5.6	0.207	1.5	0.057
59	4.8	0.177	1.2	0.045
60	4.2	0.154	0.9	0.035
61	3.6	0.132		
62	3.1	0.114		
63	2.6	0.097		
64	2.3	0.083		
65	1.9	0.070		
66	1.5	0.057		
67	1.2	0.045		
68	0.9	0.035		
69	0.7	0.025		
70	0.5	0.019		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} PL for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			11.3	0.993
31			11.3	0.990
32			11.3	0.989
33			11.2	0.986
34			11.2	0.980
35			11.1	0.972
36			10.9	0.961
37			10.8	0.947
38			10.6	0.928
39			10.3	0.904
40	11.3	0.990	10.0	0.876
41	11.3	0.989	9.6	0.842
42	11.2	0.986	9.0	0.795
43	11.2	0.980	8.5	0.744
44	11.1	0.972	7.9	0.691
45	10.9	0.961	7.2	0.635
46	10.8	0.947	6.6	0.575
47	10.6	0.928	5.9	0.520
48	10.3	0.904	5.3	0.467
49	10.0	0.876	4.7	0.415
50	9.6	0.842	4.2	0.365
51	9.0	0.795	3.7	0.321
52	8.5	0.744	3.2	0.282
53	7.9	0.691	2.8	0.246
54	7.2	0.635	2.4	0.213
55	6.6	0.575	2.1	0.183
56	5.9	0.520	1.7	0.153
57	5.3	0.467	1.4	0.126
58	4.7	0.415	1.1	0.101
59	4.2	0.365	0.9	0.078
60	3.7	0.321	0.7	0.058
61	3.2	0.282		
62	2.8	0.246		
63	2.4	0.213		
64	2.1	0.183		
65	1.7	0.153		
66	1.4	0.126		
67	1.1	0.101		
68	0.9	0.078		
69	0.7	0.058		
70	0.5	0.043		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} PL

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			38.0	0.988
31			37.9	0.984
32			37.7	0.979
33			37.5	0.975
34			37.2	0.967
35			36.7	0.954
36			36.1	0.938
37			35.3	0.916
38			33.9	0.881
39			32.4	0.841
40	37.7	0.980	30.7	0.796
41	37.6	0.976	28.7	0.746
42	37.3	0.968	26.5	0.689
43	36.8	0.957	24.2	0.627
44	36.2	0.941	21.8	0.566
45	35.4	0.920	19.4	0.505
46	34.1	0.887	17.1	0.443
47	32.6	0.848	14.8	0.384
48	31.0	0.805	13.0	0.337
49	29.1	0.756	11.3	0.294
50	27.1	0.703	9.8	0.254
51	24.7	0.642	8.4	0.219
52	22.4	0.582	7.4	0.192
53	20.1	0.521	6.4	0.166
54	17.7	0.461	5.5	0.143
55	15.4	0.401	4.7	0.123
56	13.6	0.353	4.0	0.104
57	11.9	0.309	3.3	0.086
58	10.4	0.269	2.7	0.070
59	9.0	0.233	2.1	0.055
60	7.8	0.203	1.6	0.042
61	6.8	0.177		
62	5.9	0.153		
63	5.1	0.132		
64	4.3	0.113		
65	3.6	0.094		
66	3.0	0.077		
67	2.4	0.062		
68	1.8	0.048		
69	1.4	0.035		
70	1.0	0.026		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} PT for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			8.3	0.989
31			8.3	0.985
32			8.2	0.980
33			8.2	0.977
34			8.1	0.969
35			8.0	0.958
36			7.9	0.943
37			7.7	0.922
38			7.5	0.889
39			7.1	0.851
40	8.2	0.980	6.8	0.808
41	8.2	0.977	6.4	0.760
42	8.1	0.969	5.9	0.707
43	8.0	0.958	5.4	0.645
44	7.9	0.943	4.9	0.583
45	7.7	0.922	4.4	0.522
46	7.5	0.889	3.9	0.460
47	7.1	0.851	3.3	0.398
48	6.8	0.808	2.9	0.350
49	6.4	0.760	2.6	0.306
50	5.9	0.707	2.2	0.265
51	5.4	0.645	1.9	0.229
52	4.9	0.583	1.7	0.199
53	4.4	0.522	1.5	0.173
