

Hans nijland

computing or measuring noise pro's and cons



**Netherlands Environmental
Assessment Agency**

Noise measuring 1:

Ad hoc: evaluation of measures



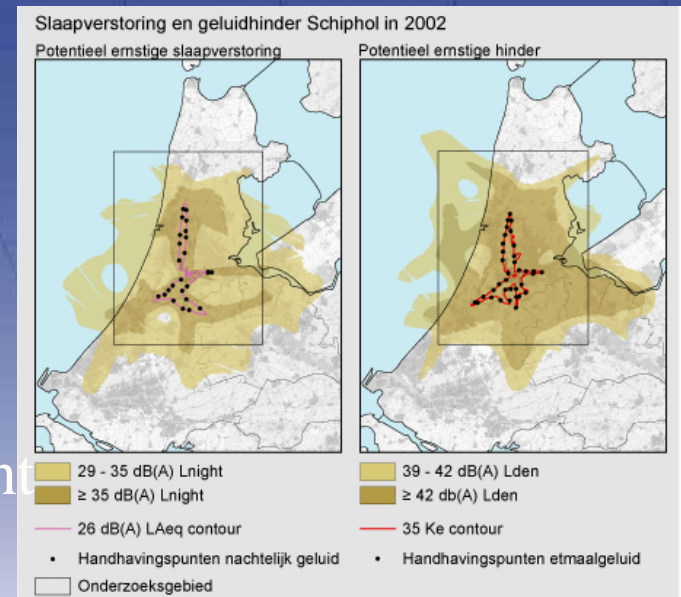
Noise measuring 2 Control



occasionally



permanent



**Netherlands Environmental
Assessment Agency**

Noise measuring 3 (Semi-)permanent : validation



Measuring

pro's

- 'exact' noise levels in given situation

con's

- expensive
- applicability limited



Noise measuring
NEVER for END,
only calculations !

Noise calculations

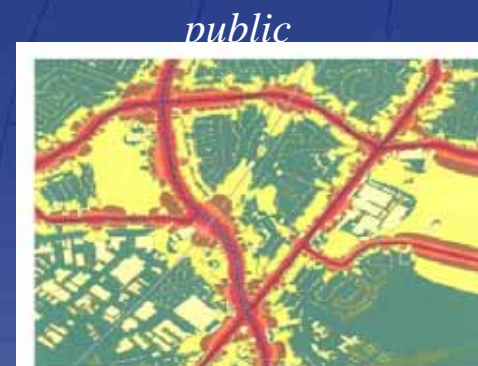
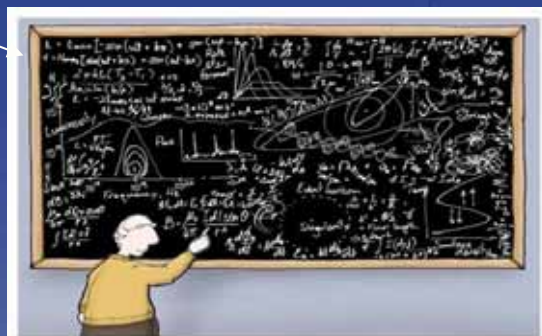
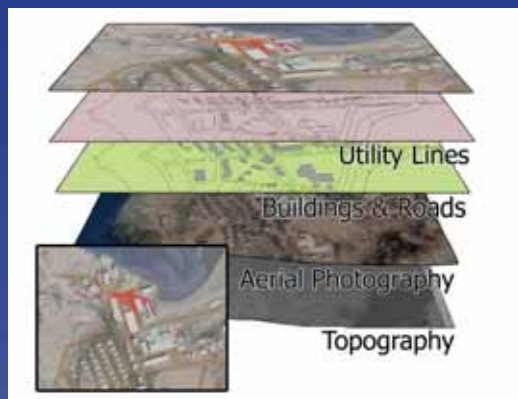


Table 1: Noise levels (dB) for various locations and times.

