5.0 ENVIRONMENTAL OVERVIEW

This chapter provides a review of environmental categories that may be affected by the implementation of the Recommend Airfield and Landside Development Plan (Recommended Plan) shown in Exhibit 4-7. The phasing plan, which is presented in the following chapter, Chapter 6, *Airport Plans*, identifies which projects within the Recommended Plan would be implemented in the short-term, the medium-term and the long-term. The projects slated for the short-term would be included in the first environmental documentation. The remaining projects would be evaluated to determine what level of environmental documentation is needed closer to the time of implementation.

One of the projects within the Recommended Plan that is slated in the medium-term is the runway extension. To complete the runway extension in the medium-term, the environmental documentation needs to take place in the short-term. It is assumed that the runway extension would require an Environmental Assessment (EA) level of documentation. However, it is the FAA's determination which projects would require an EA. In this chapter, reference to the initial EA refers to the documentation that would be prepared for the projects listed in the short-term of the Recommended Plan.

This review includes an examination of all of the environmental impact categories evaluated as part of an EA, as prescribed in the guidelines provided in FAA Order 5050.4A, Airport Environmental Handbook. This is required by the National Environmental Policy Act of 1969 (NEPA). The purpose of this review is to identify those environmental issues which may require additional environmental analysis prior to implementation. The environmental impact categories are:

- Noise
- Compatible Land Use
- Social Impacts
- Induced Socioeconomic Impacts
- Air Quality
- Water Quality
- Department of Transportation Act, Section 4(f)

- Historic, Architectural, Archaeological, and Cultural Resources
- Biotic Communities
- Endangered and Threatened Species of Flora and Fauna
- Wetlands
- Floodplains
- Coastal Zone Management Program
- Coastal Barriers
- Wild and Scenic Rivers
- Prime and Unique Farmland
- Energy Supply and Natural Resources
- Light Emissions
- Solid Waste Impacts
- Construction Impacts
- Hazardous Waste and Asbestos

The environmental review process is designed to provide a brief, preliminary indication of environmental constraints and environmental issues affected by implementation of the Recommended Plan. This review does not provide analysis and data required to prepare an official EA for the Recommended Plan. This chapter includes initial coordination with relevant local, State, and Federal agencies as part of the identification of environmental issues and the potential need for further study. At the time of project implementation, appropriate environmental documentation, such as an EA or an Environmental Impact Statement (EIS) must be completed if warranted. The preparation of an EA or and EIS would require additional coordination with Federal, State, and local environmental agencies to secure the necessary approvals and permits to implement specific recommended development items. Copies of all correspondence received during the preparation of this desktop review process are provided out the end of this chapter.

Listed below are the key projects in the Recommended Plan for which the FAA would more than likely require some level of environmental documentation. These projects are organized into the phasing development years, due to the phasing dictating when the environmental analysis would need to take place. These projects are also depicted in the Future Airport Layout Plan in Chapter 6.0*, Airport Plans*. They are:

- A southwest 899-foot extension of Runway 3L/21R (Phase II)
- Relocation of Taxiway 'C' 1,000 feet to the northeast (Phase III)

- A parallel taxiway for Runway 3R/21L (Phase III)
- Relocation of the 45-acre Airport stormwater detention basin southeast of Runway 3R/21L (Phase III)
- Relocation of 1,000 foot section of Airport Road (Phase I)
- Facility improvements (Phase III)
- Future aviation development areas (Phase III)

This chapter addresses each project and identifies potential environmental issues which may require further study.

5.1 NOISE

Simply defined, sound is the sensation perceived by the sense of hearing. Undesirable sound is considered noise.

The airport noise environment, including aircraft operations and ambient noise, is described using the Day-Night Average Sound Level (DNL). The DNL metric includes a measurement of aircraft activity for noise generated over a 24-hour period, with a 10-decibel penalty applied to nighttime noise events (11:00 p.m. to 7:00 a.m.). The DNL metric, introduced by the Environmental Protection Agency (EPA), was developed as a single-number measurement of community noise exposure. Regulations of the Department of Housing and Urban Development (HUD) also use the DNL as the standard for measuring outdoor noise.

Aircraft noise impacts are assessed through the use of the FAA's Integrated Noise Model (INM) Version 6.1. This computer model is used to determine the yearly average of noise impacts by distributing the total year's noise level into 356 equal days; otherwise known as an annual day. The INM produces noise contours based on input of the Airport's aircraft activity and operational characteristics. These noise contours show the areas that are affected by different levels of noise. It should be noted that concurrent with this Master Plan Study, a Federal Aviation Regulation (FAR) Part 150 Noise Compatibility Study was being completed for Lunken Airport. Necessary coordination activities between the studies were completed, including the exchange of

existing conditions and future assumptions with respect to Airport operations and facility layout, and other necessary data input and modeling assumptions. One major difference between the Part 150 Study and the Master Plan is the timeframe for the noise contour projections. FAR Part 150 studies focus on existing conditions (baseline 2002) and a 5-year (2007) future timeframe. The Master Plan study focuses on existing conditions (baseline 2002) and a 20-year (2022) future timeframe.