54	3.9	0.460	1.3	0.149
55	3.3	0.398	1.1	0.128
56	2.9	0.350	0.9	0.110
57	2.6	0.306	0.8	0.092
58	2.2	0.265	0.6	0.075
59	1.9	0.229	0.5	0.060
60	1.7	0.199	0.4	0.046
61	1.5	0.173		
62	1.3	0.149		
63	1.1	0.128		
64	0.9	0.110		
65	0.8	0.092		
66	0.6	0.075		
67	0.5	0.060		
68	0.4	0.046		
69	0.3	0.034		
70	0.2	0.025		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} PT for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.7	0.995
31			1.7	0.994
32			1.7	0.993
33			1.6	0.991
34			1.6	0.987
35			1.6	0.983
36			1.6	0.976
37			1.6	0.969
38			1.6	0.958
39			1.6	0.944
40	1.7	0.994	1.5	0.927
41	1.7	0.993	1.5	0.906
42	1.6	0.991	1.5	0.875
43	1.6	0.987	1.4	0.841
44	1.6	0.983	1.3	0.803
45	1.6	0.976	1.3	0.762
46	1.6	0.969	1.2	0.715
47	1.6	0.958	1.1	0.664
48	1.6	0.944	1.0	0.613
49	1.5	0.927	0.9	0.562
50	1.5	0.906	0.8	0.509
51	1.5	0.875	0.8	0.459
52	1.4	0.841	0.7	0.412
53	1.3	0.803	0.6	0.366
54	1.3	0.762	0.5	0.321
55	1.2	0.715	0.5	0.279
56	1.1	0.664	0.4	0.234
57	1.0	0.613	0.3	0.194
58	0.9	0.562	0.3	0.157
59	0.8	0.509	0.2	0.123
60	0.8	0.459	0.2	0.092
61	0.7	0.412		
62	0.6	0.366		
63	0.5	0.321		
64	0.5	0.279		
65	0.4	0.234		
66	0.3	0.194		
67	0.3	0.157		
68	0.2	0.123		
69	0.2	0.092		
70	0.1	0.066		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} PT

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			9.9	0.990
31			9.9	0.986
32			9.9	0.982
33			9.8	0.979
34			9.8	0.972
35			9.7	0.962
36			9.5	0.948
37			9.3	0.930
38			9.0	0.901
39			8.7	0.867
40	9.9	0.982	8.3	0.828
41	9.8	0.979	7.9	0.784
42	9.8	0.973	7.4	0.735
43	9.7	0.963	6.8	0.678
44	9.5	0.949	6.2	0.620
45	9.4	0.931	5.6	0.561
46	9.1	0.902	5.0	0.502
47	8.7	0.869	4.4	0.442
48	8.3	0.831	4.0	0.394
49	7.9	0.788	3.5	0.348
50	7.4	0.740	3.1	0.306
51	6.9	0.683	2.7	0.267
52	6.3	0.626	2.4	0.235
53	5.7	0.568	2.1	0.205
54	5.1	0.510	1.8	0.178
55	4.5	0.451	1.5	0.153
56	4.0	0.402	1.3	0.131
57	3.6	0.357	1.1	0.109
58	3.2	0.314	0.9	0.089
59	2.8	0.275	0.7	0.070
60	2.4	0.243	0.5	0.054
61	2.1	0.213		
62	1.9	0.185		
63	1.6	0.160		
64	1.4	0.138		
65	1.2	0.116		
66	1.0	0.095		
67	0.8	0.076		
68	0.6	0.059		
69	0.4	0.044		
70	0.3	0.032		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} RO for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			14.2	0.985
31			14.1	0.980
32			14.0	0.973
33			14.0	0.968
34			13.8	0.958
35			13.6	0.943
36			13.3	0.923
37			12.9	0.896
38			12.3	0.852
39			11.6	0.803
40	14.0	0.973	10.8	0.750
41	14.0	0.968	10.0	0.691
42	13.8	0.958	9.1	0.628
43	13.6	0.943	8.1	0.562
44	13.3	0.923	7.2	0.498
45	12.9	0.896	6.3	0.435
46	12.3	0.852	5.4	0.375
47	11.6	0.803	4.6	0.316
48	10.8	0.750	3.9	0.273
49	10.0	0.691	3.4	0.234
50	9.1	0.628	2.9	0.200
