4.0 RECOMMENDED MANAGEMENT/ADMINISTRATIVE STRATEGIES

Management and administrative strategies relate to the oversight and management of the Airport. The management/administrative actions consist of revisions to times and locations of engine maintenance run-ups, the installation of noise deflectors at strategic locations, and an extensive pilot communication program to advise pilots of the Airport's revised and updated noise compatibility program.

4.1 EDUCATIONAL STRATEGIES

Educational strategies are designed to inform pilots through notices placed on announcement boards and/or the distribution of fliers and brochures. Educational strategies allow interested parties to become aware of new programs. In the case of the Airport, it allows users to be knowledgeable of the recommended noise abatement measures.

4.1.1 Pilot Communication

Chapter 2.0 (Volume II) discussed the mitigation measures that are heavily influenced by pilots operating their aircraft within the Airport's airspace and over surrounding communities. Effectively communicating revised noise mitigation programs to pilots will enhance the airport's Noise Abatement Program. Communicating arrival/departure noise abatement procedures via flyers, brochures, maps, posters, AOPA's Airport Directories and other communiqués in lounges, nearby hotels, flight training schools, airport restaurants and place of work, will sensitize pilots to community noise concerns. This strategy is relatively inexpensive and involves the Airport management's ongoing efforts to inform, educate, and remind pilots of the procedures.

4.1.2 Signage

Installing signage at focal points on the airfield area will further assist the Airport in its efforts to remind pilots of the noise abatement procedures now active at the Airport. These signs can either be inscribed with symbols and colors that refer to abatement procedures described in the brochures and posters or graphics easily depicting the abatement flight paths. The background of these signs should be in yellow, with inscriptions appearing in black. These signs will be visible at night.

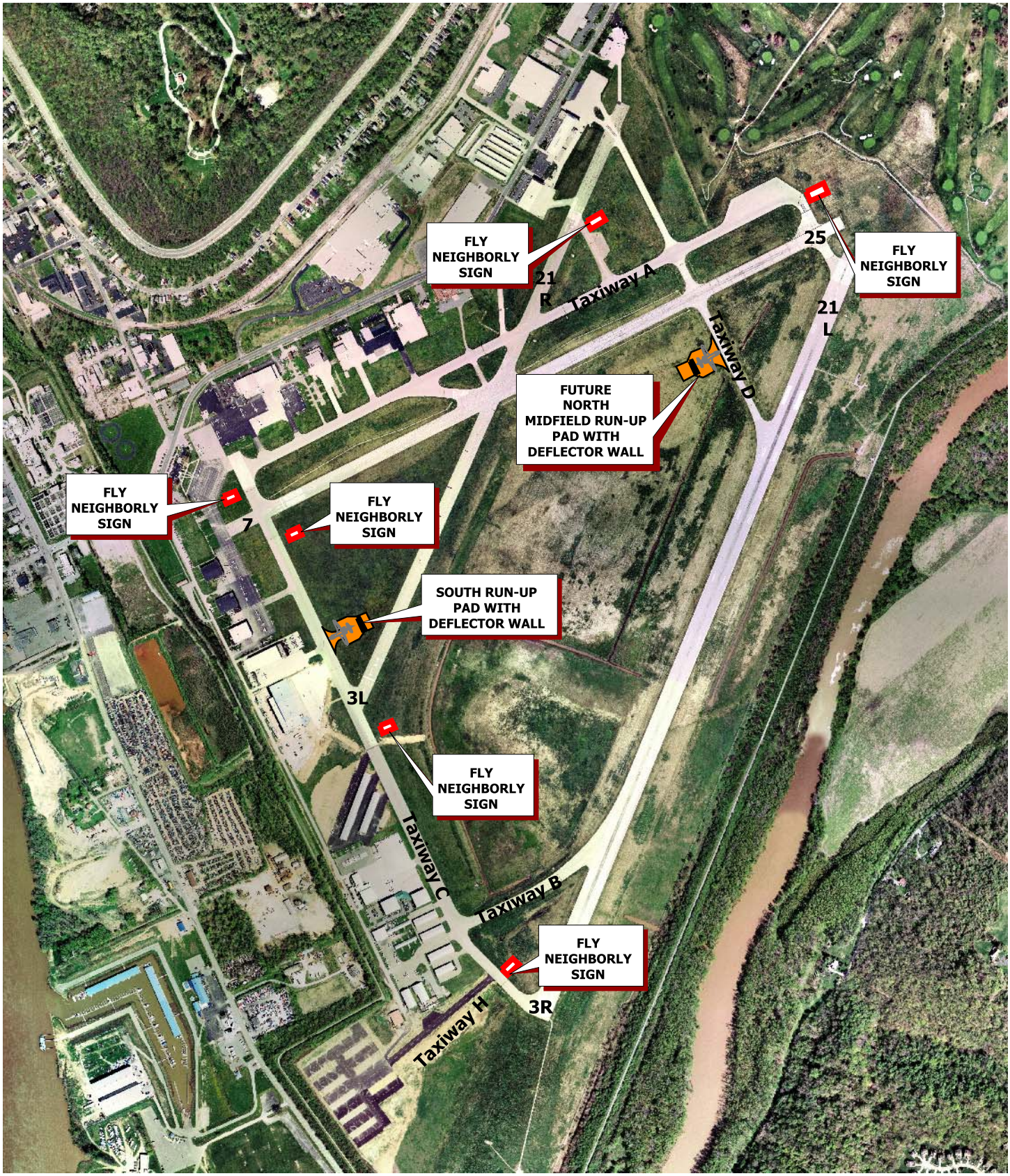
Signs must follow FAA Part 77 Surface Restrictions, Obstacle Free Zones, building restriction controls and frangible material components in order to meet FAA airfield standards. At the Airport, the noise abatement signs will be located:

