

## CHAPTER FOUR

# RECOMMENDED NOISE COMPATIBILITY PROGRAM MEASURES

This chapter provides the details of the recommended Part 150 noise abatement, land use management, and implementation measures for the Cincinnati/Northern Kentucky International Airport (CVG) Noise Compatibility Program (NCP). The recommended program consists of measures drawn from the Kenton County Airport Board's (KCAB's) previously approved 1990 Part 150, 1992 Supplemental Part 150, and 1999 FAR Part 150 studies, as well as from the evaluation of alternatives conducted during this study.

This Part 150 Study is being conducted according to Federal Aviation Regulation (FAR) Part 150 guidelines that call for the periodic re-evaluation and submission of the noise conditions at an airport. The year 2011 was selected as the future year for analysis based on a provision in the FAR Part 150 guidelines which states the future year should be five years from the date of submission (2006 plus five years).

If the currently approved noise abatement and land use measures are continued through 2011 (Future (2011) Baseline Condition), two unmitigated houses would remain within the 65 Day-Night Average Sound Level (DNL) noise contour (none of those homeowners have previously been offered participation in a KCAB mitigation program). With the implementation of the recommended NCP measures, both of those houses would fall outside of the 2011 Noise Exposure Map (NEM)/NCP 65 DNL noise contour. Therefore, no new land use impacts occur inside the 2011 NEM/NCP 65 DNL noise contour.

The recommended NCP measures are summarized in this chapter in two formats: a summary table and detailed plate illustrations for each individual measure.

- The summary table (**Table 4-1, *Noise Compatibility Program Recommendations***) describes the recommended measures, identifies the primary party responsible for implementation, estimated costs to the various stakeholders (airport, local government, and users), and the implementation target (year). The designation in *italics* is a cross reference to the alternatives that were evaluated; all of the alternatives are presented in Appendix F, *Noise Abatement Alternatives*. Measures with no alternative reference in italics are previously approved measures being continued in this NCP, measures that are complete, or measures that have expired. More detailed information about these measures can be found in Appendix G, *Land Use Management Alternatives*, and Appendix H, *Implementation Alternatives*.
- The detailed plate illustrations are on the pages following Table 4-1. These plates describe ***each of the recommended noise compatibility program measures*** in a format that brings together all of the following critical, detailed information:

- Description of the measure
- Relationship to the 1999 NCP
- 2006 NCP action
- Background and intent
- Status (not applicable if new)
- Land use compatibility improvement
- Responsible implementing parties
- Implementation steps, costs, and schedule
- Effects on other programs/measures
- Limitations to Implementation (applicable to new noise abatement measures)

### **Supporting Exhibits**

Map exhibits depicting the areas affected by each recommended NCP measure are provided at the end of the detailed plate illustrations on pages 89 through 97.

**Exhibit 4-1 *Existing and Recommended Departure Corridors***

**Exhibit 4-2 *Recommended Runway 36L Departure Corridor***

**Exhibit 4-3 *Recommended Runway 36R Departure Corridor***

**Exhibit 4-4 *Potential Interstate Approach***

**Exhibit 4-5 *Recommended 2011 Noise Compatibility Program Mitigation***

Section 4.1, *Noise Compatibility Program Map* (page 4-99), discusses the population, housing, and noise-sensitive public facility impacts associated with the full implementation of the recommended NCP measures. Section 4.2, *Noise Compatibility Program Costs* (page 4-106), presents the estimated cost to implement the NCP measures. Section 4.3, *Implementation Schedule* (page 4-106), provides a generalized implementation schedule for the program.

***The approval of the NCP by the FAA does not commit the FAA or the KCAB to the costs or the implementation schedule listed in this document. This information is provided here as a planning tool to assist the KCAB and the FAA to implement the measures ultimately approved in the FAA Record of Approval on the NCP.***

**Table 4-1**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE   | RESPONSIBLE PARTY        | COST TO AIRPORT | COST TO LOCAL GOVERNMENTS | COST TO USERS  | IMPLEMENTATION TARGET  |
|---|--------------------------|-----------------|---------------------------|--|--|
| <b>NOISE ABATEMENT MEASURES</b>   |                          |                 |                           |  |  |
| <b>Measure OP-1:</b> Extend Runway 18R/36L by 1,500 feet to the north.  | N/A                      | N/A             | N/A                       | N/A  | N/A – Measure completed 1996   |
| <b>Measure OP-2:</b> Turbojet aircraft (over 70,000 pounds) departing Runway 18L fly runway heading until 1.5 Distance Measuring Equipment (DME) south of the localizer, then turn left to a 165-degree heading and climb on course; or fly an Advanced Navigation (ANAV) departure procedure directing aircraft over the Interstate-71/75 corridor for four nautical miles (n.m.) from the runway end. | FAA ATCT, Airlines, KCAB | N/A             | N/A                       | Costs would accrue to the airlines to appropriately equip aircraft.<br><i>(See Table 4-1 Footnote 1)</i> | Measure is implemented. (ANAV procedure developed by ATCT in 2005 –procedure expected to be implemented in 2007)         |
| <b>Measure OP-3:</b> Turbojet aircraft (over 70,000 pounds) departing Runway 18C fly runway heading; or fly an Advanced Navigation (ANAV) departure procedure directing aircraft to a turn point approximately four nautical miles (n.m.) from the runway end.  | FAA ATCT, Airlines, KCAB | N/A             | N/A                       | Costs would accrue to the airlines to appropriately equip aircraft.<br><i>(See Table 4-1 Footnote 1)</i> | Measure is being continued. KCAB contacted FAA ATCT and requested the development and implementation of ANAV procedures. |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE   | RESPONSIBLE PARTY        | COST TO AIRPORT | COST TO LOCAL GOVERNMENTS | COST TO USERS  | IMPLEMENTATION TARGET  |
|---|--------------------------|-----------------|---------------------------|--|--|
| <b>Measure OP-4:</b> Continue night noise policy and implement contra-flow arrival and departure procedure on west side of the airport. (Nighttime noise policy is to designate larger aircraft nighttime arrival and departure procedures between 10:00 p.m. and 7:00 a.m. to the west)  | N/A                      | N/A             | N/A                       | N/A  | Measure is being continued.  |
| <b>Measure OP-5:</b> Turbojet aircraft (over 70,000 pounds) departing Runway 27 fly runway heading; or fly an Advanced Navigation (ANAV) departure directing aircraft to a turn point approximately four nautical miles (n.m.) from the runway end.   | FAA ATCT, Airlines, KCAB | N/A.            | N/A                       | Costs would accrue to the airlines to appropriately equip aircraft. (See Table 4-1 Footnote 1) | Measure is being continued. KCAB contacted FAA ATCT and requested the development and implementation of ANAV procedures. |
| <b>Measure OP-6:</b> Turbojet aircraft (over 70,000 pounds) departing Runway 36C overfly the Ohio River by turning left after reaching 0.5 miles beyond the localizer (ICVG) to a 330-degree heading; or fly an Advanced Navigation (ANAV) departure procedure directing aircraft over the Ohio River for four nautical miles (n.m.) from the runway end. | FAA ATCT, Airlines, KCAB | N/A             | N/A                       | Costs would accrue to the airlines to appropriately equip aircraft. (See Table 4-1 Footnote 1) | Measure is implemented. (ANAV procedure developed by ATCT in 2005 – use of procedure is expected to begin in 2007).      |
| <b>Measure OP-7:</b> Continue, to the extent practicable, the use of Runway 27 for daytime departures.  | FAA ATCT, Airlines, KCAB | N/A             | N/A                       | N/A  | Measure is being continued.  |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE   | RESPONSIBLE PARTY        | COST TO AIRPORT | COST TO LOCAL GOVERNMENTS | COST TO USERS  | IMPLEMENTATION TARGET  |
|---|--------------------------|-----------------|---------------------------|--|--|
| <b>Measure OP-8:</b> Increase noise abatement departure routes to four nautical miles (n.m.) from runway overflight end or 5,000 feet Mean Sea Level (MSL); develop an Advanced Navigation (ANAV) procedure that directs aircraft to a turn point approximately four nautical miles (n.m.) from the runway end. | FAA ATCT, Airlines, KCAB | N/A             | N/A                       | Costs would accrue to the airlines to appropriately equipping aircraft.<br><i>(See Table 4-1 Footnote 1)</i> | Measure is being continued. KCAB contacted FAA ATCT and requested the development and implementation of ANAV procedures.                                 |
| <b>Measure OP-9:</b> Withdraw measure to implement near-term nighttime turbojet (over 70,000 pounds) departure runway priorities—Runways 27, 36L, 18R, and 9.   | N/A                      | N/A             | N/A                       | N/A  | N/A – Measure previously withdrawn. No FAA action is required.   |
| <b>Measure OP-10:</b> Withdraw nighttime turbojet (over 70,000 pounds) arrival runway priorities Runways 9, 27, 36L, and 18R.   | FAA ATCT, Airlines, KCAB | N/A             | N/A                       | N/A  | Measure is being withdrawn. Recommended measures OP-17, OP-18, and OP-19 would replace Measures OP-10 and OP-11 as the new nighttime runway use program. |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE   | RESPONSIBLE PARTY        | COST TO AIRPORT | COST TO LOCAL GOVERNMENTS | COST TO USERS  | IMPLEMENTATION TARGET  |
|---|--------------------------|-----------------|---------------------------|--|--|
| <b>Measure OP-11:</b> Withdraw longer-term nighttime turbojet (over 70,000 [sic]) departure runway priorities – Runway 27, 36L, 9, and 18R.                         | FAA ATCT, Airlines, KCAB | N/A             | N/A                       | N/A  | Measure is being withdrawn. Recommended measures OP-17, OP-18, and OP-19 would replace Measures OP-10 and OP-11 as the new nighttime runway use program.   |
| <b>Measure OP-12:</b> Extend Runway 9/27 to the west by 2,200 feet.   | N/A                      | N/A             | N/A                       | N/A  | N/A - Measure completed in 1996  |
| <b>Measure OP-13:</b> Implement near-term nighttime arrival runway priorities: Runway 27, Runway 9, Runway 36L, Runway 18R.   | N/A                      | N/A             | N/A                       | N/A  | N/A - Measure previously withdrawn. No FAA action is required.   |
| <b>Measure OP-14:</b> Define and utilize Advanced Navigation (ANAV) flight procedures to increase the accuracy of aircraft flying noise abatement flight corridors. | FAA ATCT, Airlines, KCAB | N/A             | N/A                       | Costs would accrue to the airlines to appropriately equip aircraft. (See Table 4-1 Footnote 1) | Measure is being continued. KCAB contacted FAA Air Traffic and requested the development and implementation of ANAV procedures. (Runways 18L and 36C departure procedures have been developed by ATCT) |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE   | RESPONSIBLE PARTY        | COST TO AIRPORT  | COST TO LOCAL GOVERNMENTS | COST TO USERS | IMPLEMENTATION TARGET  |
|---|--------------------------|--|---------------------------|---------------|--|
| <b>Measure OP-15:</b> Implement nighttime engine maintenance run-up procedures defining central locations and orientations of the aircraft.   | N/A                      | N/A  | N/A                       | N/A           | N/A – Measure previously withdrawn. No FAA action is required.   |
| <b>Measure OP-16:</b> Turbojet aircraft (over 70,000 pounds) departing Runway 36L (formerly 35) turn left at 4.2 Distance Measuring Equipment (DME) from the Cincinnati/Northern Kentucky International Airport (CVG) Very High Frequency Omnidirectional Range (VOR) to a 325-degree heading to overfly the Ohio River; or fly an Advanced Navigation (ANAV) departure procedure directing aircraft over the Ohio River for four nautical miles (n.m.) | FAA ATCT, Airlines, KCAB | Minimal costs would accrue for briefing air traffic controllers and for developing procedures. | N/A                       |               | Measure is being continued.  |
| <b>Measure OP-17:</b> Modify nighttime runway use program to include Runway 18L/36R. <i>Alternative NA-A</i>  | FAA ATCT, Airlines, KCAB | Minimal costs would accrue for briefing air traffic controllers and for developing procedures. | N/A                       | N/A           | This measure could be implemented following receipt of the FAA Record of Approval (ROA) on the NCP and environmental processing. |
| <b>Measure OP-18:</b> Assign heavy (>255,000 lbs) aircraft departures to Runway 27 during the nighttime hours (10:00 p.m. to 7:00 a.m.). <i>Alternative NA-C</i>  | FAA ATCT, Airlines, KCAB | Nominal costs for modifying the ATCT Tower Order.  | N/A                       | N/A           | This measure could be implemented following receipt of the FAA ROA on the NCP and environmental processing.                      |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE  | RESPONSIBLE PARTY        | COST TO AIRPORT   | COST TO LOCAL GOVERNMENTS | COST TO USERS | IMPLEMENTATION TARGET  |
|--|--------------------------|---|---------------------------|---------------|--|
| <b>Measure OP-19:</b> Turbojet aircraft departing Runway 36R during the nighttime hours (10:00 p.m. to 7:00 a.m.) turn left to 330-degree heading to follow the Ohio River corridor. <i>Alternative NA-F</i> | FAA ATCT, Airlines, KCAB | Nominal costs for modifying the ATCT Tower Order.                               | N/A                       | N/A           | This measure could be implemented following receipt of the FAA ROA on the NCP and environmental processing.  |
| <b>Measure OP-20:</b> Conduct a study to evaluate the feasibility of establishing an Interstate-75/Interstate-71 corridor approach to Runway 36R. <i>Alternative NA-N</i>                                    | KCAB                     | Costs of a feasibility study are expected to range from \$100,000 to \$150,000. | N/A                       | N/A           | This measure could be implemented following receipt of the FAA ROA.  |
| <b>LAND USE COMPATIBILITY ACTIONS</b>  |                          |   |                           |               |  |
| <b>Measure LU-1:</b> Offer the option of a voluntary acquisition program for remaining houses in a 1,700 by 8,000-foot box off the arrival end of Runways 18L, 18C, 18R, 36L, 36C, 36R, and 27.              | KCAB                     | Estimated cost to acquire ten houses:<br>\$2,000,000                            | N/A                       | N/A           | Measure is being continued with modification to include Runway 18R/36L. This measure could be implemented following receipt of the FAA ROA on the NCP; and subject to FAA and KCAB funding availability. |
| <b>Measure LU-2:</b> Purchase the Immaculate Heart of Mary Church and School.  | N/A                      | N/A   | N/A                       | N/A           | N/A - Measure completed 1991   |

**Table 4-1, Continued  
 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS  
 Cincinnati/Northern Kentucky International Airport**

| <b>MEASURE</b>  | <b>RESPONSIBLE PARTY</b> | <b>COST TO AIRPORT</b>  | <b>COST TO LOCAL GOVERNMENTS</b> | <b>COST TO USERS</b> | <b>IMPLEMENTATION TARGET</b>   |
|---|--------------------------|---|----------------------------------|----------------------|--|
| <b>Measure LU-3:</b> Offer voluntary acquisition to remaining houses in the 2011 Noise Compatibility Plan (NCP) 75 Day/Night Average Sound Level (DNL) noise contour.   | KCAB                     | N/A   | N/A                              | N/A                  | N/A - Measure completed 2004   |
| <b>Measure LU-4:</b> Offer voluntary acquisition to the two remaining houses in the Ethan's Glen subdivision and scattered houses west of the airport within the 2011 Noise Compatibility Plan (NCP) 70-75 Day/Night Average Sound Level (DNL) noise contour. | KCAB                     | Estimated cost to acquire six houses:<br>\$1,200,000                                    | N/A                              | N/A                  | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |
| <b>Measure LU-5:</b> Offer voluntary acquisition for the remaining houses and undeveloped lots in the Rolling Green Acres subdivision and the remaining houses in the vicinity of O'Hara Rd. and Turfway Rd.  | KCAB                     | Estimated cost to acquire 12 houses and 51 undeveloped residential lots:<br>\$3,420,000 | N/A                              | N/A                  | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE   | RESPONSIBLE PARTY | COST TO AIRPORT   | COST TO LOCAL GOVERNMENTS | COST TO USERS | IMPLEMENTATION TARGET  |
|---|-------------------|---|---------------------------|---------------|--|
| <b>Measure LU-6:</b> Sound insulate the Woodspoint Nursing Home, now known as the Harborside Healthcare, <sup>3</sup> and offer participation in the purchase assurance/sound insulation program (PA/SI) to single-family homeowners in the 65 Day/Night Average Sound Level (DNL) noise contour of the Long-Term Noise Abatement Plan for 1997 (excluding the area west of the airport covered in LU-4). | N/A               | N/A   | N/A                       | N/A           | N/A - Woodspoint Nursing Home completed in 1998; PA/SI program south expired March 2001; voluntary acquisition northwest expired December 1999. No further FAA action is required. |
| <b>Measure LU-7:</b> Offer sound insulation to eligible schools around the airport (eligibility based on FAA funding criteria).   | KCAB              | Specific costs are unknown until eligibility is determined.<br><i>(See Table 4-1 Footnote 3)</i>  | N/A                       | N/A           | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability.                           |
| <b>Measure LU-8:</b> Offer voluntary acquisition of undeveloped, approved residential building lots in Ethan's Glen subdivision.  | KCAB              | N/A - funding was included in the 1992 Supplemental Part 150 NCP and will not be duplicated here. | N/A                       | N/A           | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability.                           |

<sup>3</sup> In June 2005, SeniorCare LLC sold nine Kentucky long-term care facilities to Harborside Healthcare Corp., a skilled-nursing and long-term-care company. The Woodspoint Nursing Home in Florence, Kentucky was one of those facilities. *Nine Kentucky long-term care facilities being acquired by Harborside Healthcare*, Business First of Louisville, May 19, 2005. <http://www.bizjournals.com/louisville/stories/2005/05/16/daily26.html>

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE   | RESPONSIBLE PARTY | COST TO AIRPORT | COST TO LOCAL GOVERNMENTS | COST TO USERS | IMPLEMENTATION TARGET   |
|---|-------------------|-----------------|---------------------------|---------------|---|
| <b>Measure LU-9:</b> Withdraw the previously approved Measure LU-9 to "Offer options of sound insulation or acquisition of avigation easements to homeowners in the 65 Day/Night Average Sound Level (DNL) decibels (dB) contour of the 1992 Near-Term Noise Abatement Plan, northwest of the Airport" (approximately 132 houses).  | N/A               | N/A             | N/A                       | N/A           | N/A - Measure previously withdrawn. No FAA action is required |
| <b>Measure LU-10:</b> Withdraw previously approved measure to "Sound insulate new single-family houses built after approval of the Supplemental Part 150 Plan on currently approved residential building lots; the level of sound insulation was to be based on conditions at the time of installation. The program was not to be initiated until all other measures were completed."   | N/A               | N/A             | N/A                       | N/A           | N/A - Measure previously withdrawn. No FAA action is required |
| <b>Measure LU-11:</b> Offer purchase assurance or sound insulation (PA/SI) options for all houses in the Deerfield and Dartmouth Woods subdivisions west of the airport located partially in the 65 Day/Night Average Sound Level (DNL) noise contour of the 1997 plan. This offer would be triggered if the annual noise contour update for any year shows that aircraft noise levels exceeds the forecast 1997 plan levels on the subdivision by Day/Night Average Sound Level (DNL) 1.5 decibels (dB). | N/A               | N/A             | N/A                       | N/A           | N/A - Measure expired in 1997. No FAA action is required.     |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
 Cincinnati/Northern Kentucky International Airport

| MEASURE  | RESPONSIBLE PARTY | COST TO AIRPORT  | COST TO LOCAL GOVERNMENTS | COST TO USERS | IMPLEMENTATION TARGET  |
|--|-------------------|--|---------------------------|---------------|--|
| <b>Measure LU-12:</b> Offer sound insulation to eligible single-family houses west of the airport located in the western 65-70 Day/Night Average Sound Level (DNL) noise contour of the 2011 NCP.        | KCAB              | Estimated cost to sound insulate five houses:<br>\$150,000             | N/A                       | N/A           | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |
| <b>Measure LU-13:</b> Offer voluntary acquisition to eligible houses northwest of Runway 18R/36L within the 1999 Noise Compatibility Plan (NCP) 65-70 Day/Night Average Sound Level (DNL) noise contour. | N/A               | N/A  | N/A                       | N/A           | N/A - These houses were acquired for Master Plan development. No further FAA action is required.   |
| <b>Measure LU-14:</b> Offer sound insulation to eligible single-family houses in the Dartmouth Woods subdivision.  | KCAB              | Estimated cost to sound insulate approximately 16 houses:<br>\$480,000 | N/A                       | N/A           | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
 Cincinnati/Northern Kentucky International Airport

| MEASURE   | RESPONSIBLE PARTY | COST TO AIRPORT   | COST TO LOCAL GOVERNMENTS | COST TO USERS | IMPLEMENTATION TARGET  |
|---|-------------------|---|---------------------------|---------------|--|
| <b>Measure LU-15:</b> Offer sound insulation to eligible single-family houses in the Deerfield subdivision.   | KCAB              | Estimated cost to sound insulate approximately three houses:<br>\$90,000                  | N/A                       | N/A           | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |
| <b>Measure LU-16:</b> Offer sound insulation to eligible single-family houses in the Orchard Estates subdivision.   | KCAB              | Estimated cost to sound insulate approximately 16 houses:<br>\$480,000                    | N/A                       | N/A           | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |
| <b>Measure LU-17:</b> Offer sound insulation to eligible churches around the airport (eligibility based on Federal Aviation Administration (FAA) funding criteria). | KCAB              | Specific costs are unknown until eligibility is determined.<br>(See Table 4-1 Footnote 3) | N/A                       | N/A           | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

| MEASURE   | RESPONSIBLE PARTY | COST TO AIRPORT | COST TO LOCAL GOVERNMENTS | COST TO USERS | IMPLEMENTATION TARGET  |
|---|-------------------|-----------------|---------------------------|---------------|--|
| <p><b>Measure LU-18:</b> Support the Boone County Planning Commission Comprehensive Plan's compatible land use policies within the 65 Day/Night Average Sound Level (DNL) noise contour. This measure is a modification to the Measure LU-9 in the 1990 Part 150 Study. It is intended to show support for adopted land use policies and regulations, encouraging their continued implementation. These include supplemental Noise Level Reduction (NLR) performance standards within the 65 Day/Night Average Sound Level (DNL) noise contour, and incorporated the airport's Noise Exposure Measurement (NEM) contours.</p> | KCAB              | None            | None                      | None          | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |
| <b>IMPLEMENTATION ACTIONS</b>   |                   |                 |                           |               |  |
| <p><b>IM-1:</b> Establish an implementation committee to outline implementation steps and program eligibility criteria. This measure was approved in 1990 and not recommended in the 1992 Supplemental Study. It is included here for continuity of numbering.</p>  | N/A               | N/A             | N/A                       | N/A           | N/A - No FAA action is required.   |
| <p><b>IM-2:</b> Conduct noise monitoring of Runway 18L/36R to develop "before and after" comparisons of the new runway. This measure was not recommended in the 1992 Supplemental Part 150 study, and is included here for continuity of numbering.</p>   | N/A               | N/A             | N/A                       | N/A           | N/A - No FAA action is required.   |

