Runway 11-29 Extension and Safety Area Improvement Project
Louisville International Airport

DRAFT
Environmental Assessment

U.S. Department of Transportation

Federal Aviation Administration

Louisville Regional Airport Authority

July 2013

This Environmental Assessment becomes a Federal document when evaluated and signed and dated by the Responsible FAA official.

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Responsible FAA Official Date

****This document is intended to be read in its entirety.****

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1. PURPOSE AND NEED

The Federal Aviation Administration (FAA) may require the preparation of an EA on any action at any time to assist agency planning and decision making (40 CFR 1501.3b). FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, paragraph 404b, states that "Program offices must prepare concise EA documents with a level of analysis sufficient to:

(1) Understand the purpose and need for the proposed action, identify reasonable alternatives, including a no action alternative, and assess the proposed action's potential environmental impacts.

(2) Determine if an EIS is needed because the proposed action's potential environmental impacts will be significant."

If the FAA evaluation of the Final EA determines that the proposed action will not result in impacts requiring the preparation of an Environmental Impact Statement (EIS), they shall prepare a Finding of No Significant Impact (FONSI). This EA was prepared in compliance with the National Environmental Policy Act of 1969 (NEPA) [42 U.S.C. Section 4321, et seq.], the implementing regulations of the Council on Environmental Quality (CEQ) [40 CFR Parts 1500-1508] and FAA directives (Order 1050.1E, Environmental Impacts: Policies and Procedures, and Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions For Airport Actions.

1.1 PROJECT NEED

The Louisville International Airport - Standiford Field (SDF) is located in the City of Louisville in Jefferson County, Kentucky as shown in **Figure 1** (all figures are in Appendix B of this document). SDF is currently served by three runways as shown in **Figure 2**. All three runways are 150 feet wide. The two primary runways are the north-south parallel runways. Runway 17R-35L is 11,890 feet in length and Runway 17L-35R is 8,579 feet in length. Runway 11-29 is 7,250 feet long and serves as a secondary runway that is typically used when strong crosswind conditions exist. Use of the runway is almost always for takeoffs and landings to the west on Runway 29, which is used for 2.0% of all departures and 2.1% of all arrivals at SDF. Runway 11 Runway 11 is used for 0.1% of all departures and 0.0% of all arrivals at SDF. Navaids for Runway 29 are a Localizer, a Medium Intensity Approach Lighting System (MALSR) and a Precision Approach Path Indicator (PAPI).

In accordance with FAA Advisory Circular (AC) 150/5300-13A, Airport Design, runways are required to have a runway safety area (RSA) which is a graded area clear of obstacles. The RSA is centered on the runway centerline, encompassing the entire runway, and extends beyond each runway end. The RSA width and length beyond the runway ends is dictated by the Runway Design Code (RDC). The Aircraft Approach Category (AAC), Airplane Design Group (ADG) and approach visibility minimums are combined to determine the RDC, which for SDF is D-V based on the current and projected fleet mix. The RSA width standard for this RDC is 500 feet wide. The RSA length beyond the runway end is 1,000 feet (for overshoots) and the length prior to the threshold is 600 feet (for undershoots) for runway approaches that provide vertical guidance. Vertical guidance consists of either an instrument approach procedure that includes

vertical guidance or a visual guidance lighting aid (such as a PAPI). Runways without vertical guidance require a full 1,000 feet of RSA beyond the runway end for undershoots. Although the RSA encompasses the entire runway, the focus of this analysis is the safety areas beyond the runway ends of Runway 11-29.

The FAA standard RSA for Runway 11-29 is 1,000 feet from the end of the runway pavement and 500 feet wide. Existing RSAs are shown in **Figure 3**. The existing RSA at the west (Runway 11) end is 656 feet x 500 feet and 733 feet x 500 feet at the east (Runway 29) end. Runway 29 has a Global Positional System (GPS) approach that provides vertical guidance for GPS-equipped users in addition to a PAPI. Runway 11 has a visual approach that does not have vertical guidance. The existing RSA on Runway 29 satisfies the RSA requirement of 600 feet for undershoots. With no vertical guidance, the RSA on Runway 11 does not satisfy the RSA requirement of 1,000 feet for undershoots. Neither runway end satisfies overshoot requirements. It is impractical to relocate I-65 off the Runway 29 end to provide the 1,000 x 500 feet for Runway 11 overshoots. Although these RSAs do not meet the FAA standards, FAA has allowed use of the full runway length of 7,250 feet for takeoffs and landings. In accordance with Public Law 109-115-Nov. 30, 2005, Runway 11-29 must be brought into compliance with the FAA RSA standards for overshoots and undershoots by December 31, 2015. Application of these standards on the existing airport would require use of a portion of the runway pavement, which would result in 6,906 feet available for takeoffs and landings on Runway 29 and 6,983 feet available for takeoffs and 6,639 feet for landings on Runway 11, as shown in **Figure 4**. UPS has advised LRAA that it needs 7,250 feet for landings on Runway 29 and desires as much Runway 29 takeoff distance as possible in order to maximize payload. Extending the Runway 29 end to provide additional takeoff distance is shown on the Long Term Plan for SDF (**Figure 7)** and the current FAA-approved Airport Layout Plan (ALP).

The use of an engineered material arresting system (EMAS) is an alternative to providing 1,000 feet of safety area beyond the end of a runway for overshoots.

The existing runway does not have paved shoulders. For D-V aircraft, Runway 11-29 is required to have 35-foot paved shoulders, in accordance with AC 150/5300-13A.

If the required 1,000 x 500 feet were provided off the end of Runway 11, existing Crittenden Drive, the airport security road and industrial property would lie within the standard RSA. Since the RSA must be clear of obstacles, Crittenden Drive and the airport security road would have to relocate and property acquired to avoid penetration of the RSA.

1.2 PROJECT PURPOSE

The purpose of the project is to provide on existing airport property the most cost-effective FAA runway safety area for Runway 11-29 in accordance with FAA standards, provide paved runway shoulders 35 feet wide and maintain the existing Runway 29 landing distance and departure distance of 7,250 feet.

1.3 PROPOSED PROJECT

The Proposed Project is shown in **Figure 5** and consists of the following:

- Construct 162-foot-long EMAS at Runway 11 end,
- Install PAPI at Runway 11 end,
- Relocate Runway 11 localizer,
- Relocate Airport Security Road,
- Extend Runway 29 end 546 feet for takeoffs,
- Construct 35-foot shoulders throughout length of Runway 11-29,
- Replace Runway 29 MALSR.

The cost is estimated at $22.8 million, as presented in Section 2.1.2.

1.4 PROPOSED ACTION

The proposed action is environmental approval, for implementation and use, of the preferred alternative selected in Section 2.2.

1.5 PERMITS AND APPROVALS

The anticipated permits and approvals required to implement the Proposed Project are provided in **Table 1**.

