



## APPROVED MEETING MINUTES MARCH 12, 2010

The meeting of the O'Hare Noise Compatibility Commission (ONCC) was held on Friday, March 12, 2010, at Rosewood Banquets in Rosemont, IL.

Commission Chairperson Mayor Arlene J. Mulder called the meeting to order at 8:05 A.M. ONCC staff took the meeting minutes.

The following members were **PRESENT**:

Mayor Arlene J. Mulder, Member, Village of Arlington Heights  
Mayor Frank Soto, Member, Village of Bensenville  
Chief Operating Officer Christopher Arman, Designee, Chicago Department of Aviation  
Mr. Frank A. Damato, Designee, Cook County  
Mayor Martin Moylan, Member, City of Des Plaines  
Trustee Alan Kaminski, Alternate, Village of Elmwood Park  
Mr. William Esposito, Alternate, Village of Franklin Park  
Mayor Arlene Jezierny, Member, Village of Harwood Heights  
Mr. Gary Salavitch, Alternate, Village of Hoffman Estates  
Mayor Jeffrey Pruyn, Member, Village of Itasca  
Mr. Ralph Sorce, Alternate, Village of Melrose Park  
Trustee Arlene Juracek, Designee, Village of Mount Prospect  
Mr. Joseph Annunzio, Alternate, Village of Niles  
Ms. Judith Dunne Bernardi, Designee, Village of Norridge  
Mayor Jeffrey Sherwin, Member, City of Northlake  
Ms. Rita Mullins, Alternate, Village of Palatine  
Mr. Dennis Ryan, Designee, Village of River Grove  
Mr. Barry Krumstok, Alternate, City of Rolling Meadows  
Mr. Donald Storino, Jr., Alternate, Village of Rosemont  
Ms. June Johnson, Alternate, Village of Schaumburg  
Mr. Kevin Barr, Alternate, Village of Schiller Park  
Mayor Kenneth Johnson, Member, City of Wood Dale  
Mr. Tony Rossi, Alternate, School District 59  
Mr. Kerry Leiby, Alternate, School District 80  
Superintendent Dr. Roberta Taylor, Member, School District 81  
Mr. John Barry, Alternate, School District 84 and 84 ½  
Ms. Debra Parenti, Alternate, School District 214  
Superintendent Dr. Robert Lupo, Member, School District 234  
Ms. Lynn Crivello, Alternate, School District 299

The following members were **ABSENT**:

Bartlett, Bellwood, Maywood, Oak Park, Park Ridge, River Forest, Stone Park, School Districts 63, 64, 85½, 86, 87, 88, 89 and 401.

There being a majority of members in attendance, a quorum was present for the transaction of business.

The following ONCC, City of Chicago, Chicago Department of Aviation (CDA), and Federal Aviation Administration (FAA) staff were present:

Jeanette Camacho – O’Hare Noise Compatibility Commission; Joe Deal – City of Chicago; Pat Carey – City of Chicago; Ted Woosley – Landrum & Brown; Arlene Williams – Chicago Airports Resource Enterprise (CARE); Jeffrey Jackson – Landrum & Brown; Aaron Frame – Chicago Department of Aviation (CDA) and Maria Gutierrez – Chicago Department of Aviation.

## **PLEDGE OF ALLEGIANCE**

Members and staff said the Pledge of Allegiance.

## **APPROVAL OF MINUTES – February 5, 2009, MEETING**

**Ms. Bernardi** moved and **Mr. Krumstok** seconded that the minutes of the February 5, 2010, ONCC meeting be approved. The motion was approved by unanimous voice vote.

## **WELCOMES**

Mayor Mulder recognized the following individuals who were present at the meeting: June Taylor – American Airlines; Janie Morrison – State Senator Dan Kotowski; Ann Limjoco – Congresswoman Jan Schakowsky; Kitty Weiner – Congressman Peter Roskam; and Captain John Burton – American Airlines.

## **2010 ANNUAL MEETING**

### **A. ONCC Resolution 2010-2: Recommended Slate for ONCC Officers for 2010**

Mayor Arlene Jezierny reported that, as reflected in Commission Resolution 2010-2, the Ad Hoc Nominating Committee presented the following slate for the offices of Chairperson, Vice-Chairperson, and Treasurer for 2010: Mayor Arlene J. Mulder of Village of Arlington Heights for Chairperson; Retired Superintendent Raymond J. Kuper, representing School District 234, for Vice-Chairperson, and Village Clerk Judith Dunne Bernardi of Norridge for Treasurer

A motion was made by **Mr. Krumstok** to approve the 2010 ONCC Officers slate. The motion was seconded by **Mayor Moylan**. The motion was approved by unanimous voice vote.