**Table 4-1, Continued  
 NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS  
 Cincinnati/Northern Kentucky International Airport**

| <b>MEASURE</b>  | <b>RESPONSIBLE PARTY</b> | <b>COST TO AIRPORT</b>            | <b>COST TO LOCAL GOVERNMENTS</b> | <b>COST TO USERS</b> | <b>IMPLEMENTATION TARGET</b>   |
|---|--------------------------|-----------------------------------|----------------------------------|----------------------|--|
| <b>IM-3:</b> Update annual noise contours. This measure is recommended for continuation.  | KCAB                     | Estimated cost: \$10,000 per year | N/A                              | N/A                  | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |
| <b>IM-4:</b> Continue the use of a 24-hour public comment system indefinitely.  | KCAB                     | N/A                               | N/A                              | N/A                  | Measure is being continued. As a continuation of an approved measure, implementation can begin immediately subject to FAA and KCAB funding availability. |
| <b>IM-5:</b> Acquire an Automated Radar Terminal System (ARTS) Tracking System to provide information to the Kenton County Airport Board (KCAB) staff on actual operations relative to the Noise Compatibility Plan (NCP); enhance airline, pilots, and air traffic awareness of local noise abatement procedures; and ensure that assumptions used in the annual noise contour updates are consistent with actual flight procedures. | N/A                      | N/A                               | N/A                              | N/A                  | N/A - An ARTS Tracking System was acquired by KCAB in 1997. No FAA action is required.   |

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
 Cincinnati/Northern Kentucky International Airport

| MEASURE  | RESPONSIBLE PARTY | COST TO AIRPORT             | COST TO LOCAL GOVERNMENTS | COST TO USERS | IMPLEMENTATION TARGET  |
|--|-------------------|-----------------------------|---------------------------|---------------|--|
| <b>IM-6:</b> Acquire portable noise meters to monitor the implementation and effectiveness of the Noise Compatibility Program (NCP), including recommended noise abatement operational procedures, and to carry out other noise compatibility projects including recommended residential and school/church sound insulation measures. This is a new measure and has no relationship to previous Part 150 approvals. Portable noise meters would allow the Kenton County Airport Board (KCAB) to monitor noise levels in communities around the airport. Community input would be considered for the placement of the meters and the development of the community noise monitoring program. They also would be used to implement the residential and school/church sound insulation program measures to determine eligibility and selection of dwelling units or other structures for sound insulation. | N/A               | N/A                         | N/A                       | N/A           | N/A - The portable noise monitoring system was acquired by KCAB in 2002. |
| <b>IM-7:</b> Develop a community outreach website  | KCAB              | \$100,000 plus \$5,000/year | N/A                       | N/A           | Immediately  |

**Note:** The designation in *italics* is a cross reference to the alternatives that were evaluated; all of the alternatives are presented in Appendix F, *Noise Abatement Alternatives*. Measures with no alternative reference in italics are previously approved measures being continued in this NCP, measures that are complete, or measures that have expired. More detailed information about these measures can be found in Appendix G, *Land Use Management Alternatives*, and Appendix H, *Implementation*

**Table 4-1 Footnote 1:** The approximate cost to retrofit existing aircraft with the appropriate ANAV equipment is \$100,000 per aircraft. The decision to retrofit existing aircraft would be a system wide business decision for each individual airline and, therefore, is not assignable to these recommended NCP measures.

**Table 4-1, Continued**  
**NOISE COMPATIBILITY PROGRAM RECOMMENDATIONS**  
**Cincinnati/Northern Kentucky International Airport**

**Table 4-1 Footnote 2:** This procedure is currently implemented and ANAV is a refinement that is subject to FAA approval.

**Table 4-1 Footnote 3:** As of October 2006, no additional schools or churches met the eligibility criteria for sound insulation; however, the KCAB will continue to monitor and conduct eligibility testing based upon future significant changes in airport operations.

**Acronyms used in Table 4-1:**

- ANAV - Advanced Navigation
- ARTS - Automated Radar Terminal System
- ATCT - Air Traffic Control Tower
- CVG - Cincinnati/Northern Kentucky International Airport
- dB - decibels
- DME - Distance Measuring Equipment
- DNL - Day/Night Average Sound Level
- FAA - Federal Aviation Administration
- KCAB - Kenton County Airport Board
- MSL - Mean Sea Level
- n.m. - nautical miles
- NCP - Noise Compatibility Program
- NEM - Noise Exposure Measurement
- NRL - Noise Level Reduction
- ROA - Record of Approval
- VOR - Very High Frequency Omnidirectional Range

Source: Landrum & Brown, 2006.

MEASURE: OP-1

EXHIBIT: N/A

**Description:** Extend Runway 18R/36L by 1,500 feet to the north.

**Relationship to 1999 NCP:** This measure was approved in the 1992 Supplemental Part 150 Study.

**2006 NCP Action:** *Measure OP-1 was completed in 1996. No further FAA action is required.*

**Background and Intent:** This measure was intended to provide noise reduction south of the airport by extending Runway 18R/36L 1,500 feet to the north. This measure has been completed.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-2**

**EXHIBIT: 4-1**

**Description:** Turbojet aircraft (over 70,000 pounds) departing Runway 18L fly runway heading until 1.5 Distance Measuring Equipment (DME) south of the localizer, then turn left to a 165-degree heading and climb on course; or fly advanced navigation technology (ANAV) departure procedure directing aircraft over the Interstate-71/75 corridor for four nautical miles (n.m.) from the runway end.

**Relationship to 1999 NCP:** Measure OP-2 was approved in the 1992 Supplemental Part 150 Study and modified in the 1999 NCP.

**2006 NCP Action:** *Measure OP-2 is to be continued.*

**Background and Intent:** The intent of the originally approved measure was to route turbojet aircraft over 70,000 pounds onto a flight path that overflies the Interstate-71/75 corridor adjacent to Florence Mall. The original measure from the 1992 Supplemental Part 150 Study recommended an initial turn point at 1.7 DME south of the localizer and continued the aircraft on that heading until four n.m. from the runway end. After flight testing of the procedure was conducted, the turn point was relocated to 1.5 DME south of the localizer to better accomplish the goal of routing aircraft over compatible areas.

This measure has been very effective in reducing aircraft noise impacts south of the airport. In an effort to further increase the accuracy of aircraft flying the intended flight path, an ANAV departure procedure was added to this measure to more accurately direct aircraft over the same flight path. This departure procedure would only be flown by aircraft that are equipped with the necessary technology. Exhibit 4-1 shows the anticipated flight corridors for both ANAV-equipped aircraft and non-ANAV equipped aircraft along with the proposed ANAV "waypoints."<sup>4</sup>

**Status:** The measure as previously approved has been implemented.

**Land Use Compatibility Improvement:** This measure, as modified, reduces aircraft noise impacts south of the airport. With the implementation of an ANAV departure procedure, the dispersion of aircraft overflights over incompatible land uses has been reduced.

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

<sup>4</sup> For the purposes of this Part 150 Study Update, a waypoint is defined as the point defined by the latitude and longitude coordinates representing the location to which aircraft fly. A series of waypoints can be used to define a continuous flight path by instructing the aircraft to fly from waypoint to waypoint.

**MEASURE: OP-3**

**EXHIBIT: 4-1**

**Description:** Turbojet aircraft (over 70,000 pounds) departing Runway 18C (formerly 18R) fly runway heading; or fly an Advanced Navigation (ANAV) departure procedure directing aircraft to a turn point approximately four nautical miles (n.m.) from the runway end.

**Relationship to 1999 NCP:** Measure OP-3 was originally approved in the 1992 Supplemental Part 150 Study and modified in the 1999 NCP.

**2006 NCP Action:** *Measure OP-3 is to be continued.*

**Background and Intent:** The intent of the originally approved measure was to route turbojet aircraft over 70,000 pounds onto a flight path that maintains runway heading until reaching four n.m. from the runway end or 5,000 feet Mean Sea Level (MSL). This procedure creates a more predictable noise pattern over areas south of the airport and directs aircraft on the historical flight path.

This measure has been effective in reducing overflights and aircraft noise impacts south of the airport. In an effort to increase the accuracy of aircraft flight paths, an ANAV departure procedure to more accurately direct aircraft over the intended flight path is being recommended for those aircraft equipped with the necessary technology. Exhibit 4-1 shows the anticipated flight corridors for both ANAV equipped aircraft and non-ANAV equipped aircraft along with the proposed ANAV "waypoints."<sup>5</sup>

**Status:** The measure, with the exception of the ANAV overlay has been implemented.

**Land Use Compatibility Improvement:** Reduces overflights and noise impacts south of the airport. With the implementation of an ANAV departure procedure, the dispersion of overflights over incompatible land uses has been reduced.

**Responsible Implementing Parties:** CVG FAA Air Traffic Control Tower, Airlines, Kenton County Airport Board.

<sup>5</sup> For the purposes of this Part 150 Study Update, a waypoint is defined as the point defined by the latitude and longitude coordinates representing the location to which aircraft fly. A series of waypoints can be used to define a continuous flight path by instructing the aircraft to fly from waypoint to waypoint.

Measure: OP-3  
Continued

Exhibit: 4-1

**Implementation Steps, Costs, and Schedule:**

**Steps:** This measure was previously approved; however, the ANAV overlay portion of the measure has not been fully implemented. The CVG Tower Order would be modified and ANAV departure procedures would be developed and coordinated through FAA Flight Procedures. (Note: This recommended noise abatement procedure would not need to be environmentally assessed because no change would be made to the existing flight track. The implementation of an ANAV procedure would refine the departure path established by the existing Standard Instrument Departure procedure.)

**Costs:** The costs would accrue to the airlines to appropriately equip aircraft with the necessary ANAV technology. New aircraft purchased by the airlines include ANAV technology as part of the standard navigation equipment. Retrofitting an existing aircraft with ANAV equipment would cost approximately \$100,000 per aircraft. The decision to retrofit existing aircraft would be a system wide business decision for each individual airline and, therefore, is not assignable to this measure.

**Schedule:** This measure could be implemented at any time as it has already been approved.

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-4**

**EXHIBIT: N/A**

**Description:** Continue night noise policy and implement contra-flow arrival and departure procedure on west side of the airport.

**Relationship to 1999 NCP:** Measure OP-4 was originally approved in the 1992 Supplemental Part 150 Study with both a Near-Term and Long-Term component. The above description pertains to the Long-Term component of the measure.

**2006 NCP Action:** *Measure OP-4 is to be continued.*

**Background and Intent:** This measure continues the night noise policies of the airport to direct arrivals and departures to the west of the airport. The night noise policies have been effective in reducing impacts on all other sides of the airport.

**Status:** N/A

**Land Use Compatibility Improvement:** This measure directs nighttime aircraft noise impacts over the most compatible area around the airport — west of the airport off Runway 9/27.

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** This measure works in coordination with other recommended operational measures (OP-17, OP-18, and OP-19) to define the nighttime noise program.

**MEASURE: OP-5**

**EXHIBIT: 4-1**

**Description:** Turbojet aircraft (over 70,000 pounds) departing Runway 27 fly runway heading; or fly an Advanced Navigation (ANAV) departure procedure directing aircraft to a turn point approximately four nautical miles (n.m.) from the runway end.

**Relationship to 1999 NCP:** Measure OP-5 was originally approved in the 1992 Supplemental Part 150 Study and modified in the 1999 NCP.

**2006 NCP Action:** *Measure OP-5 is to be continued.*

**Background and Intent:** The intent of the original measure was to route turbojet aircraft over 70,000 pounds onto a flight path that maintains runway heading until reaching four n.m. from the runway end or 5,000 feet mean sea level (MSL). This creates a more predictable noise pattern over the area west of the airport and minimizes the overflight of populated areas.

This measure has been effective in reducing overflights and aircraft noise impacts west of the airport; therefore, it is being recommended for continuation in this Part 150 Study. In an effort to increase the accuracy of aircraft, an ANAV departure procedure which directs aircraft over the intended flight path is being recommended for those aircraft equipped with the necessary technology. Exhibit 4-1 shows the anticipated flight corridors for both ANAV equipped aircraft and non-ANAV equipped aircraft, along with the proposed ANAV "waypoints."<sup>6</sup>

**Status:** The measure, with the exception of the ANAV overlay has been implemented.

**Land Use Compatibility Improvement:** This measure has reduced overflights and aircraft noise impacts west of the airport. With the implementation of an ANAV departure procedure, the dispersion of overflights has been reduced.

**Responsible Implementing Parties:** CVG FAA Air Traffic Control Tower, Airlines, Kenton County Airport Board.

**Implementation Steps, Costs, and Schedule:**

**Steps:** This measure was previously approved; however, the ANAV overlay portion of the measure has not been fully implemented. The CVG Tower Order would be modified and ANAV departure procedures would be developed and coordinated through FAA Flight Procedures. (Note: This recommended noise abatement procedure would not need to be environmentally assessed because no change would be made to the existing flight track. The implementation of an ANAV procedure would refine the departure path established by the existing Standard Instrument Departure procedure.)

<sup>6</sup> For the purposes of this Part 150 Study Update, a waypoint is defined as the point defined by the latitude and longitude coordinates representing the location to which aircraft fly. A series of waypoints can be used to define a continuous flight path by instructing the aircraft to fly from waypoint to waypoint.

Measure: OP-5  
*Continued*

Exhibit: 4-1

**Implementation Steps, Costs, and Schedule, *continued***

**Costs:** The costs would accrue to the airlines to appropriately equip aircraft with the necessary ANAV technology. New aircraft purchased by the airlines include ANAV technology as part of the standard navigation equipment. Retrofitting an existing aircraft with ANAV equipment would cost approximately \$100,000 per aircraft. The decision to retrofit existing aircraft would be a system wide business decision for each individual airline and, therefore, is not assignable to this measure.

**Schedule:** This measure could be implemented at any time as it has already been approved.

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-6**

**EXHIBIT: 4-1**

**Description:** Turbojet aircraft (over 70,000 pounds) departing Runway 36C (formerly 36L) overfly the Ohio River by turning left after reaching 0.5 miles beyond the localizer (ICVG) to a 330-degree heading; or fly an Advanced Navigation (ANAV) departure procedure directing aircraft over the Ohio River for four nautical miles (n.m.) from the runway end.

**Relationship to 1999 NCP:** Measure OP-6 was originally approved in the 1992 Supplemental Part 150 Study and continued in the 1999 NCP.

**2006 NCP Action:** *Measure OP-6 is to be continued.*

**Background and Intent:** The intent of the original measure was to route turbojet aircraft over 70,000 pounds onto a flight path that overflies the Ohio River corridor. The original measure from the 1992 Supplemental Part 150 Study directed aircraft to turn at the Middle Marker to a 325-degree heading, but was later modified due to problems with establishing the correct turn point.

Properly implemented, this measure would reduce aircraft noise impacts to the densely populated areas directly north of the airport, and therefore is being recommended for continuation in this Part 150 Study. In an effort to increase the accuracy of aircraft, an ANAV departure procedure that directs aircraft over the intended flight path is being recommended for those aircraft equipped with the necessary technology. Exhibit 4-1 shows the anticipated flight corridors for both ANAV equipped aircraft and non-ANAV equipped aircraft, along with the proposed ANAV "waypoints."<sup>7</sup>

**Status:** The measure as previously approved has been implemented.

**Land Use Compatibility Improvement:** This measure would reduce overflights and aircraft noise impacts north of the airport. With the implementation of an ANAV departure procedure, the dispersion of overflights would be reduced.

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

<sup>7</sup> For the purposes of this Part 150 Study Update, a waypoint is defined as the point defined by the latitude and longitude coordinates representing the location to which aircraft fly. A series of waypoints can be used to define a continuous flight path by instructing the aircraft to fly from waypoint to waypoint.

**MEASURE: OP-7**

**EXHIBIT: N/A**

**Description:** Continue, to the extent practicable, the use of Runway 27 for daytime departures.

**Relationship to 1999 NCP:** Measure OP-7 was originally approved in the 1992 Supplemental Part 150 Study and was modified in the 1999 NCP to remove specified percentages and use of Land and Hold Short (LAHSO) citations on Runway 18C.

**2006 NCP Action:** *Measure OP-7 is to be continued.*

**Background and Intent:** This is a continuation of approved long-term Measure OP-7, which strived to maintain mid-1992 Runway 27 daytime departure use percentages through pursuit of LAHSO on Runway 18R. The modifications to this measure removed the specific time period and the use of LAHSO on Runway 18R. These citations were no longer valid for the current operating conditions at the airport; however, the objective of directing daytime departures to the west remains a natural and effective means of noise abatement.

Removing the mid-1992 citation was necessary since the current operating conditions at the airport allow for a much higher utilization of Runway 27 for daytime departures than had been anticipated. Mid-1992 utilization of Runway 27 for daytime departures was 28 percent versus the current utilization of Runway 27 by 45 percent of the daytime departures. This higher utilization has been accomplished without the use of the LAHSO that was stopped due to safety concerns by the Air Lines Pilots Association (ALPA).

**Status:** N/A

**Land Use Compatibility Improvement:** The use of Runway 27 for daytime departures directs aircraft over the most compatible corridor, which is located on the west side of the airport.

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-8**

**EXHIBIT: 4-1**

**Description:** Increase noise abatement departure routes to four nautical miles (n.m.) from runway overflight end or 5,000 feet Mean Sea Level (MSL); develop an Advanced Navigation (ANAV) departure procedure, which directs aircraft to a turn point approximately four nautical miles (n.m.) from the runway end.

**Relationship to 1999 NCP:** Measure OP-8 was originally approved in the 1992 Supplemental Part 150 Study and modified in the 1999 NCP.

**2006 NCP Action:** *Measure OP-8 is to be continued.*

**Background and Intent:** The intent of the original measure was to maintain aircraft on runway heading until reaching four n.m. from the runway end or 5,000 feet mean sea level (MSL). This creates a more predictable noise pattern over the residential areas and reduces the dispersion of overflight corridors.

This measure has been effective in reducing overflights and aircraft noise impacts around the airport, and therefore is being recommended for continuation in this 2006 Part 150 Update. In an effort to increase the accuracy of aircraft flying the departure path, an ANAV departure procedure, which directs aircraft over the intended flight path, is being recommended for those aircraft equipped with the necessary technology. Exhibit 4-1 shows the anticipated flight corridors for both ANAV equipped aircraft and non-ANAV equipped aircraft for Runways 9, 27, 18L, and 36R.