51	8.1	0.562	2.5	0.171
52	7.2	0.498	2.1	0.149
53	6.3	0.435	1.8	0.128
54	5.4	0.375	1.6	0.110
55	4.6	0.316	1.4	0.094
56	3.9	0.273	1.2	0.081
57	3.4	0.234	1.0	0.068
58	2.9	0.200	0.8	0.055
59	2.5	0.171	0.6	0.044
60	2.1	0.149	0.5	0.034
61	1.8	0.128		
62	1.6	0.110		
63	1.4	0.094		
64	1.2	0.081		
65	1.0	0.068		
66	0.8	0.055		
67	0.6	0.044		
68	0.5	0.034		
69	0.4	0.025		
70	0.3	0.019		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} RO for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			5.7	0.995
31			5.7	0.993
32			5.6	0.992
33			5.6	0.990
34			5.6	0.986
35			5.6	0.980
36			5.5	0.973
37			5.5	0.964
38			5.4	0.952
39			5.3	0.935
40	5.7	0.993	5.2	0.915
41	5.6	0.992	5.1	0.891
42	5.6	0.990	4.9	0.857
43	5.6	0.986	4.7	0.819
44	5.6	0.980	4.4	0.778
45	5.5	0.973	4.2	0.733
46	5.5	0.964	3.9	0.682
47	5.4	0.952	3.6	0.631
48	5.3	0.935	3.3	0.579
49	5.2	0.915	3.0	0.527
50	5.1	0.891	2.7	0.474
51	4.9	0.857	2.4	0.425
52	4.7	0.819	2.2	0.379
53	4.4	0.778	1.9	0.335
54	4.2	0.733	1.7	0.294
55	3.9	0.682	1.4	0.254
56	3.6	0.631	1.2	0.213
57	3.3	0.579	1.0	0.176
58	3.0	0.527	0.8	0.142
59	2.7	0.474	0.6	0.111
60	2.4	0.425	0.5	0.083
61	2.2	0.379		
62	1.9	0.335		
63	1.7	0.294		
64	1.4	0.254		
65	1.2	0.213		
66	1.0	0.176		
67	0.8	0.142		
68	0.6	0.111		
69	0.5	0.083		
70	0.3	0.060		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} RO

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			19.9	0.988
31			19.8	0.984
32			19.7	0.979
33			19.6	0.974
34			19.4	0.966
35			19.2	0.953
36			18.9	0.937
37			18.4	0.915
38			17.7	0.880
39			16.9	0.841
40	19.7	0.979	16.0	0.797
41	19.6	0.975	15.0	0.748
42	19.5	0.967	13.9	0.693
43	19.2	0.955	12.8	0.635
44	18.9	0.939	11.6	0.577
45	18.5	0.918	10.5	0.519
46	17.8	0.884	9.3	0.462
47	17.0	0.845	8.1	0.405
48	16.1	0.802	7.2	0.359
49	15.2	0.755	6.4	0.317
50	14.1	0.703	5.6	0.278
51	13.0	0.646	4.9	0.243
52	11.8	0.589	4.3	0.214
53	10.7	0.532	3.8	0.187
54	9.6	0.476	3.3	0.162
55	8.4	0.420	2.8	0.139
56	7.5	0.374	2.4	0.118
57	6.7	0.332	2.0	0.098
58	5.9	0.293	1.6	0.080
59	5.2	0.257	1.3	0.063
60	4.6	0.227	1.0	0.048
61	4.0	0.199		
62	3.5	0.174		
63	3.0	0.151		
64	2.6	0.130		
65	2.2	0.109		
66	1.8	0.089		
67	1.4	0.072		
68	1.1	0.056		
69	0.8	0.041		
70	0.6	0.031		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SE for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			6.2	0.987
31			6.2	0.982
32			6.2	0.976
33			6.2	0.972
34			6.1	0.963
35			6.0	0.950
36			5.9	0.932
37			5.7	0.908
38			5.5	0.870
39			5.2	0.826
40	6.2	0.976	4.9	0.777
41	6.2	0.972	4.6	0.724
42	6.1	0.963	4.2	0.665
43	6.0	0.950	3.8	0.599
44	5.9	0.932	3.4	0.534
45	5.7	0.908	3.0	0.469
46	5.5	0.870	2.6	0.406
47	5.2	0.826	2.2	0.344