The Master Plan Update includes an on-Airport noise mitigation project which addresses the goals and objectives developed earlier in the study. This mitigation project includes the implementation of two separate aircraft engine maintenance run-up pads. This project is designed to reduce the intensity of engine maintenance run-up noise resulting from aircraft for the surrounding areas. Other off-Airport noise mitigation projects which meet the goals and objectives are addressed in the Lunken Part 150 Noise Compatibility Plan. Projects recommended in the Part 150 include but are not limited to: updating Lunken's 'Fly-Friendly Program,' a voluntary flight procedures handout; update and use of Airscene, the flight tracking and noise monitoring equipment and software system; and revisions to arrival and departures procedures for the Airport. Refer to Lunken's FAR Part 150 Noise Compatibility Plan for a complete discussion of the recommended mitigation measures. The following sections summarize the data used to produce noise contours for the Airport Master Plan study.

5.1.1 Operational Levels

Operational levels for 2002 were compiled from the "Operations Summary" prepared monthly by the Airport and incorporated by the FAR Part 150 Study. **Table 5.1** presents the 2002 and 2022 level of operations by aircraft category. While total daily activity tends to vary throughout the year, Master Plan noise analyses (similar to the Part 150 Study) are based on an average annual day of activity. This is consistent with the methodology developed in FAA Advisory Circular 150/5020-1, Noise Control and Compatibility Planning for Airports.

Table 5.1
Cincinnati Municipal Airport-Lunken Field
Operation Levels

	2002		2022 Baseline	
Types of Operation	Annual Operations	Average Annual Day Operations	Annual Operations	Average Annual Day Operations
Air Taxi/Charter	12,479	34	27,152	74
General Aviation	119,457	327	160,171	439
Military	278	1	419	1
Cargo		0		0
Total	132,214	362	187,742	514

[1] "Military" does not include military helicopter operations because the INM is unable to model helicopter noise.
Source: Airport Records & PB Aviation

5.1.2 Fleet Mix

Fleet mix refers to the various categories of aircraft operating at an airport. Information on the Airport's existing fleet mix was obtained from Airport records, information provided by air taxi/charter operators and discussions with Airport operators. **Table 5-2** lists the aircraft fleet mix used in developing the Airport's noise contours for both the Master Plan and FAR Part 150 studies. This table is also referenced in Chapter 2.0, Table 2-3. The lower portion of Table 5-2 displays two sources of data used in the fleet mix distribution. These include sample and estimated fleet mix data.

Sample fleet mix data was projected based upon annual flight hours and utilization of specific general aviation aircraft types as summarized in the FAA's March 2003 Aerospace Forecasts. As indicated in Chapter 2.0, single-engine piston aircraft are projected to increase at a rate below one percent annually while multi-engine piston activity is projected to be relatively constant over the forecast period. These low rates of growth for small general aviation aircraft are partly a result of the age of the piston fleet in the U.S. Generally, the piston fleet is older than any other general aviation aircraft, and utilization tends to be less for older equipment. Corporate flying and fractional ownership are also factors that play an important role in determining the overall growth for the Airport. Turboprop activity is projected to grow at a rate

just below one percent annually. Jet aircraft exhibit the strongest growth in operations of any fleet type. Using data provided by the Airport, an estimate of equipment type represents the approximate fleet mix distribution for Lunken Airport. This estimate is carried forward for the forecast periods, 2007, 2012, and 2022.

TABLE 5-2
Cincinnati Municipal Airport-Lunken Field
OPERATIONS FLEET MIX FORECAST

	Historical		Forecast		
Equipment Type	2001	2002	2007	2012	2022
Single Engine Piston	70,287	71,802	80,709	82,132	85,052
Twin Engine Piston	18,894	20,212	21,094	21,094	21,094
Multi-Turbo	6,298	6,764	7,180	7,472	8,092
Business Jet	27,712	30,379	37,032	48,523	70,384
Helicopter	2,519	2,668	2,518	2,608	2,700
Military	252	389	419	419	419
Total	125,962	132,214	148,954	162,247	187,742
PERCENTAGE DISTRIBUTION					
	Sample	Estimated	Forecast		
Equipment Type	2001	2002	2007	2012	2022
Single Engine Piston	55.8%	54.3%	54.2%	50.6%	45.3%
Twin Engine Piston	15.0%	15.3%	14.2%	13.0%	11.2%
Multi-Turbo	5.0%	5.1%	4.8%	4.6%	4.3%
Business Jet	22.0%	23.0%	24.9%	29.9%	37.5%
Helicopter	2.0%	2.0%	1.7%	1.6%	1.4%
Military	0.2%	0.3%	0.3%	0.3%	0.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Cincinnati Municipal Airport, Lunken Field observations
Federal Aviation Administration
PB Aviation

5.1.3 Operational Procedures

Operations data, including runway utilization, aircraft flight tracks, and runway utilization was gathered through review meetings with Air Traffic Control Tower (ATCT) staff. Other Airport users and operators were consulted, as well as reviewing airspace routing procedures, in order to determine typical operating procedures. This data was also reviewed with the Part 150 Study team to ensure consistency.