1. West of Runway 3R and north of Taxiway C.
2. East of Runway 3L and north of Taxiway C.
3. East of Runway 7 and north of Taxiway C.
4. West of Runway 7 and south of Taxiway C.
5. East of Runway 21R west of the run-up pad.
6. West of Runway 25 and north of Taxiway A.

The cost of the signs is estimated to be approximately $15,000. This strategy is relatively inexpensive and involves the Airport management's ongoing efforts to inform, educate, and remind pilots of the procedures. Refer to **Exhibit 4.1-1** which depicts the locations of the airfield signs.

4.1.3 Approach Plate Modification

In an effort to further enhance the adherence of the recommended aircraft operational procedures, it is recommended to place these modified arrival/departure procedures on the Airport IFR Approach Plates. The FAA publishes approved instrument approaches for U.S. airports. Aircraft performing instrument approaches must conform to these published FAA procedures. Instrument Approach Plates, "as these charts were once officially called" are now Instrument Approach Procedures and are



CINCINNATI MUNICIPAL-LUNKEN AIRPORT PART 150 STUDY

ALTERATIONS TO AIRPORT FACILITIES

EXHIBIT 4.1-1

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published for and named after the Navaid (navigational aids) used for the approach. They could include NDB (Non Directional Beacon), VOR (VHF Omnidirectional Range), ILS (Instrument Landing System), LOC (Localizer), RNAV (Area Navigation), or GPS (Global Positioning Systems). Some approaches also require DME or availability of airport radar. This action would mitigate aircraft arrival/departure turns over residential neighborhoods, not only by informed pilots frequently flying into the Airport, but by those flying into the Airport for the first time.

4.2 ALTERATIONS TO THE AIRPORT FACILITIES

4.2.1 Aircraft Engine Maintenance/Run-Up Pads

Sustained high pitch throttling noise of aircraft engines often occurs when aircraft undergoes engine repair and engine maintenance runs. In order to reduce this noise, two engine run-up pads are recommended to be constructed at north and south locations. The south location is on Taxiway D and east of Runway 25. The north location is on Taxiway C and west of Runway 3L. The current Master Plan identifies a future relocated Taxiway C. It is expected that the south run up pad will be relocated along with Taxiway C.

Two run-up pad locations were decided upon in an effort to split the number of aircraft engine maintenance runs on either end of the airfield and with orienting aircraft engines towards the midfield are, the intent is to direct the sustained throttling noise onto the airfield area, thereby keeping the majority of the noise on the airfield area. The recommended run-up pads and their location reduces the effect of run-up noise to the surrounding communities.