48	4.9	0.777	1.9	0.298
49	4.6	0.724	1.6	0.256
50	4.2	0.665	1.4	0.219
51	3.8	0.599	1.2	0.187
52	3.4	0.534	1.0	0.162
53	3.0	0.469	0.9	0.139
54	2.6	0.406	0.8	0.119
55	2.2	0.344	0.6	0.102
56	1.9	0.298	0.6	0.087
57	1.6	0.256	0.5	0.073
58	1.4	0.219	0.4	0.059
59	1.2	0.187	0.3	0.047
60	1.0	0.162	0.2	0.036
61	0.9	0.139		
62	0.8	0.119		
63	0.6	0.102		
64	0.6	0.087		
65	0.5	0.073		
66	0.4	0.059		
67	0.3	0.047		
68	0.2	0.036		
69	0.2	0.026		
70	0.1	0.019		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SE for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			3.2	0.990
31			3.2	0.988
32			3.2	0.986
33			3.1	0.981
34			3.1	0.974
35			3.1	0.964
36			3.0	0.951
37			3.0	0.932
38			2.9	0.908
39			2.8	0.879
40	3.2	0.988	2.7	0.846
41	3.2	0.986	2.6	0.807
42	3.1	0.981	2.4	0.757
43	3.1	0.974	2.3	0.704
44	3.1	0.964	2.1	0.649
45	3.0	0.951	1.9	0.592
46	3.0	0.932	1.7	0.531
47	2.9	0.908	1.5	0.478
48	2.8	0.879	1.4	0.427
49	2.7	0.846	1.2	0.378
50	2.6	0.807	1.1	0.332
51	2.4	0.757	0.9	0.291
52	2.3	0.704	0.8	0.255
53	2.1	0.649	0.7	0.222
54	1.9	0.592	0.6	0.191
55	1.7	0.531	0.5	0.164
56	1.5	0.478	0.4	0.136
57	1.4	0.427	0.4	0.111
58	1.2	0.378	0.3	0.089
59	1.1	0.332	0.2	0.068
60	0.9	0.291	0.2	0.050
61	0.8	0.255		
62	0.7	0.222		
63	0.6	0.191		
64	0.5	0.164		
65	0.4	0.136		
66	0.4	0.111		
67	0.3	0.089		
68	0.2	0.068		
69	0.2	0.050		
70	0.1	0.037		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SE

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			9.4	0.988
31			9.4	0.984
32			9.3	0.980
33			9.3	0.975
34			9.2	0.967
35			9.1	0.955
36			9.0	0.938
37			8.7	0.916
38			8.4	0.882
39			8.1	0.844
40	9.3	0.980	7.6	0.800
41	9.3	0.977	7.2	0.752
42	9.2	0.969	6.6	0.695
43	9.1	0.958	6.0	0.634
44	9.0	0.943	5.5	0.572
45	8.8	0.922	4.9	0.511
46	8.5	0.890	4.3	0.448
47	8.1	0.854	3.7	0.389
48	7.7	0.812	3.3	0.341
49	7.3	0.765	2.8	0.297
50	6.8	0.713	2.5	0.257
51	6.2	0.652	2.1	0.222
52	5.6	0.591	1.8	0.193
53	5.1	0.530	1.6	0.167
54	4.5	0.469	1.4	0.143
55	3.9	0.407	1.2	0.123
56	3.4	0.359	1.0	0.104
57	3.0	0.314	0.8	0.086
58	2.6	0.273	0.7	0.069
59	2.2	0.235	0.5	0.054
60	2.0	0.205	0.4	0.041
61	1.7	0.178		
62	1.5	0.154		
63	1.3	0.132		
64	1.1	0.113		
65	0.9	0.094		
66	0.7	0.077		
67	0.6	0.061		
68	0.4	0.047		
69	0.3	0.034		
70	0.2	0.025		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SI for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			1.6	0.986
31			1.6	0.981
32			1.6	0.974
33			1.6	0.969
34			1.6	0.960
35			1.6	0.945
36			1.5	0.926
37			1.5	0.899
38			1.4	0.856
39			1.3	0.808
40	1.6	0.974	1.3	0.755
41	1.6	0.969	1.2	0.696
42	1.6	0.960	1.1	0.633
43	1.6	0.945	0.9	0.565
44	1.5	0.926	0.8	0.499
45	1.5	0.899	0.7	0.435