5.1.4 Runway Utilization

Table 5-3 summarizes the Airport's existing runway use patterns. These patterns were developed with information provided by ATCT personnel as well as field verification completed during the Part 150 Study.

Table 5-3
Cincinnati Municipal Airport-Lunken Field
Average Annual Runway Utilization

Equipment Type	Runway						Total
Day	3L	21R	3R	21L	7	25	
1/Piston	15%	55%	5%	10%	5%	10%	100%
2/Piston	2%	6%	20%	60%	2%	10%	100%
Multi-Turbo	0%	0%	25%	65%	0%	10%	100%
Business Jet	0%	0%	25%	67%	0%	8%	100%
Military	0%	0%	25%	75%	0%	0%	100%
Night							
1/Piston	15%	55%	5%	10%	5%	10%	100%
2/Piston	2%	6%	20%	60%	2%	10%	100%
Multi-Turbo	0%	0%	25%	65%	0%	10%	100%
Business Jet	0%	0%	25%	67%	0%	8%	100%
Military	0%	0%	25%	75%	0%	0%	100%

Source: Cincinnati Northern Kentucky International Airport, Aircraft Operation Monitoring System, April 12 and March 21, 2001.

5.1.5 Flight Corridors

A flight track is the projection on the ground of an aircraft's path in the sky. Because of meteorological conditions, aircraft types, stage lengths, and pilot judgment, no two flight tracks are exactly the same. Therefore, more generalized flight corridors were developed through discussions with contracted ATCT personnel. These corridors consist of straight-in and curved arrivals as well as curved and straight-out departures. These departure/arrival procedures, which require the pilot to establish a certain altitude and distance from the runway end before flying over a known sensitive area, are representative of Lunken Airport's Fly Friendly Program. This program was established inform pilots on the published flight corridors designed to reduce the noise generated during aircraft

arrivals and departures. Flight corridors used in this analysis are consistent with those recommended in the Lunken Part 150 Study.