Mayor Mulder thanked all of our members and alternates for their united support during her tenure as ONCC Chairperson. She said that Vice-Chairperson Dr. Kuper has been an invaluable partner and colleague of the ONCC these last twelve plus years. The outstanding accomplishments of the O'Hare School Sound Insulation Program would have been diminished without his relentless commitment and dedication. Dr. Kuper rallied fellow superintendents and school officials to uphold the ONCC mission to sound insulate all schools recognized by this Commission.

Mayor Mulder thanked Ms. Judith Dunne Bernardi, for being an active and loyal participant throughout the Commission's existence, serving in a variety of leadership roles. She thanked Ms. Bernardi for her involvement this past year as Treasurer. It has been a seamless transition because of her skills and professionalism.

Mayor Mulder commended other Commission leaders: Technical Committee Chair, Rita Mullins; Residential Committee Chair, Cook County Commissioner Frank Damato; and once again School Committee Chairperson Dr. Kuper for their participation in advancing various committee work plans, which include establishing fair guidelines and aggressively lobbying for continued funding for our sound insulation programs and technical initiatives.

Mayor Mulder also recognized the Commission's Administrative Coordinator, Jeanette Camacho, and also the efforts of the Chicago Department of Aviation Environment staff, Aaron Frame and Maria Gutierrez, for their ongoing support, as well as ONCC consultants Fran Guziel and Kay Coyne.

She recognized Chicago Department of Aviation Commissioner, Rosemarie Andolino, and Chief Operating Officer, Chris Arman, who have come to the table with valuable information, guidance and honesty to make the job as a regional noise commission equitable for every member represented here.

Mayor Mulder especially thanked Mayor Richard M. Daley for his vision in establishing this Commission, and for being responsible for giving suburban mayors and other officials the tools and means to have such a direct impact on the quality of life for their residents.

She said that it has been a privilege to have served as the Chairperson for the past twelve years and she is humbled to have been chosen again.

Clerk Bernardi thanked everyone for their support and said that she is looking forward to serving as Treasurer for another term. She said that it is an honor to work with all members of the ONCC.

## **B. Presentation of 2009 ONCC Annual Report**

Mayor Mulder referred to the 2009 ONCC Annual Report located in the meeting packets. She noted that it is an abbreviated version to keep the costs down during the challenging economic climate.

Expectations to reduce aircraft noise near O'Hare International Airport posed significant challenges for the O'Hare Noise Compatibility Commission in 2009. The ONCC's mission stayed the course to sustain the balance between (1) the aviation industry, government mandates and citizens; and (2) the vital economic development that O'Hare International Airport brings to its neighbors. ONCC's advocacy efforts accelerated following the commissioning of north runway 9L/27R in November 2008.

One ONCC initiative was its request to the Federal Aviation Administration (FAA) to reconsider current noise metrics used to determine quality of life issues such as aircraft noise, residual building vibration, and flight frequency. The FAA responded by introducing a five-year, global Noise Research Roadmap study. ONCC is a member of this international committee.

Another example of ONCC's mission is its ongoing collaboration with the Chicago Department of Aviation (CDA) to pursue funding for residential sound insulation. The FAA approved an allocation of \$247 million in December to complete sound insulation for all remaining 4,500 eligible dwellings by 2014.

ONCC relies on the CDA's sophisticated Airport Noise Management System (ANMS) to review noise statistics by month and community. With the cooperation of CDA Commissioner Rosemarie S. Andolino, the addition of three permanent noise monitors in 2009 helped us accurately track noise variables caused by winds, weather and May-to-October construction projects. ANMS also monitors the airlines' successful adherence to the O'Hare Fly Quiet Program. ONCC will continue to research avenues for portable long-term monitors for several other locations as the need arises.

Since its formation in 1997 at the suggestion of Chicago Mayor Richard M. Daley, ONCC has overseen sound insulation installations for more than 6,950 homes and 119 schools, with expenditures exceeding \$500 million.

ONCC is optimistic about further noise abatement with the introduction of new quieter, fuel-efficient planes, American Airlines' elimination of its MD-80 fleet by 2011, and completion of school sound insulation projects. Mayor Mulder encouraged everyone to take the time to read further highlights about ONCC's efforts to balance noise abatement and sound insulation with land use planning and strategic economic development.

A motion was made by **Ms. Mullins** to adjourn the 2010 ONCC Annual Meeting. The motion was seconded by **Mr. Annunzio**. The motion was approved by unanimous voice vote.

