



EUROPEAN COMMISSION

Directorate-General Enlargement

Directorate D Negotiation Pre-accession Coordination & Financial Instruments

Technical Assistance Information Exchange Unit



EVALUATION MANAGEMENT AND PROTECCION AGAINST NOISE IN ANDALUCIA

SILVIA RIVAS

Regional Government of Andalucia

SPAIN

JUNTA DE ANDALUCIA

Bucharest 7-8 September 2006

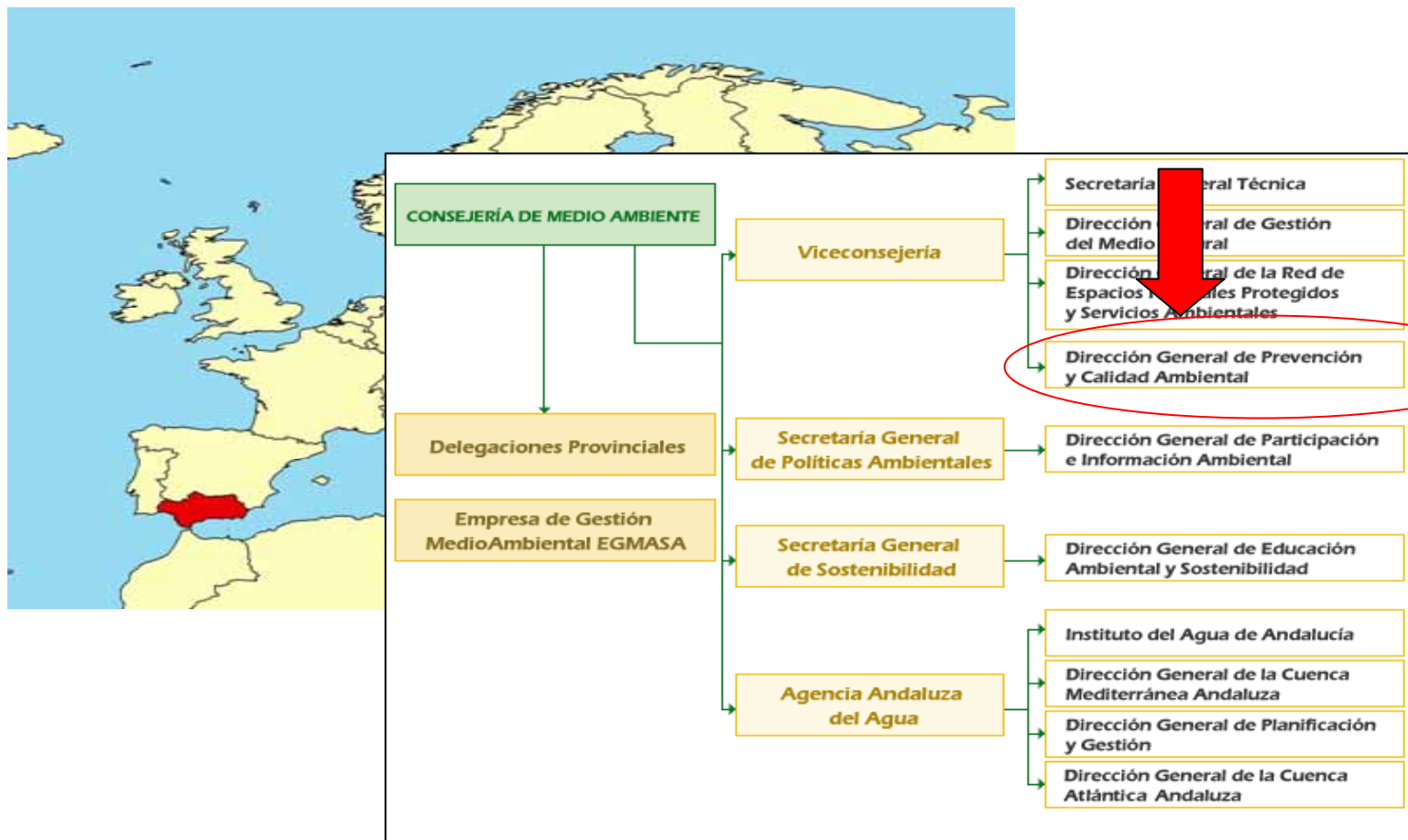
Impact of Environmental Noise and Environmental Noise Monitoring