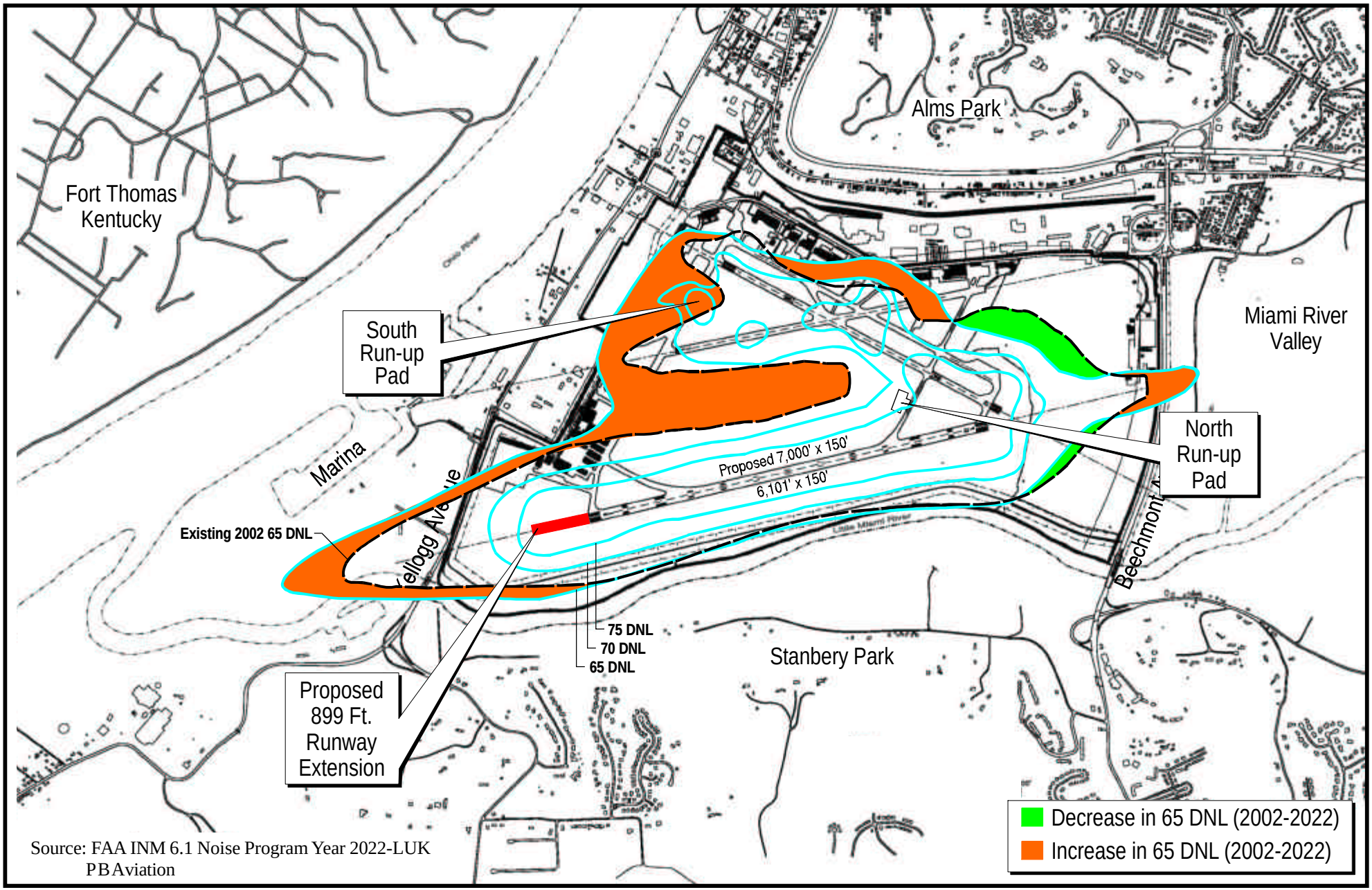
5.1.6 NOISE CONTOURS

The activity and operational data gathered for the Airport were inputs to the Integrated Noise Model (INM). Using the input file and its internal database, the model calculated existing and future noise exposure levels and produced noise contours reflecting noise impacts along the selected arrival/departure flight tracks. The existing (2002) noise contours encompass 1.54 square miles in the 65 DNL contour, 0.496 square miles in the 70 DNL contour and 0.206 square miles in the 75 DNL contour. The 65 DNL contour exceeds the Lunken Airport property line in two locations: to the southwest off Runway 3R and to the northeast off Runway 21L. The remaining noise contours are located entirely on Airport property.

As shown in **Exhibit 5-1**, 2022 Runway Configuration, the noise contours were overlayed on a map of the area to identify the communities and other locations exposed to noise levels of DNL 65 dB, 70 dB, and 75 dB. The results of the noise analysis indicate that the future 65 DNL contour would increase beyond its current location by approximately 1,000 feet towards Kellogg Avenue. Similar to the Part 150 Study findings, however, even with this extension, there are no incompatible land uses within the 65 DNL contours. Land uses and compatibility with the Airport are discussed in Section 5.2.

5.2 COMPATIBLE LAND USE

From an environmental perspective, the compatibility of existing and planned land uses in the vicinity of an airport is associated with the extent of noise impacts related to the airport. Section 511(a) (5) of the 1982 Airport and Airways Improvement Act dictates that appropriate action, including the adoption of zoning laws, should be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the airport



Source: FAA INM 6.1 Noise Program Year 2022-LUK
PB Aviation

Cincinnati Municipal Airport - Lunken Field
AIRPORT MASTER PLAN STUDY UPDATE

0 1,000' 2,000'
1" x 2,000'

NORTH

2022 RUNWAY CONFIGURATION

EXHIBIT
5-1

to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft.

The FAA has published guidelines for land use compatibility in Federal Aviation Regulation (FAR) Part 150. These guidelines are depicted in **Table 5-5**. Incompatible land generally includes residential areas and noise-sensitive community facilities, such as schools, churches, hospitals, and libraries located within the 65 DNL contour.

As described previously, noise contours for the Recommended Plan do increase in size in 2022 when compared to the 2002 noise levels. With the exception of the area immediately west of Kellogg Avenue, this marginal increase essentially remains within the Airport property line. Currently no residential units are located within the 65 DNL contour. This would also be the case in 2022, when residential units are still not located within the 65 DNL contour.

5.3 Social Impacts

FAA Order 5050.4A states that the principal social impacts to be considered in the environmental assessment process are those associated with relocation, or any other community disruptions that may be caused by the Airport development recommendations. Types of social impacts considered include the following:

- Relocation of any residence or business
- Surface transportation pattern alterations
- Disruption or division of established communities
- Disruption of orderly, planned development
- Appreciable changes in employment

As shown on the Recommended Plan, approximately 15 acres of property is proposed to be acquired along Kellogg Avenue. This land acquisition program is required for the Airport to be in compliance with FAA Runway Protection Zone (RPZ) criteria. The proposed land acquisition project would also require compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970.