To further reduce noise, blast deflectors are recommended to be constructed around the west, north and east perimeter of the south run-up pad and west, south, east of the future midfield run-up pad. These deflectors, which are constructed of galvanized steel, can substantially reduce or eliminate the effects of jet blast as well as related fumes

and noise which accompany jet engine operation. This will disperse the noise upward further restricting the noise to the airfield area.

The expected cost for each run-up pad and deflector wall is approximately $370,000. This mitigation measure is recommended to be pursued.

4.2.2 Hush Houses and Ground Run-up Enclosures

Community representatives surrounding the Airport have identified ground run-up and aircraft maintenance repair noise as a nuisance to their neighborhoods. A brief analysis was conducted to determine the benefit/cost of developing noise barriers on the Airport to reduce the noise of aircraft maintenance runs when performed. Ground Run-up Enclosures (GREs) or barriers, such as earth berms, are used to muffle noise after and during aircraft repair or during an in-flight anomaly. The aircraft engine is run at high speeds for an extended period of time. Three enclosure types were reviewed for their cost and effectiveness at the Airport:

1. Hush House
2. Aircraft Ground Run-Up Enclosures
3. Earth Berm

Hush Houses defined by BridgeNet International, an acoustical specialist firm, are, "engine exhaust muffler systems where the aircraft and the exhaust muffler are fully enclosed in a building. The buildings have movable entry doors to allow the aircraft to enter the building. They are generally designed for specific type of military aircraft and have not previously been demonstrated to be practical for commercial aircraft use." The definition of a Hush House eliminated it as a mitigation measure as it would not be an appropriate facility at the Airport.

Aircraft GRE's were defined by BridgeNet International as being an "aircraft run-up pen generally consisting of a two, three or four-sided barrier that surrounds the

aircraft. The barriers are located close to the aircraft and usually include noise absorption panels."

Earth Berms are barriers formed from earth mounds and walls (and are generally considered more attractive than sound walls). Earth berms can require considerable land to build, especially when they are built to a high elevation.

Through a brief analysis, and consultation with two acoustic specialists, it was determined that the maximum benefit of a GRE or an earth berm would be within one mile of the structure. Given the residential density of the communities around the Airport, the highest density is outside of a one-mile buffer.

Also considering that the DNL 65 dBA noise contours for the 2007 Future Baseline NEM and the Future Recommended 2007 NCP do not extend into incompatible land uses, the expense of the GRE or earth berm would not be eligible for federal funds. A general cost comparison was done for each of the run-up attenuation structures.

TABLE 4.2-1
Cincinnati Municipal-Lunken Airport
COST COMPARISON OF NOISE BARRIERS

Structure	Estimated Cost
Blast Fence	$395,000[1]
Earth Berm	$2.8 million [1]
GRE	$5.3 million [2]

Sources: 1 PB Aviation
2. Estimation based on GRE's at Oakland County International, MI, Tampa International, FL, Port of Portland, ORE, and Oakland International, CA.

Given the maximum benefit of a GRE or earth berm not affecting the majority of the population around the Airport, the reliance on the City of Cincinnati for complete funding, and the majority of noise complaints that the City of Cincinnati receiving coming from over-flights and not run-ups, GRE's and earth berms were not recommended for this Part 150 Study. However, with the installation of AirScene and

the recommendation for AirScene to expand, this Part 150 Study is recommending that further analysis, in a separate study, continue. For the purposes of this Part 150 study, a GRE or Earth Berm is not recommended due to noise attenuation and cost. The recommendation for maintenance run-up noise is the installation of a blast deflection fence, to diminish the immediate noise, at the perimeter of each run- up pad. After implementation of the AirScene noise monitors in the late spring or early summer of 2004, subsequent testing will occur to quantify to a higher level of accuracy noise impacts of maintenance engine run-ups in the communities adjacent to the Airport. In this manner, a more exact measurement of the contribution of maintenance noise run-ups to the average day DNL contours can be determined. Additional supplemental noise metrics produced by the monitors can also be used to more adequately describe these impacts.