INFRA TEAM 21591

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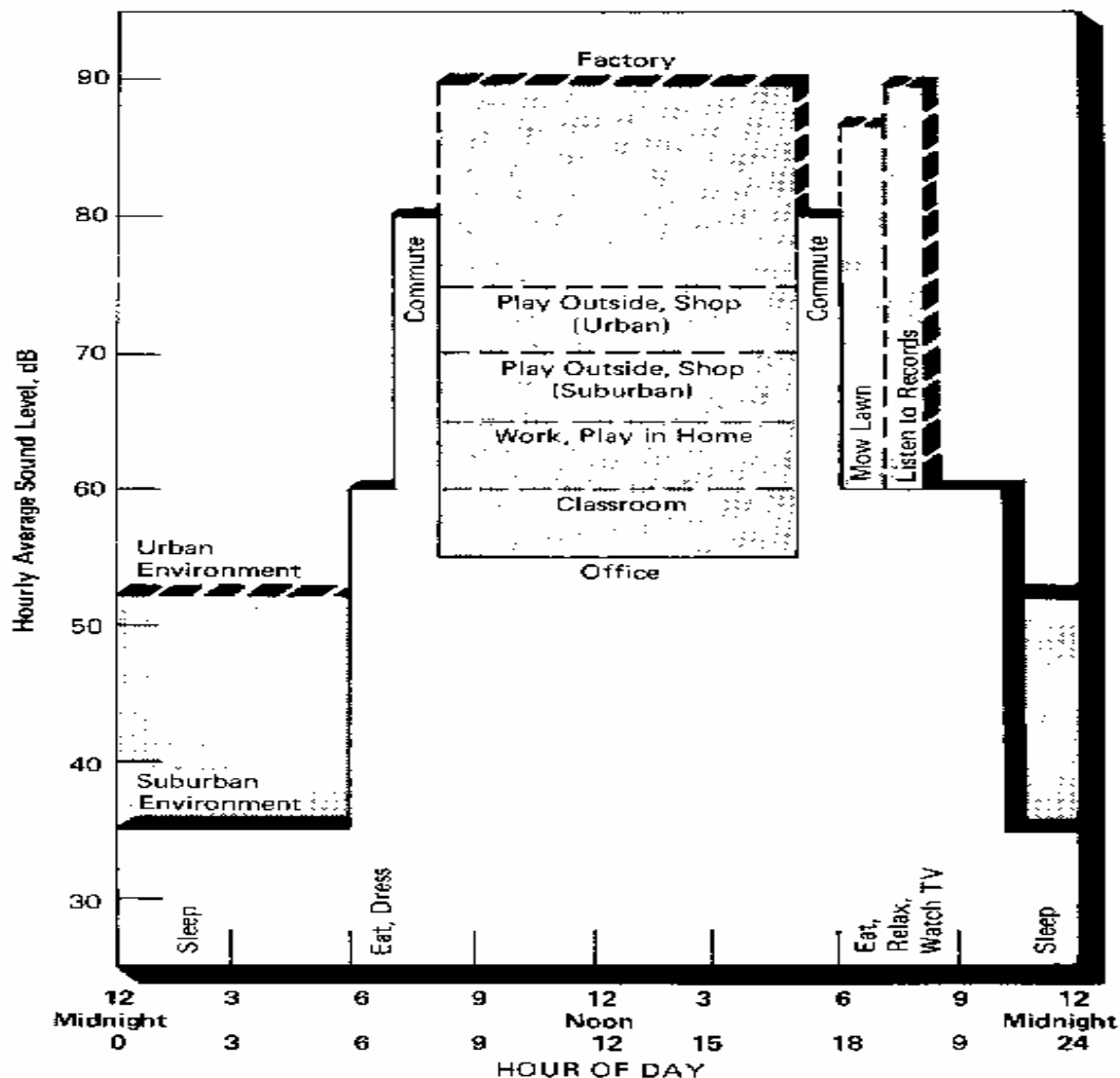
- ➡ *ENVIRONMENTAL AGENCY OF THE REGIONAL GOVERNMENT OF ANDALUCIA*
- ➡ *EVALUATION MANAGEMENT AND PROTECTION AGAINST NOISE IN ANDALUCIA*
 - * Noise: Key words
 - * Legislation
 - * Scope of application
 - Acoustic quality
 - Noise control
- ➡ *CONCLUSIONS AND CHALLENGES FOR THE FUTURE*

ENVIRONMENTAL AGENCY OF THE REGIONAL GOVERNMENT OF ANDALUCIA



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“ ENVIRONMENTAL NOISE ”

unwanted or harmful outdoor **sound**
created by human activities,
including noise emitted by means of **transport,**
road traffic, rail traffic, air traffic, **and**
from sites of **industrial activity** such as those
defined in Annex I
to Council Directive 96/61/EC of 24
September 1996
concerning integrated pollution prevention
and control.

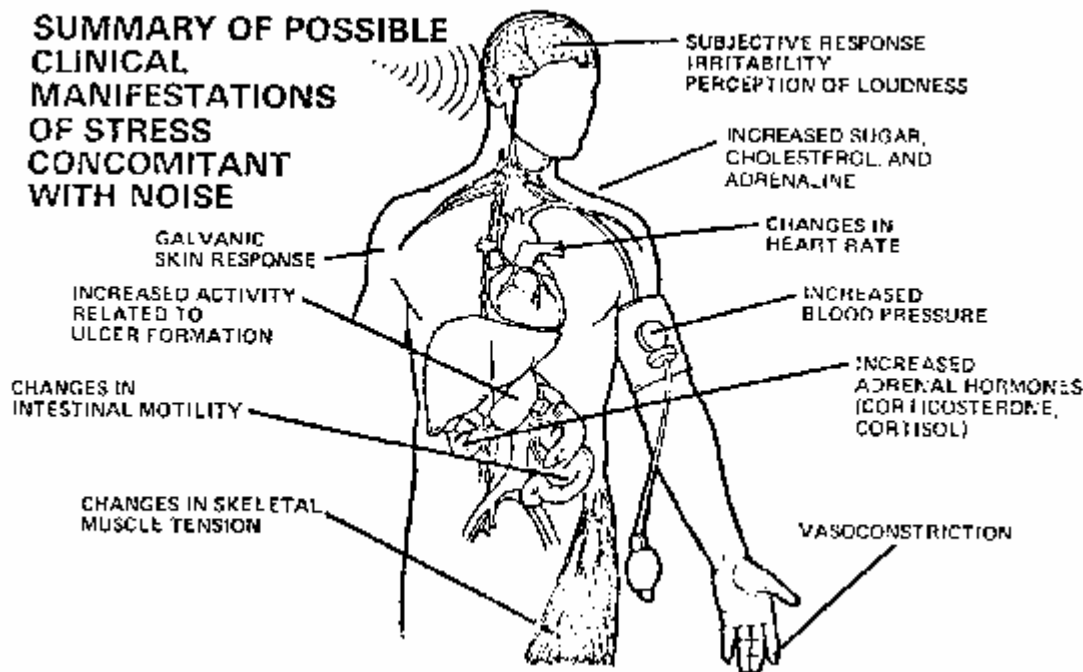
	L _{Aeq} (dB)	Health effects
Industrial areas, out and indoors	70	TEMPORARY OR PERMANENT HEARING LOSS