**Status:** The measure, with the exception of the ANAV overlay has been implemented.

**Land Use Compatibility Improvement:** This measure reduces aircraft noise impacts by restricting the point at which aircraft can turn on course. With the implementation of an ANAV departure procedure, the dispersion of overflights has been reduced.

**Responsible Implementing Parties:** CVG FAA Air Traffic Control Tower, Airlines, Kenton County Airport Board.

**Implementation Steps, Costs, and Schedule:**

**Steps:** This measure was previously approved; however, the ANAV overlay portion of the measure has not been fully implemented. The CVG Tower Order would be modified and ANAV departure procedures would be developed and coordinated through FAA Flight Procedures. (Note: This recommended noise abatement procedure would not need to be environmentally assessed because no change would be made to the existing flight track. The implementation of an ANAV procedure would refine the departure path established by the existing Standard Instrument Departure procedure.)

**Costs:** The costs would accrue to the airlines to appropriately equip aircraft with the necessary ANAV technology. New aircraft purchased by the airlines include ANAV technology as part of the standard navigation equipment. Retrofitting an existing aircraft with ANAV equipment would cost approximately \$100,000 per aircraft. The decision to retrofit existing aircraft would be a system wide business decision for each individual airline and, therefore, is not assignable to this measure.

**Schedule:** This measure could be implemented at any time as it has already been approved.

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-9**

**EXHIBIT: N/A**

**Description:** Withdraw previously approved measure to implement near-term nighttime turbojet (over 70,000 pounds) departure runway priorities – Runway 27, Runway 36L, Runway 18R, and Runway 9.

**Relationship to 1999 NCP:** Measure OP-9 was originally approved in the 1992 Supplemental Part 150 Study. Measure OP-9 was withdrawn in the 1999 Part 150 Study.

**2006 NCP Action:** *Measure OP-9 was previously withdrawn. No FAA action is required.*

**Background and Intent:** The original intent of this measure was to provide a nighttime departure runway use program during the construction of the extensions to Runways 18R/36L and 9/27. The extension to the west end of Runway 9/27 would have made it less desirable to use Runway 9 for arrivals. Therefore, this measure was intended to be used only during the extension construction period. However, the construction of the runway extensions occurred without significant interruption to the arrival capabilities of the runway and never created the need for this measure. Therefore, this measure was recommended for withdrawal in the 1999 Part 150 Study Update.

**Status:** Not implemented.

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-10**

**EXHIBIT: N/A**

**Description:** Withdraw nighttime turbojet (over 70,000 pounds) arrival runway priorities Runway 9, 27, 36L, and 18R.

**Relationship to 1999 NCP:** Measure OP-10 was originally approved in the 1992 Supplemental Part 150 Study and continued in the 1999 NCP.

**2006 NCP Action:** *Measure OP-10 is being withdrawn.*

**Background and Intent:** The intent of the nighttime step-down procedures developed under the 1992 Supplemental Part 150 Study was to direct nighttime arrival and departure traffic over the corridor west of the airport. The arrival procedures have been very successful in directing up to 77 percent of the night arrivals to the west. However, as operating levels have increased during the nighttime hours (in particular between 10:00 p.m. and Midnight) the ability of the CVG FAA Air Traffic Control Tower (ATCT) to accommodate demand with the "single runway" step-down procedures has been greatly reduced. So much so, that in 2003 the FAA ATCT at CVG began testing new nighttime procedures to increase efficiency and safety during the nighttime hours.

Recommended measures OP-17, OP-18, and OP-19 would replace Measures OP-10/11 as the new nighttime runway use program.

**Status:** N/A

**Land Use Compatibility Improvement:** This measure directs aircraft over the most compatible flight corridor, which is located on the west side of the airport off Runway 9/27. However, the inability of the ATCT to fully implement the procedures has led to an increased use of the north/south runways during nighttime hours.

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-11**

**EXHIBIT: N/A**

**Description:** Withdraw longer-term nighttime turbojet (over 70,000 pounds) departure runway priorities Runways 27, 36L, 9, and 18R.

**Relationship to 1999 NCP:** Approved long-term Measure OP-11 of the 1992 Supplemental Part 150 Study and was continued in the 1999 Part 150 Study Update.

**2006 NCP Action:** *Measure OP-11 is being withdrawn.*

**Background and Intent:** The intent of the nighttime step-down procedures developed under the 1992 Supplemental Part 150 Study was to direct nighttime arrival and departure traffic over the corridor west of the airport. The departure procedures have been very successful in directing up to 85 percent of the night departures to the west. However, as operating levels have increased during the nighttime hours (in particular between 10:00 p.m. and Midnight) the ability of the CVG FAA ATCT to accommodate demand with the "single runway" step-down procedures has been greatly reduced. So much so, that in 2003 the FAA ATCT at CVG began testing new nighttime procedures to increase operational efficiency and safety during nighttime hours.

Recommended measures OP-17, OP-18, and OP-19 would replace Measures OP-10/11 as the new nighttime runway use program.

**Status:** N/A

**Land Use Compatibility Improvement:** This measure directs aircraft over the most compatible corridor, which is located on the west side of the airport off Runway 9/27. However, the inability of the ATCT to fully implement the procedures has led to an increased use of the north/south runways during nighttime hours.

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-12**

**EXHIBIT: N/A**

**Description:** Extend Runway 9/27 to the west by 2,200 feet.

**Relationship to 1999 NCP:** Measure OP-12 was approved in the 1992 Supplemental Part 150 Study and was completed in 1996. No further FAA action was required in 1999.

**2006 NCP Action:** *Measure OP-12 is complete. No further FAA action is required.*

**Background and Intent:** The extension of Runway 9/27 by 2,200 feet has been completed and allows it to be used by more aircraft, thereby reducing the noise impact north and south of the airport.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-13**

**EXHIBIT: N/A**

**Description:** Withdraw previously approved measure to implement near-term nighttime arrival runway priorities - Runway 27, Runway 9, Runway 36L, and Runway 18R.

**Relationship to 1999 NCP:** Measure OP-13 was approved in the 1992 Supplemental Part 150 Study. Measure OP-13 was withdrawn in the 1999 Part 150 Study.

**2006 NCP Action:** *Measure OP-13 was previously withdrawn. No FAA action is required.*

**Background and Intent:** The original intent of this measure was to provide a nighttime arrival runway use only during the period of construction of the extension of Runway 9/27. The 2,200-foot extension of the west end of the runway, completed, in 1996, made it less desirable to use Runway 9 for arrivals. Construction of the runway extension occurred without significant interruption to the arrival capabilities of the runway and never created the need for this measure to be implemented. Therefore, this measure was recommended for withdrawal in the 1999 Part 150 Study Update.

**Status:** Not implemented.

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-14**

**EXHIBIT: 4-1**

**Description:** Define and utilize Advanced Navigation (ANAV) flight procedures to increase the accuracy of aircraft flying noise abatement flight corridors.

**Relationship to 1999 NCP:** Measure OP-14 was a new measure recommended in the 1999 Part 150 Study for the modification and enhancement of existing and proposed noise abatement flight procedures.

**2006 NCP Action:** *Measure OP-14 is being continued with a modification to the request for ground equipment.*

**Background and Intent:** This measure articulates the policy of the KCAB to utilize the best and most appropriate navigation technology available to assist aircraft in following defined noise abatement flight tracks. This is intended to be a continuous process of improvement as ANAV technology is improved and as the aircraft flying at the airport continue to incorporate the advanced technology into the cockpit.

Currently, GPS/FMS (Global Positioning Satellite/Flight Management System) technology is a widely available ANAV technology. The systems work by identifying the geographic location of the aircraft in relationship to another geographic location called a "waypoint."<sup>8</sup> This provides the necessary information to guide the aircraft towards the desired "waypoint." With GPS, the pilot manually guides the aircraft towards the "waypoint," while an FMS works with the autopilot system on the aircraft to automatically fly the aircraft towards the desired "waypoint." In both cases, the use of GPS/FMS can reduce the width and size of departure corridors over standard navigation techniques, therefore reducing aircraft noise impacts. The advantage of FMS is that it can more accurately guide the aircraft towards the desired point than can the GPS/pilot system. The original measure recommended the use of a Differential GPS (DGPS) ground station, located near or on the airfield to further increase the precision of all the ANAV procedures.

The estimated cost of the DGPS was \$1,000,000. After the Record of approval was issued, the FAA determined that the cost of the DGPS was not eligible for Federal funding. Therefore, the portion of the measure recommending the purchase and installation of a DGPS is being withdrawn.

Currently, it is estimated that 98 percent of Delta's fleet (not including regional jets) is equipped with ANAV technology in the form of FMS. These aircraft include the 737-300/800, 757-200, 767-300, 777, and MD88. It is anticipated that the number of ANAV equipped aircraft will continue to increase as newer aircraft are brought on-line and as older aircraft are re-equipped.

Conservative estimates indicate that ANAV equipped aircraft can operate within a corridor that is half as wide as existing flight corridors. The implementation of ANAV procedures does not increase the accuracy of non-ANAV equipped aircraft, but as stated previously, the number of non-ANAV equipped aircraft is expected to decrease over time.

<sup>8</sup> For the purposes of this Part 150 Study Update, a waypoint is defined as the point defined by the latitude and longitude coordinates representing the location to which aircraft fly. A series of waypoints can be used to define a continuous flight path by instructing the aircraft to fly from waypoint to waypoint.

Measure: OP-14  
Continued

Exhibit: 4-1

**Background and Intent (Continued):** It was recommended that ANAV arrival and departure procedures from all runway ends be defined and utilized by all turbojet aircraft (over 70,000 pounds and under 70,000 pounds) equipped with the necessary ANAV technology. Recommended Measures OP-2, OP-3, OP-5, OP-6, OP-8, and OP-16 provide the description of the "waypoints" to be used for these procedures. Furthermore, the use of ANAV technology to implement approach/departure procedures to maintain compatible noise abatement corridors, such as the Interstate-71/75 corridor off Runway 36R, should continue to be investigated for the purposes of implementation.

**Status:** The measure as previously approved has been implemented.

**Land Use Compatibility Improvement:** Increased accuracy on turns and decreased width of flight corridors will reduce overflights of incompatible land uses.

**Responsible Implementing Parties:** FAA Air Traffic Control Tower, Airlines, Kenton County Airport Board.

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** All of the noise abatement flight procedures would be redefined to take advantage of Advanced Navigation technology. Because Advanced Navigation technology takes advantage of the latest equipment, there may be the need to make periodic adjustments in order to accomplish the goal of flying the intended corridors.

**MEASURE: OP-15**

**N/A**

**Description:** Withdraw the proposed implementation of nighttime engine maintenance run-up procedures defining central locations and orientations of the aircraft.

**Relationship to 1999 NCP:** Measure OP-15 was a new measure proposed in the 1999 NCP. In a letter dated November 22, 2000, the airport operator withdrew this measure from the NCP pending further evaluation of potential run-up areas that would address FAA concerns to reduce or eliminate aircraft crossing active runways.

**2006 NCP Action:** *Measure OP-15 has been withdrawn. No further FAA action is required.*

**Background and Intent:**

Engine maintenance run-ups have historically not been a major concern for the community surrounding the airport. The 1999 NCP recommended nighttime engine maintenance run-up procedures defining central locations and orientations of the aircraft, due to growth of on-airport maintenance and cargo facilities, as well as continued growth in aircraft operations. The airport sponsor withdrew the measure.

**Status:** This measure has not been implemented.

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: OP-16**

**EXHIBIT: 4-2**

**Description:** Turbojet aircraft (over 70,000 pounds) departing Runway 36L (formerly 35) turn left at 4.2 Distance Measuring Equipment (DME) from the CVG Very High Frequency Omnidirectional Range (VOR), to a 325-degree heading to overfly the Ohio River; or fly an Advanced Navigation (ANAV) departure procedure directing aircraft over the Ohio River for four nautical miles (n.m.).

**Relationship to 1999 NCP:** Measure OP-16 was a new measure recommended in the 1999 NCP.

**2006 NCP Action:** *The FAA action taken on Measure OP-16 as stated in the FAA's 1999 Record of Approval.<sup>9</sup> Subject to implementation of the 3rd parallel runway in the EIS. FAA deferred action of proposed departure procedures until the EIS was completed. The EIS has been completed and the FAA issued a Record of Decision on December 19, 2001, approving the implementation of this measure. No further Part 150 action is required.*

**Background and Intent:** The intent of this measure is to direct departing turbojet aircraft over 70,000 pounds onto a flight path that overflies the Ohio River four n.m. Non-ANAV equipped aircraft would turn left at 4.2 DME from the CVG VOR to a 325-degree heading. For aircraft equipped with ANAV technology, a procedure is established using "waypoints"<sup>10</sup> to direct the aircraft over the intended corridor. Exhibit 4-1 shows the anticipated flight corridors for both ANAV equipped aircraft and non-ANAV equipped aircraft. In addition, the proposed ANAV "waypoints" are shown on Exhibit 4-1.

This measure would direct departing aircraft from Runway 36L (formerly 35) to follow a similar noise abatement corridor currently used by departures from Runway 36C (formerly Runway 36L). The use of the same corridor would necessitate that the departures from Runways 36C and 36L be coordinated. A staggering of the departures would be necessary to maintain minimum separation of aircraft for safety. It is anticipated that there would be very few departures using Runway 36L, so the overall impact of coordinated departures on the operation of the airport is not expected to be that great.

**Status:** N/A

**Land Use Compatibility Improvement:** The benefits would be limited because of the small number of departing aircraft that are anticipated for Runway 36L. However, those departures that do occur would fly over mostly compatible land. With the implementation of an ANAV departure procedure, the dispersion of overflights would be reduced.

**Responsible Implementing Parties:** CVG FAA Air Traffic Control Tower, Airlines, Kenton County Airport Board.

<sup>9</sup> FAR Part 150 Noise Compatibility Study Update, Cincinnati/Northern Kentucky International Airport, 1999. FAA Record of Approval signed on December 5, 2000.

<sup>10</sup> For the purposes of this Part 150 Study Update, a waypoint is defined as the point defined by the latitude and longitude coordinates representing the location to which aircraft fly. A series of waypoints can be used to define a continuous flight path by instructing the aircraft to fly from waypoint to waypoint.

**MEASURE: OP-16**  
**CONTINUED**

**EXHIBIT: 4-2**

**Implementation Steps, Costs, and Schedule:**

**Steps:** This is an approved measure. The CVG Tower Order would be modified and ANAV departure procedures would be developed and coordinated through FAA Flight Procedures.

**Costs:** Minimal costs would accrue to the FAA for briefing air traffic controllers and for developing procedures. There would be costs to the airlines to appropriately equip aircraft with the necessary ANAV technology. New aircraft purchased by the airlines include ANAV technology as part of the standard navigation equipment. Retrofitting an existing aircraft with ANAV equipment would cost approximately \$100,000 per aircraft. The decision to retrofit existing aircraft would be a system wide business decision for each individual airline and, therefore, is not assignable to this measure.

**Schedule:** This measure was previously approved in the FAA Record of Approval issued on December 19, 2001. New Runway 18R/36L opened in December 2005; this procedure can be implemented immediately. No further Part 150 action is required.

**Effects on Other Programs/Measures:** This measure proposes a flight corridor that follows the same noise abatement corridor that Runway 36C currently uses. Departures off Runways 36L and 36C would need to be coordinated. The ANAV departure portion of this measure is an outgrowth of recommended Measure OP-14, which recommends the development of ANAV procedures to provide better accuracy on noise abatement flight paths.

**MEASURE: OP-17**

**Exhibit: N/A**

**Description:** Modify nighttime runway use program to include Runway 18L/36R.

**Relationship to 1999 NCP:** There is no relationship to the 1999 NCP; Measure OP-17 is a new measure.

**2006 NCP Action:** *Measure OP-17 is a new measure.*

**Background and Intent:** The intent of OP-17 is to minimize the impact of nighttime overflights over incompatible land uses. The currently approved nighttime runway use program results in the use of a single runway for nighttime operations.<sup>11</sup> That procedure is effective when operations are either all arrivals or all departures, which was the typical nighttime operating condition at the time the program was originally developed (1993). Over time, the operations of both the passenger airlines and the smaller cargo operators have increased during the nighttime hours. This increase in operations is a combination of arrivals and departures, particularly during the 10:00 p.m. to midnight period. In order to maintain the operational efficiency and safety of the airfield, the nighttime runway use program should be modified to provide for the use of multiple runways for nighttime operations (when and as necessary) to accommodate both arrivals and departures at the same time (mixed operations), while minimizing noise impacts.

**Measure OP-17 would continue the preference for nighttime departures on Runway 27 (to the west) and nighttime arrivals on Runway 9 (from the west).** However, during periods of operational necessity, such as wind/weather conditions, snow removal, periods of high delay, construction, or maintenance work, a series of "operating configurations" have been developed that would offer the ATCT the use of two or more runways at night. Where possible, the most compatible corridors were selected; and in the case of Runway 36R, it is anticipated that a left turn up the Ohio River (see Measure OP-19) would be developed to minimize noise impacts.

The currently approved nighttime runway utilization program includes a left turn over the river corridor from Runway 36C. By moving departures to Runway 36R (when required for operational necessity) in conjunction with the river turn (Measure OP-19), aircraft turning over the river will overfly the river corridor at higher altitudes as compared to departures from Runway 36C, thereby reducing the level of noise exposure. This recommended operating configuration would continue the KCAB policy of directing departures over the most compatible land use corridor and arrivals being accommodated as necessary. Typically, departing aircraft are louder than arriving aircraft and therefore, departures take precedence over arrivals when assigning noise abatement runway priorities. Listed below are the recommended operating configurations. Where multiple runways are listed, the first runway is the preferred (primary), with the second runway (secondary) being used only when operationally necessary. In each configuration, the intent of the measure is to maximize the use of the primary runway prior to bringing the secondary runway into service. The nighttime operating configurations are as follows:

<sup>11</sup> The Kenton County Airport Board (KCAB) defines nighttime as 10:00 p.m. to 7:00 a.m., which is consistent with the requirements for calculating DNL noise exposure. However, the KCAB recognizes that between the hours of 9:00 p.m. and 11:00 p.m., the current traffic levels make it difficult for the ATCT to efficiently accommodate the level of demand. Therefore, it is understood that the ATCT may need to continue to operate the airfield in a daytime mode between 10:00 p.m. and 11:00 p.m. KCAB has requested that when conditions require the ATCT to continue operating in a daytime mode beyond 10:00 p.m. that the ATCT begins using the established nighttime runway use program as soon as possible, and no later than 11:00 p.m.

Measure: OP-17  
 Continued

Exhibit: N/A

| Background and Intent, <i>Continued</i> |                              |   |   |
|---|------------------------------|---|---|
| DEPARTURES                              | ARRIVALS                     | REMARKS   | Primary Factors for Selecting the Operational Configuration   |
| 27-Primary                              | 9-Primary                    | Would remain the KCAB's number 1 priority for nighttime operations.   | Most preferred choice. Used for separate arrival and departure bank periods. No wind condition.   |
| 27-Primary<br>36R-Secondary             | 36R-Primary<br>36C-Secondary | Maximize the use of Runway 27 for departures and Runway 36R for arrivals. Runway 36R (for departures) and Runway 36C (for arrivals) are to be used as overflow when wind/operational conditions require the use of a second runway. | Second choice when required for operational reasons. Typically used during heavy departure bank periods with minimal arrival operations. No wind condition or a north wind condition.   |
| 27-Primary<br>18L-Secondary             | 18C-Primary                  | Maximize the use of Runway 27 for departures and Runway 18C for arrivals. Runway 18L (for departures) is to be used as overflow when wind/operational conditions require the use of a second runway.                                | Third choice when required for operational reasons. Typically used during heavy departure banks with minimal arrival operations. South wind condition. This configuration is expected to occur during the shoulder hours between 10:00 p.m. and 11:00 p.m. and 6:00 a.m. and 7:00 a.m.  |
| 36R-Primary<br>36C-Secondary            | 9-Primary<br>36R-Secondary   | Maximize the use of Runway 36R for departures and Runway 9 for arrivals. Runway 36C (for departures) and Runway 36R (for arrivals) are to be used during high arrival periods with a few departures.                                | Fourth choice when required for operational reasons. Typically used during heavy arrival banks with minimal departures. No wind condition or a north wind condition. The use of Runway 36C as a secondary choice would preclude the use of the Runway 36R noise abatement turn (OP-19). |

**Status:** N/A

**Land Use Compatibility Improvement:** This measure would increase efficiency and enhance safety by reducing intersecting runway operations during the nighttime and would continue the KCAB policy of using the most compatible land use corridor off Runway 27 west of the airport. There would be a reduction in arrival overflights along the extended centerline south of Runway 36C and north of Runway 18C. Combining Measure OP-17 with Measure OP-19 increases the altitude of aircraft over the Ohio River corridor when the second configuration is required (in comparison to the currently approved nighttime program). When implemented, Measure OP-17, in conjunction with Measure OP-19, would reduce incompatible land uses by three houses.