46	1.4	0.856	0.6	0.372
47	1.3	0.808	0.5	0.312
48	1.3	0.755	0.4	0.268
49	1.2	0.696	0.4	0.229
50	1.1	0.633	0.3	0.195
51	0.9	0.565	0.3	0.166
52	0.8	0.499	0.2	0.144
53	0.7	0.435	0.2	0.124
54	0.6	0.372	0.2	0.106
55	0.5	0.312	0.2	0.091
56	0.4	0.268	0.1	0.078
57	0.4	0.229	0.1	0.065
58	0.3	0.195	0.1	0.053
59	0.3	0.166	0.1	0.042
60	0.2	0.144	0.1	0.032
61	0.2	0.124		
62	0.2	0.106		
63	0.2	0.091		
64	0.1	0.078		
65	0.1	0.065		
66	0.1	0.053		
67	0.1	0.042		
68	0.1	0.032		
69	0.0	0.024		
70	0.0	0.018		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SI for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.4	0.993
31			0.4	0.991
32			0.4	0.990
33			0.4	0.986
34			0.4	0.981
35			0.4	0.974
36			0.4	0.963
37			0.4	0.950
38			0.4	0.932
39			0.3	0.909
40	0.4	0.991	0.3	0.882
41	0.4	0.990	0.3	0.850
42	0.4	0.986	0.3	0.805
43	0.4	0.981	0.3	0.757
44	0.4	0.974	0.3	0.706
45	0.4	0.963	0.2	0.651
46	0.4	0.950	0.2	0.593
47	0.4	0.932	0.2	0.538
48	0.3	0.909	0.2	0.484
49	0.3	0.882	0.2	0.432
50	0.3	0.850	0.1	0.382
51	0.3	0.805	0.1	0.336
52	0.3	0.757	0.1	0.296
53	0.3	0.706	0.1	0.259
54	0.2	0.651	0.1	0.225
55	0.2	0.593	0.1	0.193
56	0.2	0.538	0.1	0.161
57	0.2	0.484	0.1	0.133
58	0.2	0.432	0.0	0.107
59	0.1	0.382	0.0	0.083
60	0.1	0.336	0.0	0.062
61	0.1	0.296		
62	0.1	0.259		
63	0.1	0.225		
64	0.1	0.193		
65	0.1	0.161		
66	0.1	0.133		
67	0.0	0.107		
68	0.0	0.083		
69	0.0	0.062		
70	0.0	0.046		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SI

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			2.0	0.987
31			2.0	0.982
32			2.0	0.977
33			2.0	0.973
34			2.0	0.964
35			1.9	0.950
36			1.9	0.933
37			1.9	0.909
38			1.8	0.870
39			1.7	0.827
40	2.0	0.977	1.6	0.778
41	2.0	0.973	1.5	0.725
42	2.0	0.965	1.4	0.665
43	1.9	0.952	1.2	0.601
44	1.9	0.934	1.1	0.537
45	1.9	0.911	1.0	0.475
46	1.8	0.873	0.8	0.413
47	1.7	0.831	0.7	0.354
48	1.6	0.783	0.6	0.308
49	1.5	0.731	0.5	0.267
50	1.4	0.673	0.5	0.230
51	1.2	0.610	0.4	0.197
52	1.1	0.547	0.4	0.172
53	1.0	0.485	0.3	0.149
54	0.9	0.424	0.3	0.128
55	0.7	0.364	0.2	0.110
56	0.7	0.318	0.2	0.093
57	0.6	0.276	0.2	0.078
58	0.5	0.239	0.1	0.063
59	0.4	0.206	0.1	0.050
60	0.4	0.180	0.1	0.038
61	0.3	0.156		
62	0.3	0.134		
63	0.2	0.115		
64	0.2	0.099		
65	0.2	0.083		
66	0.1	0.068		
67	0.1	0.054		
68	0.1	0.042		
69	0.1	0.031		
70	0.0	0.023		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SK for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			4.6	0.987
31			4.5	0.982
32			4.5	0.977
33			4.5	0.973
34			4.4	0.964
35			4.4	0.951
36			4.3	0.933
37			4.2	0.908
38			4.0	0.868
39			3.8	0.822
40	4.5	0.977	3.6	0.771
41	4.5	0.973	3.3	0.715
42	4.4	0.964	3.0	0.653
43	4.4	0.951	2.7	0.585
44	4.3	0.933	2.4	0.518