Table 1: Permits and Approvals

Unit of Government	Permit or Approval
Federal Aviation Administration (FAA)	Approval of Revised Airport Layout Plan
	Approval of Airport Improvement Program Funding
	Approval of Final EA and issuance of FONSI
Kentucky Division of Water Resources	Kentucky Pollution Discharge Elimination System (KPDES) General Permit (potential update of current permit)
Jefferson County	Erosion Control Permit

1.6 REQUESTED FEDERAL ACTIONS

The proposed action will include unconditional approval of the Airport Layout Plan (ALP) for the preferred alternative.

The proposed action will include the issuance of environmental approval to establish eligibility of the Airport to compete for Federal funding of the development.

Subject to completion of the environmental document approval and availability of funding, implementation of the preferred alternative will commence. The LRAA will construct, operate, and maintain the preferred alternative for the Airport.

2. ALTERNATIVES

2.1 ALTERNATIVES UNDER CONSIDERATION

The analysis of alternatives was developed in accordance with the latest criteria from FAA Order 5200.8 *Runway Safety Area Program,* FAA Order 5200.9 *Financial Feasibility and Equivalency*

of Runway Safety Area Improvements and Engineered Material Arresting Systems (EMAS) FAA Advisory Circular 150/5300-13A, *Airport Design* and FAA Advisory Circular 150/5220-22B, *Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns.*

The FAA requires the use of FAA Order 5200.9 when conducting a RSA alternatives analysis. The guidance uses a standard EMAS installation as a benchmark for comparing and determining the best financially-feasible alternative for RSA improvements. It also establishes the maximum financially-feasible cost for RSA improvements, whether EMAS is involved or not.

All alternatives use declared distances in the analysis. In addition the alternatives compare using declared distances with no major physical improvements, using EMAS, installing vertical guidance, and making physical improvements to bring Runway 11-29 into compliance with current RSA standards.

The implementation of declared distances introduces a set of terminology and criteria that need to be analyzed. The following is a brief explanation of the criteria as contained in FAA AC 150/5300-13A:

- Takeoff Run Available (TORA): The TORA is defined as the runway length declared available and suitable for the ground run of an aircraft taking off.

- Acceleration Stop Distance Available (ASDA): The ASDA is defined as the runway plus stopway length declared available and suitable for the acceleration and deceleration of an aircraft aborting takeoff. A full RSA or EMAS is required beyond the end of the ASDA.

- Landing Distance Available (LDA): The LDA is defined as the runway length declared available and suitable for landing an aircraft. A full RSA or EMAS is required beyond the end of the LDA.

EMAS performance, as stated in AC 150/5300-13A, is dependent upon aircraft weight, landing gear configuration, tire pressure, and exit speed of the design aircraft. Per the current ALP, the design aircraft for Runway 11-29 is the B-747-400 ER (747-400) aircraft. The 747-400 has a gross take-off weight of 875,000 pounds. However, the length of Runway 11-29 does not allow for aircraft operations of the design aircraft at maximum gross weight. Based on the Boeing design manual, the maximum allowable takeoff weight (MTOW) for the design aircraft on a 7,250-foot runway at SDF is approximately 730,000 pounds (see Boeing Exhibit 3.3.1 as shown in Appendix A). Installing EMAS on the west end of the runway would provide for overshoots for aircraft landing from the Runway 29 end. Aircraft typically weigh less when landing than when taking off. However, the FAA recommends designing EMAS based on the MTOW of the design aircraft. Based on this MTOW, the resulting EMAS bed should be approximately 540 feet in length per Figure 3 of FAA Order 5200.9 (in Appendix A). However, the available distance for EMAS from the west end of the runway to the programmed Taxiway A extension is only 244 feet, as shown in **Figure 5**.

According to FAA Advisory Circular (AC) 150/5220-22B, a standard EMAS system is designed for a runway exit speed of 70 knots for the design aircraft. When neither an adequate RSA distance nor standard EMAS bed length is available, a non-standard EMAS may be installed. A

non-standard EMAS can have an exit speed less than 70 knots but the exit speed must be greater than 40 knots. The MTOW of 730,000 pounds was used for all alternatives involving EMAS.

2.1.1 Alternative 1 -- No Action Alternative

The No Action Alternative represents the course of action that would be pursued if the Proposed Project is not implemented. It consists of the existing airport facilities shown in **Figure 2** and the declared distances for Runway 11-29 shown in **Figure 4**. The distance available for takeoffs is governed by the shorter of two distances – the TORA and the ASDA. For Runway 11-29 the TORA is the physical length of the runway. ASDA is the distance needed to stop the aircraft once full power has been attained and the pilot has to abort the takeoff. That distance must include 1,000 feet for stopping that cannot be part of the runway pavement. For the types of aircraft in the FedEx and UPS fleets, the ASDA determines the available takeoff distance. As shown in **Figure 4**, the ASDA on Runway 29 would be decreased from existing 7,250 feet to a declared distance of 6,906 feet. The LDA on Runway 29 would decrease from existing 7,250 feet to a declared distance of 6,906 feet.

Therefore, the No Action Alternative would not meet the project purpose and need since it would decrease the LDA and not increase the ASDA on Runway 29.

2.1.2 Alternative 2 -- Proposed Project

The Proposed Project is described in Section 1.3 and shown in **Figure 5**. It was developed to determine if a non-standard EMAS bed could be constructed west of proposed Taxiway A and east of the service road. An EMAS bed with a length of 162 feet was evaluated to determine if it is adequate for the design aircraft while maintaining the 7,250-foot LDA for Runway 29. At that length, the exit speed for the maximum landing weight of a 747-400 is 64 knots, which is within the required range of 40 to 70 knots, and therefore adequate for maintaining the 7,250-foot LDA for Runway 29. The location of this EMAS bed crosses over the Airport Service Road. However, there is adequate space between the EMAS bed and airport boundary fence to shift the airport service road. The Transportation Security Administration (TSA) requires a 10-foot set-back between the airport boundary fence and airport service road.

The EMAS bed is not adequate in length for Runway 29 takeoffs, which require 540 feet of EMAS for an ASDA of 7,250 feet. Therefore, Runway 29 must be lengthened at least 322 feet to provide the 1,000 x 500 feet RSA required beyond the end of Runway 11. Since the runway must be lengthened to achieve the purpose and need for the project, it is proposed that it be lengthened 546 feet as shown on the approved ALP.

The Project also requires relocation of the existing localizer due to the location of the EMAS bed. The Project would provide 7,250 feet of LDA and 7,474 feet of ASDA for Runway 29 and an ASDA and LDA of 6,983 feet for Runway 11. The total cost is estimated at $22.8 million, as shown in **Table 2**. Note that the EMAS must be replaced during the 20-year life cycle, which also includes annual maintenance costs.