TABLE 5-5
Cincinnati Municipal Field – Lunken Airport
LAND USE COMPATIBILITY WITH YEARLY DAY-NIGHT AVERAGE SOUND LEVELS*

	Yearly Day-Night Average Sound Level (DNL) in Decibels					
Land Use	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
Residential, other than mobile homes and transient lodgings	Y	N[1]	N[1]	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N[1]	N[1]	N[1]	N	N
Public Use						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail--building materials, hardware and farm equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail trade--general	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing, general	Y	Y	Y[2]	Y[3]	N	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock farming and breeding	Y	Y[6]	Y[7]	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y[5]	Y[5]	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables	Y	Y	25	30	N	N

Source: Federal Aviation Regulations 14 CFR Part 150, effective January 18, 1985.

SLUCM = Standard Land Use Coding Manual
Y(Yes) = Land Use and related structures compatible without restrictions.
N(No) = Land Use and related structures are not compatible and should be prohibited.
NLR = Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, or 35 = Land use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.

Notes for Table 1

1 Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB; thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria would not eliminate outdoor noise problems.

2 Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low.

3 Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low.

4 Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas or where the normal noise level is low.

5 Land use compatible provided special sound reinforcement systems are installed.

6 Residential buildings require an NLR of 25.

7 Residential buildings require an NLR of 30.

8 Residential buildings not permitted.

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

Proposed improvements may temporarily alter surface transportation patterns, but are expected to improve the overall traffic flow to and from the Airport. The proposed improvements would not divide or disrupt established communities, or disrupt planned development. An appreciable change in employment resulting from the Recommended Plan is not expected. However, short-term employment increases are most likely to occur due to construction jobs, and future aviation-related commercial developments would presumably create new jobs, thereby increasing the tax base. Overall, the Recommended Plan would have negligible social impacts.

5.4 INDUCED SOCIOECONOMIC IMPACTS

Induced or secondary impacts are those factors that affect surrounding communities, such as shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity caused by the airport development. Induced impacts would normally not be significant, except where they are also significant in other categories, especially noise, land use, or direct social impacts.

The proposed actions are not expected to result in any significant adverse impacts on shifts in patterns of population movement and growth, public service demands, or changes in business and economic activity. The proposed Airport improvements would, however, potentially induce positive socioeconomic impacts for the local community over a period of years. Any growth resulting from new corporate development and aviation-related business opportunities could result in additional economic growth and benefits on a regional level.

5.5 AIR QUALITY

Section 176(c) of the Clean Air Act Amendments of 1977 states that no Federal agency shall engage in, support in any way, or provide financial assistance for, license, permit, or approve any project which does not conform to a State Implementation Plan (SIP) after the project has been approved or promulgated under Section 110 of that Act.

The Clean Air Act (CAA), as amended, deals primarily with ground transportation-related activities such as highway improvement projects. The specific requirements for conforming to the CAA are detailed for all federally approved projects, and are listed below.

- Conforming to the SIP's purpose of eliminating or reducing the severity and number of violations of the National Ambient Air Quality Standards (NAAQS) and achieving expeditious attainment of such standards; and
- Not causing or contributing to a new violation, increasing the frequency or severity of an existing violation, delaying attainment of a standard, or delaying a required emission reduction.

Thresholds are established in FAA Order 5050.4A to determine whether an impact is considered significant. Evaluation of impact on air quality is required if the Airport has more than 1.3 million passengers or has more than 180,000 general aviation operations forecast annually. If the operations level in the time period of the project falls under a critical number (180,000), an air quality analysis is not required. As indicated in Chapter 2.0*, Activity Forecast*, the operations projected for the year 2007 total 132,214. This is the same year estimated for implementation of the runway extension project. However, the FAA would more than likely determine that an air quality evaluation is required due to the nature of the project.

Hamilton County is designated as a “non-attainment area” for its noncompliant ozone levels within the required National Ambient Air Quality Standards. The 1982 Airport and Airways Improvement Act also requires an air quality certification for projects involving a major runway extension. Both an air quality evaluation and certification would be addressed in the initial EA, which includes the runway extension

Future projects within the Recommended Plan would be assessed by the FAA for the level of environmental documentation required closer to the date of implementation.

5.6 WATER QUALITY

The Federal Water Pollution Control Act, as amended by the Clean Water Act of 1977 (commonly referred to as the Clean Water Act), provides the authority to establish water quality standards, control discharges into surface and subsurface waters, develop waste treatment management plans and practices, and issue permits for discharges (Section 402) and for dredged and fill material (Section 404).

