

January 2013

Los Angeles International Airport



January 2013
APPENDICES



LAX

*Los Angeles
World Airports*

Los Angeles International Airport

14 C.F.R. Part 161 Application for Approval of a Runway Use Restriction

APPENDICES

January 2013



1 World Way
Los Angeles, CA 90045

This page intentionally left blank.

14 C.F.R. Part 161 Application for Approval of a Runway Use Restriction

Appendices

This is the second of two volumes for the Los Angeles International Airport 14 C.F.R. Part 161 Application for Approval of a Proposed Runway Use Restriction. The Appendices which follow contain background and supporting material for the Part 161 in accordance with the documentation requirements of 14 C.F.R. Part 161 “Notice and Approval of Airport Noise and Access Restrictions.” This is not a stand-alone document and should be used together with the first volume of the Part 161 application. The Appendices are provided under separate cover due to the magnitude of information contained therein and to provide an easier review of the information presented.

This page intentionally left blank

TABLE OF CONTENTS

| | | |
|------------|--|-----|
| APPENDIX A | PUBLIC COMMENTS - EMAIL / HOTLINE | A-1 |
| APPENDIX B | PUBLIC OUTREACH DOCUMENTATION / INITIAL PUBLIC MEETINGS NOVEMBER 2006 | B-1 |
| APPENDIX C | PUBLIC WORKSHOP/MEETING NOVEMBER 2012 AND PUBLIC COMMENTS..... | C-1 |
| APPENDIX D | NONRESTRICTIVE ALTERNATIVES - COMMUNICATIONS WITH AIRLINES..... | D-1 |
| APPENDIX E | LAX NOISE WAIVERS AND ORDINANCES..... | E-1 |
| APPENDIX F | CALIFORNIA DIVISION OF AERONAUTICS NOISE STANDARDS | F-1 |
| APPENDIX G | NOISE TERMINOLOGY | G-1 |
| APPENDIX H | AIRCRAFT NOISE ANALYSIS | H-1 |
| APPENDIX I | DESCRIPTION OF NOISE EXPOSURE AND LAND USE COMPATIBILITY..... | I-1 |
| APPENDIX J | AIRCRAFT OPERATIONS FORECAST MEMORANDUM AND FAA APPROVAL | J-1 |
| APPENDIX K | DEVELOPMENT OF THE ANSI SLEEP STANDARD..... | K-1 |
| APPENDIX L | FICAN RECOMMENDATION | L-1 |
| APPENDIX M | USE RESTRICTION COST ANALYSES | M-1 |

LIST OF FIGURES

| | |
|---|------|
| Figure G-1 A-Weighting Frequency Response | G-3 |
| Figure G-2 Representative A-Weighted Sound Levels | G-3 |
| Figure G-3 Variation in the A-Weighted Sound Level over Time | G-4 |
| Figure G-4 Graphical Depiction of Sound Exposure Level | G-5 |
| Figure G-5 Graphical Depiction of Single Event Noise Exposure Level | G-5 |
| Figure G-6 Graphical Depiction of Single Event Noise Exposure Level for Two Noise Events with Different Maximums and Durations | G-6 |
| Figure G-7 Example of a One-Minute Equivalent Sound Level | G-7 |
| Figure G-8 Example of a Day-Night Average Sound Level Calculation | G-8 |
| Figure G-9 Examples of Measured Day-Night Average Sound Levels | G-9 |
| Figure G-10 Example of a Community Noise Equivalent Level Calculation | G-10 |
| Figure H-1 LAX Airport Diagram | H-3 |
| Figure H-2 Modeled Arrival Flight Tracks for Fixed-Wing Aircraft | H-7 |
| Figure H-3 Modeled Departure Flight Tracks for Fixed-Wing Aircraft | H-9 |
| Figure H-4 Modeled Arrival and Departure Flight Tracks for Helicopters | H-11 |
| Figure H-5 Modeled Non-conforming Over-Ocean East Departure Flight Tracks to be affected by the Proposed Restriction | H-13 |
| Figure K-1 Typical Experimentally Determined Relationship between Indoor SEL and Percent of Population Awakened | K-1 |
| Figure K-2 Analysis Results for 1 Hour after Retiring | K-3 |
| Figure K-3 Analysis Results for 6 Hours after Retiring | K-3 |
| Figure K-4 Translating Probability of Awakening to Probability of Sleeping Through an Aircraft Event | K-4 |

LIST OF TABLES

| | |
|--|-----|
| Table G-1 Guidelines for Interpreting Changes in Cumulative Exposure | G-9 |
| Table H-1 Runway/Helipad Details | H-2 |
| Table H-2 Runway Utilization for 2013 Status Quo and with Proposed Restriction | H-4 |
| Table H-3 Runway Utilization for 2018 Status Quo | H-5 |
| Table H-4 Runway Utilization for 2018 with Proposed Restriction | H-5 |
| Table I-1 FAA Noise / Land-Use Compatibility Guidelines | I-3 |
| Table I-2 Los Angeles County Land Use Compatibility for Airport Noise Environments | I-8 |
| Table K-1 Values of Equation Constants for Calculating Probability of Awakening | K-6 |