45	4.2	0.908	2.1	0.453
46	4.0	0.868	1.8	0.388
47	3.8	0.822	1.5	0.326
48	3.6	0.771	1.3	0.280
49	3.3	0.715	1.1	0.240
50	3.0	0.653	0.9	0.204
51	2.7	0.585	0.8	0.173
52	2.4	0.518	0.7	0.150
53	2.1	0.453	0.6	0.128
54	1.8	0.388	0.5	0.110
55	1.5	0.326	0.4	0.094
56	1.3	0.280	0.4	0.080
57	1.1	0.240	0.3	0.067
58	0.9	0.204	0.2	0.054
59	0.8	0.173	0.2	0.043
60	0.7	0.150	0.2	0.033
61	0.6	0.128		
62	0.5	0.110		
63	0.4	0.094		
64	0.4	0.080		
65	0.3	0.067		
66	0.2	0.054		
67	0.2	0.043		
68	0.2	0.033		
69	0.1	0.024		
70	0.1	0.018		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SK for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			0.8	0.990
31			0.8	0.988
32			0.8	0.986
33			0.8	0.981
34			0.8	0.974
35			0.8	0.964
36			0.7	0.950
37			0.7	0.930
38			0.7	0.905
39			0.7	0.874
40	0.8	0.988	0.7	0.839
41	0.8	0.986	0.6	0.798
42	0.8	0.981	0.6	0.744
43	0.8	0.974	0.5	0.688
44	0.8	0.964	0.5	0.629
45	0.7	0.950	0.4	0.569
46	0.7	0.930	0.4	0.505
47	0.7	0.905	0.4	0.450
48	0.7	0.874	0.3	0.398
49	0.7	0.839	0.3	0.348
50	0.6	0.798	0.2	0.302
51	0.6	0.744	0.2	0.262
52	0.5	0.688	0.2	0.227
53	0.5	0.629	0.2	0.196
54	0.4	0.569	0.1	0.168
55	0.4	0.505	0.1	0.142
56	0.4	0.450	0.1	0.118
57	0.3	0.398	0.1	0.096
58	0.3	0.348	0.1	0.076
59	0.2	0.302	0.0	0.058
60	0.2	0.262	0.0	0.042
61	0.2	0.227		
62	0.2	0.196		
63	0.1	0.168		
64	0.1	0.142		
65	0.1	0.118		
66	0.1	0.096		
67	0.1	0.076		
68	0.0	0.058		
69	0.0	0.042		
70	0.0	0.031		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} SK

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			5.3	0.988
31			5.3	0.983
32			5.3	0.978
33			5.3	0.974
34			5.2	0.965
35			5.1	0.953
36			5.0	0.935
37			4.9	0.911
38			4.7	0.873
39			4.5	0.830
40	5.3	0.978	4.2	0.781
41	5.3	0.975	3.9	0.727
42	5.2	0.966	3.6	0.666
43	5.1	0.954	3.2	0.600
44	5.1	0.937	2.9	0.534
45	4.9	0.914	2.5	0.470
46	4.7	0.877	2.2	0.406
47	4.5	0.834	1.9	0.344
48	4.2	0.786	1.6	0.297
49	4.0	0.733	1.4	0.255
50	3.6	0.674	1.2	0.218
51	3.3	0.608	1.0	0.186
52	2.9	0.543	0.9	0.161
53	2.6	0.478	0.7	0.138
54	2.2	0.415	0.6	0.118
55	1.9	0.352	0.5	0.101
56	1.6	0.305	0.5	0.085
57	1.4	0.263	0.4	0.071
58	1.2	0.225	0.3	0.057
59	1.0	0.191	0.2	0.045
60	0.9	0.166	0.2	0.034
61	0.8	0.143		
62	0.7	0.122		
63	0.6	0.104		
64	0.5	0.089		
65	0.4	0.074		
66	0.3	0.060		
67	0.3	0.047		
68	0.2	0.036		
69	0.1	0.026		
70	0.1	0.020		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} UK for non END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			27.5	0.990
31			27.4	0.986
32			27.3	0.982
33			27.2	0.979
34			27.0	0.972
35			26.7	0.961
36			26.3	0.947
37			25.7	0.927
38			24.9	0.896
39			23.9	0.859
40	27.3	0.982	22.7	0.817
41	27.2	0.979	21.4	0.770