Table 2: Proposed Project Cost Estimate

Item	Quantity/Unit	Unit Cost	Cost
Install 162 ft. EMAS	1	$5,187,105	$5,187,105
Runway Shoulders (35 ft. wide)	7,270 ft.	$240	$1,744,800
Runway 29 Extension (546 ft.)	32,100 sq.ft.	$325	$10,432,500
Adjust Signage			$47,000
Replace MALSR			$1,500,000
Relocate Localizer	1	$250,000	$250,000
Relocate Security Rd.	1400 ft.	$180	$252,000
Airfield Cost			$14,376,300
10% Contingency			$1,437,630
Subtotal			$15,813,930
20-Year Life Cycle Cost			$1,823,972
Total Cost			$22,825,007

2.1.3 Alternatives Eliminated

Standard RSA Alternative

The Standard RSA Alternative is shown in **Figures 6** and **6A** and consists of the following:

- Clear and grade 1,000 x 500-foot area at Runway 11 end to provide standard RSA,
- Construct 35-foot shoulders throughout length of Runway 11-29,
- Acquire approximately 3.95 acres of commercial manufacturing/enterprise zone property,
- Relocate Crittenden Drive and the airport security road around Runway 11 end RSA,
- Replace Runway 29 MALSR.

The Standard RSA Alternative would not require an extension of the runway at the east end. It would provide an ASDA and LDA of 7,250 feet for Runway 29 and an ASDA and LDA of 6,983 feet for Runway 11.

Extending the RSA requires the Airport Service Road, Crittenden Drive and the existing airport boundary fence to be relocated. The relocation of the Airport Service Road and Crittenden Drive would require property acquisition from portions of six parcels within the adjacent industrial development. The property acquisition assumes that all of parcels 6 and 8 would need to be acquired in addition to portions of Parcels 3, 5, 9 & 10, for a total of approximately 4.0 acres (see **Figure 6A**).

This property acquisition requires 35% of an existing business to be acquired. However, it would not be likely that only one third of the business operations would be able to be relocated due to the nature of the business (chemical coatings). Chemical coating is a multi-stage process and removing one of the stages from the process would render the plant out of its current capacity. Relocation of the entire chemical plant could potentially involve significant environmental, political and public pressures from the surrounding community.

The total cost is estimated at $44.6 million of which land acquisition is approximately $40.9 million. This alternative was eliminated because it would cost an estimated $20.7 million more than the Proposed Project and would be disruptive to the surrounding community.

Three other alternatives with EMAS placed at the Runway 11 end were considered and eliminated primarily due to their cost. They are presented in the report titled *Runway Safety Analysis for Runway 29, June 2013.* A copy of the report is available; contact Dwight Clayton at (502) 363-8515.

2.2 PREFERRED ALTERNATIVE

The No Action Alternative would not meet the project purpose and need since it would decrease the LDA and not increase the ASDA on Runway 29. The Proposed Project would achieve the project purpose and need and its environmental impacts are minimal. The Kentucky State Clearinghouse has evaluated the proposal and recommends the project be approved for assistance by the cognizant federal agency (see June 13, 2013 letter in Appendix A). The Proposed Project is therefore selected as the preferred alternative.

3. AFFECTED ENVIRONMENT AND FUTURE ACTIONS

SDF is located approximately five miles south of the downtown of the City of Louisville, which is the seat of government for Jefferson County. Louisville is also the center of a seven-county Metropolitan Statistical Area comprised of Bullitt, Jefferson, Oldham, and Shelby Counties in Kentucky and Clark, Floyd, and Harrison Counties in Indiana. SDF is centrally located within a built-up urban environment. The land use immediately west of Runway 11-29 consists of a mixture of airport-compatible development (warehousing, industrial and commercial). Residential neighborhoods adjoin the warehousing, industrial, and commercial areas. The land use immediately east of Runway 11-29 and I-65 was residential in the past, but is now an Enterprise Zone District and residents can voluntarily relocate as part of the LRAA noise mitigation plan.

Future actions include implementation of the Long Term Plan for SDF shown in **Figure 7**. The future action affecting the alternatives under consideration is the extension of Taxiway A.

4. ENVIRONMENTAL CONSEQUENCES

This section assesses the environmental impacts of the alternatives under consideration in accordance with the policies and procedures contained in FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects, as revised April 28, 2006 and FAA Order 1050.1E, Policies and Procedures for Considering Environmental Impacts, as revised March 20, 2006, for compliance with NEPA and implementing regulations issued by the Council on Environmental Quality (CEQ) found in 40 CFR parts 1500-1508.

Order 1050.1E describes the 18 environmental impact categories that must be addressed in this Draft EA. These 18 categories are addressed in alphabetical order. The Kentucky State

Clearinghouse reviewed the proposal and found no identifiable conflicts with any state or local plan, goal or objective (see June 13, 2013 letter in Appendix A).

4.1 AIR QUALITY

The two primary laws that apply to air quality are NEPA and the Clean Air Act, as amended (CAA). The FAA is required under NEPA to prepare an environmental review document for Federal actions that can potentially affect the quality of the human environment including air quality. The CAA established National Ambient Air Quality Standards (NAAQS) for six pollutants, termed "criteria pollutants." The six pollutants are carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone ($O7_3$), particulate matter (PM-10 and PM-2.5) and sulfur dioxide (SO_2). The CAA requires each state to adopt a plan approved by the EPA – called the state implementation plan – to achieve the NAAQS for each criteria pollutant. The proposed action's impact on air quality in a NEPA document is normally assessed by evaluating the impact of the proposed action on the NAAQS. Therefore, Federally sponsored airport development in Kentucky must conform with the Kentucky State Implementation Plan (SIP) in accordance with the criteria and procedures established in the SIP as specified by EPA in 40 CFR Part 51, Subpart W – *Determining Conformity of General Federal Actions to State or Federal Implementation Plans*. According to Subpart W, a conformity determination (with the SIP) is required for each criteria pollutant if the emissions in a non-attainment or maintenance area for that pollutant caused by a federal action (proposed action) would equal or exceed a specified annual emission rate when compared to the no action alternative or would be 10 percent or more of the non-attainment or maintenance area's emission inventory for that pollutant in the SIP.

Jefferson County, Kentucky is non-attainment for PM-2.5. Since annualized aircraft operations are not expected to materially change due to the No Action Alternative and the Proposed Project, changes in air quality emissions are expected to be minimal.

The proposed physical improvements for the alternatives under consideration are minimal; it is not expected that the air quality emissions during construction will exceed any de minimis levels for criteria pollutants.

4.2 COASTAL RESOURCES

Federal activities involving or affecting coastal resources are governed by the Coastal Barriers Resources Act (CBRA), the Coastal Zone Management Act (CZMA) and Executive Order (E.O.) 13089, Coral Reef Protection. The CBRA, as amended, prohibits federal financing for development within the Coastal Barriers Resources System, which consists of undeveloped coastal barriers along the Atlantic and Gulf coasts and along the shores of the Great Lakes. The CZMA requires that a proposed action be consistent with approved coastal zone management programs.

The alternatives under consideration are not located within a federally-designated coastal barrier area or coastal zone or coral reef area; therefore, analysis of the alternatives under consideration with respect to the CBRA, CZMA and E.O. 13089 is not applicable.