**REPORT OF THE CITY OF CHICAGO DEPARTMENT OF AVIATION –  
CHRIS ARMAN, CHIEF OPERATING OFFICER, FOR COMMISSIONER  
ROSEMARIE S. ANDOLINO**

**A. January 2010 Airport Noise Management System (ANMS) Reports**

Mr. Jackson reviewed the ANMS Reports for the month of January 2010.

The January 2010 ANMS Report showed that the most-used departure runway was 32L at 44% and the most-used arrival Runway was 27L at 33%. Complaint calls totaled 907 calls from 125 callers. There were a total of 2,002 operations for the month of January 2010.

Mayor Moylan pointed out that the complaints from Des Plaines are from 10 residents. He mentioned that he has not had any complaints from any Des Plaines residents regarding aircraft noise. He said that they are happy with the new configuration of the airport.

**B. Aircraft Engine Run-Up Locations – 32L Hold Pad Permanently Closed**

Mr. Arman reported that the 32L Hold Pad has been permanently closed to make way for construction of Runway 10C. He said that aircraft have been encouraged to use the 10Hold Pad and the GRE facility. Runway 32L will be reduced by 3,000 feet as of May 6, 2010. The longest runway will then be 10/28 and it will be used to its capacity.

Mr. Krumstok asked if the 10Hold Pad will be relocated.

Mr. Arman replied that the GRE will be moved.

Ms. Gutierrez said that the ONCC Technical Committee will be reviewing the 2010 O'Hare Construction Program at the next meeting.

**C. On-Line Portable Noise Monitor Reports**

Ms. Gutierrez reported that the Chicago Department of Aviation has posted a link on the Chicago Department of Aviation ([www.flychicago.com](http://www.flychicago.com)) website, under the "Environment" tab, which allows individuals to view all previous portable noise monitoring results.

**D. 65 DNL Noise Contour Map**

Mr. Arman provided ONCC Members with a chart which outlines contour maps from 1979 through the OMP full build-out.

Mr. Frame gave a brief history of the previous 20 years of noise contours. He said that the contour lines have shrunk about 50% over the years.

Mr. Arman said that the chart shows how much more noise existed in previous years and he recognized the collaboration with airlines and neighboring communities for this noise reduction.

Mayor Mullins suggested that staff give a demonstration on the noise events at a future ONCC meeting.

Mayor Sherwin asked about Runway 22L usage in the Fly Quiet Charts.

Mr. Frame acknowledged that staff have noticed the deviations on Runway 22L and are concerned with these flight deviation occurrences. He mentioned that the next step is to meet with the Fly Quiet Subcommittee and the Flight Procedure Subcommittee to discuss the 18 step process for RNAV (Area Navigation).

## **REPORT OF THE COMMISSION CHAIRPERSON – ONCC Chairperson Mayor Arlene J. Mulder, Village of Arlington Heights**

### **A. Appointment of New ONCC Executive Director – Mr. Brendan McLaughlin**

Mayor Mulder called on Mayor Jeffrey Sherwin of Northlake to give the report of the ONCC Executive Director Search Committee.

Mayor Sherwin reported that members of the Executive Director Search Committee interviewed three candidates on February 8, 2010.

As a result of the interviews, Mayor Sherwin announced the Committee's selection of the new ONCC Executive Director, Mr. Brendan McLaughlin.

Mr. McLaughlin has a Master's Degree in Public Administration and was previously employed by the Cities of Naperville and Yorkville, IL. A copy of Mr. McLaughlin's résumé was provided in the meeting packets.

Mayor Sherwin thanked members of the Committee, which besides himself included: Mayor Mulder; Dr. Kuper; Barry Krumstok of Rolling Meadows; Debra Parenti of School District 214; Dave Strahl of Mount Prospect and Mr. Joe Deal from the City of Chicago.

Mayor Mulder also thanked all the members of the committee for their participation.

A motion was made by **Mr. Krumstok** to accept the appointment of Mr. Brendan McLaughlin as the new ONCC Executive Director and was seconded by **Ms. Parenti**.