4.3 OTHER MANAGEMENT/ADMINISTRATIVE STRATEGIES

4.3.1 Employ Noise Abatement Officer

The employment of a Noise Abatement Officer at the Airport will enhance the effectiveness of the Noise Abatement Program. The individual will oversee the entire program and would continue to monitor and respond to complaints both verbally and in writing. The officer will represent the Airport in noise matters at the Airport and community meetings. The officer will also be responsible for keeping detailed records of aircraft noise, monitoring operational, remedial and land use management programs as well as disseminating information to the Airport staff and the community.

4.3.2 Community Awareness Programs

It is recommended the Airport develop a community outreach program. Its main objective would be to inform the public and specifically the surrounding communities on the status of the Noise Compatibility Program, its updates and upcoming activities. The program should disseminate information regarding the noise environment through

occasional announcements, postings of public notices, informational packets, brochures, and Airport newsletters. Having a community awareness program link on the Airport's website can also be used as a dialogue tool with the public in disseminating and retrieving information to Airport Lunken staff and community. The Noise Abatement Officer will have responsibility in coordinating these programs with the public.

4.3.3 AirScene Tracking System

The AirScene Flight Tracking System "AirScene" is a new innovative tool developed by the Rannoch Corporation to track aircraft flights both in the air and on the ground. This enables the airport proprietor to identify and manage noise conflicts in the surrounding communities. Information available includes exact aircraft tail numbers ascertained in real-time and aerial photograph images of flight arrivals, departures and over flights. With the additional use of a compatible flight track display software it allows viewers to see what is taking place above a specific geographic area as well as displaying aircraft altitude and groundspeed. The AirScene also features a web-accessible address lookup whereby property residents can pinpoint their specific address and call up information on aircraft flight tracks from current and historical time frames.

The Airport has purchased and installed "AirScene". The real time data received through AirScene has enabled airport staff to more expeditiously and accurately respond to and investigate aircraft noise complaints. A basic single antenna AirScene System was installed in 2001. This identifies aircraft landing and taking-off from the Airport.

The Airport is also in the process of expanding the capabilities of AirScene to identify aircraft within a five to seven mile radius of the Airport by adding multiple antennas in surrounding neighborhoods. Antennas will be installed on towers in Anderson Township, Indian Hill, Norwood, and Taylor Mill in Northern Kentucky to acquire aircraft data in a full 360 degree range.

Additionally, the Airport has negotiated an arrangement with the Rannoch Corporation to add noise-monitoring capabilities to the AirScene System. Five noise monitors will be permanently installed at strategic neighborhood locations, including one on the Airport, to monitor aircraft noise on a 24-hour basis. The proposed monitoring locations are Kilgore School in Mt. Lookout; the Park in Fairfax; California community baseball fields; the Water Tower in Mt. Washington and a site under study in Ft. Thomas, Kentucky. These monitors will provide Airport staff with the ability to better research noise complaints by comparing actual noise data with aircraft location and identification information provided by AirScene. The cost of implementing this tracking system along with BridgeNet International Flight Track Display software which enables internet web-accessible applications is approximately $400,000.

4.3.4 Restricting Flight Training

The restriction of flight training activities on weekdays and weekends between 10:00 p.m. – 7:00 a.m. is a common use restriction at many general aviation airports. This would entail the elimination of touch and go operations during the hours of 10:00 p.m. to 7:00 a.m. The Airport would assign staff to implement and monitor this use restriction mitigation program, and establish an on-going Noise Abatement Advisory Committee. This strategy would also review the FAR Part 150 program measures in the future if, or when, significant changes to operations at the Airport occur. This voluntary procedure should continue.

4.4 STRATEGIES NOT CARRIED FORWARD

4.4.1 Limitation Strategies

The implementation of a nighttime curfew would not only reduce noise but significantly restrict the activity at the Airport. It means placing constraints on the type or number of aircraft that operate at the Airport or the time of day (which is nighttime) that certain activities can occur. However, any airport activity restriction must:

1. Be justified on the basis of a demonstrable noise problem;
2. Not place an undue burden on interstate commerce;
3. Not discriminate among types of airport users;
4. Not intrude into an area where the federal government clearly has preemptive authority; and
5. Conform to the airport proprietor's grant assurances.