The Airport is situated northwest of the Little Miami River, and northeast of the Ohio River, with stormwater runoff contributing to both watersheds. Measures to minimize adverse water quality impacts, including control of soil erosion, siltation, and water pollution during construction, should be incorporated into the Airport's development plans.

As indicated by the Ohio Department of Natural Resources (ODNR), Division of Natural Areas and Preserves, in their 2004 coordination letter, the Little Miami River earned the distinction of becoming Ohio's first designated State Scenic River. The removal of forested corridors along waterways increases erosion, runoff and sedimentation, and may result in the degradation of water quality and the reduction of the natural diversity of aquatic communities. Under the recommendation of the ODNR, the use of Best Management Practices (Best Management Practices, or BMP's is a term used commonly to define the physical or behavioral practices that ensure environmental protection) should be implemented during construction in order to avoid impact to the Little Miami River. Potential impacts to the Little Miami River would be addressed in the initial EA. Future projects within the Recommend Plan would be assessed by the FAA for the level of environmental documentation required closer to the date of implementation.

The proposed relocation of Taxiway 'C' and the development of a full parallel taxiway for Runway 3R/21L would require the relocation of the existing midfield storm water detention basin. The proposed location for the new detention basin is on the southeastern side of Runway 3R/21L and is planned to measure approximately 5,000 feet long by 250 feet wide. The material removed from the proposed storm water detention basin is planned to

be used to fill the existing detention basin. Once complete, anti-bird ground cover netting may be constructed to discourage the attraction of birds to the airfield. Additional pumps and filters would be required to maintain the water quality standards set forth by the State and local regulations. The creation of a new detention basin is scheduled for some time after 2012. Prior to construction, an analysis of environmental impacts would be required during the preparation of an Environmental Assessment.

Coordination with the EPA should be undertaken if Airport activities may potentially cause contamination of area aquifers designated as water sources for drinking. Review and coordination with the U.S. Fish and Wildlife Service, the Corps of Engineers, and the EPA would be required prior to the initiation of any construction of the proposed improvements.

Water quality studies for stormwater runoff have not been conducted at Lunken Airport. Stormwater runoff is discharged into the City of Cincinnati stormwater system. The requirements for construction include the following:

- Stormwater runoff calculations. The rate of discharge should not increase over present conditions, for a 24-hour, 25-year event.
- A Land Disturbance Permit through the City Stormwater Management this permit would require a detention plan, an erosion control plan, and a landscaping plan.

The development plans for the runway extension do not indicate an impact to water quality, provided that controls for erosion, siltation, and water pollution of the nearby water channels are implemented during construction. Potential impacts to water quality would be addressed in the initial EA. Future projects within the Recommend Plan would be assessed by the FAA for the level of environmental documentation required closer to the date of implementation.

5.7 DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(F)

The Department of Transportation Act, Section 4(f), also known as Section 303(C), states that any program or project which requires the use of any publicly owned land, including public parks, recreation areas, or any land from a historic site of national, state, or local significance, shall not be approved unless there is no feasible and prudent alternative to the use of such land, and such program includes all possible planning to minimize harm. Coordination efforts between the City and appropriate local, State and Federal agencies would be required to address the Section 4(f) statement and its role within the Environmental Assessment, since a portion of one of the projects within the Recommended Plan requires the use of several acres of the Lunken Golf Course for aviation-related activities.

5.8 HISTORIC, ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

Based on the National Historic Preservation Act of 1966 and the Archaeological and Historic Preservation Act of 1974, any undertaking which is Federally funded, permitted or licensed is subject to Section 106 review to ensure that properties or data which have historic, scientific, prehistoric, archaeological, or paleontological significance are surveyed, recovered or preserved. Section 106 of the National Historic Preservation Act requires Federal agencies to take into account the effects of their undertakings on historic properties. Several structures on the Airport property potentially have historical significance and therefore would require detailed coordination when they are subjected to impacts by the implementation of the Recommended Plan. During the first five-year phasing period, Hangar 3 is scheduled for relocation or demolition due to its location within the extended Runway Safety Area (RSA) for Runway 7. Strategies are currently being developed in order to facilitate the required compliance with Section 106 regulations.

According to the Ohio State Historic Preservation Officer, archaeological sites are also known to exist near Lunken Airport. Areas along creeks, bends in creeks, and at higher elevation areas are likely sites for archaeological remnants. All undisturbed and undeveloped areas that would be affected by the proposed Airport projects must be

surveyed prior to proceeding with the Recommended Plan, and the findings documented in the environmental process. Additional evaluation, documentation, and coordination would be conducted with the State Historic Preservation Officer (SHPO) and other appropriate historical and archeological agencies during the preparation of the Environmental Assessment.