Main noise effects and usual sound level in cities

Urban areas outdoors

Indoors

OMS 20



Noise could cause negative effects due to normal activities

100-120

Bar

120-140

Airport

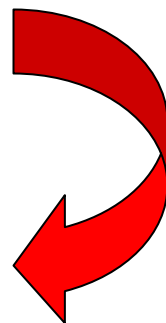
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(Park)

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ENVIROMENTAL NOISE QUALITY PROTECTION IN THE REGIONAL GOVERNMENT OF ANDALUCIA

*DIRECTIVE 2002/49/EC
OF THE EUROPEAN PARLIAMENT
AND OF THE COUNCIL of 25 June 2002
relating to the assessment
and management of environmental noise*



*Ley 37/2003
del Ruido
(national transduction
At the moment develop
regulation in progres)*

**Decreto 326/2003 of Protection Against the Acoustic
Pollution**

ENVIROMENTAL NOISE QUALITY PROTECTION IN THE REGIONAL GOVERNMENT OF ANDALUCIA

OBJETIVES

- ➡ Achieve a high level of health and environmental protection
- ➡ Use a common noise indicator and methodology (given by the European regulation) for noise calculation and measurement
- ➡ Adoption of the main tools for guarantee the environmental noise quality: noise mapping, plans.
- ➡ Guidelines for local regulation

ENVIROMENTAL NOISE QUALITY PROTECTION IN THE REGIONAL GOVERNMENT OF ANDALUCIA

TOOLS

To that end the following actions shall be implemented progressively:

- a) the determination of exposure to environmental noise, through noise mapping, by methods of assessment common to the Member States;
- b) adoption of action plans
- c) ensuring that information on environmental noise and its effects is made available to the public;
- d) Special Protection Areas
- e) Noise control

SCOPE OF APPLICATION

ACOUSTIC QUALITY

- Noise Mapping
- Action Plans
- Public information
- Special areas

NOISE CONTROL

- Evaluation index
- Limits
- Technical requirements
- Regional activity helping the local authorities

ACOUSTIC QUALITY

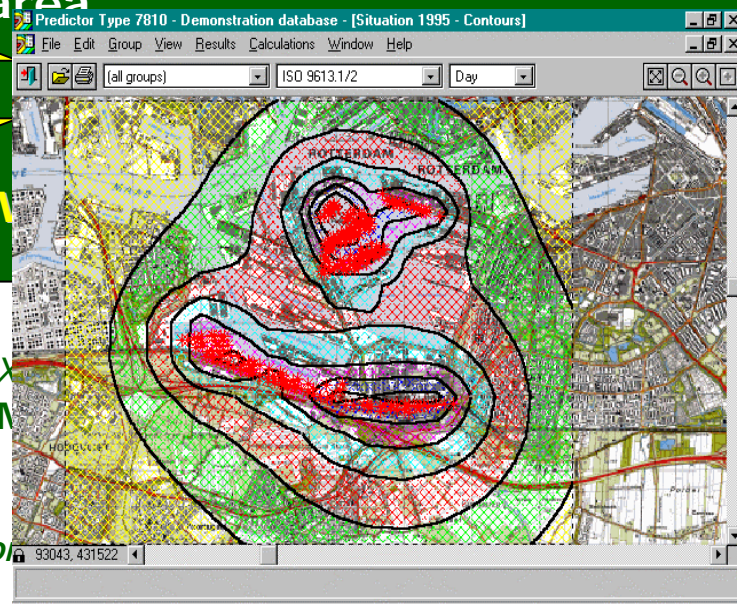
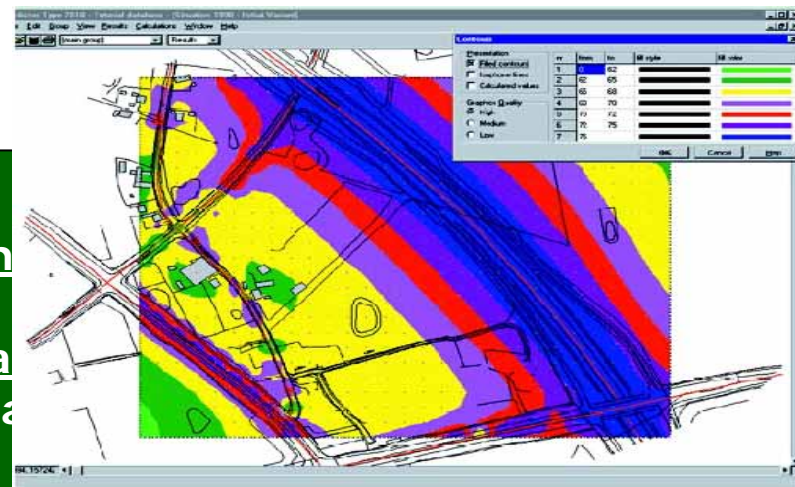
NOISE MAPPING

presentation of data on an existing map in terms of a noise indicator, indicating breaches of any relevant noise indicator, the number of people affected in a certain area, the number of dwellings exposed to a certain noise indicator in a certain area