42	27.0	0.972	19.9	0.717
43	26.7	0.961	18.1	0.653
44	26.3	0.947	16.3	0.588
45	25.7	0.927	14.5	0.524
46	24.9	0.896	12.7	0.459
47	23.9	0.859	10.9	0.394
48	22.7	0.817	9.5	0.343
49	21.4	0.770	8.3	0.298
50	19.9	0.717	7.1	0.256
51	18.1	0.653	6.1	0.219
52	16.3	0.588	5.2	0.189
53	14.5	0.524	4.5	0.163
54	12.7	0.459	3.9	0.140
55	10.9	0.394	3.3	0.120
56	9.5	0.343	2.8	0.102
57	8.3	0.298	2.4	0.085
58	7.1	0.256	1.9	0.069
59	6.1	0.219	1.5	0.055
60	5.2	0.189	1.2	0.042
61	4.5	0.163		
62	3.9	0.140		
63	3.3	0.120		
64	2.8	0.102		
65	2.4	0.085		
66	1.9	0.069		
67	1.5	0.055		
68	1.2	0.042		
69	0.9	0.031		
70	0.6	0.023		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} UK for END agglomerations

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			35.2	0.993
31			35.1	0.991
32			35.1	0.990
33			34.9	0.986
34			34.7	0.981
35			34.5	0.974
36			34.1	0.964
37			33.7	0.951
38			33.1	0.933
39			32.3	0.911
40	35.1	0.991	31.3	0.884
41	35.1	0.990	30.2	0.852
42	34.9	0.986	28.6	0.807
43	34.7	0.981	26.8	0.758
44	34.5	0.974	25.0	0.705
45	34.1	0.964	23.0	0.650
46	33.7	0.951	20.9	0.590
47	33.1	0.933	18.9	0.534
48	32.3	0.911	17.0	0.479
49	31.3	0.884	15.1	0.426
50	30.2	0.852	13.3	0.374
51	28.6	0.807	11.6	0.328
52	26.8	0.758	10.2	0.287
53	25.0	0.705	8.8	0.250
54	23.0	0.650	7.6	0.215
55	20.9	0.590	6.5	0.184
56	18.9	0.534	5.4	0.152
57	17.0	0.479	4.4	0.124
58	15.1	0.426	3.5	0.098
59	13.3	0.374	2.7	0.075
60	11.6	0.328	1.9	0.055
61	10.2	0.287		
62	8.8	0.250		
63	7.6	0.215		
64	6.5	0.184		
65	5.4	0.152		
66	4.4	0.124		
67	3.5	0.098		
68	2.7	0.075		
69	1.9	0.055		
70	1.4	0.040		

Provisional road traffic noise distribution per decibel 40-70 dB L_{den} and 30-60 dB L_{night} UK

dB	*Population (million - L_{den})*	*Fraction Pop. above (L_{den})*	*Population (million - L_{night})*	*Fraction Pop. above (L_{night})*
30			62.6	0.992
31			62.5	0.989
32			62.3	0.986
33			62.1	0.983
34			61.7	0.977
35			61.2	0.968
36			60.4	0.956
37			59.4	0.940
38			57.9	0.917
39			56.1	0.888
40	62.4	0.987	54.0	0.855
41	62.2	0.985	51.6	0.816
42	61.9	0.980	48.5	0.767
43	61.4	0.972	44.9	0.711
44	60.8	0.962	41.3	0.654
45	59.9	0.948	37.6	0.594
46	58.5	0.927	33.6	0.532
47	56.9	0.901	29.8	0.472
48	55.0	0.870	26.5	0.419
49	52.7	0.834	23.3	0.370
50	50.1	0.793	20.4	0.322
51	46.7	0.739	17.7	0.280
52	43.2	0.683	15.4	0.244
53	39.5	0.625	13.4	0.212
54	35.8	0.566	11.5	0.182
55	31.8	0.504	9.8	0.155
56	28.4	0.450	8.2	0.130
57	25.2	0.399	6.7	0.107
58	22.2	0.351	5.4	0.085
59	19.3	0.306	4.2	0.066
60	16.9	0.267	3.1	0.049
61	14.7	0.233		
62	12.7	0.202		
63	10.9	0.173		
64	9.3	0.148		
65	7.7	0.123		
66	6.3	0.100		
67	5.0	0.079		
68	3.8	0.061		
69	2.8	0.044		
70	2.0	0.032		