### **Roll Call Vote**

Arlington Heights – Yes  
Bartlett – Absent  
Bellwood – Absent  
Bensenville - Yes  
Chicago – Yes  
Cook County – Yes  
Des Plaines – Yes  
Elmwood Park – Yes  
Franklin Park – Yes  
Harwood Heights - Yes  
Hoffman Estates – Yes  
Itasca - Yes  
Maywood – Absent  
Melrose Park – Yes  
Mount Prospect – Yes  
Niles – Yes  
Norridge – Yes  
Northlake – Yes  
Oak Park – Absent  
Palatine – Yes  
Park Ridge – Absent  
River Forest – Absent  
River Grove – Yes

Rolling Meadows – Yes  
Rosemont – Yes  
Schaumburg – Yes  
Schiller Park – Yes  
Stone Park – Absent  
Wood Dale – Yes  
District 59 – Yes  
District 63 – Absent  
District 64 – Absent  
District 80 – Yes  
District 81 – Yes  
District 84 – Yes  
District 84.5 – Yes  
District 85.5 – Absent  
District 86 – Absent  
District 87 – Absent  
District 88 – Absent  
District 89 – Absent  
District 214 – Yes  
District 234 – Yes  
District 299 – Yes  
District 401 – Absent

Mr. McLaughlin said that he is excited to join the ONCC. He acknowledged all of the accomplishments of the ONCC and said that he hopes to continue to build on the successes of Brian Gilligan, the former Executive Director with the support of all of its the members.

## **B. Recap 2010 Noise Symposium – February 28 – March 3, 2010**

Mayor Mulder reported that she attended the Annual University of California Noise Symposium in San Diego, with about 200 other participants from all over the world. While the theme of this year's conference addressed achieving sustainability and efforts to reduce greenhouse gas emissions, two thirds of the program's session still focused on noise issues.

One initiative coming out of this global conference was "it is time to set limits for the total elimination of all stage three aircraft." She mentioned that the FAA still has hopes for NextGen technology and NASA continues to promote super sonic technology for air travel.

Mayor Mulder chaired the Community Group Meeting where 18 community leaders from all over the country, including San Francisco, Los Angeles, Newport Beach, and Portland, came together to voice their concerns over aircraft noise. She also participated in a very lively roundtable discussion on

“What would make an airport look beyond the 65 DNL?” And at what cost to the airlines? There is one Scandinavian Country already using 60 DNL as its baseline for sound insulation.

### **C. Recap FAA Noise Research Roadmap Workshop – March 4, 2010**

Mayor Mulder reported that while in San Diego she attended the second FAA Roadmap Conference, which is a five-year study to re-evaluate 65 DNL. One of the goals of the panel is to streamline the scientific data. The panel decided to pursue four areas of research:

- Community annoyance - new U.S. surveys
- Sleep disturbance - new U.S. studies
- Complaints - what can be learned and standardized
- Retrospective study on public action

For those who are interested in the complete discussions and findings to date, please visit [www.fican.org](http://www.fican.org).

Dr. Lupo suggested that a study be conducted on children in classrooms and the impact of noise on their ability to learn.

Mayor Mulder said that she will make the suggestion to the group.

### **Technical Committee Report – Ms. Rita Mullins, Chairperson ONCC Technical Committee**

Ms. Mullins reported that the Technical Committee met on February 23, 2010. Chicago Department of Aviation Assistant Commissioner Aaron Frame introduced a draft document entitled “O’Hare Permanent Noise Monitoring Program” that highlights the history of noise monitor activity surrounding O’Hare International Airport.

An overview of the draft included:

- A summary statement explaining that “the CDA and the O’Hare Noise Compatibility Commission utilize noise data from the permanent monitors to validate the noise contour and identify trends (season changes, runway use) in aircraft noise as they occur.”
- A history of monitor installations, locations, removals by monitor number;
- An historical map of noise contours from 1993, 1997, 2000 and projected OMP full build out; and
- A historic Aircraft Noise Report noting DNL averages for years 1996 through 2009 by community.



The Technical Committee plans to approve the final document at the April Technical Committee meeting before disseminating it to the general ONCC membership.

The Itasca long-term portable monitor remains in place for the time being. The committee continues to advocate for more long-term permanent monitors for Niles and Schiller Park. The Committee requested that Mr. Frame prepare a plan that outlines the technical basis for how many monitors are in use and the rationale for their placement. Mr. Frame expects to send a draft of this plan to the Technical Committee before the April Committee meeting.

The Technical Committee discussed the consistent deviation of aircraft from the recommended Fly Quiet preferential routes in both reports. Discussions included ideas of a Fly Quiet Information Campaign; however, Mr. Frame explained that the 18-step process to formalize RNAV will include individual aeronautical charts in pilot chart manuals. Even though RNAV is a voluntary option for pilots, Fly Quiet preferential routes will appear on RNAV aeronautical plates.

The Committee is hoping to meet with the pilots again at Flight Procedure Subcommittee meetings. It is imperative that as we improve the charts so we can get the correct information to the pilots.

The next ONCC Technical Committee Meeting will be held in the Mount Prospect Village Hall on April 27, 2010.