STRATEGIC MAP

ANNEX MINIM



ENVIROMENTAL NOISE QUALITY PROTECTION

G

ACOUSTIC QUALITY

Assessment index and methods

L_{den}
L_{day}
L_{evening}
L_{night}



$$L_{den} = 10 \lg \frac{1}{24} \left(12 * 10^{\frac{L_{day}}{10}} + 4 * 10^{\frac{L_{evening} + 5}{10}} + 8 * 10^{\frac{L_{night} + 10}{10}} \right)$$

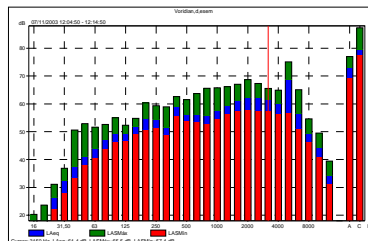
ACOUSTIC QUALITY

INDUSTRIAL NOISE

ISO 9613-2: 'Acoustics — Abatement of sound propagation outdoors, Part 2: General method of calculation'.

Suitable noise-emission data (input data) for this method can be obtained from measurements carried out in accordance with one of the following methods:

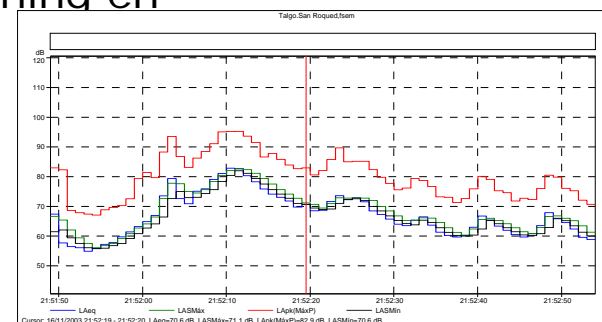
- ISO 8297: 1994
- EN ISO 3744: 1995
- EN ISO 3746: 1995



RAILWAY NOISE

The Netherlands national computation method published in 'Reken- en Meetvoorschrift Railverkeerslawaaai '96,

Ministerie Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer, 20 November 1996'.



ACOUSTIC QUALITY

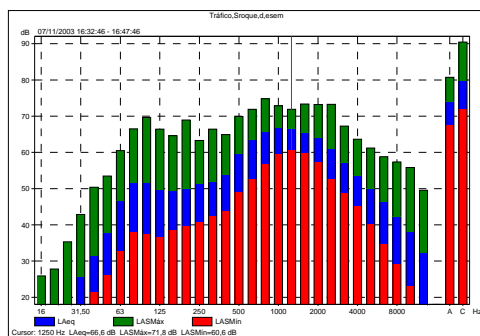
AIRCRAFT NOISE

ECAC.CEAC Doc. 29 'Report on Standard Method of Computing Noise Contours around Civil Airports', 1997.

Of the different approaches to the modelling of flight paths, the segmentation technique referred to in section 7.5 of ECAC.CEAC Doc. 29 will be used.

ROAD TRAFFIC NOISE

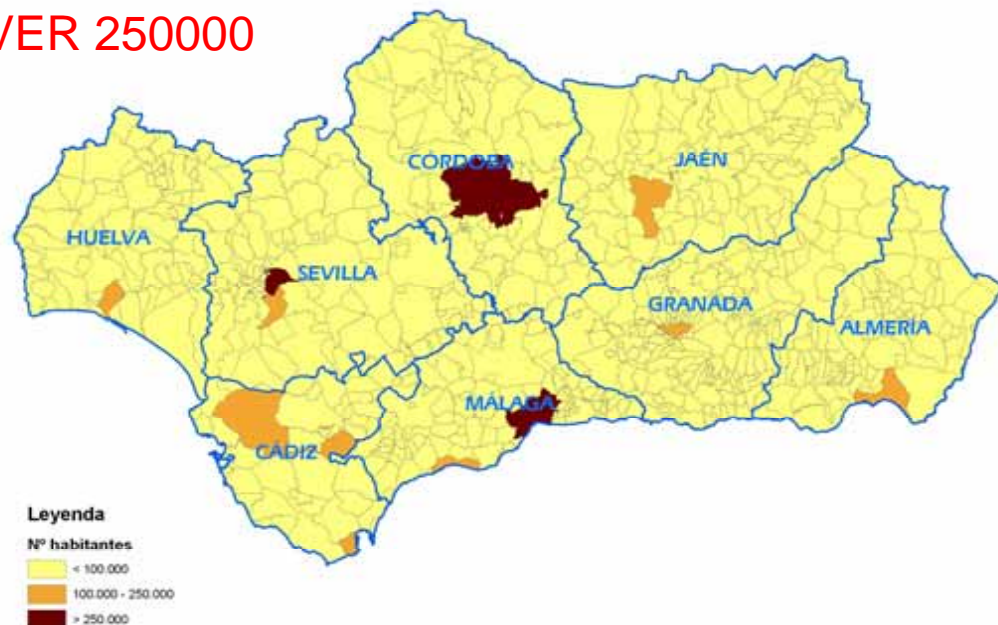
The French national computation method '**NMPB-Routes-96** (SETRA-CERTU-LCPCCSTB)', referred to in 'Arrêté du 5 mai 1995 relatif au bruit des infrastructures routières, Journal Officiel du 10 mai 1995, Article 6' and in the French standard 'XPS 31-133'.