4.4.1.1 Night Time Curfew

Although there are several types of use restrictions, the nighttime curfew restriction has been specifically mentioned. The FAA has established FAR 161 to assist airport operators in reviewing and establishing airport use restrictions. In order to formally implement an airport use restriction, an airport must have the voluntary cooperation of all existing and potential airport users.

A nighttime curfew would involve completely banning or restricting aircraft activities based on the time of occurrence (i.e. during nighttime hours). Since the Airport is designated as a reliever airport to Cincinnati/Northern Kentucky International Airport (CVG), all general aviation and corporate activity in the metropolitan region is performed. Restricting the Airport would force these activities to be diverted to CVG, thereby clustering and hampering the capacity of CVG and its airspace. This strategy is not recommended.

4.4.2 Charted VFR Approach Corridors

Requesting the FAA to establish "Charted VFR Approach Corridors" for the Airport will ensure that the noise abatement procedures are included as part of the normal Instrument Landing System operating procedure. The purpose of this noise mitigation alternative is to provide an alternative instrument approach procedure for pilots that are navigating on an instrument flight plan under visual weather conditions. Frequently during visual weather conditions, as pilots approach the Airport using IFR flight plans and in order to save time and keep from flying the longer straight-in instrument approach pilots will cancel their IFR flight plan, and fly a visual route directly to Runway 3R/21L. This procedure typically results in the aircraft flying over the residential areas surrounding the Airport.

Several major FAA Class B Airspace Control Zones similar to the CVG Class B airspace have both fixed-wing and rotary-wing "*Charted VFR Approach Corridors*". These special Class B airspace operating procedures are considered instrument operations under visual weather conditions. As an example, the New York City Class B Airspace has both fixed-wing and rotary-wing Charted VFR approach and departure procedures along the Hudson River for aircraft going to and from the three major airports and the three public use heliports on Manhattan Island.

The potential for the Airport FAA Charted VFR Approach Corridor would establish visual instrument procedures for aircraft arriving to Runway 21L from the west utilizing the Norwood Lateral radial and intersect a point one and a half miles on the extended centerline of Runway 21L. From the east, aircraft would follow a radial from the center of the Little Miami River Valley and also intersect a point one and one half miles for piston powered aircraft and to a point 2 miles for turbine powered aircraft on the extended centerline of Runway 21L.

This Charted VFR Approach procedure is only for pilots navigating on an IFR flight plan under visual weather conditions. Under IFR weather conditions, pilots approaching the Airport will utilize FAA published instrument approach procedures.

Several Lunken Airport Planning Advisory Committee members (PAC) suggested that Charted VFR Approach Corridors affected a very small percentage of the aircraft traffic to the Airport therefore the benefit to residents of surrounding neighborhoods would be negligible. It was recommended not to pursue this procedure.