5.9 BIOTIC COMMUNITIES

As outlined in FAA Order 5050.4A, "If the proposal would impact only man-dominated areas such as previously disturbed airport property, populated area, or farmland, it may be assumed that there would be no significant impact on biotic communities". The proposed projects are located in areas that have, in fact, been disturbed. Therefore, impacts to biotic communities are not anticipated. However, biotic surveys may be required in areas that previously have not been disturbed that could be affected by the proposed projects.

An additional concern among potential impacts to biotic communities is the proximity of the Ohio and Little Miami Rivers to the Airport. The Airport's proximity to the two rivers poses a threat to arriving and departing aircraft due to the presence of birds. Local aircraft operators, air traffic controllers and pilots would continue to be advised of bird activity prior to takeoff or landing at the Airport.

5.10 ENDANGERED AND THREATENED SPECIES OF FLORA AND FAUNA

Section 7 of the Endangered Species Act, as amended, requires each Federal agency to ensure that "any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with the affected States, to be critical, unless such agency has been granted an exemption for such action by the Committee...".

Coordination with the ODNR revealed that five species are listed on their database within the study area. These species include:

- Cycleptus elongatus (Blue Sucker), endangered in Ohio
- Moxostoma carinatum (River Redhorse), Ohio status of special concern
- Noturus eleutherus (Mountain Madtom), endangered in Ohio
- Paspalum fluitans (Riverbank Paspalum), potentially threatened in Ohio
- Spermacoce glabra (Smooth Buttonweed), potentially threatened in Ohio

Based on the recommendations of the ODNR, impact on all endangered and threatened species should be avoided throughout the Runway 3R extension project. Potential impacts to threatened and endangered species would be addressed in the initial EA, which includes the runway extension. Future projects within the Recommended Plan would be assessed by the FAA for the level of environmental documentation required closer to the date of implementation.

5.11 WETLANDS

Department of Transportation Order 5660.1A, Preservation of Nation's Wetlands, implements Executive Order 11990, Protection of Wetlands. The identification of wetlands is partially based upon soils identified as hydric by the National Resources Conservation Service (formerly known as Soil Conservation Service). The U.S. Army Corps of Engineers define a wetland as having three characteristics:

- Wetland Hydrology
- Hydric Soils
- Characteristic Wetland Vegetation

In general, Section 10 of the Rivers and Harbors Act of 1899 prohibits work in navigable water of the U.S. without a Department of the Army (DA) permit. Section 404 of the Clean Water Act prohibits the discharge of dredged and/or fill materials into waters of the United States, including wetlands, without first obtaining a DA permit. Any activity that would affect the Little Miami or Ohio River would require a DA permit pursuant to Section 10.

A preliminary wetlands determination using the National Wetland Inventory (NWI) maps would be required during the environmental process. A field inspection and wetlands delineation for the purpose of Section 404 of the Clean Water Act must be performed during the Environmental Assessment. An experienced wetlands consultant would be required during the environmental assessment process to perform a field inspection to identify wetlands within the Airport study area.

5.12 FLOODPLAINS

Executive Order 11988, Floodplain Management, defines floodplains as "the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year". In other words, the floodplain is an area that would be inundated by a 100-year flood. Currently, the Airport is protected by a levee; therefore no impacts to the 100-year floodplain are anticipated. However, if any portion of the levee is relocated, the potential for a change in flood control exists and requires coordination with the U.S. Army Corps of Engineers. If any construction for the runway extension occurs outside the area protected by the levee, further analysis of the encroachment on the base floodplain would be required during the initial EA process. Future projects within the Recommended Plan would be assessed by the FAA for the level of environmental documentation required closer to the date of implementation.

5.13 COASTAL ZONE MANAGEMENT PROGRAM

The National Oceanic and Atmospheric Administration (NOAA) Regulations (15 CFR Part 930) require an analysis of any action affecting the coastal areas along the Atlantic and Gulf Coasts. Lunken Airport is not located on the Atlantic or Gulf Coast, and hence, needs no such analysis.

5.14 COASTAL BARRIERS

The Coastal Barriers Resources Act of 1982, PL 97-348 (CBRA), prohibits, with some exceptions, Federal financial assistance for projects within the Coastal Barrier Resources System which consists of undeveloped coastal barriers along the Atlantic and Gulf coasts. Since the Airport does not lie within a coastal area, the CBRA does not apply.

5.15 WILD AND SCENIC RIVERS

The Little Miami River is designated as a state wild and scenic river in Ohio. According to the ODNR, any construction taking place near the Little Miami River should incorporate the use of Best Management Practices in order to avoid impacts to the natural environment. Given the runway extension project's area of defined construction, no impacts are anticipated to occur within the Little Miami River corridor. There are no other rivers listed on the U.S. Department of Interiors inventory of National Wild and Scenic Rivers in the vicinity of the Airport. Should the scope of the project change, additional coordination with the ODNR may be required during preparation of the initial EA. Future projects within the Recommended Plan would be assessed by the FAA for the level of environmental documentation required closer to the date of implementation.