ACOUSTIC QUALITY

FIRST STEP:
AGGLOMERATIONS OVER 250000
BEFORE JUNE 2007

Número de habitantes por municipio



Population (2003)			
Area (km ²)	46.65	58.11	56.00
Authoritie	Cordoba Council	Malaga Council	Sevilla Council

ACOUSTIC QUALITY

FIRST STEP:

MAYOR ROAD (MORE THAN SIX MILLION VEHICLE PASSAGES A YEAR)
BEFORE JUNE 2007

More than 300 km

CTR	PK	SITUACION	PROVIN	IMD03	COORDX	COORDY
A-	64,3000	JAEN - TORREDELCAMPO	JAEN	22952,00	424491,13	4182094,78000
316	71,1500	TORREDELCAMPO-	JAEN	18943,00	419563,58	4180095,59500
316	5,30000	TORREDONJIMENO	GRANA	34082,00	438622,19	4116666,25389
A-	121,0000	VELEZ MALAGA-TORRE	DA MALAG	16141,00	402133,38	4067917,31000
335	60,00000	DEL MAR	A MALAG	28809,00	362159,93	4064376,97500
A-	64,40000	CRUCE PARQ. TECN.-	A MALAG	43110,00	365482,03	4064268,27000
357	22,00000	CARTAMA	A MALAG	21732,00	371857,38	4092474,93000
A-	85,00000	PARQUE CEMENT. -	A MALAG	17949,00	364545,28	4058525,25500
359	7,00000	MERCAMALAGA	A MALAG	23594,00	245724,56	4138969,01000
A-	22,00000	PTO. DE LAS PEDRIZAS	A SEVILLA	16649,00	249899,32	4123734,48000
366	96,99000	CHURRIANA	SEVILLA	17247,00	277932,99	4006211,19000
A-	26,40000	A-3110 - UTRERA	CADIZ	16365,00	246132,68	4070418,49835
376	2,60000	LOS BARRIOS - ALGECIRAS	CADIZ	30287,00	535190,32	4071434,28000
A-	1,00000	AP-4 - ARCOS	ALMERI	65414,00	448105,10	4112417,50000
381	39,40000	ROQUETAS DE MAR - A-7	A GRANA		217148,96	4141478,55000
A-		A-44 - GR-SE-16	DA SEVILLA		000	
382		BENACAZON-SANLUCAR				
391		LA MAYOR				
395						
477						

ACOUSTIC QUALITY

ACTION PLANS

- * The actions which the competent authorities intend to take **may include:**
 - traffic planning,
 - land-use planning,
 - technical measures at noise sources,
 - selection of quieter sources,
 - reduction of sound transmission,
 - regulatory or **economic measures** or incentives.

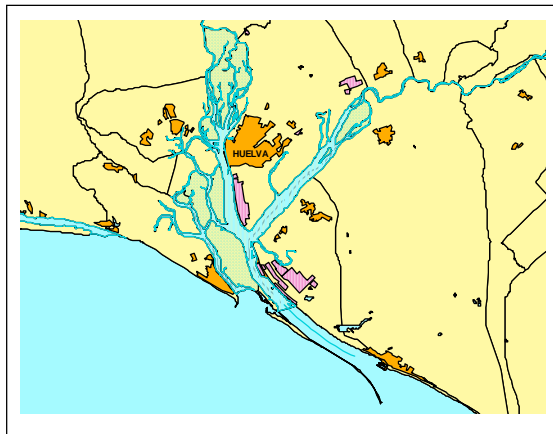
- * Each action plan should contain estimates in terms of the reduction of the number of people affected (annoyed, sleep disturbed, or other)

- * The Commission may develop guidelines providing further guidance

ANNEX V DIRECTIVE 49CE2002

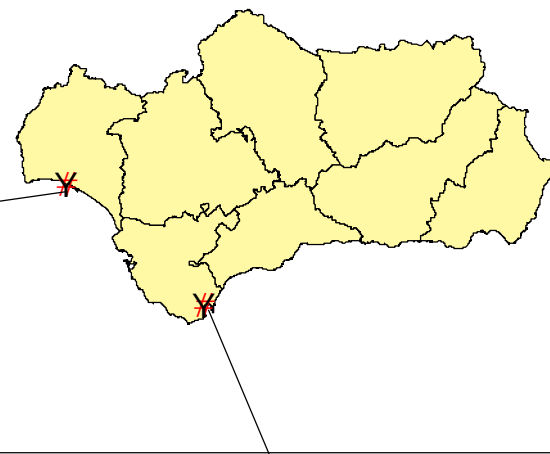
MINIMUM REQUIREMENTS FOR ACTION PLANS

ACOUSTIC QUALITY



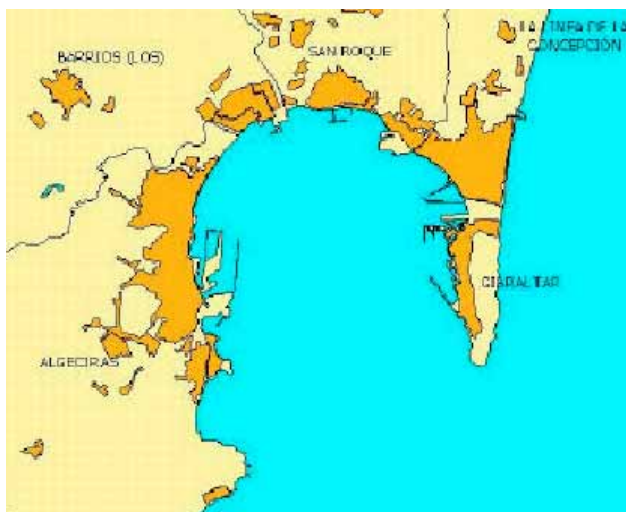
*Environmental quality control
of Huelva*