**Responsible Implementing Parties:** CVG FAA Air Traffic Control Tower, Kenton County Airport Board.

Measure: OP-17  
Continued

Exhibit: N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would adopt the 2006 NCP and the FAA would issue an ROA. The recommended measure would be environmentally assessed, and the Tower Order would be modified.

**Costs:** Nominal costs for modifying the ATCT Tower Order

**Schedule:** This measure could be implemented following receipt of the FAA Record of Approval and environmental processing is complete.

**Effects on Other Programs/Measures:** Measure OP-17, in conjunction with Measure OP-19, would replace the currently approved nighttime runway use program (Measures OP-10 and OP-11).

**Limitations to Implementation:** The procedures defined by this measure are designed to accommodate the current and anticipated nighttime demand through 2011 and beyond. The program is intended to maintain operations to the west of the airport as the first priority. Runways 18L/36R and 18C/36C would be used when wind/weather/operational conditions require their use. Currently, during the periods between 10:00 p.m. and midnight and again between 6:00 a.m. and 7:00 a.m., it is anticipated the parallel runways would be used due to a combination of both arrival and departure operations at those times. The program outlines a series of configurations to be used when arrivals and departures cannot be accommodated to the west of the airport on Runway 9/27. The program becomes less effective at maintaining aircraft to the west of the airport as mixed operations (both arrivals and departures at the same time) increase during the nighttime hours. The configurations defined in the program can accommodate up to approximately 100 mixed operations or 70 single mode (either all arrivals or all departures) operations in a single hour. If the demand during the nighttime exceeds these levels in a single hour then the program may need to be revised to ensure efficient use of the airfield is occurring.

**MEASURE: OP-18**

**EXHIBIT: N/A**

**Description:** Assign heavy (>255,000 lbs) aircraft departures to Runway 27 during the nighttime hours (10:00 p.m. to 7:00 a.m.).

**Relationship to 1999 NCP:** There is no relationship to the 1999 NCP; Measure OP-18 is a new measure.

**2006 NCP Action:** *Measure OP-18 is a new measure.*

**Background and Intent:** The intent of Measure OP-18 is for ATCT to assign heavy aircraft (aircraft with a gross weight over 255,000 pounds) to use Runway 27 for nighttime departures. Heavy aircraft, such as the Boeing DC-8, 747, and 767 aircraft, which currently operate at CVG, are often the loudest aircraft in the fleet mix.

Currently, Runway 27 is the longest departure runway at 12,000 feet and, as such, is generally the preferred departure runway for heavy aircraft. Additionally, Runway 27 is the primary departure runway as indicated by the currently approved nighttime runway utilization program. There are occasions when operational necessity (wind/weather conditions, snow removal, and periods of high delay, construction, or maintenance work) may warrant the use of multiple departure runways during the nighttime hours. The intent of this measure is that during times when an additional departure runway is needed, the ATCT would assign all heavy aircraft to use Runway 27. This measure would result in quieter aircraft, including regional jet and passenger jet aircraft, being assigned to the second departure runway.

**Status:** N/A

**Land Use Compatibility Improvement:** By focusing the loudest aircraft of the fleet to maintain the use of Runway 27 during times when a second departure runway is needed, the impact of nighttime overflights to the north and the south of the airport would be reduced, which is consistent with the KCAB's nighttime runway use goals.

**Responsible Implementing Parties:** CVG FAA Air Traffic Control Tower, Airlines, Kenton County Airport Board.

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would adopt the 2006 NCP and the FAA would issue a Record of Approval. The recommended measure would be environmentally assessed, and the Tower Order would be modified.

**Costs:** Nominal costs for modifying the ATCT Tower Order.

**Schedule:** This measure could be implemented following receipt of the FAA Record of Approval and environmental processing is complete.

**Effects on Other Programs/Measures:** This measure would not affect other programs or measures.

**Measure: OP-18**  
**Continued**

**Exhibit: N/A**

**Limitations to Implementation:** The procedure defined in this measure is designed to accommodate the current forecasted level of activity through 2011 and beyond. Three events may limit the implementation of this measure.

1. If operating levels by heavy aircraft exceed forecasted levels at night by more than 25 percent, this measure may need to be revised to ensure efficient operation of the airfield.
2. Wind/weather/operating conditions may make it impossible to implement this procedure at some times.
3. Pilot requests for the use of another runway, other than Runway 27, will be honored if no safety conflicts are present.

**MEASURE: OP-19**

**EXHIBIT: 4-3**

**Description:** Turbojet aircraft departing Runway 36R during the nighttime hours (10:00 p.m. to 7:00 a.m.) turn left to 330-degree heading to follow the Ohio River corridor.

**Relationship to 1999 NCP:** There is no relationship to the 1999 NCP; Measure OP-19 is a new measure.

**2006 NCP Action:** *Measure OP-19 is a new measure.*

**Background and Intent:** The intent of Measure OP-19 is to direct nighttime departures to use the Ohio River corridor by turning to an approximate 330-degree heading following take-off. The existing nighttime departure procedure for Runway 36C directs aircraft to turn left and overfly the Ohio River corridor to the west. This measure would create a similar procedure for Runway 36R. The procedure would be used in conjunction with the currently approved nighttime runway use program or the revised nighttime runway use program (recommended Measures OP-17 and OP-19) when additional departure capacity is required on multiple runways.

The Ohio River corridor left turn off of Runway 36R was tested as part of the FAA ATCT operational tests conducted in 2004. During the construction of the Runway 27 extension, Runway 36R, in conjunction with the left turn over the Ohio River, was used heavily for nighttime cargo departures. It is anticipated that the level of use of Runway 36R at night would be far less than what occurred during the testing period in the summer of 2004.

**Status:** N/A

**Land Use Compatibility Improvement:** Measure OP-19, when used in conjunction with Measure OP-17, would move nighttime departures from Runway 36C to Runway 36R during certain operational conditions and turn the departing aircraft from Runway 36R northwest to intersect the existing river corridor departure track. As compared to the existing, currently approved, turn over the Ohio River corridor from Runway 36C, this measure would allow aircraft to overfly the same corridor but at an increased altitude, which would reduce the noise exposure along the corridor. In addition, the first section of the turn from Runway 36R to the northwest would be over airport property before overflying residential areas.

**Responsible Implementing Parties:** CVG FAA Air Traffic Control Tower, Airlines, Kenton County Airport Board.

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would adopt the 2006 NCP and the FAA would issue a Record of Approval. The procedure would need to be further developed and evaluated by the FAA prior to implementation.

**Costs:** Nominal costs for modifying the ATCT Tower Order.

**Schedule:** This measure could be implemented following receipt of the FAA Record of Approval and environmental processing is complete.

**Measure: OP-19**  
**Continued**

**Exhibit: 4-3**

**Effects on Other Programs/Measures:** Measure OP-19, in conjunction with Measure OP-17, would replace the currently approved nighttime runway use program (Measures OP-10 and OP-11).

**Limitations to Implementation:** The procedure defined in this measure is designed to prevent direct overflights of the areas north of the airport in Hamilton County, Ohio during the nighttime hours. Its implementation is linked to the implementation of recommended Measure OP-17. Three events would limit the implementation of this procedure.

1. If OP-17 was not implemented, this procedure may not be implemented.
2. Wind/weather/operating conditions may make it impossible to implement this procedure at some times.
3. If operations require the use of departures from Runway 36C and 36R at the same time, this procedure would not be used because of the potential for intersecting flight routes.

**MEASURE: OP-20**

**EXHIBIT: 4-4**

**Description:** Conduct a study to evaluate the feasibility of establishing an Interstate-71/75 interstate approach to Runway 36R.

**Relationship to 1999 NCP:** There is no relationship to the 1999 NCP; Measure OP-20 is a new measure.

**2006 NCP Action:** *Measure OP-20 is a new measure.*

**Background and Intent:** Measure OP-20 recommends that the KCAB conduct a feasibility study that would evaluate the establishment of an Interstate-71/75 approach to Runway 36R, which would take advantage of the compatible land use corridor that the interstate creates. Currently, aircraft approaching Runway 36R use a standard, straight-in approach, which overflies residential areas outside of the 65 DNL noise contour. It is anticipated that this approach would initially be used only during the nighttime hours, in conjunction with the revised, recommended nighttime runway use program described in Measure OP-17.

Two options merit evaluation in a feasibility study: (1) a Charted Visual Approach (CVA), which would require at least five miles of visibility and a ceiling (altitude of clouds) height of at least 1,500 feet; and (2) defining the procedure as a Simultaneous Offset Instrument Approach (SOIA), which would require the installation of additional navigational aids on runway 18L/36R (an ILS and Glide Slope). The SOIA is a precision approach, therefore it would not reduce capacity, and would allow simultaneous approaches to Runways 36R and either 36L or 36C. As a result, a SOIA would provide more flexibility to the ATCT and could theoretically be used for both day and night operations.

**Status:** N/A

**Land Use Compatibility Improvement:** An Interstate-71/75 approach would reduce overflight noise impacts outside of the 65 DNL noise contour, while not increasing noise impacts within the 65 DNL noise contour. This approach could be implemented at night, in conjunction with Measure OP-19, to help reduce impacts associated with the runway use changes. Further, a SOIA approach could be utilized during the daytime, and would provide more accurate adherence to the arrival path than a charted visual approach, which results in no loss in capacity as a precision approach.

**Responsible Implementing Parties:** Kenton County Airport Board.

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would adopt the 2006 NCP and pursue funding to study the feasibility of implementing an interstate approach. The procedure would need to be further developed and evaluated by the FAA prior to implementation.

**Costs:** Costs of a feasibility study are expected to range from \$100,000 to \$150,000.

**Schedule:** This measure could be implemented following receipt of the FAA Record of Decision.

**Measure: OP-20**  
*Continued*

**Exhibit: 4-4**

**Effects on Other Programs/Measures:** A feasibility study for an interstate approach would not have an effect on other programs/measures.

**Limitations to Implementation:** The primary limitation to the implementation of this measure would be the availability of funding through either KCAB or FAA sources.

## MEASURE LU-1

Exhibit: 4-5

**Description:** Offer the option of a voluntary acquisition program for remaining houses in a 1,700 by 8,000-foot box off the arrival end of Runways 18L, 18C, 18R, 36L, 36C, 36R, and 27.

**Relationship to 1999 NCP:** Measure LU-1 was initiated as mitigation in the Environmental Assessment for Runway 18L/36R in the 1990 Part 150 Study. It was subsequently approved for continuation in the 1992 Supplemental Part 150 Study. In the 1999 NCP, it was approved to offer the option of a voluntary acquisition program for remaining houses in a 1,700 by 8,000-foot box off the arrival end of Runways 18L, 18C (center parallel/former Runway 18R), 36C (center parallel/former Runway 36L), 36R, and 27.

**2006 NCP Action:** *Continue to offer Measure LU-1 with modification to include Runway 18R/36L.*

**Background and Intent:** This measure continues previously approved Measure LU-1 to offer the option of a voluntary acquisition program for remaining houses in a 1,700 by 8,000-foot box off the arrival end of Runways 18L, 18C (center parallel/former Runway 18R), 36C (center parallel/former Runway 36L), 36R, and 27.

As approved in the 1990 Part 150 Study, Measure LU-1 implemented a Purchase Assurance/Sound Insulation (PA/SI) program for areas directly off of all existing runway ends to mitigate existing aircraft noise impacts. After Measure LU-1 was approved in the 1990 Part 150 Study, the KCAB implemented the purchase assurance program. Of the houses eligible for this program and put up for sale by the homeowner, no buyers made reasonable offers; therefore, no houses were sold within the 90-day marketing period. The KCAB then purchased these houses and re-marketed them for an additional 90 days. Again, no buyers made reasonable offers and no houses were sold. The KCAB did not want to own and maintain these vacant houses nor was it reasonable to allow vacant houses to remain in the neighborhood. The residential character of this area was not going to be preserved. Therefore, the KCAB changed the mitigation program in this area to a voluntary acquisition program. This measure was continued as an approved measure in the 1992 Supplemental Part 150 Study and the 1999 FAR Part 150 Study Update.

In the 1999 Part 150 Measure LU-1 was approved with the modification to offer the option of a voluntary acquisition program for remaining houses in a 1,700 by 8,000-foot box off the arrival end of Runways 18L, 36R, and 27. Also included in the modification of Measure LU-1 was the placement of the 1,700 by 8,000-foot box at the end of 18C (center parallel/former Runway 18R) and 36C (center parallel/former Runway 36L), which was extended 1,500 feet to the north. No additional houses, however, were in this extended area.

This measure was re-evaluated to include the arrival end of Runway 18R to maintain consistency with the currently approved Measure LU-1 mitigation program, the continuation of approved EIS mitigation commitments, and future land use compatibility. Since 1990, KCAB has used the 1,700 x 8,000 foot box off the arrival end of Runways 18L, 36R, and 27 (originally developed as mitigation in an Environmental Assessment<sup>12</sup>) to successfully remove and prevent non-compatible land uses off the ends of the runways. Including the arrival end of Runway 18R in Measure LU-1 maintains consistency and equity in the application of this program.

<sup>12</sup> Environmental Assessment for Construction of Runway 18L/36R at Greater Cincinnati Airport, May 1988

Measure LU-1  
Continued

Exhibit: 4-5

**Background and Intent (continued):** The 2001 Final FAA Environmental Impact Statement (FEIS) for the construction of Runway 18R/36L (identified as Runway 17/35 in the FEIS) included voluntary acquisition as mitigation in a 1,700 x 8,000-foot box off of the arrival end of Runway 18R. Participation in this voluntary mitigation program was extended to property owners through December 31, 2006. Modifying Measures LU-1 to include Runway 18R continues the KCAB's mitigation commitments and applies them consistently to all existing runways. Ten eligible properties are located within the 1,700 x 8,000 boxes off of all runway ends, including four within the box north of Runway 18R/36L.

**Status:** Ten houses remain within the program boundaries (including four houses off the arrival end of Runway 18R).

**Land Use Compatibility Improvement:** Assuming 100 percent participation, the implementation of this measure would reduce the number of incompatible structures around the airport by ten houses.

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB staff will coordinate the assessment and inventory of the incompatible property. The voluntary acquisition program is regulated by 49 CFR Part 24 (*Uniform Relocation Assistance and Real Property Acquisition Regulations For Federal and Federally Assisted Programs*) and FAA Order 5100.37A (*Land Acquisition and Relocation Assistance for Airport Projects*). This measure is being continued from the 1999 FAR Part 150 Study Update. Participation eligibility would be based upon the homeowner being the owner of record on or before the date of the 2006 Part 150 Study FAA Record of Approval and the house must have been built prior to October 1, 1998.

**Costs:** The estimated cost<sup>13</sup> to acquire the remaining ten houses is \$2,000,000.<sup>14</sup>

**Schedule:** This measure may be implemented following FAA approval of the NCP and is subject to FAA and KCAB funding availability.

**Effects on Other Programs/Measures:** The continuation of this measure is not expected to adversely affect any other mitigation programs or measures and it will enhance the compatibility of land uses surrounding the airport.

<sup>13</sup> The estimated program costs include, but are not limited to, the following items: appraisal, title, survey, inspection negotiations, closing costs, deed recording and transfer, property taxes, legal fees, engineering fees, demolition and removal of the structure, project management, and project administration.

<sup>14</sup> This information was provided by the Kenton County Airport Board, Noise Abatement Office (November 2006).

**MEASURE: LU-2**

**Exhibit: N/A**

**Description:** Purchase the Immaculate Heart of Mary Church and School.

**Relationship to 1999 NCP:** Measure LU-2 was completed in 1991.

**2006 NCP Action:** *Measure LU-2 was completed in 1991. No further FAA action is required.*

**Background and Intent:** The 1988 Environmental Assessment (EA) and the 1990 Part 150 Study recommended the purchase of the Immaculate Heart of Mary Church and School, at the Catholic Diocese of Covington's request. It was located on Limaburg Road, north of the centerline of Runway 9/27. This was a voluntary sale on the part of the Diocese.

**Status:** The Immaculate Heart of Mary Church and School were purchased by the KCAB on November 6, 1991 and demolished.

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE LU-3**

**Exhibit: N/A**

**Description:** Offer voluntary acquisition to remaining houses in the 1999 Noise Compatibility Program (NCP) 75 Day/Night Average Sound Level (DNL) noise contour.

**Relationship to 1999 NCP:** Measure LU-3 was initially approved in the 1990 Part 150 Study and subsequently approved for continuation in the 1992 Supplemental Part 150 Study and 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-3 is complete. No further FAA action is required.*

**Background and Intent:** Previously approved Measure LU-3 offered voluntary acquisition to houses remaining in the 75 DNL noise contour. According to the FAR Part 150 noise compatibility guidelines, (*FAA Land Use Compatibility*, Appendix A, Table 1), residential structures are not compatible land uses within the 75 DNL noise contour. The voluntary acquisition program provided homeowners with the opportunity to leave the area of high noise exposure. The KCAB implemented this measure in October 1991, and established a five-year participation period<sup>15</sup> that expired in October 1996.

Measure LU-3 provided for the voluntary acquisition of single-family houses in the 1992 (existing) and 1997 (future) 75 DNL noise contour, as shown in the 1992 Supplemental Part 150 Study. Because the program was voluntary, houses were not condemned. No incompatible existing land uses (houses) are located within the 75 DNL noise contour of the 2011 NCP; the program is considered complete.

**Status:** As of June 2004, 32 houses were acquired and removed by the KCAB under Measure LU-3. The program is complete.

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

<sup>15</sup> This participation period, established by the Kenton County Airport Board, defines the time frame in which an eligible homeowner must decide whether or not to participate in the mitigation program and sign the airport's participation agreement.

**MEASURE LU-4**

**Exhibit: 4-5**

**Description:** Offer voluntary acquisition to the two remaining houses in the Ethan's Glen subdivision and scattered houses west of the airport within the 2011 NCP 70-75 Day/Night Average Sound Level (DNL) noise contour.

**Relationship to 1999 NCP:** Measure LU-4, as approved in the 1992 Supplemental Part 150 Study, offered voluntary acquisition to houses in the western 65-75 DNL noise contours. It was modified and approved in the 1999 NCP to offer voluntary acquisition to the two remaining houses in the Ethan's Glen subdivision and houses scattered west of the airport in the 1999 NCP 70-75 DNL noise contour (a total of seven houses).

**2006 NCP Action:** *Measure LU-4 is to be continued.*

**Background and Intent:** Previously approved Measure LU-4 of the 1992 Supplemental Part 150 Study offered participation in the airport's voluntary acquisition program to houses in the Ethan's Glen subdivision and houses scattered throughout the western 65-75 DNL noise contours. The intent of the measure was to foster a change in land use from residential to nonresidential land use west of the airport, and, in particular, within the Ethan's Glen subdivision because of the long-term high levels of both nighttime and daytime aircraft noise. This concentration of noise exposure resulted from the recommended noise abatement plan, which established a nighttime noise abatement corridor to the west.

In the course of implementing this measure, KCAB staff determined that a number of eligible homeowners in the western 65-75 DNL noise contour did not want to sell their houses, and therefore declined to participate in the voluntary acquisition program. The KCAB pursued continuing the mitigation of the 70-75 DNL noise contour through a program of voluntary acquisition and change in land use. Homeowners within the 65-75 DNL noise contour would be offered participation in the sound insulation mitigation program recommended in Measure LU-12.

There are 10 houses within the 2011 NCP 70-75 DNL noise contour in addition to the one house in the Ethan's Glen subdivision, which is treated as part of this measure. Of these 11 houses, four have taken part in a previous mitigation program. The remaining seven houses are eligible for participation in the voluntary acquisition program. The KCAB determined that it is unlikely that the four previously mitigated homeowners would take part in a voluntary acquisition program; therefore, the program is extended to offer participation to the remaining seven homeowners.

**Status:** Within the western 2011 NCP 70 DNL noise contour, a total of seven unmitigated single-family houses are expected to be eligible for participation in the program: two houses are in the Ethan's Glen subdivision (one house is now in the 2011 NCP 65-70 DNL noise contour) and an estimated five are scattered in the area of Limaburg Road and Bullitsville Road.

**Land Use Compatibility Improvement:** Assuming 100 percent eligibility and participation, this measure would enhance land use compatibility by removing seven houses from the 2011 NCP 70-75 DNL noise contour.