4.3 COMPATIBLE LAND USE

The compatibility of existing and planned land uses in the vicinity of an airport is associated with the extent of the airport's noise impacts, other impacts exceeding thresholds of significance that have land use ramifications including disruption of communities, relocation and induced socioeconomic impacts, and effects on the safety of aircraft operations.

The Airport Development Grant Program (49 USC 47101 *et seq*.) requires that a project may not be approved unless the Secretary of Transportation is satisfied that the project is consistent with the plans (existing at the time the project is approved) of public agencies for development of the area in which the airport is located (49 USC 47106(a)(1)).

The current and foreseeable runway use for Runway 11-29 is minimal (approximately 2.1% overall) and the alternatives under consideration should not materially alter the use of the runway. The Proposed Project would not have an adverse noise impact because it would have the same effect as the No Action Alternative on noise sensitive land uses, as shown in **Figure 10**.

The Proposed Project would have no land use effects.

4.4 CONSTRUCTION IMPACTS

Construction impacts are short-term, occurring only during the period when construction personnel and equipment are operating at SDF.

Construction noise is very transient in nature and dependent on the type of work. The equipment that produces it is limited to the construction area on airport or to the haul routes. This noise is mitigated by the fact that construction is predominantly performed during daylight hours when people are much less sensitive to noise.

Potential temporary air quality impacts from construction include fugitive dust associated with site work and haul routes, exhaust and machinery-related emissions from construction equipment and haul vehicles and potential congestion in the vicinity of construction sites and on haul routes. Contractors would be required to mitigate construction/grading activities disrupting ground cover by controlling fugitive dust emissions and other airborne particulates in accordance with specifications including measures such as applying water to exposed soils, and limiting the extent and duration of exposed soil conditions. All equipment on this project will be required to be maintained in good working order and all air pollution control equipment will be operational. Contractors would be required to conform to all applicable federal, state, and local regulatory requirements.

The earthwork necessary to construct the Proposed Project will create the potential for erosion and siltation. An Erosion Control Permit from Jefferson County will be required. No dewatering is expected. The FAA AC 150/5370-10E, "Standards for Specifying Construction of Airports," Item P-156 "Temporary Air and Water Pollution, Soil Erosion, and Siltation Control" will be included in the project specifications and the contractor will be required to meet the requirements in it.

All construction debris will be required to be disposed of at an approved site and none of it will be allowed to be deposited in wetlands or other sensitive sites.

Heavy equipment used during construction would require fueling, routine maintenance, and potentially minor repairs while on site. There is a risk of minor spills or leaks of petroleum products during maintenance and equipment refueling. This risk is typical of any construction project involving similar activities. The contractor is responsible for the implementation of measures to prevent petroleum spills and the reporting and clean-up requirements for any petroleum spills that occur during construction.

4.5 DEPARTMENT OF TRANSPORTATION ACT, SECTION 4(f)

This section considers the impacts of the airport alternatives on resources eligible for review under Section 4(f) of the 1966 Department of Transportation Act.[1] Section 4(f) states that the Secretary of the U.S. Department of Transportation may not approve a project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land in an historic site of national, state or local significance. The act requires that no project be approved unless there is no feasible and prudent alternative to using that land and planning for the project includes all possible measures to minimize harm resulting from the use of the land. Section 4(f) applies if archaeological sites are found that warrant preservation in place.

Gray & Pape, Inc. performed a Phase I historical/architectural survey in 2002 that identified a complex south of the proposed RSA improvement for Runway 11 that has been determined eligible for listing in the NRHP by the Kentucky State Historic Preservation Officer (SHPO) – a circa (c.) 1920s brick factory building complex that was the original factory of the Wood Mosaic Corporation. The complex is located on MacLean Avenue west of Crittenden Drive, and would not be affected by the Proposed Project and EMAS Alternative. The Final EA for Construction of Parallel Taxiway A Project (HNTB Corporation, August 2006) provides detail for these resources.

A Phase 1 archaeological survey was completed by Gray & Pape, Inc. in May 2007.[2] An area (Area 1, Figure 7 in the report) was not accessible and was recommended for a Phase 1 survey. The Report is available for review at the LRAA office; contact Dwight Clayton at (502) 368-6524. This area would not be affected by the alternatives under consideration.

4.6 FARMLANDS

The Farmland Protection Policy Act (FPPA) regulates Federal actions with the potential to convert farmland to non-agricultural uses. As stated in the Natural Resources Conservation Service (NRCS) Rules, Part 658 -- Farmland Protection Policy Act**,** *Farmland* means prime or unique farmlands as defined in section 1540(c)(1) of the Act or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the

[1] In January 1983, as part of an overall recodification of the DOT Act, Section 4(f) was amended and codified in 49 U.S.C, Section 303. This regulation is commonly known as "Section 4(f)."

[2] Phase 1 Archeological Investigations for Taxiway A and Relocation of Crittenden Drive, Louisville International Airport, Gray & Pape, Inc., May 1, 2007

Secretary to be farmland of statewide local importance. It does not include land already in or committed to urban development or water storage.

The area affected by the Proposed Project does not contain prime or unique farmland and is planned for airport use. Therefore the Proposed Project and EMAS Alternative would not impact farmlands.

4.7 FISH, WILDLIFE, AND PLANTS

Section 7 of the Endangered Species Act (ESA), as amended, applies to Federal actions and sets forth requirements for consultation to determine if the proposed action may affect an endangered or threatened species. If an endangered or threatened species or its critical habitat may be affected, Section 7(a)(2) of the ESA requires the Federal lead agency to consult with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS), as appropriate, to ensure that the proposed action does not jeopardize the continued existence of the affected species. Threatened, endangered, candidate and proposed state-listed animal and plant species and their habitats that exist in the affected environment must also be considered. Plant or animal species with special status are also included.

The affected environment is the area that would be disturbed by the proposed construction. The area that would be disturbed by the Proposed Project consists of mowed turf and pavement on airport property. There is one federally endangered species, the Indiana Bat (*Myotis sodalis*), that could potentially forage in the proximate area west of Runway 11. The potential Indiana Bat habitat is not within the affected environment and therefore the Proposed Project would not adversely affect the Indiana Bat.

4.8 FLOODPLAINS

Executive Order 11988 directs Federal agencies to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values served by floodplains. Order DOT 5650.2 contains DOT policies and procedures for implementing the executive order. Agencies are required to show there is no practical alternative before taking action that would have a significant encroachment on a 100-year floodplain based on a 100-year flood. In terms of NEPA, a significant encroachment would occur when the proposed action would have notable adverse impacts on the natural and beneficial values of the floodplain.

Floodplains are defined as that portion of lowland and flat area adjoining waters subject to a one percent or greater chance of flooding in any given year (i.e., a 100-year flood event). Federal Emergency Management Agency (FEMA) 100-year and 500-year floodplain data were reviewed for the existing airport site to determine potential impacts.

As shown in **Figure 8** southern portions of SDF are located in a 100-year floodplain. The Proposed Project would not occur within the floodplain; therefore, there is no impact.