4.4.3 Pursue 24 Hour Operation Of The Lunken Air Traffic Control Tower

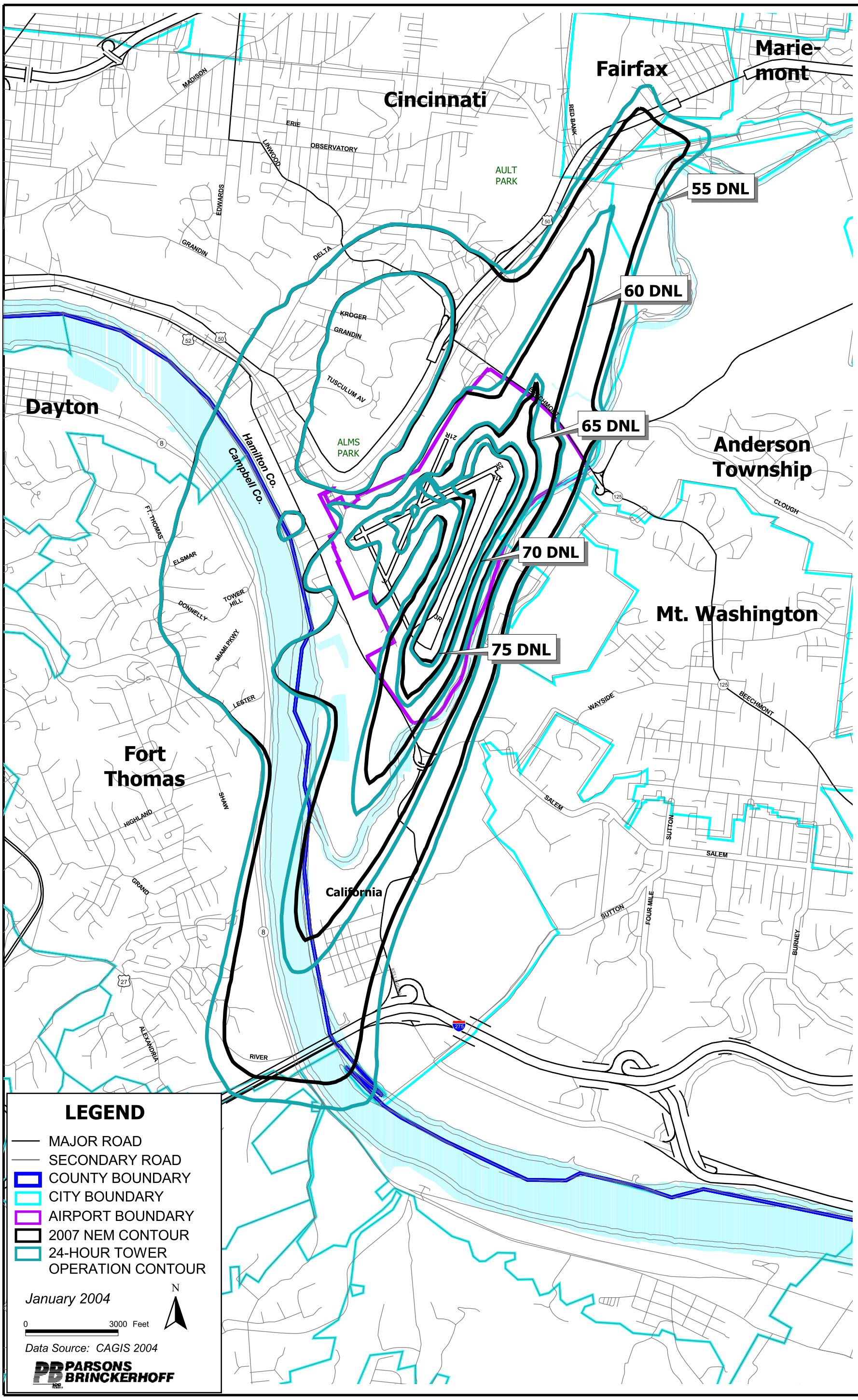
The Air Traffic Control Tower (ATCT) manages aircraft traffic from the airport from a radius of three to 30 miles out. The ATC gives pilots taxiing and take-off instructions, air traffic clearance, and advice based on their own observations and experience.

The air traffic controllers provide separation between landing and departing aircraft, transfer control of aircraft to the enroute center controllers when the aircraft leave their airspace, and receive control of aircraft on flights coming into their airspace.

The Airport ATC tower is manned during the hours of 7:00 a.m. to 11:00 p.m. Pursuing a 24-hour operation would enable the ATC to continuously control aircraft flight procedure, thereby continuing the recommended noise abatement flight procedures throughout nighttime hours. The benefit of this strategy would allow 24-hour oversight of noise mitigation procedures. However there is community concern that if the Airport began a 24-hour ATCT operation additional traffic will be attracted to the night time hours. Nighttime hours begin from 11:00 p.m. to 7:00 p.m.

An analysis was undertaken to determine what the noise effects would occur if additional aircraft operations were placed at nighttime. Approximately seven aircraft operations were placed during nighttime hours, thereby, triggering the FAA 10 dBA nighttime penalty. **Exhibit 4.4-1** shows that the northern and southern areas of the Airport would experience increased noise levels in the DNL 55 dBA, 60 dBA, 65 dBA, 70 dBA and 75 dBA contour levels compared to the 2007 NEM.

Additionally, acknowledging that this strategy would not gain FAA eligible noise mitigation funding because of the limited amount of operations in nighttime hours, the cost of funding this measure solely with the Airport proprietor's revenue is approximately $150,000 annually. It was recommended not to pursue this strategy.



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24-HOUR TOWER OPERATIONS CONTOUR COMPARED TO 2007 NEM

EXHIBIT

4.4-1

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