### **School Sound Insulation Committee Report – Dr. Robert Lupo, Vice-Chairperson ONCC School Sound Insulation Committee**

Dr. Lupo Reported that the School Sound Insulation Committee is anxiously waiting to hear from FAA Acting Assistant Administrator of Airports Catherine Lang, which will be visiting the three schools dropped from the FAA eligibility list. The construction status on Washington Elementary School in Park Ridge is in Phase 2 of Construction. All funding is in place and construction will be completed this summer. Roosevelt Elementary in Park Ridge is currently out to bid and will have a bid opening on March 15, 2010. Construction is contingent on FAA construction funding being approved, which is anticipated to occur by March 31st. Assuming FAA gets their funding approved, District 64 expects to be able to have all the work complete this summer also. Hitch Elementary School in Chicago is still under construction with 25 percent of the project underway. The remaining project is scheduled for completion this year. Farnsworth Elementary School is currently in design stage and has not received a construction grant from the FAA. The FAA and the city of Chicago have expended approximately \$10.4 million in funding to sound insulate these four schools.

### **Residential Sound Insulation Committee Report – Mr. Frank A. Damato, Chairperson ONCC Residential Sound Insulation Committee**

Mr. Damato reported that 1,000 dwelling units have been enrolled to date, and home inventories are complete on all of these units. Notices to proceed have been issued on all 4 contracts. Construction will begin in homes in May 2010.

The homeowner briefings have been held for the Chicago single-family homes. Briefings for the Park Ridge homes and the Chicago multi-family homes will be scheduled in the near future. Home inventories will commence immediately after the briefings. 534 homes are enrolled and 237 home inventories are complete.

The next Residential Committee meeting will take place on Wednesday, April 21, 2010, at the Norridge Village Hall at 9:30 A.M.

## **REPORT OF THE EXECUTIVE DIRECTOR – Mr. Brendan McLaughlin**

### **A. February 2010 Financial Statements**

Mr. McLaughlin reported on expenses which totaled **\$11,783.92** for the month of February 2010.

A motion was made by **Mr. Krumstok** to approve the February 2010 expenses and was seconded by **Mayor Johnson**. The motion passed by roll call vote.

#### **Roll Call Vote**

Arlington Heights – Yes	Rolling Meadows – Yes
Bartlett – Absent	Rosemont – Yes
Bellwood – Absent	Schaumburg – Yes
Bensenville - Yes	Schiller Park –Yes
Chicago – Yes	Stone Park – Absent
Cook County – Yes	Wood Dale – Yes
Des Plaines – Yes	District 59 – Yes
Elmwood Park – Yes	District 63 – Absent
Franklin Park – Yes	District 64 – Absent
Harwood Heights - Yes	District 80 – Yes
Hoffman Estates – Yes	District 81 – Yes
Itasca - Yes	District 84 – Yes
Maywood –Absent	District 84.5 – Yes
Melrose Park – Yes	District 85.5 – Absent
Mount Prospect – Yes	District 86 – Absent
Niles – Yes	District 87 – Absent
Norridge – Yes	District 88 – Absent
Northlake – Yes	District 89 – Absent
Oak Park – Absent	District 214 – Yes
Palatine – Yes	District 234 – Yes
Park Ridge – Absent	District 299 – Yes
River Forest – Absent	District 401 – Absent
River Grove – Yes	

## **B. 2010 ONCC Meetings Schedule**

Mr. McLaughlin provided a copy of the 2010 ONCC Meetings Schedule in the member packets.

## **C. Next O'Hare Noise Compatibility Commission Meeting – May 7, 2010**

Mayor Mulder noted that the next ONCC meeting will be held on Friday, May 7, 2010.

## **COMMENTS FROM THE AUDIENCE**

Ms. Joanne Cameron, a Park Ridge resident, requested that documents from the EPA which she read at the May 2009 ONCC meeting be included in the meeting minutes. Her documents included the following:

*US Senator  
Gov.  
Dist. Admin. for  
Rick Zient  
788-788-  
6000*

**INFORMATION ON LEVELS OF ENVIRONMENTAL NOISE REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY**

MARCH 1974

PREPARED BY  
THE U.S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF NOISE ABATEMENT AND CONTROL

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**FOREWORD**

The Congress included among the requirements of the Noise Control Act of 1972 a directive that the Administrator of the Environmental Protection Agency "... develop and publish criteria with respect to noise..." and then "publish information on the levels of environmental noise the attainment and maintenance of which in defined areas under various conditions are requisite to protect the public health and welfare with an adequate margin of safety."