DPSIR framework

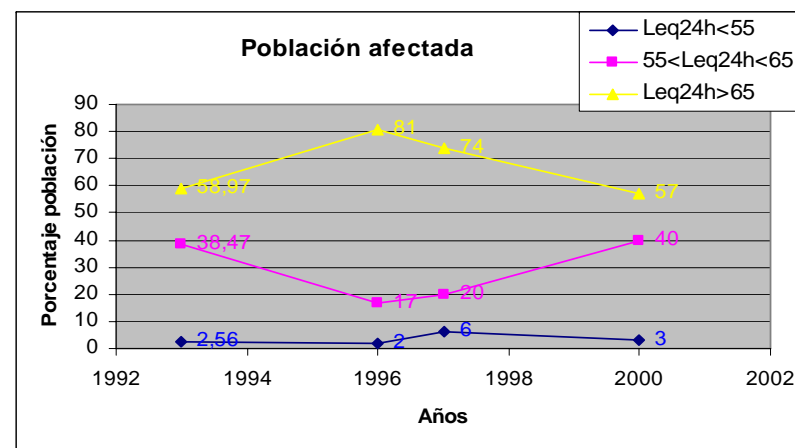
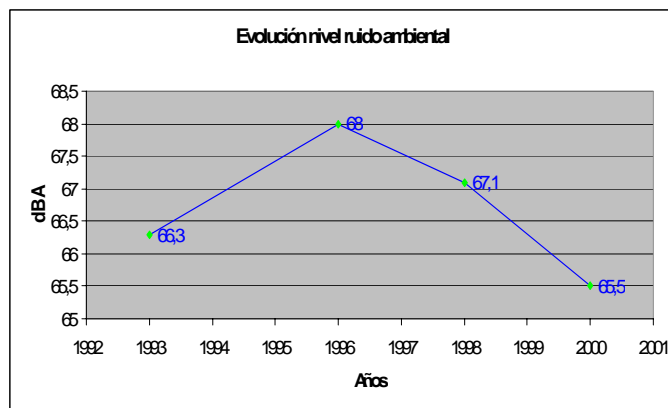


*Environmental quality control
of the Bay of Algeciras*





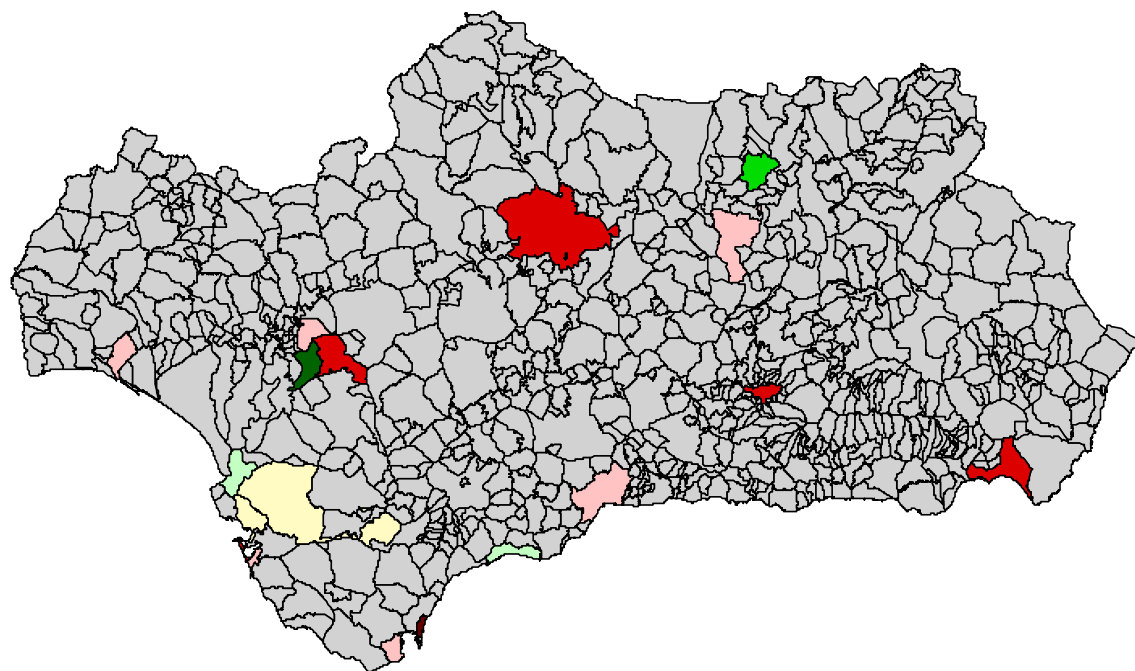
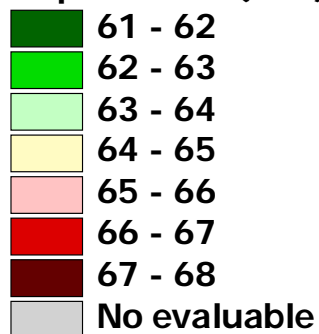
Algeciras	% Población sometida a un Leq _{24h} < a 55dBA	% Población sometida a un Leq _{24h} entre 55 y 65dBA	% Población sometida a un Leq _{24h} > a 65dBA
1993	2.56	38.47	58.97
1996	2	17	81
1997	6	20	74
2000	3	40	57