Measure LU-4  
Continued

Exhibit: 4-5

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB staff will coordinate the assessment and inventory of the incompatible property. The acquisition program is regulated by 49 CFR Part 24 (*Uniform Relocation Assistance and Real Property Acquisition Regulations For Federal and Federally Assisted Programs*) and FAA Order 5100.37A (*Land Acquisition and Relocation Assistance for Airport Projects*). The KCAB will determine the closing date on each of the houses. The KCAB has determined that participation eligibility for this mitigation program will be based on the FAA's Mitigation Policy<sup>16</sup> which states that: Beginning October 1, 1998, the FAA will approve remedial noise mitigation measures (sound insulation, acquisition, purchase assurance, etc.) under Part 150 only for incompatible development which exists as of that date. Incompatible development that potentially may occur on or after October 1, 1998, may only be addressed in Part 150 programs with preventive noise mitigation measures (land use controls—comprehensive plan, zoning regulations, subdivision regulations, building code, etc.). Therefore, only houses with an original construction closing date on or before October 1, 1998 would be eligible for mitigation under the 1999 NCP. The FAA Mitigation Policy does not apply to houses newly impacted by the 65 DNL noise contour.

This measure is being continued from the 1992 Supplemental Part 150 Study and the 1999 FAR Part 150 Study Update. Participation eligibility would be based upon the homeowner being the owner of record on or before the date of the FAA Record of Approval on the 2006 Part 150 Study.

**Costs:** The estimated cost<sup>17</sup> to acquire the residences potentially eligible for this program is \$1,400,000.

**Schedule:** This measure may be implemented following FAA approval of the NCP and subject to FAA and KCAB funding availability.

**Effects on Other Programs/Measures:** The implementation of this measure as modified is not expected to adversely affect any other mitigation programs or measures.

<sup>16</sup> The FAA's Mitigation Policy was published as a final notice on March 27, 1998, and became effective as FAA policy on October 1, 1998. Source: Department of Transportation, Federal Aviation Administration, 14 CFR Part 150, [Docket No. 28149], Final Policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects. ACTION: Notice of Final Policy. Issued in Washington, DC, on March 27, 1998, John R. Hancock, Acting Assistant Administrator for Policy, Planning, and International Aviation.

<sup>17</sup> The estimated program costs include, but are not limited to, the following items: appraisal, title, survey, inspection negotiations, closing costs, deed recording and transfer, property taxes, legal fees, engineering fees, demolition and removal of the structure, project management, and project administration.

**MEASURE LU-5**

**Exhibit: 4-5**

**Description:** Offer voluntary acquisition for the remaining houses and undeveloped lots in the Rolling Green Acres subdivision and the remaining houses in the vicinity of O'Hara Road and Turfway Road.

**Relationship to 1999 NCP:** Measure LU-5 was initially approved in the 1990 Part 150 Study and subsequently approved for continuation in the 1992 Supplemental Part 150 Study and the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-5 is to be modified and continued.*

**Background and Intent:** Previously approved Measure LU-5 offered voluntary acquisition for houses and undeveloped lots in the Rolling Green Acres subdivision and the houses in the vicinity of O'Hara Road and Turfway Road. The 1987 EA for Construction of Runway 18L/36R<sup>18</sup> recommended that the 1990 Part 150 Study include a land use mitigation measure to address the houses in the entire Rolling Green Acres subdivision, located east of and adjacent to the airport, north of the centerline of Runway 9/27. The 1992 Supplemental Part 150 Study recommended the acquisition of all existing houses and undeveloped lots<sup>19</sup> in the Rolling Green Acres subdivision, as well as the acquisition of existing houses in the vicinity of O'Hara Road and Turfway Road, located east of and adjacent to the airport, south of the centerline of Runway 9/27.

The intent of this measure is to continue the voluntary acquisition program as previously approved in the 1990 Part 150 Study, the 1992 Supplemental Part 150 Study, and the 1999 Part 150 Study Update to remove all noise-sensitive land uses from this area.

**Status:** A total of 31 houses and 125 undeveloped lots in the Rolling Green Acres subdivision and in the vicinity of O'Hara Road and Turfway Road were eligible to participate in the 1999 NCP program. Since 1999, the owners of 19 houses and 74 lots chose to participate in the program. Currently there are four houses and 51 undeveloped residential lots in Rolling Green Acres and eight houses in the vicinity of O'Hara Road and Turfway Road that will continue to be eligible for participation in the program as shown in the chart below.

| <b>Unmitigated Land<br/>Uses<br/>in 1999</b> | <b>Unmitigated Land<br/>Uses<br/>in 2006</b> | <b>Location</b>                |
|--|--|--------------------------------|
| 18 houses                                    | 4 houses                                     | Rolling Green Acres            |
| <u>13 houses</u>                             | <u>8 houses</u>                              | <u>O'Hara and Turfway Road</u> |
| <b>31 houses</b>                             | <b>12 houses</b>                             | TOTAL                          |
| <b>125 undeveloped lots</b>                  | <b>51 undeveloped lots</b>                   | Rolling Green Acres            |

**Land Use Compatibility Improvement:** Assuming 100 percent participation, the implementation of this measure would reduce the number of incompatible structures by approximately 12 houses and 51 undeveloped residential lots.

<sup>18</sup> Greater Cincinnati International Airport Environmental Assessment for Construction of Runway 18L/36R, Aviation Planning Associates, Inc., December 1987.

<sup>19</sup> Several of the property owners own multiple lots that could serve as yard area for a potential primary residence. As of September 2006, there were approximately 51 undeveloped residential lots on 40 parcels of land that are potentially eligible for participation in the voluntary acquisition program.

Measure LU-5  
Continued

Exhibit: 4-5

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB staff will coordinate the assessment and inventory of the incompatible property. The acquisition program is regulated by 49 CFR Part 24 (*Uniform Relocation Assistance and Real Property Acquisition Regulations For Federal and Federally Assisted Programs*) and FAA Order 5100.37A (*Land Acquisition and Relocation Assistance for Airport Projects*). This measure is being modified and continued from the 1999 FAR Part 150 Study Update. Participation eligibility would be based upon the homeowner being the owner of record on or before the date of the FAA Record of Approval on the 2006 Part 150 Study and having been built prior to October 1, 1998.

**Costs:** Assuming 100 percent eligibility and participation in the voluntary acquisition program, as continued in Measure LU-5, the total estimated cost<sup>20</sup> is \$2,400,000 for the 12 houses and \$1,020,000 for 51 residential lots for a total of \$3,420,000.

**Schedule:** This measure may be implemented following FAA approval of the NCP and subject to FAA and KCAB funding availability.

**Effects on Other Programs/Measures:** The continued implementation of this measure is not expected to adversely affect any other mitigation programs.

<sup>20</sup> The estimated program costs include, but are not limited to, the following items: appraisal, title, survey, inspection negotiations, closing costs, deed recording and transfer, property taxes, legal fees, engineering fees, demolition and removal of the structure, project management, and project administration.

Measure: LU-6

Exhibit: N/A

**Description:** Measure LU-6 as approved in the 1992 Supplemental Part 150 Study: Sound insulate the Woodspoint Nursing Home, now known as the Harborside Healthcare,<sup>21</sup> and offer participation in the purchase assurance/sound insulation program (PA/SI) to single-family homeowners in the 65 Day/Night Average Sound Level (DNL) noise contour of the Long-Term Noise Abatement Plan for 1997 (excluding area west of the airport covered in LU-4).

**Relationship to 1999 NCP:** Measure LU-6 was initially approved in the 1990 Part 150 Study and subsequently approved for continuation in the approved 1992 Supplemental Part 150 Study. No further action in the 1999 FAR Part 150 Study Update was required.

**2006 NCP Action:** *Measure LU-6 is complete. No further FAA action is required.* The sound insulation of the Woodspoint Nursing Home was completed in 1998, the PA/SI program south of the airport expired March 31, 2001, and the voluntary acquisition program northwest of the airport expired December 31, 1999.

**Background and Intent:** The implementation of Measure LU-6 was intended to mitigate the impacts of aircraft noise in the 65 DNL noise contour of the Long-Term Noise Abatement Plan for 1997 (1997 plan).

Measure LU-6, as previously approved, included three separate programs: 1) the sound insulation project of the Woodspoint Nursing Home, 2) the PA/SI program south of the airport (PA/SI South) — implemented in April, 1996/expired on March 31, 2001; and 3) the PA/SI Northwest program (Northwest Program) — implemented in December 1994/expired December 1999 (this program was changed to a voluntary acquisition program prior to implementation<sup>22</sup>).

**Status:** Woodspoint Nursing Home: The sound insulation project was completed in 1998.

PA/SI South: Approximately 540 houses were initially identified as eligible to participate in the PA/SI program. As of July 2004, 253 residential structures were resold under the purchase assurance program and 280 houses were sound insulated. Avigation easements were obtained for these 533 houses. There are seven unmitigated houses in the PA/SI South, all of which are outside the 2011 NCP 65 DNL noise contour.

Northwest Program: Approximately 12 residential structures were identified as eligible for participation in the voluntary acquisition program. As of July 2004, six of these houses have been acquired and removed. The remaining houses are outside the 2011 NCP 65 DNL noise contour.

**Land Use Compatibility Improvement:** The implementation of this measure has improved land use compatibility through the mitigation of 539 residential structures.

<sup>21</sup> In June 2005, SeniorCare LLC sold nine Kentucky long-term care facilities to Harborside Healthcare Corp., a skilled-nursing and long-term-care company. The Woodspoint Nursing Home in Florence, Kentucky was one of those facilities. *Nine Kentucky long-term care facilities being acquired by Harborside Healthcare, Business First of Louisville*, May 19, 2005. <http://www.bizjournals.com/louisville/stories/2005/05/16/daily26.html>

<sup>22</sup> Prior to the implementation of the PA/SI program northwest of the airport in December 1994, the Kenton County Airport Board identified that land use was changing in this area and that a program of PA/SI would no longer be appropriate. A program of voluntary acquisition was recommended due to the change in land use and the FAA agreed to this change in program. Seventeen houses in this area were approved as eligible for mitigation through voluntary acquisition.

**Measure LU-6**  
*Continued*

**Exhibit: N/A**

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

MEASURE LU-7

Exhibit: N/A

**Description:** Offer sound insulation to eligible schools around the airport.

**Relationship to 1999 NCP:** Measure LU-7, as approved in the 1992 Supplemental Part 150 Study and the 1999 FAR Part 150 Study Update, offered to sound insulate eligible schools (eligibility based on FAA funding criteria). It is recommended that this measure be continued in the 2006 NCP to offer sound insulation to eligible schools around the airport (eligibility based on FAA funding criteria).

**2006 NCP Action:** *Measure LU-7 is to be continued.*

**Background and Intent:** Previously approved Measure LU-7 of the 1992 Supplemental Part 150 Study and 1999 FAR Part 150 Study Update offered sound insulation to eligible schools. This measure is intended to continue to address the potential noise impacts resulting from daytime aircraft operations.

The *Airport Improvement Handbook* (FAA Order 5100.38A, Chapter 7, Paragraph 712.a.) states that noise insulation, if approved in an airport sponsor's NCP, or if qualified as a public school under section 104(c)(3) of the Airport Safety and Noise Abatement Act, as amended, is eligible under the Airport Improvement Program (AIP). This chapter of the AIP further states in paragraph 712.c.(1) that for schools,<sup>23</sup> the usual design objective for a classroom environment is a time-average A-weighted sound level of 45 dB resulting from aircraft operations during normal school hours. A school sound insulation project should reduce the existing noise levels by at least 5 dB. Therefore, in order for a school to be eligible for participation in a sound insulation program, the sound insulation materials must reduce the existing noise levels by at least 5 dB to achieve a time-average A-weighted interior sound level of 45 dB.

Sound insulation consists of increasing the exterior-to-interior noise attenuation characteristics of a structure, i.e., reducing the level of noise intrusion from aircraft overflights and ground operations. There are several basic ways to accomplish this and variations of each would occur on a structure-to-structure basis (i.e. acoustical windows, acoustical doors, ventilation systems, additional roof/attic/wall insulation, etc.).

**Status:** This measure initially resulted in the sound insulation of Conner Middle School (KY) in 1992 and Boone County High School (KY) in 1998.

Five Kentucky schools were determined eligible for sound insulation since the FAA issued its Record of Approval on the 1999 NCP: Ockerman Elementary, Ockerman Middle, Goodridge Elementary, Conner High School, and Boone County Vocational/Technical School. The sound insulation projects for Ockerman Elementary, Ockerman Middle, and Goodridge Elementary School were completed in 2005. The Conner High School sound insulation project is underway with completion expected by mid-2007. The Boone County Vocational/Technical School sound insulation project is scheduled to begin in 2008, once the project design work is completed.

<sup>23</sup> According to AIP, eligible schoolrooms include classrooms, libraries, offices, and other rooms for which noise insulation is specifically justified because of the substantial and disruptive effect of aircraft noise. Facilities, such as gymnasiums, cafeterias, and hallways are usually not eligible. FAA Order 5100.38A, *Airport Improvement Handbook*, Chapter 7, Paragraph 712.c.(1) and (2).

Measure LU-7  
Continued

Exhibit: N/A

**Status, Continued:** During 2004 and 2005, four schools located in Ohio were tested for eligibility in the school sound insulation project; three were determined eligible. The sound insulation projects for St. Aloysius Elementary School, Our Lady of Victory School, and C.O. Harrison Elementary School are currently underway. Saylor Park Elementary School will be retested at a later date to check its eligibility status.

The KCAB intends to continue this program and evaluate schools to determine eligibility in the program, provided funding is available.

**Land Use Compatibility Improvement:** The sound insulation of eligible schools would reduce the impact of aircraft operations on noise-sensitive public facilities located around the airport.

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB should make recommendations on the eligibility of the schools for sound insulation based upon the same methodology used to implement the 1992 Supplemental Part 150 Study and 1999 FAR Part 150 Study Update school mitigation programs.

Eligibility will be based on FAA funding criteria and include a three-step process:

1. Schools will be informed of their potential eligibility and, if there is interest, the KCAB's sound insulation professionals will conduct interior acoustical measurements during school hours when the buildings are unoccupied.
2. If the school meets the FAA program eligibility criteria, then an acoustical audit will be performed and a sound insulation plan prepared in cooperation with school officials.
3. The actual installation of the recommended sound insulation material and follow-up testing will be conducted.

**Costs:** Until the determination of eligibility is known, it is not possible to accurately estimate the sound insulation program costs for each school. As of October 2006, no other schools met the eligibility criteria for sound insulation; however, the KCAB will continue to monitor and conduct eligibility testing based upon future significant changes in airport operations.

**Schedule:** The determination of sound insulation eligibility does not require FAA authorization; however, funding for the determination and the sound insulation of the eligible schools would be subject to the availability of FAA and KCAB funding.

**Effects on Other Programs/Measures:** The implementation of this measure is not expected to adversely affect any other mitigation programs or measures and it will enhance the compatibility of land uses surrounding the airport.

**MEASURE LU-8**

**Exhibit: 4-5**

**Description:** Offer voluntary acquisition of undeveloped, approved residential building lots in Ethan's Glen subdivision.

**Relationship to 1999 NCP:** Measure LU-8 was initially approved in the 1990 Part 150 Study and subsequently approved for continuation in the approved 1992 Supplemental Part 150 Study and in the approved 1999 FAR Part 150 Study Update. It is recommended that this measure be continued in the 2006 NCP to offer voluntary acquisition to undeveloped, approved residential building lots in the Ethan's Glen subdivision.

**2006 NCP Action:** *Measure LU-8 is to be continued.*

**Background and Intent:** Continue previously approved Measure LU-8 to acquire undeveloped, approved residential building lots in the Ethan's Glen subdivision by voluntary acquisition. The 1992 Supplemental Part 150 Study recommended fostering a change in land use from residential to nonresidential west of the airport, and, in particular, within the Ethan's Glen subdivision because of the long-term high levels of daytime and nighttime aircraft noise. This concentration of noise exposure resulted from the approved noise abatement plan that established a nighttime noise abatement corridor to the west. Previously approved Measure LU-8 recommended the acquisition of undeveloped, approved residential building lots in the Ethan's Glen subdivision by voluntary acquisition to prevent this type of development from occurring in the future. On the north side of Ethan's Glen there are 109 undeveloped, approved residential building lots.

The KCAB previously purchased 158 houses in the Ethan's Glen subdivision, which resulted in a change in land use from residential to compatible within the 70-75 DNL western noise contour. In order to prevent future incompatible residential development in this area it is recommended that the undeveloped, approved residential building lots in the Ethan's Glen subdivision be acquired by the KCAB. (These approved residential building lots are in the 2011 NCP 70-75 DNL noise contour.)

**Status:** One individual owns all of the 109 undeveloped, approved lots within the Ethan's Glen subdivision. KCAB has extended a purchase offer to the landowner in order to acquire all of these lots. To date, no agreement has been reached on the voluntary acquisition of these lots and discussions are ongoing between the KCAB and the landowner.

**Land Use Compatibility Improvement:** The continued implementation of this measure would assure that incompatible residential development would not be permitted on the 109 undeveloped, approved lots located on the north side of the Ethan's Glen subdivision and within the 70-75 DNL western nighttime noise abatement contour.

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB has secured funding for the implementation of this measure through previous Part 150 studies. Should an agreement be reached between the landowner and the KCAB, the KCAB will purchase the property and be reimbursed by the FAA.

**Costs:** The costs for implementing Measure LU-8 have been included in the previously approved 1992 Supplemental Part 150 Program and will not be duplicated here.

**Schedule:** This measure may be implemented following FAA approval of the NCP and subject to FAA and KCAB funding availability.

**Measure LU-8**  
*Continued*

**Exhibit: 4-5**

**Effects on Other Programs/Measures:** The continued implementation of this measure is not expected to adversely affect any other mitigation programs or measures and it will enhance the compatibility of land uses surrounding the airport.

**MEASURE LU-9**

**Exhibit: N/A**

**Description:** Withdraw previously approved, but not implemented, Measure LU-9 from the 1992 Supplemental Part 150 Study to offer option of sound insulation or the acquisition of aviation easements to homeowners in the 65 DNL noise contour of the 1992 NCP Near-Term Noise Abatement Plan, northwest of the airport.

**Relationship to 1999 NCP:** Measure LU-9 was recommended and approved in the approved 1992 Supplemental Part 150 Study. This measure was not implemented. The measure was withdrawn in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-9 was withdrawn. No further FAA action is required.*

**Background and Intent:** As part of the 1992 Supplemental Part 150 Study's noise abatement air traffic actions, a preferred nighttime runway usage step-down procedure was recommended for turbojet departures in the following descending order of priority: Runway 27, Runway 36L, Runway 18R, and Runway 9. This nighttime step-down procedure was recommended to provide noise relief to incompatible residential land uses located south of CVG, as the airport was planning for the construction of a 2,200-foot extension to Runway 9/27. Extending Runway 9/27 to 10,000 feet would make it the longest runway at CVG, and therefore preferable to pilots requiring additional pavement. Departures to the west on Runway 27 would allow aircraft to fly over the less populated areas in this flight corridor.

In the near-term, it was expected that if aircraft could not use Runway 27, due to its temporary reduced length, the pilot would request Runway 36L, the second preferred runway in the nighttime runway usage procedure. Since this usage would most likely occur during nighttime hours, it was recommended that near-term mitigation be implemented prior to and during construction of the 2,200-foot extension to Runway 9/27 to provide interim noise mitigation for incompatible land uses off Runway 36L.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE LU-10**

**Exhibit: N/A**

**Description:** Withdraw previously approved, but not implemented, Measure LU-10 to sound insulate new single-family houses built after the approval of the 1992 Supplemental Part 150 Study on currently approved residential lots; the level of sound insulation is to be based on conditions at the time of installation; and the program is not to be initiated until all other measures are completed.

**Relationship to 1999 NCP:** Measure LU-10 was recommended and approved in the 1992 Supplemental Part 150 Study. This measure was never implemented. The measure was withdrawn in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-10 was withdrawn. No further FAA action is required.*

**Background and Intent:** Previously approved Measure LU-10 was recommended to address marketing problems, which might be created for the owners of currently approved residential building lots<sup>24</sup> that would be exposed to long-term high levels of aircraft noise. It was intended as a low-priority, long-term compatibility measure of last resort and limited to single-family houses on currently approved residential lots. This measure has not been implemented because the KCAB has not yet completed the implementation of all other approved mitigation programs.

Single-family residential houses built on lots approved prior to the 1992 Supplemental Part 150 Study Record of Approval (October 25, 1993) and in the previously approved 1999 NCP 65 DNL noise contour are included in the programs recommended in this 2006 Part 150 Study (see Measures LU-12, LU-14, LU-15, and LU-16). The measure was withdrawn in the 1999 FAR Part 150 Study Update.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** The mitigation of incompatible land uses within the western 65-70 DNL noise contour, and the Dartmouth Woods, Deerfield, and Orchard Estates subdivisions is addressed in Measures LU-12, LU-14, LU-15, and LU-16, respectively.

<sup>24</sup> A currently approved residential building lot is defined in this measure as a building lot which was approved by Boone County for residential development prior to the FAA issuing the Record of Approval on the Kenton County Airport Board's 1992 Supplemental Part 150 Study Update. The FAA Record of Approval was signed on October 25, 1993.