4.9 HAZARDOUS MATERIALS, POLLUTION PREVENTION AND SOLID WASTE

Four primary laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances and wastes. The two statutes most important to this project are the Resource Conservation and Recovery Act (RCRA), as amended, and the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended. RCRA governs the generation, treatment, storage and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment. Agencies should include an appropriate level of review regarding the hazardous nature of any materials or wastes to be used, generated or disturbed by the proposed action, as well as the control measures to be taken.

Known sites containing hazardous or potentially hazardous substances are present along Runway 17R-35L, Taxiway B and west of Runway 17R-35L as shown in **Figure 9**. The Proposed Project may affect soil containing foundry sand. This soil is from the former Louisville Forge and Gear (LF&G) site and would need to be handled and disposed of in accordance with the controls set forth in the "Soils Management Plan" issued on April 29, 1997 by ETI Corradino and the "General and Site-Specific Environmental Controls, Louisville International Airport at Standiford Field, Louisville, Kentucky" issued March 2011 by the LRAA.

4.10 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

Historical, architectural, archaeological and cultural resources that would be affected by federally funded/licensed undertakings come under the protection of the National Historic Preservation Act of 1966 (16 U.S.C.470), as amended. This act, in Section 106, requires federal agencies to consider the effects of such undertakings on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP). Regulations related to this process are described in 36 CFR Part 800: Protection of Historic Properties.

A broader range of cultural resources comes under the protection of Section 4(f) of the U.S. Department of Transportation (DOT) act of 1966, which requires projects funded by the DOT to avoid significant historic sites unless there is no "feasible and prudent" alternative. In general, this provision applies to resources that are in, or are eligible for inclusion in, the NRHP. However, at the discretion of the DOT, Section 4(f) protection may also be extended to properties that do not meet NRHP criteria as long as the responsible jurisdiction advocates Section 4(f) status.

The area of potential effect (APE) is the geographic area or areas within which an undertaking may cause changes in the character or use of archaeological sites or historic properties. A potential effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling or association. Examples of adverse effects include physical damage or alteration of the property, change of the character of the property's use or of physical features

within its setting that contribute to its historical significance, and introduction of visual, atmospheric or audible elements that diminish the integrity of the property's significant historic features. The Proposed Project and EMAS Alternative would not introduce atmospheric or audible elements when compared to the No Action Alternative.

Therefore, the APE for historic properties is the area that contains a property that would be acquired or physically disturbed to the extent that its current use may be affected, or that would be significantly visually affected by the alternatives. For archaeological sites, the APE is the area where the ground could be disturbed as a direct or indirect consequence of the Proposed Project. As stated in Section 4.5 above, there are no historic properties determined eligible for listing in the NRHP and no archaeological sites that would be affected by the Proposed Project.

4.11 LIGHT EMISSIONS AND VISUAL IMPACTS

Light emission effects consider the extent to which any lighting associated with the undertaking would create an annoyance among people in the vicinity or interfere with their normal activities. Visual or aesthetic effects deal more broadly with the extent that the undertaking contrasts with the existing environment, architecture, historic or cultural setting, or land use planning, and whether the jurisdictional agency considers this contrast objectionable.

Changes in the runway end lights from the Proposed Project would not adversely impact residential areas. Since the Proposed Project would not include vertical improvements, it is not expected that they would have aesthetic effects.

4.12 NATURAL RESOURCES AND ENERGY SUPPLY

The proposed action is to be examined to identify any proposed major changes in stationary facilities or the movement of aircraft and ground vehicles that would have a measurable effect on local supplies of energy or natural resources. For most actions, natural resource consumption does not typically result in significant impacts. If it is determined that demand will exceed supplies, impacts would be deemed significant and further review required.

The Proposed Project would have no adverse effect on local energy supplies.

4.13 NOISE

The analysis of noise considers the effects of aircraft noise on residential population and noise-sensitive activities at other places (schools, hospitals, nursing homes, churches, auditoriums, outdoor amphitheaters, and concert halls). FAA's most recent compatible land use noise guidelines are contained in Appendix A of Title 14 CFR Part 150.

For aviation noise analysis, the FAA has determined that the cumulative noise energy exposure of individuals resulting from aviation activities must be established in terms of annual average day/night sound level (DNL) as FAA's primary noise metric. According to FAA land use compatibility guidelines, noise exposure levels of less than DNL 65 dBA are compatible with residential and other noise-sensitive land uses.

Significant Noise Impact Thresholds

According to FAA Order 1050.1E, a significant noise impact would occur if the analysis shows that the proposed project would cause noise-sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB noise exposure when compared to the no action alternative for the same timeframe. For example, an increase from DNL 63.5 to 65 dB is considered a significant impact.

Noise contours for the No Action Alternative, the Proposed Project and Alternative 3 are shown on **Figure 10**. The Proposed Project and Alternative 3 would not change runway use or fleet mix. When strong crosswind conditions exist, Runway 29 is used almost exclusively for takeoffs and landings to the west, which accounts for approximately 2.1% of all operations at SDF. Compared to the No Action Alternative, the Proposed Project and Alternative 3 would have a Runway 29 ASDA of 7,796 feet and an LDA of 7,250 feet compared to an ASDA and LDA of 6,906 feet for the No Action Alternative. These effects on the DNL contours are minimal and not noticeable on **Figure 10**. **Figure 11** shows the noticeable changes are the result of shifting the start of Runway 29 takeoffs 546 feet to the east, which occurs in the DNL contours that do not affect noise-sensitive uses. The Proposed Project and Alternative 3 would not have an adverse noise impact on noise-sensitive uses because they would have approximately the same effect as the No Action Alternative on these uses.

4.14 SECONDARY (INDUCED) IMPACTS

Induced or secondary impacts include any shifts in patterns of population movement and growth, the demand for public services, and changes in business and economic activity to the extent influenced by proposed airport development. According to Order 1050.1E, secondary impacts would not normally be significant except where there is also a significant impact to another category; particularly noise, land use, or direct social impacts.

The affected environment is the City of Louisville and surrounding communities. The Proposed Project and EMAS Alternative would not induce additional operations at SDF.

The development pattern in the City and surrounding communities in general and around the airport in particular, would not change as a result of implementing the Proposed Project or Alternative 3. Population movement and the growth and demand for public services would not change beyond those patterns and levels currently experienced in the City and surrounding communities.

4.15 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

Socioeconomic Impacts

Socioeconomic impacts include the displacement of persons and businesses as a result of the acquisition of real property, disruption of local traffic patterns that substantially reduce the levels of service of the roads serving the airport and surrounding communities, and a substantial loss in community tax base.

The Proposed Project would not displace persons or businesses or disrupt local traffic patterns; therefore there are no impacts.