Not all of the scientific work that is required for basing such levels of environmental noise on precise objective factors has been completed. Some investigations are currently underway, and the need for others has been identified. These involve both special studies on various aspects of effects of noise on humans and the accumulation of additional epidemiological data. In some cases, a considerable period of time must elapse before the results will be meaningful, due to the long-term nature of the investigations involved. Nonetheless, there is information available from which extrapolations are possible and about which reasoned judgments can be made.

Given the foregoing, EPA has sought to provide information on the levels of noise requisite to protect public health and welfare with an adequate margin of safety. The information presented is based on analyses, extrapolations and evaluations of the present state of scientific knowledge. This approach is not unusual or different from that used for other environmental stressors and pollutants. As pointed out in "Air Quality Criteria"-Staff Report, Subcommittee on Air and Water Pollution, Committee on Public Works, U-S. Senate, July, 1968,

The protection of public health is required action based upon best evidence of causation available. Sir E. B. Hill, 1962 appropriately expressed this philosophy, when he wrote: "All scientific work is incomplete-whether it be observational or experimental. All scientific work is liable to be upset or modified by advancing knowledge. That does not confer upon us freedom to lower the knowledge we already have, or to postpone the action that it appears to demand at a given time. The lessons of the past in general health and safety practices are easy to read. They are characterized by empirical decisions, by eternally persistent reappraisal of public health standards against available knowledge of causation, by consistently giving the public the benefit of the doubts, and by ever striving for improved environmental quality with the accompanying reduction in disease morbidity and mortality. The day of precise quantitative

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measurement of health and welfare effects has not yet arrived. Until such measurement is possible, action must be based upon limited knowledge, guided by the principal of the enhancement of the quality of human life. Such action is based on a philosophy of preventive medicine."

The foregoing represents the approach taken by EPA in the preparation of this present document on noise. As the fund of knowledge is expanded, improved and refined, revisions of this document will occur.

The incorporation of a margin of safety in the identification of non-hazardous levels is not new. In most cases, a statistical determination is made of the lowest level at which harmful effects could occur, and then an additional correction is applied as a margin of safety. In the case of noise, the margin of safety has been developed through the application of a conservative approach at each stage of the data analysis. The cumulation of these results thus provides for the adequate margin of safety.

It should be borne in mind that this document is published to present information required by the Noise Control Act, Section 5(a)(2), and that its contents do not constitute Agency regulations or standards. Its statistical generalizations should not be applied to a particular individual. Moreover, States and localities will approach this information according to their individual needs and situations.

Foreword-2

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*EPA doc*

Section 4

IDENTIFIED LEVELS OF ENVIRONMENTAL NOISE IN DEFINED AREAS

IDENTIFIED LEVELS

Table 4 identifies the levels requisite to protect public health and welfare with an adequate margin of safety for both activity interference and hearing loss. The table classifies the various areas according to the primary activities that are most likely to occur in each. The following is a brief description of each classification and a discussion of the basis for the identified levels in Table 4. For a more detailed discussion of hearing loss and activity interference, see Appendices C and D.

1. Residential areas are areas where human beings live, including apartments, seasonal residences, and mobile homes, as well as year-round residences. A quiet environment is necessary in both urban and rural residential areas in order to prevent activity interference and annoyance, and to permit the hearing mechanism to recuperate if it is exposed to higher levels of noise during other periods of the day.

An indoor  $L_{dn}$  of 45 dB will permit speech communication in the home, while an outdoor  $L_{dn}$  not exceeding 55 dB will permit normal speech communication at approximately three meters. Maintenance of this identified outdoor level will provide an indoor  $L_{dn}$  of approximately 40 dB with windows partly open for ventilation. The nighttime portion of this  $L_{dn}$  will be approximately 32 dB, which should in most cases, protect against sleep interference. An  $L_{eq(24)}$  of 70 dB is identified as protecting against damage to hearing.

Although there is a separate category for commercial areas, commercial living accommodations such as hotels, motels, cottages, and inns should be included in the residential category since these are places where people sleep and sometimes spend extended periods of time.

2. Commercial areas include retail and financial service facilities, offices, and miscellaneous commercial services. They do not include warehouses, manufacturing plants, and other industrial facilities, which are included in the industrial classification. Although a level for activity interference has not been identified here (see footnote a), suggestions for such levels will be found in Table D-10 of Appendix D. On the other hand, a level of  $L_{eq(24)}$  of 70 dB has been identified to protect against hearing loss.