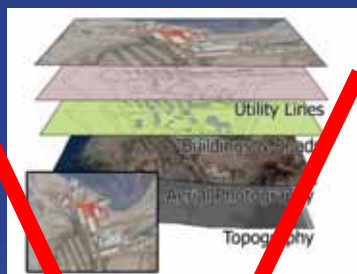
Location	Day	Night	Evening	Morning
Location 1	105	100	102	104
Location 2	108	103	105	107
Location 3	110	105	107	109
Location 4	112	107	109	111
Location 5	115	110	112	114
Location 6	118	113	115	117
Location 7	120	115	117	119
Location 8	122	117	119	121
Location 9	125	120	122	124
Location 10	128	123	125	127
Location 11	130	125	127	129
Location 12	132	127	129	131
Location 13	135	130	132	134
Location 14	138	133	135	137
Location 15	140	135	137	139
Location 16	142	137	139	141
Location 17	145	140	142	144
Location 18	148	143	145	147
Location 19	150	145	147	149
Location 20	152	147	149	151
Location 21	155	150	152	154
Location 22	158	153	155	157
Location 23	160	155	157	159
Location 24	162	157	159	161
Location 25	165	160	162	164
Location 26	168	163	165	167
Location 27	170	165	167	169
Location 28	172	167	169	171
Location 29	175	170	172	174
Location 30	178	173	175	177
Location 31	180	175	177	179
Location 32	182	177	179	181
Location 33	185	180	182	184
Location 34	188	183	185	187
Location 35	190	185	187	189
Location 36	192	187	189	191
Location 37	195	190	192	194
Location 38	198	193	195	197
Location 39	200	195	197	199
Location 40	202	197	199	201
Location 41	205	200	202	204
Location 42	208	203	205	207
Location 43	210	205	207	209
Location 44	212	207	209	211
Location 45	215	210	212	214
Location 46	218	213	215	217
Location 47	220	215	217	219
Location 48	222	217	219	221
Location 49	225	220	222	224
Location 50	228	223	225	227
Location 51	230	225	227	229
Location 52	232	227	229	231
Location 53	235	230	232	234
Location 54	238	233	235	237
Location 55	240	235	237	239
Location 56	242	237	239	241
Location 57	245	240	242	244
Location 58	248	243	245	247
Location 59	250	245	247	249
Location 60	252	247	249	251
Location 61	255	250	252	254
Location 62	258	253	255	257
Location 63	260	255	257	259
Location 64	262	257	259	261
Location 65	265	260	262	264
Location 66	268	263	265	267
Location 67	270	265	267	269
Location 68	272	267	269	271
Location 69	275	270	272	274
Location 70	278	273	275	277
Location 71	280	275	277	279
Location 72	282	277	279	281
Location 73	285	280	282	284
Location 74	288	283	285	287
Location 75	290	285	287	289
Location 76	292	287	289	291
Location 77	295	290	292	294
Location 78	298	293	295	297
Location 79	300	295	297	299
Location 80	302	297	299	301
Location 81	305	300	302	304
Location 82	308	303	305	307
Location 83	310	305	307	309
Location 84	312	307	309	311
Location 85	315	310	312	314
Location 86	318	313	315	317
Location 87	320	315	317	319
Location 88	322	317	319	321
Location 89	325	320	322	324
Location 90	328	323	325	327
Location 91	330	325	327	329
Location 92	332	327	329	331
Location 93	335	330	332	334
Location 94	338	333	335	337
Location 95	340	335	337	339
Location 96	342	337	339	341
Location 97	345	340	342	344
Location 98	348	343	345	347
Location 99	350	345	347	349
Location 100	352	347	349	351

Table 2: Noise levels (dB) for various locations and times.