Environmental Justice (EJ)

The U.S. Department of Transportation (DOT) issued DOT Order 5610.2, Environmental Justice (EJ) in Low-Income Populations and Minority Populations (62 FR 18377, April 15, 1997) to implement in part Executive Order (E.O.) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations (59 FR 7629, February 16, 1994) and the accompanying Presidential Memorandum, and the DOT Strategy (60 FR 33896, June 29, 1995). EJ is concerned with whether or not a federal action would result in a disproportionate environmental or public health adverse impact to minority populations or low income populations. E.O. 12898 requires an examination of whether these impacts are disproportionately high and adverse, and evaluation of measures to avoid or minimize the identified disproportionately high and adverse impacts.

There would be no adverse effects on low-income or minority populations from the Proposed Project because there are no low-income or minority populations affected by the Proposed Project.

Children's Environmental Health and Safety Risks

The purpose of this impact category is to determine whether or not adverse impacts to the health and safety risks of children as a result of the Federal action are disproportionate. The Proposed Project would not affect the health and safety risks of children because there are no children affected by the Proposed Project.

4.16 WATER QUALITY

The Federal Water Pollution Control Act (commonly referred to as the Clean Water Act) provides for the establishment of water quality standards, control of discharges, development of waste treatment management plans and practices, prevention or minimization of the loss of wetlands, the location with regard to an aquifer or sensitive ecological area such as a wetlands area, and the regulation of other issues concerning water quality. The purpose of this section is to determine if the proposed action has the potential to exceed water quality standards from the discharge of surface water runoff or the impact to the groundwater and water supply/drinking water sources, or affect waste treatment management plans and practices. Wetland impacts are discussed in Section 4.17.

The affected environment consists of the receiving waters for storm water runoff and groundwater underlying the Proposed Project.

Surface Water

The airport property is approximately 70 percent impervious and lies within the Ohio River watershed. Storm water runoff from the airport drains in a generally north to south pattern and is collected in a system of ditches and storm sewer pipes and conveyed to seven outfalls. Small portions of the northwestern and northeastern corners of the airport drain to ditches, which discharge into the Metropolitan Sewer District (MSD) system. The airport has 40 oil/water

separators located throughout the property to intercept storm water from chemical storage areas. Each unit has a valve that allows it to discharge to the sanitary or storm sewer as appropriate.

The airport has a Kentucky Pollutant Discharge Elimination System (KPDES) Permit that regulates the discharge of pollutants to the receiving waters. As characterized in the permit, storm water runoff from the airport may come into contact with aircraft deicing fluids, pavement deicing chemicals, and fuel residuals that have the potential to impact the storm water. The segment of Northern Ditch/Pond Creek that the airport runoff eventually discharges to is listed on Kentucky's 303(d) list of impaired waters because of ammonia (Un-ionized), fecal coliform, nutrient/eutrophication biological indicators, organic enrichment (sewage) biological indicators.

The runway/taxiway pavement associated with the alternatives will have little impact on water quality. Because of the addition of impervious area with the proposed construction, there may be an increase in runoff volume and peak discharge rate from the site.

The Proposed Project and Alternative 3 physical improvements would require an erosion and sediment control permit issued by Jefferson County. A comprehensive erosion control plan to minimize soil loss during construction will be needed to obtain this permit.

Groundwater

In Jefferson County, groundwater is obtained from sedimentary rocks of (oldest to youngest) Ordovician, Silurian, Devonian and Mississippian ages, and unconsolidated sediments of Quaternary age. SDF is underlain by Devonian Age fractured shale and limestone bedrock. The City of Louisville is located on the slope of the Cincinnati Arch in which bedrock is generally dipping westward. The potential for karst features and groundwater movement is high within the limestone bedrock

It is not expected that the Proposed Project and Alternative 3 would have an adverse effect on the groundwater. Post construction operation would also not likely have an adverse effect on the groundwater due to the limited pavement expansions. Construction activities may disturb existing contaminated soils, as discussed in Section 4.9, Hazardous Materials, Pollution Prevention and Solid Waste.

Wastewater and Water Supply

The Proposed Project and Alternative 3 would not induce aircraft operations, and therefore would not increase wastewater flows or water supply requirements.

4.17 WETLANDS

Executive Order 11990, DOT Order 5660.1A: Preservation of the Nation's Wetlands, the Rivers and Harbors Act of 1899 and the Clean Water Act, Section 404, address activities in wetlands.

The US Army Corps of Engineers (USCOE) has jurisdiction over wetlands that are adjacent, tributary, or have significant nexus to waters of the US. The USCOE 1987 manual outlines the criteria and procedures for identifying wetlands. Once the USCOE receives a project specific permit application or request for a jurisdictional determination, the USCOE will determine if the affected wetlands are adjacent, tributary or have significant nexus to waters of the US. Isolated

wetlands and areas created in upland which are not intended to create wetland conditions, such as the active waste water treatment ponds on the existing airport property, are not USCOE jurisdictional wetlands.

Review of the National Wetland Inventory as held by U.S. Fish and Wildlife indicated that there are no wetlands off either end of Runway 11-29, therefore the Proposed Project would not impact any wetlands.

4.18 WILD AND SCENIC RIVERS

The Wild and Scenic Rivers Act, as amended, describes those river segments designated or eligible to be included in the Wild and Scenic Rivers System. River segments eligible for protection are those that are free flowing and have "outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural and other similar values." River segments that appear to qualify for inclusion in the National Wild and Scenic River System are listed on the Nationwide Rivers Inventory (NRI), compiled by the National Park Service of the U.S. Department of Interior.

No wild and scenic river or NRI river segment is located in the affected environment of any alternative. Therefore, the Proposed Project would not impact a wild and scenic river or NRI river segment.

4.19 CUMULATIVE EFFECTS

A cumulative effect on the environment results from the incremental effect of a proposed action/alternative when added to other past, present and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. The CEQ Handbook "Considering Cumulative Effects" (January 1997) recommends that a list of potential effects and issues be established during the scoping process; that a geographic boundary and timeframe be established, that a list of other actions contributing to cumulative effects be identified, and that information related to the affected environment and environmental consequences be obtained. This information should include thresholds, standards, guidelines and planning goals.

Cumulative effects are effects the alternative would have on a particular resource when added to effects on that resource due to past, present, and reasonably foreseeable actions within a defined timeframe and geographical area. The primary purpose of this analysis is to determine if the cumulative effects exceed the threshold of significance for the particular resource and therefore require either avoidance or mitigation. This requires the availability of quantitative data. Therefore, the timeframe used in this EA is five years for past actions. Reasonably foreseeable future actions are actions that the proponent has committed to completing within the same timeframe as the implementation of the proposed action.

None of the resources in Sections 4.1-4.18 would have a cumulative effect that would result in a significant impact from the Proposed Project.

5. PUBLIC AND AGENCY COORDINATION

Public Coordination

The Draft EA has been posted on the LRAA website, http//www.flylouisville.com. The LRAA will hold an information open house during the comment period for the purpose of informing interested parties on the project.

Interagency Coordination

LRAA has coordinated with the Kentucky State Clearinghouse and the FAA in the preparation of this Draft EA.

6. LIST OF PREPARERS

The following individuals assisted in the preparation of this document.