ACOUSTIC QUALITY

NOISE LEVELS IN ANDALUCIA

Leq 24 horas (dBA)

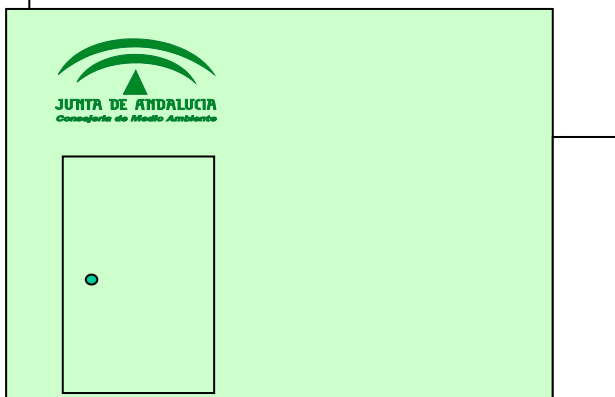


PUBLIC INFORMATION OF ENVIRONMENTAL QUALITY



ENVIRONMENTAL INFORMATION POINTS (PICAs)

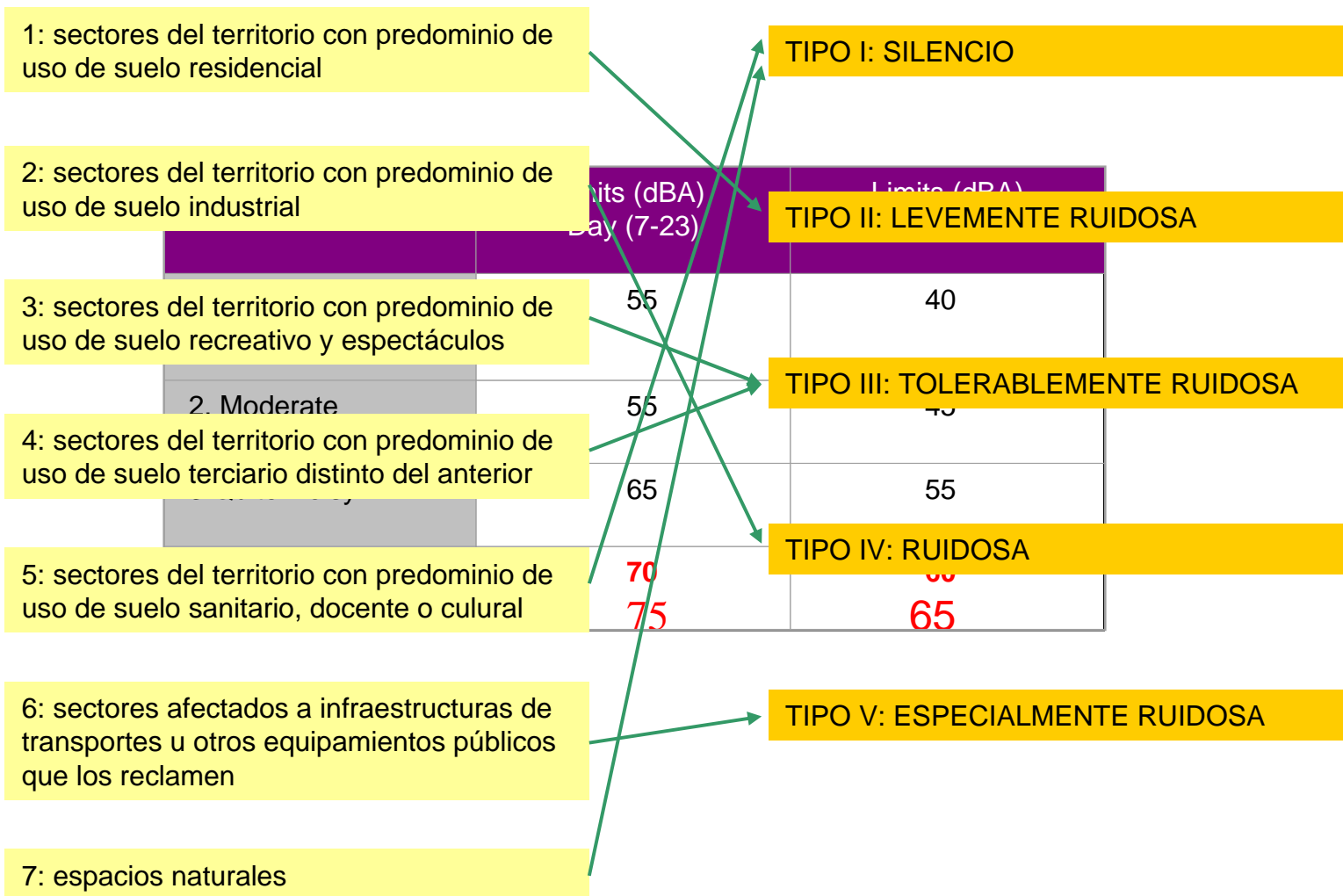
Panel de información
a la población



WEB SITE

Information desks

SPECIAL PROTECTION AREAS



NOISE CONTROL



Evaluation Index

Emission NEE (L10) and Inmission NAE (LAEqr+A)