Location	Day	Night	Evening	Morning
Location 1	105	100	102	104
Location 2	108	103	105	107
Location 3	110	105	107	109
Location 4	112	107	109	111
Location 5	115	110	112	114
Location 6	118	113	115	117
Location 7	120	115	117	119
Location 8	122	117	119	121
Location 9	125	120	122	124
Location 10	128	123	125	127
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Location 21	155	150	152	154
Location 22	158	153	155	157
Location 23	160	155	157	159
Location 24	162	157	159	161
Location 25	165	160	162	164
Location 26	168	163	165	167
Location 27	170	165	167	169
Location 28	172	167	169	171
Location 29	175	170	172	174
Location 30	178	173	175	177
Location 31	180	175	177	179
Location 32	182	177	179	181
Location 33	185	180	182	184
Location 34	188	183	185	187
Location 35	190	185	187	189
Location 36	192	187	189	191
Location 37	195	190	192	194
Location 38	198	193	195	197
Location 39	200	195	197	199
Location 40	202	197	199	201
Location 41	205	200	202	204
Location 42	208	203	205	207
Location 43	210	205	207	209
Location 44	212	207	209	211
Location 45	215	210	212	214
Location 46	218	213	215	217
Location 47	220	215	217	219
Location 48	222	217	219	221
Location 49	225	220	222	224
Location 50	228	223	225	227
Location 51	230	225	227	229
Location 52	232	227	229	231
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Location 54	238	233	235	237
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Location 59	250	245	247	249
Location 60	252	247	249	251
Location 61	255	250	252	254
Location 62	258	253	255	257
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Location 64	262	257	259	261
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Location 72	282	277	279	281
Location 73	285	280	282	284
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Location 77	295	290	292	294
Location 78	298	293	295	297
Location 79	300	295	297	299
Location 80	302	297	299	301
Location 81	305	300	302	304
Location 82	308	303	305	307
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Location 87	320	315	317	319
Location 88	322	317	319	321
Location 89	325	320	322	324
Location 90	328	323	325	327
Location 91	330	325	327	329
Location 92	332	327	329	331
Location 93	335	330	332	334
Location 94	338	333	335	337
Location 95	340	335	337	339
Location 96	342	337	339	341
Location 97	345	340	342	344
Location 98	348	343	345	347
Location 99	350	345	347	349
Location 100	352	347	349	351

Brussels



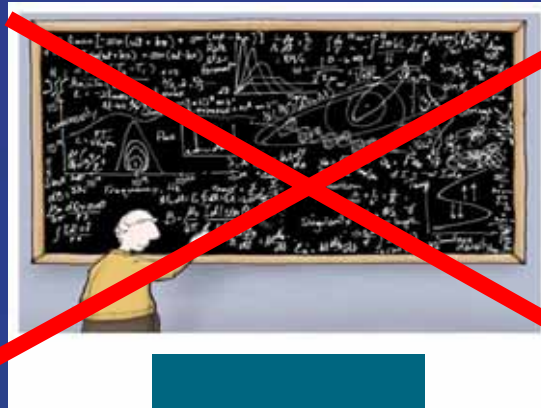


Road type	day	evening	night
Dead-end roads	175	50	25
Service roads (mainly used by residents living there)	350	100	50
Collecting roads (collecting traffic from service roads and leading it to & from main roads)	700	200	100
Small main roads	1,400	400	200

Tool 2.5: No traffic flow data available

Method	complexity	accuracy	cost
Make traffic counts for each of the three periods: daytime, evening and night time			
Select sample roads and do traffic counts there; extrapolate to other roads of same type			
Use official traffic flow data for typical road types.			
Use other traffic flow data for typical road types.			
Use default values, such as:			
Road type	traffic¹⁰		
	day	evening	night
Dead-end roads	175	50	25
Service roads (mainly used by residents living there)	350	100	50
Collecting roads (collecting traffic from service roads and leading it to & from main roads)	700	200	100
Small main roads	1,400	400	200
Main roads	Must undertake traffic counts or produce flows from a traffic model. See section 2.10		