5.16 PRIME AND UNIQUE FARMLAND

The Farmland Protection Act (FPPA), P.L. 97-98, authorizes the Department of Agriculture (USDA) to develop criteria for identifying the effects of Federal programs on the conversion of farmland to nonagricultural uses. The evaluation is based upon soils identified by the National Resource Conservation Service (NRCS). Results from correspondence with the NRCS indicate that no prime farmland soils have been identified within the project area. Form 1006 is included at the end of this chapter and shows a total of zero (0) acres of prime/unique farmland within the project area. Should the boundary of the project area change, further correspondence with the NRCS would be required during preparation of the Environmental Assessment.

5.17 ENERGY SUPPLY AND NATURAL RESOURCES

If any major changes to facilities and equipment requiring utilities are to occur with future development, power companies or other suppliers of energy shall be contacted to determine if projected demands can be met by existing or planned source facilities. Use of natural resources, other than for fuel, needs to be examined only if the action involves a need for unusual materials or those in short supply.

The proposed development at the Airport is not expected to have an effect of any magnitude on the demand for stationary facilities such as airfield lighting, terminal heating, and air conditioning. There would be some increase in energy demand due to additional runway and taxiway lighting; however, this increase would be minimal in the total system usage. There would be no need for unusual natural resources or materials in short supply at the site during construction activities.

5.18 LIGHT EMISSIONS

This section explores the extent to which any lighting associated with an airport action would create an annoyance to people in the vicinity of the installation. A special study and a more detailed examination of the light impacts is necessary within an EA only in unusual circumstances, such as high-intensity strobes shining into people's homes. All the projects within the Recommended Plan are not expected to result in any significant increase of light emission from the existing levels.

5.19 SOLID WASTE IMPACTS

This environmental category focuses on projected changes in quantity or type of solid waste generated, and identifies the location of solid waste facilities within 1,500 meters of all runways to be used by piston-type aircraft, and within 3,000 meters of runways to be used by turbojet aircraft. The location of solid waste facilities is important to determine in order to avoid attracting birds near the Airport. Bird attractant areas located within the vicinity of an airport increases the potential for bird strikes.

Using information from the City of Cincinnati Public Works Department website, the closest landfill to Lunken Airport is approximately 15 miles to the north. All the proposed Airport improvements within the Recommended Plan are not expected to result in any significant changes in type or quantity of solid waste, or the method of collection or disposal.

5.20 CONSTRUCTION IMPACTS

Impacts associated with construction activities include noise from equipment, air pollution from dust, water pollution, soil erosion from grading, and traffic impacts from construction vehicles. Use of Best Management Practices during the construction phase of the project are required for compliance under FAA Order 5050.4A.

There would be some construction impacts associated with the Airport improvements, specifically the construction of the runway extension, producing short-term, localized impacts upon air quality at the construction site. Noise pollution would be mainly from equipment and vehicles; however, it is anticipated to be only a short-term problem. Any site grading could affect stormwater run-off pollution if proper measures for siltation control are not performed.

5.21 HAZARDOUS WASTE AND ASBESTOS

Just south of the Airport, near Kellogg Avenue, an auto salvage yard is contiguous with Airport property. The Airport's future expansion plans in the third and final phasing plan include the acquisition of 5.5 acres of the auto salvage yard in order to provide additional land for aviation-related uses. The acquisition of this property would require an assessment of environmental clean-up due to the long-term storage of automobiles and other petroleum-carrying machinery. This property is anticipated to require soil remediation before construction may begin. A full analysis of the remediation measures required would be addressed in a future EA when the project is closer to implementation. No additional studies have been done to identify hazardous wastes in the Airport vicinity or within the proposed development areas. Before construction may begin, a Phase

One Hazardous Materials Investigation is required in order to comply with requirements set forth in FAA Order 5050.4A.

5.22 SUMMARY

The above overview briefly describes the potential environmental impacts caused by the Recommended Plan within the 20-year planning period. The first phase of development for projects within the Recommended Plan would more than likely require an EA due to the runway extension. The remaining projects slated for development in later phases may require further environmental analysis. Closer to the time of implementation of these projects, coordination with the FAA and other regulatory agencies would determine the level of environmental analysis required. Below is a general summary of what projects are included with this Recommended Plan that may require further environmental analysis

PHASE 1 (Environmental Preparation)

- Endangered species near the Airport
- A wetlands survey and determination

PHASE II (Extension of Runway 3R)

- No additional environmental analysis required

PHASE III (Land Acquisition)

- A Phase One Hazardous Materials Investigation
- Coordination with the U.S. Army Core of Engineers would be required for the relocation of the mid field storm water detention basin, which may result in a change of flood control