Limits of noise inmission and emission

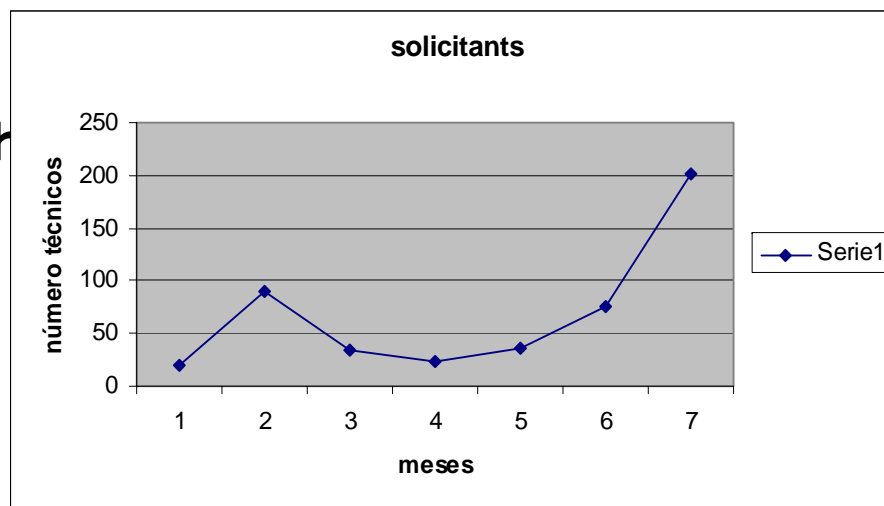
Activity Area	Limits (dBA) Day(7-23)	Limits (dBA) Night (23-7)
Sanitary	45	35
Rresidencial	50	40
Comercial	65	55
Industrial	70	55

NOISE CONTROL

Activity location	Limits (dBA) Day(7-23)	Limits (dBA) Night (23-7)
Sanitary	60	50
Residencial	65	55
Comercial	70	60
Industrial	75	70



Tech



NOISE CONTROL

➡ Regional activity helping the local authorities

ESCALA DE NIVELES SONOROS

Problemas comunes (dB)

Nivel de Problema Sonoro (dB)

Unidades Móviles de Medida de la Contaminación Acústica

Unidades Móviles de Medida de la Contaminación Acústica

Normativa

Para más información, consulta la información disponible en la página web de la Consejería de Medio Ambiente.

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Unidad de Europa
FEDER



OBJETIVO 1

La Consejería de Medio Ambiente de la Junta de Andalucía ha iniciado un programa de actuación para mejorar la calidad acústica en las zonas urbanas, mediante la implementación de unidades móviles de medida de la contaminación acústica.

Ámbito	Medida	Impacto	Beneficio
Urbano	Medida de la contaminación acústica	Reducción de la contaminación acústica	Mejora de la calidad de vida
Industrial	Medida de la contaminación acústica	Reducción de la contaminación acústica	Mejora de la calidad de vida
Leisure	Medida de la contaminación acústica	Reducción de la contaminación acústica	Mejora de la calidad de vida

ACTIVACIÓN

La Consejería de Medio Ambiente de la Junta de Andalucía ha iniciado un programa de actuación para mejorar la calidad acústica en las zonas urbanas, mediante la implementación de unidades móviles de medida de la contaminación acústica.

El programa de actuación se desarrolla en tres fases:

1. Diagnóstico de la situación actual.
2. Planificación de las actuaciones.
3. Ejecución de las actuaciones.

BOQUEAMIENTO

La Consejería de Medio Ambiente de la Junta de Andalucía ha iniciado un programa de actuación para mejorar la calidad acústica en las zonas urbanas, mediante la implementación de unidades móviles de medida de la contaminación acústica.

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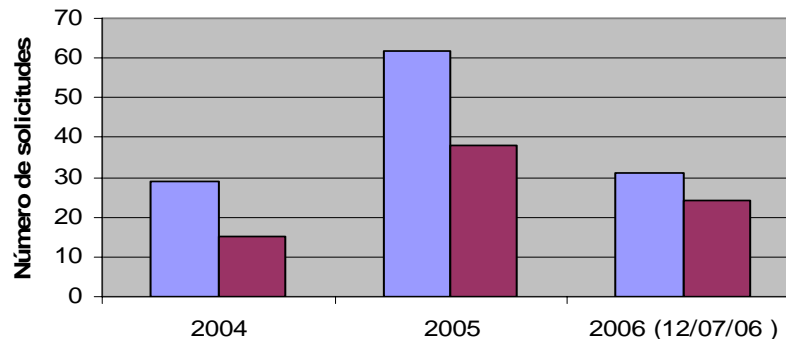
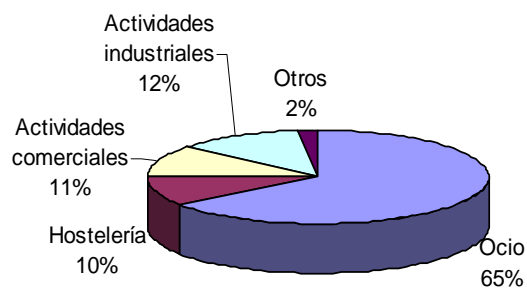
1. Diagnóstico de la situación actual.
2. Planificación de las actuaciones.
3. Ejecución de las actuaciones.

TIPO DE MEDIDAS

- Medida de la contaminación acústica en las zonas urbanas.
- Medida de la contaminación acústica en las zonas industriales.
- Medida de la contaminación acústica en las zonas de ocio.

NOISE CONTROL

Activities



Over 200 evaluations
since 2004

Helping local authorities

By citizen request

CONCLUSIONS AND CHALLENGES FOR THE FUTURE

- ➡ **Elaboration of strategic noise maps: agglomerations, mayor traffic roads and railway**
- ➡ **Elaboration of action plans related**
- ➡ **Develop completely the national and local noise regulation**
- ➡ **Application of new regional and local regulation**