http://ec.europa.eu/environment/noise/pdf/best_practice_guide.pdf



interim methods

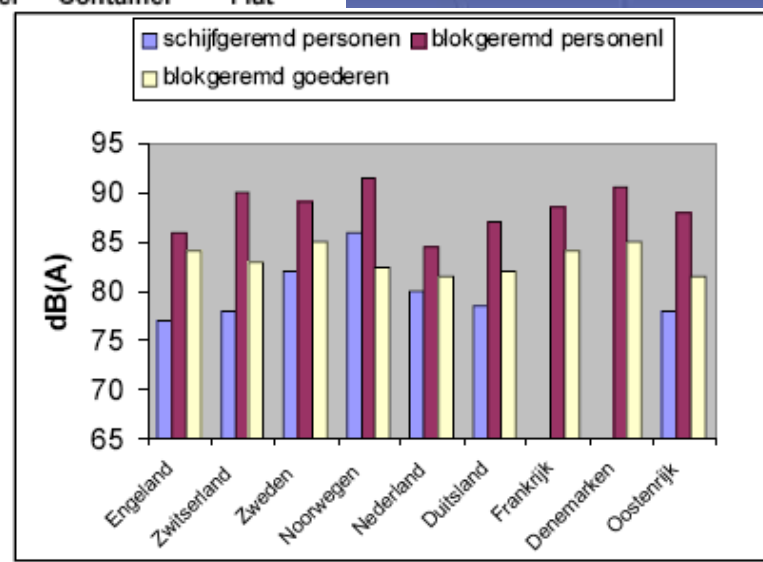
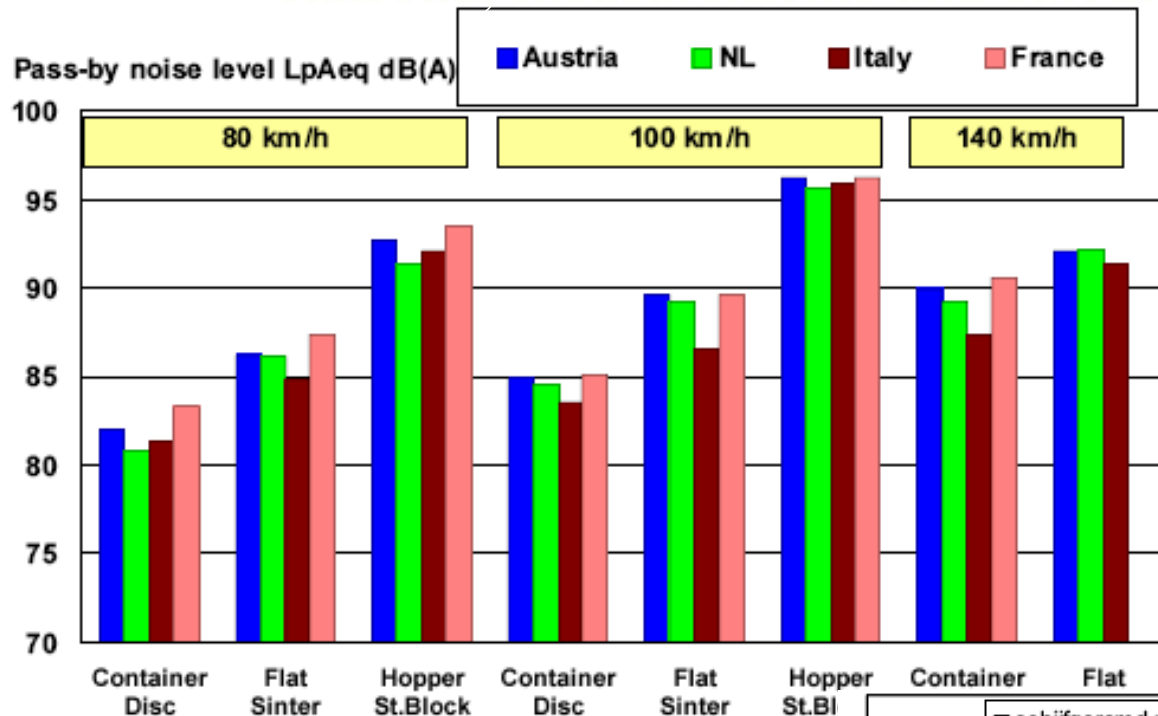
- road traffic: French method
NMPB-Routes-96
- railroad traffic: Dutch method,
reken- en meetvoorschrift railverkeerslawaaai '96
- air traffic: ECAC.CEAC doc. 29

Harmonoise 2001-2004 5th framework

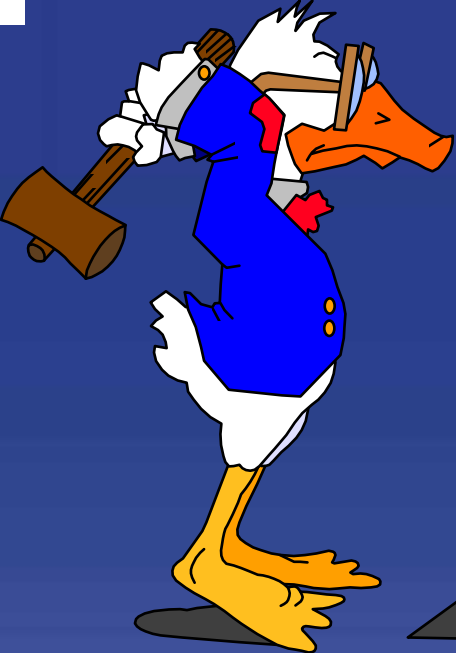
Imagine 2003-2006 6th framework

naam, titel presentatie

Noise calculations using different national models railroad measurements and calculations



mental



Calculations

pro's

- relatively cheap (0.5 - 1 Euro per person)
- wide applicability

con's

- reliability
- availability of data