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Table 4

YEARLY AVERAGE\* EQUIVALENT SOUND LEVELS IDENTIFIED AS REQUISITE TO PROTECT THE PUBLIC HEALTH AND WELFARE WITH AN ADEQUATE MARGIN OF SAFETY

	Measure	Indoor			Outdoor		
		Activity Interference	Hearing Loss Consideration	To Protect Against Both Effects (b)	Activity Interference	Hearing Loss Consideration	To Protect Against Both Effects (b)
Residential with Outside Space and Farm Residences	$L_{dn}$	45	-	45	55	-	55
	$L_{eq(24)}$	-	70	-	-	70	-
Residential with No Outside Space	$L_{dn}$	45	-	45	-	-	-
	$L_{eq(24)}$	-	70	-	-	-	-
Commercial	$L_{eq(24)}$	(a)	70	70(c)	(a)	70	70(c)
Inside Transportation	$L_{eq(24)}$	(a)	70	(a)	-	-	-
Industrial	$L_{eq(24)(d)}$	(a)	70	70(c)	(a)	70	70(c)
Hospitals	$L_{dn}$	45	-	45	55	-	55
	$L_{eq(24)}$	-	70	-	-	70	-
Educational	$L_{eq(24)}$	45	-	45	55	-	55
	$L_{eq(24)(d)}$	-	70	-	-	70	-
Recreational Areas	$L_{eq(24)}$	(a)	70	70(c)	(a)	70	70(c)
Farm Land and General							

- a. Since different types of activities appear to be associated with different levels, identification of a maximum level for activity interference may be difficult except in those circumstances where speech communication is a critical activity. (See Figure D-2 for noise levels as a function of distance which allow satisfactory communication.)
- b. Based on lowest level.
- c. Based only on hearing loss.
- d. An  $L_{eq(8)}$  of 75 dB may be identified in these situations so long as the exposure over the remaining 16 hours per day is low enough to result in a negligible contribution to the 24-hour average, i.e., no greater than an  $L_{eq}$  of 60 dB.

Note: Explanation of identified level for hearing loss: The exposure period which results in hearing loss at the identified level is a period of 40 years.

\*Refers to energy rather than arithmetic averages.

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3. Transportation facilities are included so as to protect individuals using public and private transportation. Included within this classification are commercial and private transportation vehicles. Identification of a level to protect against hearing loss is the only criterion used at this time, although levels lower than a  $L_{eq}$  of 70 dB are often desirable for effective speech communication. However, because of the great variety of conditions inside transportation vehicles, and because of the desirability of speech privacy in certain situations, a level based on activity interference cannot be identified for all modes of transportation at this time.
4. Industrial areas include such facilities as manufacturing plants, warehouses, storage areas, distribution facilities, and mining operations. Only a level for hearing loss is identified due to the lack of data with respect to annoyance and activity interference. Where the noise exposure is intermittent, a  $L_{eq(24)}$  of 70 dB is identified as the maximum level for protection of hearing from industrial exposure to intermittent noise. For 8-hour exposures, an  $L_{eq(8)}$  of 75 dB is considered appropriate so long as the exposure over the remaining 16 hours per day is low enough to result in a negligible contribution to the 24-hour average.
5. Hospital areas include the immediate neighborhood of the hospital as well as its interior. A quiet environment is required in hospital areas because of the importance of sleep and adequate rest to the recovery of patients. The maintenance of a noise level not exceeding a  $L_{dn}$  of 45 dB in the indoor hospital environment is deemed adequate to prevent activity interference and annoyance. An outdoor  $L_{dn}$  of 55 dB should be adequate to protect patients who spend some time outside, as well as insuring an adequately protective indoor level. A  $L_{eq(24)}$  of 70 dB is identified to prevent hearing loss.
6. Educational areas include classrooms, auditoriums, and schools in general, and those grounds not used for athletics. The principal consideration in the education environment is the prevention of interference with activities, particularly speech communication. An indoor noise level not exceeding  $L_{eq(24)}$  of 45 dB is identified as adequate to facilitate thought and communication. Since teaching is occasionally conducted outside the classroom, an outdoor  $L_{eq(24)}$  of 55 dB is identified as the maximum level to prevent activity interference. To protect against hearing loss a  $L_{eq(24)}$  of 70 dB is identified for both indoor and outdoor environments. As in the industrial situation, eight hours is generally the amount of time spent in educational facilities. Therefore an  $L_{eq(8)}$  of 75 dB is considered appropriate to protect against hearing loss, so long as the exposure over the remaining 16 hours is low enough to result in a negligible contribution to the 24-hour average.
7. Recreational areas include facilities where noise exposure is voluntary. Included within this classification are nightclubs, theaters, stadiums, racetracks, beaches, amusement parks, and athletic fields. Since sound exposure in such areas is usually voluntary, there is seldom any interference with the desired activity. Consequently, the chief consideration is

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the protection of hearing. An  $L_{eq(24)}$  of 70 dB is therefore identified for intermittent noise in order to prevent hearing damage.