**MEASURE: LU-11**

**Exhibit: N/A**

**Description – Measure LU-11 as approved in the 1992 Supplemental Part 150 Study:** Offer purchase assurance or sound insulation (PA/SI) options for all houses in the Deerfield and Dartmouth Woods subdivisions west of the airport located partially in the 65 DNL contour of the 1997 plan.<sup>25</sup> This offer would be triggered if the annual noise contour update for any year shows that the aircraft noise exceeds the forecast 1997 plan levels on the subdivision by DNL 1.5 dB.

**Relationship to 1999 NCP:** Measure LU-11 was recommended and approved in the 1992 Supplemental Part 150 Study. Measure LU-11 was never implemented. The effective period for implementation expired in 1997.

**2006 NCP Action:** *Measure LU-11 is expired. No further FAA action is required.*

**Background and Intent:** This measure was effective between 1993 and 1997. A grid point analysis prepared for 1997 conditions showed that the aircraft noise measured did not exceed the forecast 1997 plan levels by DNL 1.5 dB, therefore this measure was never implemented.

**Status:** Measure expired without being implemented.

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

<sup>25</sup> The 1997 plan is defined as Long-Term Noise Abatement Plan for 1997 from the 1992 Supplemental Part 150 Study Update.

**MEASURE: LU-12**

**Exhibit: 4-5**

**Description:** Offer sound insulation to eligible single-family houses west of the airport in the western 2011 NCP 65-70 DNL noise contour.

**Relationship to 1999 NCP:** Measure LU-12 was initially approved in the 1999 FAR Part 150 Study Update having evolved from the mitigation offered in Measure LU-4, voluntary acquisition, within the western 65-75 DNL noise contours.

**2006 NCP Action:** *Measure LU-12 is to be continued.*

**Background and Intent:** This measure evolved from previously approved LU-4, and 44 unmitigated houses remained from that previously approved program. Approximately 35 additional houses are impacted by the current NEMs and may be eligible for sound insulation under this measure.

In the course of implementing previously approved Measure LU-4, which provided for the voluntary acquisition of houses in the western 65-75 DNL noise contours, KCAB staff determined that a number of eligible homeowners in the western 65-70 DNL noise contour did not wish to sell their homes, and therefore declined participation in the voluntary acquisition program.

The land uses in the western noise contour, which was established as the nighttime noise abatement corridor in the 1992 Supplemental Part 150 Study, experience significant<sup>26</sup> levels of daytime and nighttime noise exposure. Because this area will continue to be exposed to high noise levels and aircraft overflights, the KCAB desired to provide a mitigation measure that would allow homeowners in the 65-70 DNL noise contour to remain in their homes. To that end, participation in a sound insulation would be offered to eligible houses in the western 1999 NCP 65-70 DNL noise contour.

Sound insulation consists of increasing the exterior-to-interior noise attenuation characteristics of a structure, i.e., reducing the level of noise intrusion from aircraft overflights and ground operations. There are several basic ways to accomplish this, and variations of each occur on a structure-to-structure basis (i.e. acoustical windows, acoustical doors, ventilation systems, additional roof/attic/wall insulation, etc.). Participation in the sound insulation program is voluntary and provides mitigation to all conventionally built single-family houses that meet the FAA design objective for interior noise level reduction. Only those structures able to achieve the minimum Noise Level Reduction (NLR) will be eligible for participation in the Federally funded mitigation program. In order for a homeowner to participate in the sound insulation program, all eligibility requirements would need to be met. According to FAA Order 5100.38, *Airport Improvement Program (AIP) Handbook*, an airport project cannot provide funding to compensate for inadequate maintenance, to bring nonconforming structures up to building code standards, or to improve the comfort or attractiveness of a building. If the property is valued at less than the cost of sound insulation, voluntary acquisition would be offered in lieu of sound insulation. Houses in violation of the local building code would not be eligible. Sound insulation is contingent upon the homeowner signing an aviation easement.

<sup>26</sup> Significant noise levels are defined as 65 DNL or greater.

**Measure: LU-12**  
*Continued*

**Exhibit: 4-5**

**Status:** Approximately five houses remain inside the 2011 65-70 DNL noise contour that are not part of another land use mitigation measure.

**Land Use Compatibility Improvement:** Assuming 100 percent eligibility and participation, the implementation of this measure would reduce the number of incompatible structures within the 2011 NCP 65-70 DNL noise contour by approximately five houses.

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would extend offers to participate in the sound insulation program to the remaining homeowners of all eligible houses in the 2011 65-70 DNL noise contour. This may include approximately five existing houses. (Participation eligibility for the existing houses would be based upon the owner of record on or before the date of the 1999 Part 150 Study Update FAA Record of Approval.) The pace and phasing of the implementation schedule would be based upon the availability of funding.

The implementation of sound insulation measures will be consistent with all applicable FAA guidelines. A program implementation plan will be developed by the KCAB prior to program initiation.

**Costs:** Assuming 100 percent eligibility and participation, the total estimated cost to implement the sound insulation program recommended in Measure LU-12 is \$150,000.<sup>27</sup>

**Schedule:** This measure is currently implemented as approved in the 1999 NCP. The continuation of the program may be implemented upon receipt of the FAA's Record of Approval and would be subject to FAA and KCAB funding availability.

**Effects on Other Programs/Measures:** The implementation of this measure is not expected to adversely affect any other mitigation programs or measures and it will enhance the compatibility of land uses surrounding the airport.

<sup>27</sup> The average cost, in 2006, to sound insulate one residential structure was approximately \$30,000. Design, construction, and administrative costs include noise measurements, architectural design specifications, cost of materials, labor, and final inspection of completed work. (Information was provided by the Kenton County Airport Board, Noise Abatement Office, September 2006.)

**MEASURE: LU-13**

**Exhibit: N/A**

**Description:** Offer voluntary acquisition to eligible houses northwest of Runway 18C/36C (center parallel/former Runway 18R/36L) within the 1999 NCP 65-70 DNL noise contour.

**Relationship to 1999 NCP:** Measure LU-13 was approved in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-13 was not implemented. No further FAA action is required.* The residences included in LU-13 were located within the construction envelope for the development of new Runway 18R/36L (FAA 2001 EIS for Runway 17/35)<sup>28</sup> and the associated projects. These houses were acquired for construction.

**Background and Intent:** This measure evolved from previously approved measure LU-6 in the 1992 Supplemental Part 150 Study, which was intended to mitigate the impacts of aircraft noise in the 65 DNL noise contour of the Long-Term Noise Abatement Plan for 1997 and included three separate programs: 1) the sound insulation project of the Woodspoint Nursing Home; 2) the PA/SI South,<sup>29</sup> and 3) the PA/SI Northwest Program, which was changed to a voluntary acquisition program.<sup>30</sup>

It was anticipated that high noise exposure levels and aircraft overflights off the north end of the runway would continue in the future, therefore, it was recommended that these houses be acquired through a program of voluntary acquisition. This action would be consistent with the program previously implemented in this area.

Only two houses from the original Northwest Program were in the 1999 NCP 65-70 DNL noise contour northwest of Runway 18C/36C (Center Parallel/Formal Runway 18R/36L). These two houses were within the construction envelope for Runway 18R/36L (West Parallel/Proposed Runway 17/35). These houses were acquired for construction; therefore, Measure LU-13 as written was not implemented.

**Status:** Not implemented

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

<sup>28</sup> *Final Environmental Impact Statement*, Cincinnati/Northern Kentucky International Airport, FAA Record of Decision signed on December 19, 2001.

<sup>29</sup> The PA/SI South program was implemented in April 1996, and expired on March 31, 2001.

<sup>30</sup> Prior to the implementation of the PA/SI program northwest of the airport in December 1994, the Kenton County Airport Board identified that land use was changing in this area and that a program of PA/SI would no longer be appropriate. A program of voluntary acquisition was recommended due to the change in land use and the FAA agreed to this change in program. Seventeen houses in this area were approved as eligible for mitigation through voluntary acquisition. The participation period for the voluntary acquisition program expired in December 1999.

**Measure: LU-13**  
*Continued*

**Exhibit: N/A**

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: LU-14**

**Exhibit: 4-5**

**Description:** Offer sound insulation to eligible single-family houses in the Dartmouth Woods subdivision.

**Relationship to 1999 NCP:** Measure LU-14 was initially approved in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-14 is to be continued.*

**Background and Intent:** Measure LU-14 was intended to provide sound insulation for the Dartmouth Woods subdivision located southwest of the airport. This subdivision was partially included in the 1999 NCP 65 DNL noise contour. Portions of Dartmouth Woods will remain in the 2011 NCP 65 DNL noise contour. The Runway 9/27 western corridor is the airport's nighttime noise abatement corridor; therefore, these areas are expected to continue to be impacted by high levels of daytime and nighttime aircraft noise.

The Dartmouth Woods subdivision is a contiguous, stable, and viable residential neighborhood of similar housing design, construction-type and materials, and price range. At the time this measure was introduced, the neighborhood had not been fully built-out. The analysis in the 1992 Supplemental Part 150 Study projected long-term noise conditions for both 1997 and 2003. Under the 1997 Plan contour, portions of Dartmouth Woods were in the 65-70 DNL noise contour. However, by 2003, the 65 DNL noise contour decreased in size and the subdivision was located outside of the 65 DNL. Based on this 1992 Supplemental analysis of 2003 conditions, residential planning and development in Dartmouth Woods continued with the assumption that the neighborhood would be located outside of the future 65 DNL noise contour. To preserve the integrity of this community it was recommended that the mitigation program be implemented throughout the entire neighborhood to maintain the consistency in like design and building materials.

There were originally 47 existing houses and 25 approved undeveloped building lots in the Dartmouth Woods subdivision at the time of this measure's implementation. Program eligibility requirements set forth by the KCAB stated that houses would be eligible for sound insulation if they were built prior to the date of the Record of Approval of the 1999 NCP, which was December 5, 2000. As of September 2006, there are 16 potentially eligible houses in Dartmouth Woods. This measure would provide continued funding for these 16 houses until such time that all are mitigated or funding is no longer available.

Sound insulation consists of increasing the exterior-to-interior noise attenuation characteristics of a structure, i.e., reducing the level of noise intrusion from aircraft overflights and ground operations. There are several basic to accomplish this, and variations of each occur on a structure-to-structure basis (i.e. acoustical windows, acoustical doors, ventilation systems, additional roof/attic/wall insulation, etc.). Participation in the sound insulation program is voluntary and provides mitigation to all conventionally built single-family houses that meet the FAA design objective for interior NLR. Only those structures able to achieve the minimum NLR will be eligible for participation in the Federally funded mitigation program. In order for a homeowner to participate in the sound insulation program, all eligibility requirements would need to be met. According to FAA Order 5100.38, *Airport Improvement Program (AIP) Handbook*, an airport project cannot provide funding to compensate for inadequate maintenance, to bring nonconforming structures up to building code standards, or to improve the comfort or attractiveness of a building.

**Measure: LU-14**  
*Continued*

**Exhibit: 4-5**

**Background and Intent, *Continued*:** If the property is valued at less than the cost of sound insulation, voluntary acquisition would be offered in lieu of sound insulation. Houses in violation of the local building code would not be eligible. Sound insulation is contingent upon the homeowner signing an aviation easement.

**Status:** At the time this measure was approved, 57 houses were eligible for participation in the program. The owners of 41 houses have participated in this mitigation program. The owners of the 16 remaining houses have chosen, at this time, not to participate. This measure would continue the program for these remaining 16 homeowners.

**Land Use Compatibility Improvement:** Sound insulating houses in the Dartmouth Woods subdivision would reduce the number of incompatible land uses within the 2011 NCP 65-70 DNL noise contour and in the immediate vicinity of the primary nighttime departure corridor.

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would extend offers to participate in the sound insulation program to the remaining homeowners of all eligible houses in the Dartmouth Woods subdivision. This may include approximately 16 existing houses. (Participation eligibility for the existing houses would be based upon the owner of record on or before the date of the 1999 Part 150 Study Update FAA Record of Approval. Participation eligibility for the approximately 25 yet to be constructed houses would be based upon the closing date, which would have to be on or before the date of the 1999 Part 150 Study Update FAA Record of Approval.) The pace and phasing of the implementation schedule would be based upon the availability of funding.

The implementation of sound insulation measures will be consistent with all applicable FAA guidelines. A program implementation plan will be developed by the KCAB prior to program initiation

**Costs:** Assuming the 100 percent eligibility and participation of the owners of the 16 existing houses, the estimated cost for implementing the Dartmouth Woods sound insulation program is \$480,000.<sup>31</sup>

**Schedule:** This measure may be implemented upon receipt of the FAA's Record of Approval and would be subject to FAA and KCAB funding availability.

**Effects on Other Programs/Measures:** The implementation of this measure is not expected to adversely affect any other mitigation programs or measures and it will enhance the compatibility of land uses surrounding the airport.

<sup>31</sup> The average cost, in 2006, to sound insulate one residential structure was approximately \$30,000. Design, construction, and administrative costs include noise measurements, architectural design specifications, cost of materials, labor, and final inspection of completed work. (Information was provided by the Kenton County Airport Board, Noise Abatement Office, September 2006.)

MEASURE: LU-15

Exhibit: 4-5

**Description:** Offer sound insulation to eligible single-family houses in the Deerfield subdivision.

**Relationship to 1999 NCP:** Measure LU-15 was initially approved in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-15 is to be continued.*

**Background and Intent:** Measure LU-15 was intended to provide sound insulation for the Deerfield subdivision. Located southwest of the airport, the Dartmouth Woods subdivision was partially included in the 1999 NCP 65 DNL noise contour. Portions of Deerfield remain in the 2011 NCP 65 DNL noise contour. The Runway 9/27 western corridor is the airport's nighttime noise abatement corridor; therefore, these areas are expected to continue to be impacted by high levels of daytime and nighttime aircraft noise.

The Deerfield subdivision is a contiguous, stable, and viable residential neighborhood of similar housing design, construction-type and materials, and price range. The analysis in the 1992 Supplemental Part 150 Study projected long-term noise conditions for both 1997 and 2003. Under the 1997 Plan contour, portions of Deerfield were in the 65-70 DNL noise contour. However, by 2003, the 65 DNL noise contour decreased in size and the subdivision was located outside of the 65 DNL. Based on this 1992 Supplemental analysis of 2003 conditions, residential planning and development in Deerfield continued with the assumption that the neighborhood would be located outside of the future 65 DNL noise contour. In order to preserve the integrity of this community it was recommended that the mitigation program be implemented through the entire neighborhood to maintain the consistency in like design and building materials.

There were originally 66 houses in the Deerfield subdivision at the time of this measure's implementation. Program eligibility requirements set forth by the KCAB stated that houses would be eligible for sound insulation if they were built prior to the date of the Record of Approval of the 1999 NCP, which was December 5, 2000. Sixty-three homeowners took part in the original program and three homeowners declined to participate. This measure would provide continued funding for these three houses, and participation offers will be re-extended, until such time that all are mitigated or funding is no longer available.

Sound insulation consists of increasing the exterior-to-interior noise attenuation characteristics of a structure, i.e., reducing the level of noise intrusion from aircraft overflights and ground operations. There are several basic to accomplish this and variations of each occur on a structure-to-structure basis (i.e. acoustical windows, acoustical doors, ventilation systems, additional roof/attic/wall insulation, etc.). Participation in the sound insulation program is voluntary and provides mitigation to all conventionally built single-family houses that meet the FAA design objective for interior NLR. Only those structures able to achieve the minimum NLR will be eligible for participation in the Federally funded mitigation program. In order for a homeowner to participate in the sound insulation program, all eligibility requirements would need to be met. According to FAA Order 5100.38, *Airport Improvement Program (AIP) Handbook*, an airport project cannot provide funding to compensate for inadequate maintenance, to bring nonconforming structures up to building code standards, or to improve the comfort or attractiveness of a building. If the property is valued at less than the cost of sound insulation, voluntary acquisition would be offered in lieu of sound insulation. Houses in violation of the local building code would not be eligible. Sound insulation is contingent upon the homeowner signing an avigation easement.

**Measure: LU-15**  
*Continued*

**Exhibit: 4-5**

**Status:** At the time this measure was approved, 66 houses were eligible for participation in the program. The owners of 63 houses chose to participate and the remaining three chose not to participate. This measure would continue the program for the remaining three homeowners.

**Land Use Compatibility Improvement:** Sound-insulating houses in the Deerfield subdivision will reduce the number of incompatible land uses within the 2011 NCP 65-70 DNL noise contour by approximately three houses.

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would extend offers to participate in the sound insulation program to the remaining homeowners of all eligible houses in the Deerfield subdivision. This may include approximately three existing houses. (Participation eligibility for the existing houses would be based upon the owner of record on or before the date of the 1999 Part 150 Study Update FAA Record of Approval.) The pace and phasing of the implementation schedule would be based upon the availability of funding.

The implementation of sound insulation measures will be consistent with all applicable FAA guidelines. A program implementation plan will be developed by the KCAB prior to program initiation.

**Costs:** Assuming the 100 percent eligibility and participation of three homeowners, the estimated cost for implementing the Deerfield sound insulation program is \$90,000.<sup>32</sup>

**Schedule:** This measure may be implemented upon receipt of the FAA's Record of Approval and would be subject to FAA and KCAB funding availability.

**Effects on Other Programs/Measures:** The implementation of this measure is not expected to adversely affect any other mitigation programs or measures and it will enhance the compatibility of land uses surrounding the airport.

<sup>32</sup> The average cost, in 2006, to sound insulate one residential structure was approximately \$30,000. Design, construction, and administrative costs include noise measurements, architectural design specifications, cost of materials, labor, and final inspection of completed work. (Information was provided by the Kenton County Airport Board, Noise Abatement Office, September 2006.)

**MEASURE: LU-16**

**Exhibit: 4-5**

**Description:** Offer sound insulation to eligible single-family houses in the Orchard Estates subdivision.

**Relationship to 1999 NCP:** Measure LU-16 was initially approved in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-16 is to be continued.*

**Background and Intent:** Measure LU-16 was intended to provide sound insulation for the Orchard Estates subdivision located southwest of the airport. This subdivision was partially included in the 1999 NCP 65 DNL noise contour. Portions of Orchard Estates remain in the 2011 NCP 65 DNL noise contour. The Runway 9/27 western corridor is the airport's nighttime noise abatement corridor; therefore, these areas are expected to continue to be impacted by high levels of daytime and nighttime aircraft noise.

The Orchard Estates subdivision is a contiguous, stable, and viable residential neighborhood of similar housing design, construction-type and materials, and price range. The analysis in the 1992 Supplemental Part 150 Study projected long-term noise conditions for both 1997 and 2003. Under the 1997 Plan contour, portions of Orchard Estate were in the 65-70 DNL noise contour. However, by 2003, the 65 DNL noise contour decreased in size and the subdivision was located outside of the 65 DNL. Based on this 1992 Supplemental analysis of 2003 conditions, residential planning and development in Orchard Estates continued with the assumption that the neighborhood would be located outside of the future 65 DNL noise contour. In order to preserve the integrity of this community it was recommended that the mitigation program be implemented through the entire neighborhood to maintain the consistency in like design and building materials.

There were originally 144 houses in the Orchard Estates subdivision at the time of this measure's implementation. Program eligibility requirements set forth by the KCAB stated that houses would be eligible for sound insulation if they were built prior to the date of the Record of Approval of the 1999 NCP, which was December 5, 2000. 128 homeowners took part in the original program and 16 homeowners declined participation. This measure would provide continued funding for these 16 houses until such time that all are mitigated or funding is no longer available. Since the FAA approval of the 1999 NCP, additional houses have been built to the north of the existing subdivision, along Sugarberry Drive. Those houses are not eligible for sound insulation under this measure.<sup>33</sup>

<sup>33</sup> The Orchard Estates subdivision consisted of 143 single-family houses at the time of the 1999 FAR Part 150 Study Update. In October 1999, the Boone County Fiscal Court approved the request for a zoning map amendment from Agricultural Estate (A-2) and Rural Suburban (RS) to Suburban Residential One (SR-1) for a 44.783 acre site on the south side of Conner Road immediately east of the Orchard Estates Subdivision. The request was for a zone change to allow a subdivision for detached, single-family residences. The Fiscal Court has stipulated that due to the proximity to the airport's 65 DNL noise contour, the builder will incorporate the appropriate level of noise attenuation in the houses constructed in this area, as per the requirements of the *Boone County Zoning Regulations* (Article 31, Section 3196). As such, these houses would not be eligible for mitigation under this measure.