Preparer	Title/Firm	Education/ Registration	Years Exp.	EA Responsibility
Karen Scott	Deputy Executive Director, Planning and Engineering, LRAA	M. Eng, Civil Engineering, P.E.	22	Review of EA
Dwight Clayton	Acting Deputy Executive Director, Planning and Engineering, LRAA	BS Civil Engineering	24	LRAA Project Manager; Review of EA
Gregory Albjerg	Vice President/Principal Aviation Engineer, HNTB	BS Civil Engineering, P.E.	33	Aviation Planning
Larry Dallam	Senior Project Manager, HNTB	BS, MS, PhD Civil Engineering	42	Preparer of EA
Randall McGee	Project Director, HNTB	BS Civil Engineering, MBA	34	Review of EA
Robert McAndrews	Project Director, HNTB	BS Civil Engineering: MBA, P.E.	25	HNTB Project Manager; Review of EA
Todd Tabor	Senior Staff Engineer, HNTB	BS Civil Engineering, P.E.	26	Airport Engineering; Graphics
John Verburg Jr.	Project Engineer, HNTB	BS Civil Engineering, EIT	13	Review of EA

7. LIST OF AGENCIES, JURISDICTIONS, PRIVATE PARTIES AND DEPOSITORIES THAT RECEIVED THE DRAFT EA

Federal
U.S. Army Corps of Engineers
U.S. Environmental Protection Agency
U.S. Department of the Interior, Fish and Wildlife Service
U.S. Department of Agriculture
Kentucky Air National Guard

State
Kentucky Heritage Council, State Historic Preservation Officer
Kentucky Division of Water Resources
Office of State Highway Engineer

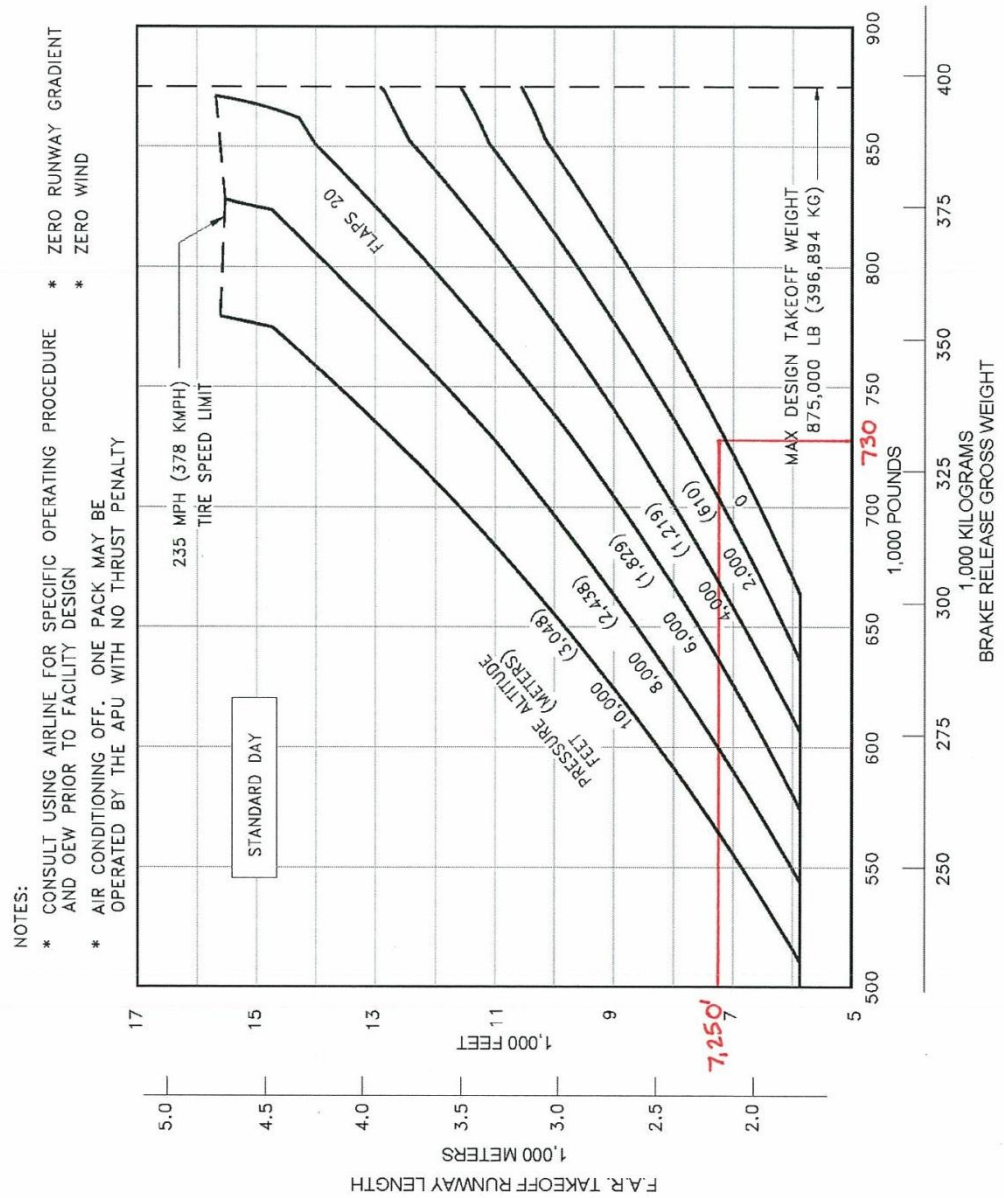
Regional/Municipalities
City of Louisville
Jefferson County
Jefferson County Air Pollution Control District
Metropolitan Sewer District

Libraries
Bon Air Branch Library
Highland-Shelby Park Branch Library
Louisville Public Library