8. Farm and general unpopulated land primarily includes agricultural property used for the production of crops or livestock. For such areas, the primary considerations are the protection of human hearing and the prevention of adverse effects on domestic and wild animals. Protection of hearing requires that an individual's exposure to intermittent noise does not exceed  $L_{eq(24)}$  of 70 dB. A separate level for the exposure of animals is not identified due to the lack of data indicating that hearing damage risk for animals is substantially different from that of humans. The unpopulated areas include wilderness areas, parks, game refuges, and other areas that are set aside to provide enjoyment of the outdoors. Although quiet is not always of paramount importance in such areas, many individuals enjoy the special qualities of serenity and tranquility found in natural areas. At this time it is not possible to identify an appropriate level to prevent activity interference and annoyance. However, when it becomes possible to set such a level, a clear distinction should be made between natural and man-made noise.

#### USE OF IDENTIFIED ENVIRONMENTAL NOISE LEVELS

One of the purposes of this document is to provide a basis for judgment by states and local governments as a basis for setting standards. In doing so the information contained in this document must be utilized along with other relevant factors. These factors include the balance between costs and benefits associated with setting standards at particular noise levels, the nature of the existing or projected noise problems in any particular area, the local aspirations and the means available to control environmental noise.

In order to bring these factors together, states, local governments and the public will need to evaluate in a systematic manner the following:

1. The magnitude of existing or projected noise environments in defined areas as compared with the various levels identified in this document.



TABLE 1. LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS

Land Use	Yearly Day-Night Average Sound Level (L <sub>dn</sub> ) in decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes and transient lodgings	YES	NO (1)	NO (1)	NO	NO	NO
Mobile home parks	YES	NO	NO	NO	NO	NO
Transient lodgings	YES	NO (1)	NO (1)	NO (1)	NO	NO
Public Use						
Schools	YES	NO (1)	NO (1)	NO	NO	NO
Hospitals and nursing homes	YES	25	30	NO	NO	NO
Churches, auditoriums, and concert halls	YES	25	30	NO	NO	NO
Government services	YES	YES	25	30	NO	NO
Transportation	YES	YES	YES (2)	YES (3)	YES (4)	YES (4)
Parking	YES	YES	YES (2)	YES (3)	YES (4)	NO
Commercial Use						
Offices, business and professional	YES	YES	25	30	NO	NO
Wholesale and retail- building materials, hardware and farm equipment	YES	YES	YES (2)	YES (3)	YES (4)	NO
Retail trade-general	YES	YES	25	30	NO	NO
Utilities	YES	YES	YES (2)	YES (3)	YES (4)	NO
Communication	YES	YES	25	30	NO	NO
Manufacturing and Production						
Manufacturing, general	YES	YES	YES (2)	YES (3)	YES (4)	NO
Photographic and optical	YES	YES	25	30	NO	NO
Agriculture (except livestock) and forestry	YES	YES (6)	YES (7)	YES (8)	YES (8)	YES (8)
Livestock farming and breeding	YES	YES (6)	YES (7)	NO	NO	NO
Mining and fishing, resource production and extraction	YES	YES	YES	YES	YES	YES
Recreational						
Outdoor sports arenas and spectator sports	YES	YES (5)	YES (5)	NO	NO	NO
Outdoor music shells, amphitheaters	YES	NO	NO	NO	NO	NO
Nature exhibits and zoos	YES	YES	NO	NO	NO	NO
Amusements, parks, resorts, and camps	YES	YES	YES	NO	NO	NO
Golf courses, riding stables and water recreation	YES	YES	25	30	NO	NO

next  
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Numbers in parenthesis refer to notes; see continuation of Table 1 for notes and key.

NOTE: The designations in this table do not constitute a Federal determination that any use of land is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with local land use authorities. FAA determinations under Part 150 are guidelines and are not intended to substitute for land uses determined to be suitable by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

**TABLE 1. LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS**

Key to Table 1	
YES	Land Use and related structures compatible without restrictions.
NO	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, or 35	Land use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.
Notes for Table 1	
(1)	Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
(2)	Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(3)	Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(4)	Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
(5)	Land use compatible provided special sound reinforcement systems are installed.
(6)	Residential buildings require an NLR of 25.
(7)	Residential buildings require an NLR of 30.
(8)	Residential buildings not permitted.

(End of Table 1)

**MEETING ADJOURNMENT**

**Mayor Sherwin** moved and **Mr. Krumstok** seconded that the meeting adjourn. The motion was approved by unanimous voice vote. The meeting adjourned at 9:30 A.M.