Measure: LU-16  
Continued

Exhibit: 4-5

**Background and Intent, Continued:** Sound insulation consists of increasing the exterior-to-interior noise attenuation characteristics of a structure, i.e., reducing the level of noise intrusion from aircraft overflights and ground operations. There are several basic to accomplish this and variations of each occur on a structure-to-structure basis (i.e. acoustical windows, acoustical doors, ventilation systems, additional roof/attic/wall insulation, etc.). Participation in the sound insulation program is voluntary and provides mitigation to all conventionally built single-family houses that meet the FAA design objective for interior NLR. Only those structures able to achieve the minimum NLR will be eligible for participation in the Federally funded mitigation program. In order for a homeowner to participate in the sound insulation program, all eligibility requirements would need to be met. According to FAA Order 5100.38, *Airport Improvement Program (AIP) Handbook*, an airport project cannot provide funding to compensate for inadequate maintenance, to bring nonconforming structures up to building code standards, or to improve the comfort or attractiveness of a building. If the property is valued at less than the cost of sound insulation, voluntary acquisition would be offered in lieu of sound insulation. Houses in violation of the local building code would not be eligible. Sound insulation is contingent upon the homeowner signing an avigation easement.

**Status:** 144 houses were eligible for participation in the program. The owners of 128 houses chose to participate and the remaining 16 declined participation. This measure would continue the program for the remaining 16 houses.

**Land Use Compatibility Improvement:** Sound-insulating houses in the Orchard Estates subdivision will reduce the number of incompatible land uses within the 2011 NCP 65-70 DNL noise contour by 16 houses.

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would extend offers to participate in the sound insulation program to the remaining homeowners of all eligible houses in the Orchard Estates subdivision. This may include approximately 16 existing houses. (Participation eligibility for the existing houses would be based upon the owner of record on or before the date of the 1999 Part 150 Study Update FAA Record of Approval. The pace and phasing of the implementation schedule would be based upon the availability of funding.

The implementation of sound insulation measures will be consistent with all applicable FAA guidelines. A program implementation plan will be developed by the KCAB prior to program initiation.

**Costs:** Assuming the 100 percent eligibility and participation of 16 homeowners, the estimated cost for implementing the Orchard Estates sound insulation program is \$480,000.<sup>34</sup>

**Schedule:** This measure may be implemented upon receipt of the FAA's Record of Approval and would be subject to FAA and KCAB funding availability.

<sup>34</sup> The average cost, in 2006, to sound insulate one residential structure was approximately \$30,000. Design, construction, and administrative costs include noise measurements, architectural design specifications, cost of materials, labor, and final inspection of completed work. (Information was provided by the Kenton County Airport Board, Noise Abatement Office, September 2006.)

**Measure: LU-16**  
*Continued*

**Exhibit: 4-5**

**Effects on Other Programs/Measures:** The implementation of this measure is not expected to adversely affect any other mitigation programs or measures and it will enhance the compatibility of land uses surrounding the airport.

**MEASURE: LU-17**

**Exhibit: N/A**

**Description:** Offer sound insulation to eligible churches around the airport (eligibility based on FAA funding criteria).

**Relationship to 1999 NCP:** Measure LU-17 was initially approved in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-17 is to be continued.*

**Background and Intent:** This was a new measure approved in the 1999 FAR Part 150 Study Update and has no relationship to previous Part 150 approvals. It was intended to address potential noise impacts resulting from daytime activity on existing north-south runways and the potential new runway.

This measure was initially approved in the 1999 NCP and was intended to address potential noise impacts resulting from the daytime (in particular Sunday morning) aircraft operations on all existing runways, as well as the potential future aircraft noise impacts that may occur when the western parallel runway (Runway 18R/36L) becomes operational.

The *Airport Improvement (AIP) Handbook* (FAA Order 5100.38A, Chapter 712.d.) states that churches, when recommended for sound insulation by an airport sponsor in an FAA-approved NCP are eligible for sound insulation. AIP further states that the sound insulation of churches should be evaluated on a case-by-case basis involving consultation with the FAA Airports Financial Assistance Division (APP-500) and Community Environmental Needs Division (APP-600). This consultation process and evaluation will take place prior to implementing sound insulation at a church. A signed avigation easement would be required prior to the sound insulation.

Sound insulation consists of increasing the exterior-to-interior noise attenuation characteristics of a structure, i.e., reducing the level of noise intrusion from aircraft overflights and ground operations. There are several basic to accomplish this and variations of each would occur on a structure-to-structure basis (i.e. acoustical windows, acoustical doors, ventilation systems, additional roof/attic/wall insulation, etc.).

**Status:** Two churches were evaluated for eligibility during the implementation of this measure: Saint Aloysius on the Ohio (Sayler Park, Ohio) and Christ Chapel Assembly of God (Turfway Road, Boone County).

Noise monitoring was conducted at Saint Aloysius on the Ohio (Sayler Park, Ohio); however because the church already had completed several major structural improvements (i.e., central air and newer windows) the church was deemed not eligible for sound insulation.

The Christ Chapel Assembly of God was located within the approved FAA 1999 NCP 65 DNL noise contour; therefore, noise monitoring was not necessary. Although it was located inside the contour and eligible for sound insulation, the church structure is all brick with few windows and doors and has central air conditioning. Because a five dB reduction could not be achieved with the application of sound insulation, the main church structure was deemed ineligible. However, the church owns two former residential structures that are used for church-related housing (one is a temporary house for missionaries who come through and the other is a shelter for pregnant teens/young mothers). Because these two structures are ranch-style residential structures, the residences were eligible for sound insulation. These two residences were included in the 2004 residential sound insulation construction contract and were sound insulated in November 2004.

Measure: LU-17  
*Continued*

Exhibit: N/A

**Land Use Compatibility Improvement:** The sound insulation of eligible churches would reduce the number of noise-sensitive public facilities located around the airport.

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB should make recommendations on the eligibility of churches for sound insulation based on a methodology similar to the 1992 Supplemental Part 150 Study methodology used for the school sound insulation program (Measure LU-7).

**Costs:** Until the determination of eligibility is known, it is not possible to accurately estimate the sound insulation program costs for eligible churches. As of October 2006, no other churches met the eligibility criteria for sound insulation; however, the KCAB will continue to monitor and conduct eligibility testing based upon future significant changes in airport operations.

**Schedule:** The determination of sound insulation eligibility does not require FAA authorization; however, funding for the determination and the sound insulation of the eligible churches would be subject to the availability of FAA and KCAB funding.

**Effects on Other Programs/Measures:** The implementation of this measure is not expected to adversely affect any other mitigation programs or measures and it will enhance the compatibility of land uses surrounding the airport.

MEASURE: LU-18

Exhibits: N/A

**Description:** Support the Boone County Planning Commission's Comprehensive Plan's compatible land use policies within the 65 DNL noise contour.

**Relationship to 1999 NCP:** Measure LU-18 was initially approved in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure LU-18 is to be continued.*

**Background and Intent:** Previously approved Measure LU-9 from the 1990 Part 150 Study recommended that Boone County update the Airport Environs Overlay District to include the future (1994) recommended noise contours and that the 65, 70, and 75 DNL noise contours be included on the county's zoning map. The Airport Environs Overlay District should be revised to inform the developer or builder of the need to include appropriate sound insulation in residential structures. The Boone County Planning Commission would be responsible for implementing any zoning and land use planning changes into their comprehensive land use plan.

From 1980 to 1996, Boone County had an Airport Environs Overlay District (AEO). In 1996, the AEO zoning district was eliminated because it was determined that this type of zoning was not viable or effective for property owners, political leaders, or the Planning Commission and therefore, could not be satisfactorily implemented. Their concerns about overlay zoning involved the possibility of future shrinking/changing noise contours that would cause the district's boundaries to fluctuate, the deeds to constantly need adjustment, and the litigation potential to increase. Instead, Boone County applied the Land Use Compatibility standards, Yearly Average Noise Levels and Noise Mitigation or sound insulation requirements to all zoning districts instead of the AEO zoning district. The standards, noise levels, and sound insulation requirements were included as supplemental performance standards and meet federal noise guidelines.

In response to the need for land use controls to inform developers and builders of the need to incorporate appropriate sound insulation in residential structures, Boone County incorporated the KCAB's 1992 Supplemental Part 150 Study contour maps and Measure 17 from the airport Master Plan into the *1995 Boone County Comprehensive Plan*.<sup>35</sup> The county also developed supplemental performance standards within the subdivision regulations to require NLR measures for new residential development within the 65 DNL noise contour. The 1999 NCP recommended modification of the measure to support the Boone County Planning Commission *Comprehensive Plan* compatible land use policies within the 65 DNL noise contour.

<sup>35</sup> *1995 Boone County Comprehensive Plan: a Vision for the Year 2020*, May 1995, adopted by the Boone County Planning Commission, May 3, 1995.

Measure: LU-18  
*Continued*

Exhibit: N/A

**Background and Intent, *Continued*:** Objective 7 of the housing section of the 2005 Boone County Comprehensive Plan incorporates language relative to the construction of new housing within the 65 DNL noise contour and supports this development only if the structure is designed to be compatible with aircraft noise:

*Housing Objective 7. Airport noise levels are among those legitimate land use impacts to be evaluated when new residential development is proposed. New residential development shall not occur in areas with existing or proposed noise levels of 65 DNL or higher as identified on official Noise Exposure Maps adopted and approved by the Kenton County Airport Board and the Federal Aviation Administration, unless acceptable measures are taken by builders to reduce adverse noise impacts.*

As required by Kentucky Revised Statutes Chapter 100, the Boone County Planning Commission is in the process of examining and updating the county's adopted Comprehensive Plan. The housing section of the 2005 Boone County Comprehensive Plan states:

*It is important that the construction of new residential development, that would be built in areas impacted by high airport noise levels (65 DNL plus), should have stipulations that would mandate that builders in these developments construct their buildings with materials that would reduce excess noise from the outside. The general guidelines for new residential construction within 65 DNL or greater is that it should be built with enough sound insulation to provide an outdoor to indoor NLR of at least 30 dB, and 35 dB if the outside area is within 70 DNL.*

Thus Boone County, through its comprehensive planning policies, has shown a commitment to implementing compatible land use planning and recognizes that aircraft noise currently exists in the county and that future aircraft noise impacts are likely to occur.

To further support its compatible land use planning, Boone County incorporated supplemental performance standards within the county's subdivision regulations to enforce compatible land use NLR measures within the 65 DNL noise contours.

***Boone County Subdivision Regulations -- Supplemental Performance Standards***

**Section 3195—Applicability of Noise Contours:** *The Planning Commission, in its consideration of reviewing and issuing any residential zoning permit and all Site Plan Review applications and subdivision plan/plat reviews, shall consider the impact of aircraft noise on the proposed use and shall advise the applicant of the relationship of the proposed development to existing or projected aircraft noise. Such permit, plan, and plat approvals shall be contingent on the adopted KCAB Noise Exposure Maps and shall involve sound insulation measures.*

*The Planning Commission shall consider the Part 150 Land Use Compatibility with Yearly DNLs table and where NLR measures are recommended shall request that the applicant provide such information as necessary to determine the extent of measures to be take in design of a development (14 CFR Part 150, Appendix A, Table 1, Land Use Compatibility with Yearly Day-Night Average Sound Levels).*

Measure: LU-18  
Continued

Exhibit: N/A

**Background and Intent, Continued:**

**Section 3196—Structures Requiring Protection:** This section of the Supplemental Performance Standards requires that all single-family structures, and the portion of non-residential structures in which noise-sensitive activities are conducted (e.g. research facilities, hotel sleeping rooms, meeting rooms, and similar activities), within the 65 DNL noise contour be constructed following specific building construction guidelines. These building construction guidelines address general construction, exterior walls, windows, doors, roofs, ceilings, floors, and ventilation systems to achieve the NLR as defined in the Part 150 Land Use Compatibility with Yearly Day-Night Average Sound Levels table.

The KCAB supports these compatible land use policies and regulations as adopted by the Boone County Planning Commission and the Board encourages their continued implementation.

**Status:** N/A

**Land Use Compatibility Improvement:** The potential improvement in land use compatibility is dependent upon the implementation and enforcement of these local land use policies and regulations.

**Responsible Implementing Parties:** Boone County

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** Implementing this measure as modified is not expected to adversely affect any other mitigation programs or measures.

**MEASURE: IM-1**

**Exhibit: N/A**

**Relationship to 1999 NCP:** There is no relationship to the 1999 NCP. Measure IM-1 was initially approved in the 1990 Part 150 Study. It was not recommended for continuation in the 1992 Supplemental Part 150 Study or the 1999 Far Part 150 Update Study.

**2006 NCP Action:** *Measure IM-1 is included for continuity of numbering. No further FAA action is required.*

**Background and Intent:** Previously approved Measure IM-1 from the *1990 Part 150 Study* recommended the establishment an implementation committee to outline specific implementation steps and program eligibility criteria.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: IM-2**

**Exhibit: N/A**

**Description:** Conduct noise monitoring of Runway 18L/36R to develop “before and after” comparisons of the new runway.

**Relationship to 1999 NCP:** There is no relationship to the 1999 NCP. Measure IM-2 was initially approved in the 1990 Part 150 Study to monitor the aircraft noise conditions with the operation of the “new” north/south runway on the east side of the airfield (Runway 18L/36R). That runway became operational in 1991. It was not recommended for continuation in the 1992 Supplemental Part 150 Study.

**2006 NCP Action:** *Measure IM-2 is included for continuity of numbering. No further FAA action is required.*

**Background and Intent:** Previously approved Measure IM-1 from the 1990 Part 150 Study recommended conducting noise monitoring of Runway 18L/36R to develop “before and after” comparisons of the new runway.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** N/A

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: IM-3**

**Exhibit: N/A**

**Description:** Update annual noise contours.

**Relationship to 1999 NCP:** Measure IM-3 was originally approved in the 1990 Part 150 Study and recommended to be continued in the 1999 NCP.

**2006 NCP Action:** *Measure IM-3 is to be continued with modification.*

**Background and Intent:** Previously approved Measure IM-3 from the 1990 Part 150 Study recommended updating annual noise contours to monitor shifts in noise impacts when Runway 18L/36R became operational. The 1999 Part 150 Study recommended continuing the annual noise contour updates throughout the current Part 150 planning period. Measure IM-3 is again recommended for continuation throughout the life of the current Part 150 planning period.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** This measure would be implemented using the existing procedures and processes used by the KCAB to prepare annual noise contours.

**Costs:** The annual cost to update the noise contours is approximately \$10,000.

**Schedule:** This measure may be implemented upon receipt of the FAA's Record of Approval and would be subject to FAA and KCAB funding availability.

**Effects on Other Programs/Measures:** The implementation of this measure is not expected to have any effect on other programs or measures.

**MEASURE: IM-4**

**Exhibit: N/A**

**Description:** Continue the use of a 24-hour public comment system indefinitely.

**Relationship to 1999 NCP:** Measure IM-4 was initially approved in the 1992 Supplemental Part 150 Study. The implementation of this measure is continuous.

**2006 NCP Action:** *Measure IM-4 is to be continued.*

**Background and Intent:** Previously approved Measure IM-4 recommended the continued use of a 24-hour public comment system indefinitely. This measure has been implemented and should continue.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** The estimated annual cost to maintain and staff the 24-hour public comment system is borne by the KCAB and is not subject to AIP funding.<sup>36</sup>

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

<sup>36</sup> According to FAA Order 5100.38B, *Airport Improvement Program Handbook*, Section 2. *Noise Compatibility Projects*, 810. *General*, d., May 31, 2002. "Other ineligible noise compatibility proposals include development of new or modified flight procedures or environmental assessments prepared by the FAA for flight procedures approved in an NCP, projects which are not described in sufficient detail to determine their noise mitigation benefits, projects which cannot be implemented by an eligible sponsor, operational or administrative costs of a sponsor's ongoing noise mitigation program, and demonstration programs intended to test the effectiveness of new noise mitigation technology."

**MEASURE: IM-5**

**Exhibit: N/A**

**Description:** Acquire an ARTS (Automated Radar Terminal System) Tracking System to provide information to the Kenton County Airport Board (KCAB) staff on actual operations relative to the Noise Compatibility Plan; enhance airline, pilots, and air traffic awareness of local noise abatement procedures; and ensure that assumptions used in the annual noise contour updates are consistent with actual flight procedures.

**Relationship to 1999 NCP:** There is no relationship to the 1999 NCP. Measure IM-5 was approved in the 1992 Supplemental Part 150 Study and has been completed.

**2006 NCP Action:** *Measure IM-5 has been completed and is included for continuity of numbering. No further FAA action is required.*

**Background and Intent:** The KCAB purchased an Aircraft Operations Monitoring System (AOMS) to collect ARTS data in 1997. This system provides detailed aircraft operations data to assist the KCAB staff in preparing reports for the KCAB Board, local governments, and the public. It also ensures that the assumptions used in the airport's ongoing analysis of noise conditions are consistent with actual aircraft operations. Although it is not intended as an enforcement technique, the ARTS data also provides information for the tenant airlines at CVG to evaluate the compliance of their pilots and the need for improved pilot training and awareness programs.

**Status:** The AOMS has been operational since November 1997.

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: IM-6**

**Exhibit: N/A**

**Description:** Acquire portable noise meters to monitor the implementation and effectiveness of the Noise Compatibility Plan including recommended noise abatement operational procedures and to carry out other noise compatibility projects including recommended residential and school/church sound insulation measures.

**Relationship to 1992 NCP:** Measure IM-6 was initially approved in the 1999 FAR Part 150 Study Update.

**2006 NCP Action:** *Measure IM-6 has been completed and is included for continuity of numbering. No further FAA action is required.*

**Background and Intent:** In November 1997, the KCAB began operating an Aircraft Operations Monitoring System (AOMS) system (Measure IM-5) to collect aircraft flight track data. The AOMS system provides detailed aircraft operations data to assist the KCAB staff in preparing reports for the KCAB Board, local governments, and the public. It also ensures that the assumptions used in the airport's ongoing analysis of aircraft noise conditions are consistent with actual aircraft operations. Measure IM-6 recommended the acquisition of portable noise monitoring equipment for use in monitoring the effectiveness of the recommended noise abatement procedures and to aid in determining eligibility for the approved school and church sound insulation programs (Measures LU-7 and LU-17).

In 2002, the KCAB acquired six portable Environmental Monitoring Unit (EMU) 1200 noise monitors from Lochard. The noise monitoring systems are operational and are used regularly to monitor aircraft operations and to determine eligibility for sound insulation programs.

Data gathered from the noise meters placed in surrounding communities is used for public information purposes, and school and church eligibility studies. Part 150 regulations require the Integrated Noise Model (INM) to be used in preparing the official noise contours and subsequent noise exposure maps. Noise monitor data can be and is used to refine and verify the input data used in the INM, however, at this time, the INM cannot directly utilize noise monitor data in the preparation of noise contours.

Although not intended as an enforcement technique, the noise monitoring data, in combination with the ARTS data, provides information to KCAB staff on the performance of aircraft operating at CVG and the overall accuracy and compliance with the approved noise abatement procedures.

**Status:** The AOMS system has been operational at CVG since November 1997.

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** Kenton County Airport Board

**Measure: IM-6**  
*Continued*

**Exhibit: N/A**

**Implementation Steps, Costs, and Schedule:**

**Steps:** N/A

**Costs:** N/A

**Schedule:** N/A

**Effects on Other Programs/Measures:** N/A

**MEASURE: IM-7**

**Exhibit: N/A**

**Description:** Develop a community outreach website.

**Relationship to 1999 NCP:** There is no relationship to the 1999 NCP; Measure IM-7 is a new measure.

**2006 NCP Action:** *Measure IM-7 is a new measure.*

**Background and Intent:** This measure proposes that the KCAB develop and maintain a comprehensive public information website to provide the public with on-line access to information about current airport operations, noise abatement and land use mitigation programs, and an on-line noise complaint form.

The KCAB has maintained an active noise abatement program since 1990 that has included a 24-hour noise complaint hotline, three Part 150 Studies, the acquisition of a flight tracking system and portable noise monitors, land use mitigation programs, and a full-time staff of four. In addition to the extensive public outreach program undertaken in this current Part 150 Study, the KCAB desires to develop additional avenues to convey noise abatement information.

A number of important factors affect the way aircraft will operate during this Part 150 planning period. These include the opening of the new north/south third parallel runway (Runway 18R/36L) in December 2005, the continuation of FAA nighttime operational runway use tests, the changes to the nighttime runway utilization program being proposed as part of this Part 150 study (Alternative NA-A, Alternative NA-C, and Alternative NA-F), and a series of runway pavement rehabilitation projects that will close the existing runways for periods of time up to four months between 2006 and 2010. While the KCAB will continue to maintain the noise complaint hotline, a community outreach website would allow the public to access important information about airport projects and operations at their convenience.

**Status:** N/A

**Land Use Compatibility Improvement:** N/A

**Responsible Implementing Parties:** Kenton County Airport Board

**Implementation Steps, Costs, and Schedule:**

**Steps:** The KCAB would adopt the 2006 FAR Part 150 Noise Compatibility Study and the FAA would issue its ROA. The KCAB could then develop a community outreach website.

**Costs:** The cost for this measure is expected to be approximately \$100,000 for the initial set-up and approximately \$5,000 per month to maintain the site with the most current and up-to-date information.

**Schedule:** This measure may be implemented upon receipt of the FAA's ROA for this Part 150 Study. The implementation of this measure also would be subject to the availability of funding from the FAA AIP or from Passenger Facility Charges (PFCs).

**Effects on Other Programs/Measures:** N/A











## 4.1 NOISE COMPATIBILITY PROGRAM MAP

The 2011 NCP noise contour is similar in shape and size to the Future (2011) Baseline noise contour. The notable differences include an increase in the size of the 65 DNL noise contour of the 2011 NCP immediately northwest of Runway 18L/36R and directly south of Runway 18L/36R. This increase in size is due to the increased operational use of Runway 36R during the nighttime hours for both arrivals and departures, as well as, the use of the 36R Ohio River turn (recommended Measure OP-19). The 2011 NCP noise contour is smaller than the Future (2011) Baseline to the north and south of Runway 18C/36C due to the decreased use of the runway during the nighttime hours. The Future (2011) Baseline includes 171 housing units within the 65 DNL noise contour. The owners of all but two of these housing units have been offered participation in an airport mitigation program approved in a previous KCAB Part 150 Study or are ineligible for participation in a mitigation program. The 2011 NCP includes 159 housing units within the 65 DNL noise contour. The owners of all of these housing units have been offered participation in an airport mitigation program approved in a previous KCAB Part 150 Study or are ineligible for participation in a mitigation program. Therefore, with the implementation of this recommended program, there would be a reduction in the number of unmitigated housing units within the 65 DNL noise contour.

**Exhibit 4-6** shows a comparison between the Future (2011) Baseline noise exposure contour and the 2011 NCP noise exposure contour. **Table 4-2, Comparison of Baseline and NCP Housing, Population, and Noise-Sensitive Public Facility Incompatibilities**, compares the baseline impacts and the impacts with the implementation of the NCP. As data in the table indicates, the land use mitigation measures recommended in this NCP, when implemented, would mitigate all of the existing incompatible land uses within the 65 DNL noise contour.



**Table 4-2  
 COMPARISON OF BASELINE AND NCP HOUSING, POPULATION, AND  
 NOISE-SENSITIVE PUBLIC FACILITY INCOMPATIBILITIES  
 Cincinnati/Northern Kentucky International Airport**

| EXISTING (2006) BASELINE                       | 65-70<br>DNL | 70-75<br>DNL | 75+<br>DNL | TOTAL     | TOTAL<br>UNMITIGATED |
|--|--------------|--------------|------------|-----------|----------------------|
| <b>RESIDENCES</b>                              |              |              |            |           | <i>Residences</i>    |
| Previously mitigated                           | 4            | 0            | 0          | 4         | 0                    |
| Refused mitigation                             | 0            | 0            | 0          | 0         | 0                    |
| Ineligible structures                          | 0            | 0            | 0          | 0         | 0                    |
| <i>Never offered mitigation</i>                | 0            | 0            | 0          | 0         | 0                    |
| <b>Total</b>                                   | <b>4</b>     | <b>0</b>     | <b>0</b>   | <b>4</b>  |                      |
| <b>ESTIMATED POPULATION</b>                    |              |              |            |           | <i>Population</i>    |
| Previously mitigated                           | 12           | 0            | 0          | 12        | 0                    |
| Refused mitigation                             | 0            | 0            | 0          | 0         | 0                    |
| Not eligible                                   | 0            | 0            | 0          | 0         | 0                    |
| <i>Never offered mitigation</i>                | 0            | 0            | 0          | 0         | 0                    |
| <b>Total</b>                                   | <b>12</b>    | <b>0</b>     | <b>0</b>   | <b>12</b> |                      |
| <b>NOISE-SENSITIVE PUBLIC FACILITIES (NSF)</b> |              |              |            |           | <i>NSF</i>           |
| Schools  | 0            | 0            | 0          | 0         | 0                    |
| Churches                                       | 0            | 0            | 0          | 0         | 0                    |
| Nursing Homes                                  | 0            | 0            | 0          | 0         | 0                    |
| Hospitals                                      | 0            | 0            | 0          | 0         | 0                    |
| Libraries                                      | 0            | 0            | 0          | 0         | 0                    |

**TABLE 4-2, Continued**  
**COMPARISON OF BASELINE AND NCP HOUSING, POPULATION, AND**  
**NOISE-SENSITIVE PUBLIC FACILITY INCOMPATIBILITIES**  
**Cincinnati/Northern Kentucky International Airport**

| <b>FUTURE (2011) BASELINE</b>                  | <b>65-70<br/>DNL</b> | <b>70-75<br/>DNL</b> | <b>75+<br/>DNL</b> | <b>TOTAL</b> | <b>TOTAL<br/>UNMITIGATED</b> |
|--|----------------------|----------------------|--------------------|--------------|------------------------------|
| <b>RESIDENCES</b>                              |                      |                      |                    |              | <i>Residences</i>            |
| Previously mitigated                           | 120                  | 7                    | 0                  | <b>127</b>   | <i>0</i>                     |
| Refused mitigation                             | 28                   | 4                    | 0                  | <b>32</b>    | <i>0</i>                     |
| Ineligible structures                          | 10                   | 0                    | 0                  | <b>10</b>    | <i>0</i>                     |
| <i>Never offered mitigation</i>                | <b>2</b>             | <b>0</b>             | <b>0</b>           | <b>2</b>     | <i>2</i>                     |
| <b>Total</b>                                   | <b>160</b>           | <b>11</b>            | <b>0</b>           | <b>171</b>   |                              |
| <b>ESTIMATED POPULATION</b>                    |                      |                      |                    |              | <i>Population</i>            |
| Previously mitigated                           | 337                  | 23                   | 0                  | <b>360</b>   | <i>0</i>                     |
| Refused mitigation                             | 81                   | 16                   | 0                  | <b>97</b>    | <i>0</i>                     |
| Not eligible                                   | 26                   | 0                    | 0                  | <b>26</b>    | <i>0</i>                     |
| <i>Never offered mitigation</i>                | <b>5</b>             | <b>0</b>             | <b>0</b>           | <b>5</b>     | <i>5</i>                     |
| <b>Total</b>                                   | <b>449</b>           | <b>39</b>            | <b>0</b>           | <b>488</b>   |                              |
| <b>NOISE-SENSITIVE PUBLIC FACILITIES (NSF)</b> |                      |                      |                    |              | <i>NSF</i>                   |
| Schools  | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |
| Churches                                       | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |
| Nursing Homes                                  | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |
| Hospitals                                      | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |
| Libraries                                      | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |

**TABLE 4-2, Continued  
COMPARISON OF BASELINE AND NCP HOUSING, POPULATION, AND  
NOISE-SENSITIVE PUBLIC FACILITY INCOMPATIBILITIES  
Cincinnati/Northern Kentucky International Airport**

| <b>2011 NCP</b>                                | <b>65-70<br/>DNL</b> | <b>70-75<br/>DNL</b> | <b>75+<br/>DNL</b> | <b>TOTAL</b> | <b>TOTAL<br/>UNMITIGATED</b> |
|--|----------------------|----------------------|--------------------|--------------|------------------------------|
| <b>RESIDENCES</b>                              |                      |                      |                    |              | <b>Residences</b>            |
| Previously mitigated                           | 110                  | 7                    | 0                  | <b>117</b>   | <i>0</i>                     |
| Refused mitigation                             | 28                   | 4                    | 0                  | <b>32</b>    | <i>0</i>                     |
| Ineligible structures                          | 10                   | 0                    | 0                  | <b>10</b>    | <i>0</i>                     |
| <b>Never offered mitigation</b>                | <b>0</b>             | <b>0</b>             | <b>0</b>           | <b>0</b>     | <i>0</i>                     |
| <b>Total</b>                                   | <b>148</b>           | <b>11</b>            | <b>0</b>           | <b>159</b>   |                              |
| <b>ESTIMATED POPULATION</b>                    |                      |                      |                    |              | <b>Population</b>            |
| Previously mitigated                           | 309                  | 23                   | 0                  | <b>332</b>   | <i>0</i>                     |
| Refused mitigation                             | 80                   | 16                   | 0                  | <b>96</b>    | <i>0</i>                     |
| Not eligible                                   | 26                   | 0                    | 0                  | <b>26</b>    | <i>0</i>                     |
| <b>Never offered mitigation</b>                | <b>0</b>             | <b>0</b>             | <b>0</b>           | <b>0</b>     | <i>0</i>                     |
| <b>Total</b>                                   | <b>415</b>           | <b>39</b>            | <b>0</b>           | <b>454</b>   |                              |
| <b>NOISE-SENSITIVE PUBLIC FACILITIES (NSF)</b> |                      |                      |                    |              | <b>NSF</b>                   |
| Schools  | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |
| Churches                                       | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |
| Nursing Homes                                  | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |
| Hospitals                                      | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |
| Libraries                                      | 0                    | 0                    | 0                  | <b>0</b>     | <i>0</i>                     |

Notes: The numbers of residences were verified through detailed field surveys of the entire 65 DNL noise contour. Population numbers were estimated by multiplying the number of impacted residences by the average population per residence for each U.S. Census Block in 2000 rounded to the nearest whole number.

Previously mitigated residences are those that were included in a sound insulation program prior to the start of this Part 150 study. Previously unmitigated residences include those which either chose not to participate in a program or new homeowners whose previous owner declined participation in a program. Not Eligible residences include one mobile home, and residences which were newly constructed in the 65 DNL noise contour after December 5, 2000 (the date of the FAA Record of Approval for the KCAB's 1999 Part 150 Study). New impacts are defined as those houses that have never before been located inside a 65 DNL noise contour.

Source: Landrum & Brown, 2006

## 4.2 NOISE COMPATIBILITY PROGRAM COSTS

The direct costs associated with the recommended NCP measures will be incurred by the KCAB, FAA, airport users, and local governments, supplemented by eligible funding by the FAA. Costs for completion of the program have been estimated in 2005 dollars and are presented in **Table 4-3, *Estimated NCP Implementation Costs***. These costs are divided into annual or one-time expenditures, with the KCAB carrying the vast majority of responsibility for funding the program measures.

Annual costs consist of the administrative expenses to implement a continuing measure or to operate aircraft according to the recommended measures. One-time costs include the expenditures to implement mitigation programs such as voluntary acquisition and sound insulation. The total estimated cost to the KCAB for recommended NCP measures is \$8,495,000 to \$8,545,000 for one-time expenditures. The FAA would incur a one-time administrative expense of approximately \$50,000 to implement all of the recommended noise abatement air traffic actions. The KCAB-funded mitigation actions recommended for implementation are eligible, however, for Federal matching funds amounting to approximately 80 percent of the total program cost.

## 4.3 IMPLEMENTATION SCHEDULE

In general, noise abatement air traffic measures may begin once the KCAB adopts the NCP and receives both the FAA Record of Approval on the NCP and environmental approval of the revised nighttime runway use program (Measures OP-17, OP-18, and OP-19). The FAA previously approved measures under the 1999 FAR Part 150 Study Update, and implementation of those measures may continue under that approval. **Table 4-4, *NCP General Implementation Schedule***, displays the general status of implementation for the recommended NCP measures. A general rather than specific schedule of implementation is recommended, owing to the different parties responsible for approvals and the continuing uncertainty of matching fund availability.

All of the new measures will require FAA approval of this NCP, so KCAB implementation must await that approval. Some measures will result in a direct Federal action (such as noise abatement air traffic measures) and must be environmentally reviewed.

The measures that do not require Federal participation and not eligible for Federal funding consequently may be implemented immediately upon KCAB approval of the program. Land use management actions (mitigation) will typically require longer implementation periods, owing to the number of houses or noise-sensitive public facilities included within the mitigation program, the construction time required for sound insulation measures, and the availability of FAA and/or KCAB funds.

**Table 4-3  
ESTIMATED NCP IMPLEMENTATION COSTS  
Cincinnati/Northern Kentucky International Airport**

| <b>TYPE OF MEASURE</b>     | <b>COST TO AIRPORT<sup>†</sup></b>  | <b>DIRECT COST TO LOCAL GOVERNMENT</b> | <b>DIRECT COST TO USERS</b> | <b>DIRECT COST TO FAA ATCT</b> |
|----------------------------|---|--|-----------------------------|--------------------------------|
| <b>Noise Abatement</b>     | ~\$80,000* annual (\$400,000):<br>one-time administrative cost<br>~\$100,000 – \$150,000<br>Interstate Approach Feasibility Study - one time cost   | None                                   | Minimal**                   | ~\$50,000*<br>one-time cost    |
| <b>Land Use Management</b> | Voluntary Acquisition:<br>~\$6,620,000 one-time cost<br><br>Sound Insulation:<br>~\$1,200,000 one-time cost<br><br>School Sound Insulation:<br>To be determined if schools meet eligibility criteria<br><br>Church Sound Insulation:<br>To be determined if churches meet eligibility criteria<br><br>Minimal annual administrative | Minimal administrative                 | None                        | None                           |
| <b>Implementation</b>      | Annual Noise Contours:<br>~\$10,000 annual (\$50,000)<br>Community Outreach Website:<br>~\$100,000 one-time cost<br>~\$5,000 annual (\$25,000)  | None                                   | None                        | None                           |
| <b>TOTAL COST</b>          | <b>~\$8,495,000 to ~\$8,545,000</b>   | <b>Minimal administrative</b>          | <b>Minimal</b>              | <b>~\$50,000</b>               |

<sup>†</sup> The “Cost to Airport” represents the KCAB-funded mitigation actions that would be eligible for Federal matching funds amounting to approximately 80 percent of the total program cost. Implementation of the recommended measures would depend upon the availability of FAA and/or KCAB funding.

\* The noise abatement administrative costs, annual and one-time, are estimated to provide for the implementation and annual maintenance of all noise abatement measures. No costs are attributable to any one measure(s). The estimated cost is provided for planning purposes only.

\*\* Costs to users would typically include increased fuel consumption.

Notes: Administrative costs include staffing costs.

The numbers noted in parenthesis after the “annual cost” represent the estimated costs for the five-year Part 150 planning period.

Source: Landrum & Brown, 2006

**Table 4-4  
NCP GENERAL IMPLEMENTATION SCHEDULE  
Cincinnati/Northern Kentucky International Airport**

| <b>Recommended Measure*</b>  | <b>Responsible Implementing Parties</b>           | <b>General Implementation Schedule</b> |
|--|---|--|
| Currently approved Noise Abatement Measures OP-1 and OP-12 are complete.   | Not Applicable                                    | Not Applicable                         |
| Withdraw currently approved Noise Abatement Measures (OP-9, OP-15, and OP-13).   | Not Applicable                                    | Not Applicable                         |
| Continue Measure OP-2 for Runway 18C departures w fly an ANAV departure procedure over I-71/75.  | KCAB, FAA Air Traffic Control, aircraft operators | 2007                                   |
| Continue Measure OP-3 (Runway 18R departures), OP-5 (Runway 27 departures), and Measure OP-8 (noise abatement departure routes) with modification for an ANAV departure procedure to a turn point approximately four n.m. from the runway end. | KCAB, FAA Air Traffic Control, aircraft operators | 2007                                   |
| Continue Measure OP-4 night noise policy and contra-flow arrival and departure procedure on west side of the airport.  | KCAB, FAA Air Traffic Control, aircraft operators | In place                               |
| Continue Measure OP-6 for Runway 36C departures with modification for an ANAV departure procedure over the Ohio River.   | KCAB, FAA Air Traffic Control, aircraft operators | 2007                                   |
| Continue Measure OP-7 for the use of Runway 27 for daytime departures.   | KCAB, FAA Air Traffic Control, aircraft operators | In place                               |
| Withdraw Measure OP-10 nighttime turbojet arrival runway priorities (9, 27, 36C, and 18C).   | KCAB, FAA Air Traffic Control, aircraft operators | Not Applicable                         |
| Withdraw Measure OP-11 nighttime turbojet departure runway priorities (27, 36C, 9, and 18C).   | KCAB, FAA Air Traffic Control, aircraft operators | Not Applicable                         |
| Continue Measure OP-14 to define and utilize ANAV procedures to increase accuracy of flight corridors.   | KCAB, FAA Air Traffic Control, aircraft operators | 2007                                   |
| Continue Measure OP-16 for departing Runway 36L: turn left at 4.2 DME from CVG VOR to 325-degree heading to overfly Ohio River; or fly ANAV procedure over Ohio River.   | KCAB, FAA Air Traffic Control, aircraft operators | 2007                                   |
| Implement Measure OP-17 to modify the nighttime runway use program to include Runway 18L/36R.  | KCAB, FAA Air Traffic Control, aircraft operators | 2007                                   |
| Implement Measure OP-18 to assign heavy (>255,000 lbs) aircraft departures to Runway 27 during the nighttime hours.  | KCAB, FAA Air Traffic Control, aircraft operators | 2007                                   |
| Implement Measure OP-19 to direct turbojet aircraft departing Runway 36R during nighttime hours to turn left to a 330-degree heading to follow the Ohio River corridor.  | KCAB, FAA Air Traffic Control, aircraft operators | 2007                                   |

**Table 4-4, Continued  
NCP GENERAL IMPLEMENTATION SCHEDULE  
Cincinnati/Northern Kentucky International Airport**

| <b>Recommended Measure*</b>  | <b>Responsible Implementing Parties</b> | <b>General Implementation Schedule</b> |
|--|---|--|
| Implement Measure OP-20 to study the feasibility of establishing an interstate approach to Runway 36R.   | KCAB                                    | 2007                                   |
| Currently approved Land Use Measures LU-2, LU-3, LU-6, and LU-13 are complete or measures have expired.  | Not Applicable                          | Not Applicable                         |
| Withdraw currently approved Land Use Management Measures (LU-9 and LU-10).   | Not Applicable                          | Not Applicable                         |
| Continue Measure LU-1 to offer voluntary acquisition within a 1,700 by 8,000-foot box off the arrival end of Runways 18L, 18C, 18R, 36L, 36C, 36R, and 27 with modification to include Runway 18R/36L. | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-4 to offer voluntary acquisition within the 2011 NCP 70-75 DNL noise contour.  | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-5 for voluntary acquisition in Rolling Green Acres and the vicinity of O'Hara Road and Turfway Road.   | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-7 to sound insulate eligible schools.  | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-8 for voluntary acquisition of undeveloped, approved residential lots in Ethan's Glen subdivision.   | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-12 to sound insulate eligible single-family houses west of the airport within the western 2011 NCP 65-70 DNL noise contour.  | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-14 to sound insulate eligible single-family in Dartmouth Woods subdivision.  | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-15 to sound insulate eligible single-family in Deerfield subdivision.  | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-16 to sound insulate eligible single-family in Orchard Estates subdivision.  | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-17 to sound insulate eligible churches.  | KCAB, FAA                               | Current through 2011                   |
| Continue Measure LU-18 to support the Boone County Planning Commission Comprehensive Plan's compatible land use policies within the 65 DNL noise contour.  | KCAB, Boone County Planning Commission  | Immediately                            |
| Implementation Measures IM-1 and IM-2 are not recommended for continuation.  | Not Applicable                          | Not Applicable                         |
| Continue Measure IM-3 to update annual noise contours throughout the current Part 150 planning period.   | KCAB                                    | Current through 2011                   |

**Table 4-4, Continued  
 NCP GENERAL IMPLEMENTATION SCHEDULE  
 Cincinnati/Northern Kentucky International Airport**

| <b>Recommended Measure*</b>                                     | <b>Responsible Implementing Parties</b> | <b>General Implementation Schedule</b> |
|---|---|--|
| Continue Measure IM-4, 24-hour public comment system.           | KCAB                                    | In place                               |
| Currently approved IM-5 is completed.                           | Not Applicable                          | Not Applicable                         |
| Currently approved IM-6 is completed.                           | Not Applicable                          | Not Applicable                         |
| Implement Measure IM-7 to develop a community outreach website. | KCAB                                    | 2007                                   |

Source: Landrum & Brown, 2006

#### **4.4 SUPPLEMENTAL PLANNING INFORMATION**

Due to the interest of local jurisdictions in Kentucky and Ohio in the potential development of local compatible land use policies and land use controls beyond the 65 DNL, the KCAB is disclosing the 60 DNL noise exposure contour for both 2006 existing conditions and the future 2011 NCP. This data is being provided for local planning purposes only.

- **Exhibit 4-7, 2006 Existing Conditions Noise Exposure Contour with the 60 DNL**
- **Exhibit 4-8, 2011 NCP Noise Exposure Contour with the 60 DNL**