Others
CSX
UPS
FedEx

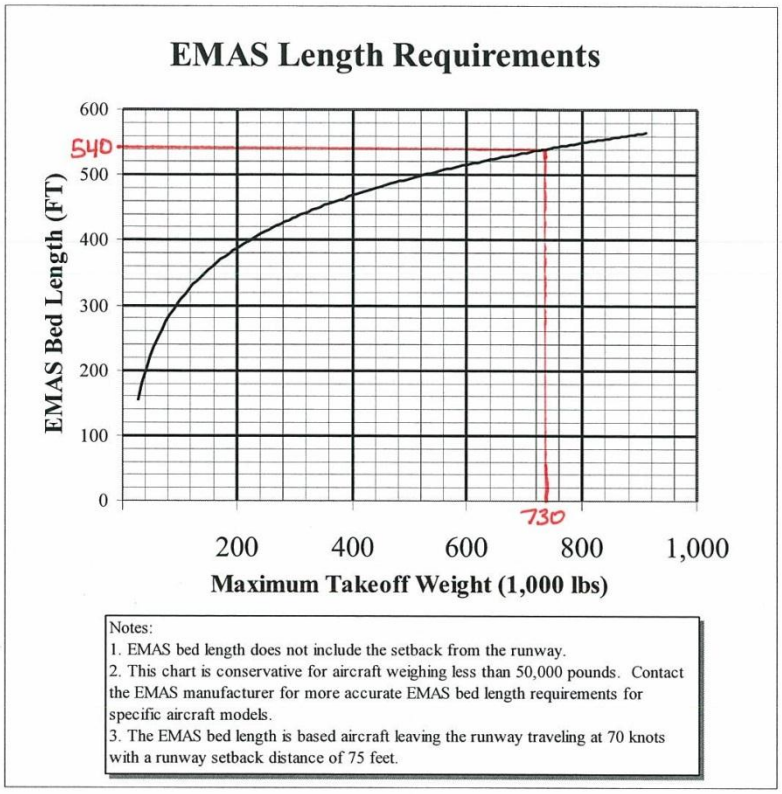
APPENDIX A

SUPPORTING INFORMATION



3.3.1 F.A.R. TAKEOFF RUNWAY LENGTH REQUIREMENTS - STANDARD DAY
MODEL 747-400 (CF6-80C2B1 ENGINES)

Figure 3. EMAS Length Requirements



STEVEN L. BESHEAR
GOVERNOR

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OFFICE OF THE GOVERNOR
1024 CAPITAL CENTER DRIVE, SUITE 340
FRANKFORT, KENTUCKY 40601-8204
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TOLL FREE (800) 346-5606
WWW.DLG.KY.GOV

TONY WILDER
COMMISSIONER

June 13, 2013

Mr. C.T. Miller
Louisville Regional Airport Authority
P.O. Box 9129
Louisville, KY 40209

RE: Airport Improvement Program
SAI# KY20130509-0487
CFDA# 20-106

Dear Mr. Miller:

The Kentucky State Clearinghouse, which has been officially designated as the Commonwealth's Single Point of Contact (SPOC) pursuant to Presidential Executive Order 12372, has completed its evaluation of your proposal. The clearinghouse review of this proposal indicates there are no identifiable conflicts with any state or local plan, goal, or objective. Therefore, the State Clearinghouse recommends this project be approved for assistance by the cognizant federal agency.

Although the primary function of the State Single Point of Contact is to coordinate the state and local evaluation of your proposal, the Kentucky State Clearinghouse also utilizes this process to apprise the applicant of statutory and regulatory requirements or other types of information which could prove to be useful in the event the project is approved for assistance. Information of this nature, if any, concerning this particular proposal will be attached to this correspondence.

You should now continue with the application process prescribed by the appropriate funding agency. This process may include a detailed review by state agencies that have authority over specific types of projects.

This letter signifies only that the project has been processed through the State Single Point of Contact. It is neither a commitment of funds from this agency or any other state of federal agency.

The results of this review are valid for one year from the date of this letter. Continuation or renewal applications must be submitted to the State Clearinghouse annually. An application not submitted to the funding agency, or not approved within one year after completion of this review, must be re-submitted to receive a valid intergovernmental review.

If you have any questions regarding this letter, please feel free to contact my office at 502-573-2382.

Sincerely,

Lee Nalley
Kentucky State Clearinghouse

Attachments

APPENDIX B

FIGURES

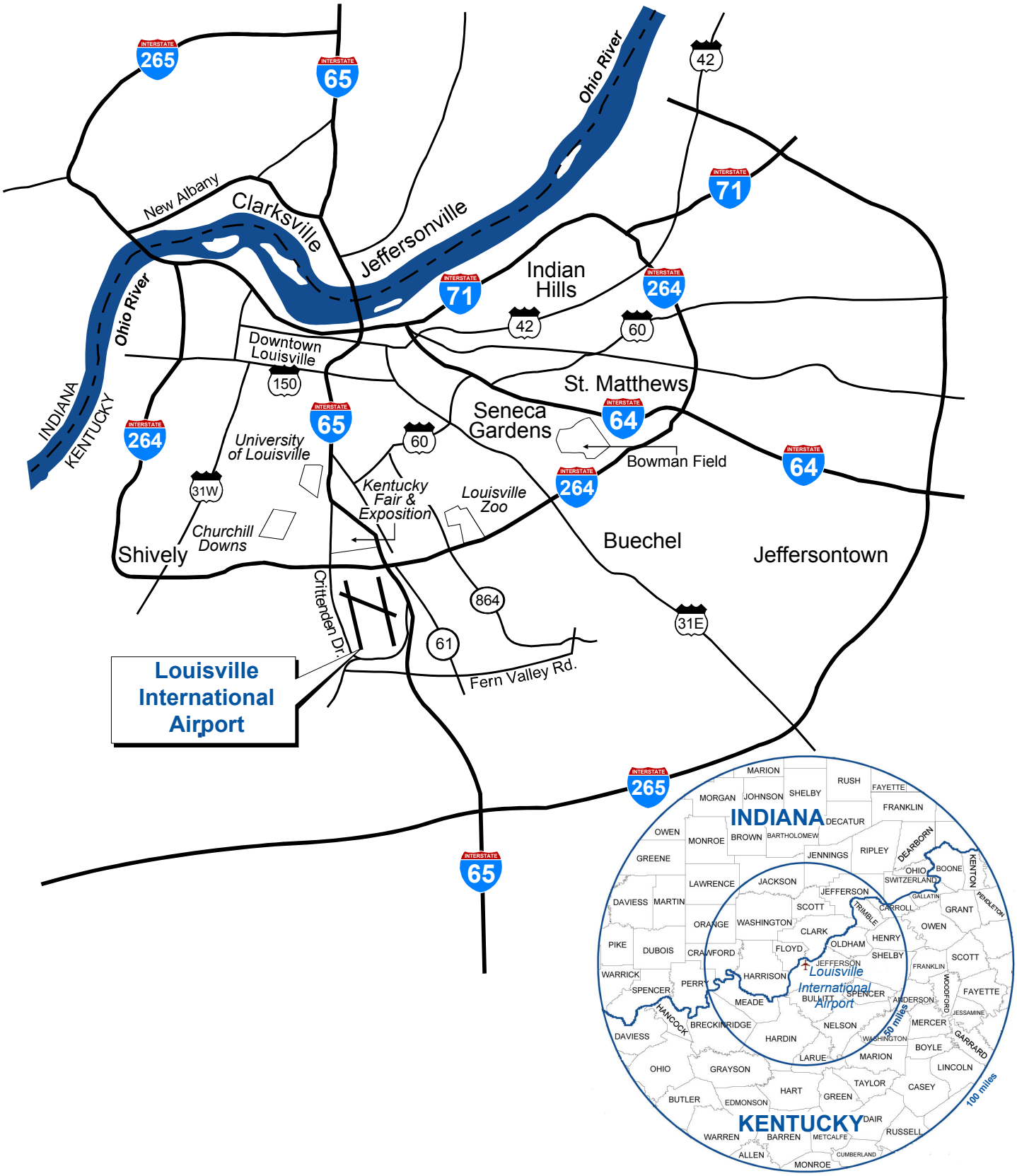

FIGURE 1 -LOCATION MAP

LOUISVILLE INTERNATIONAL AIRPORT

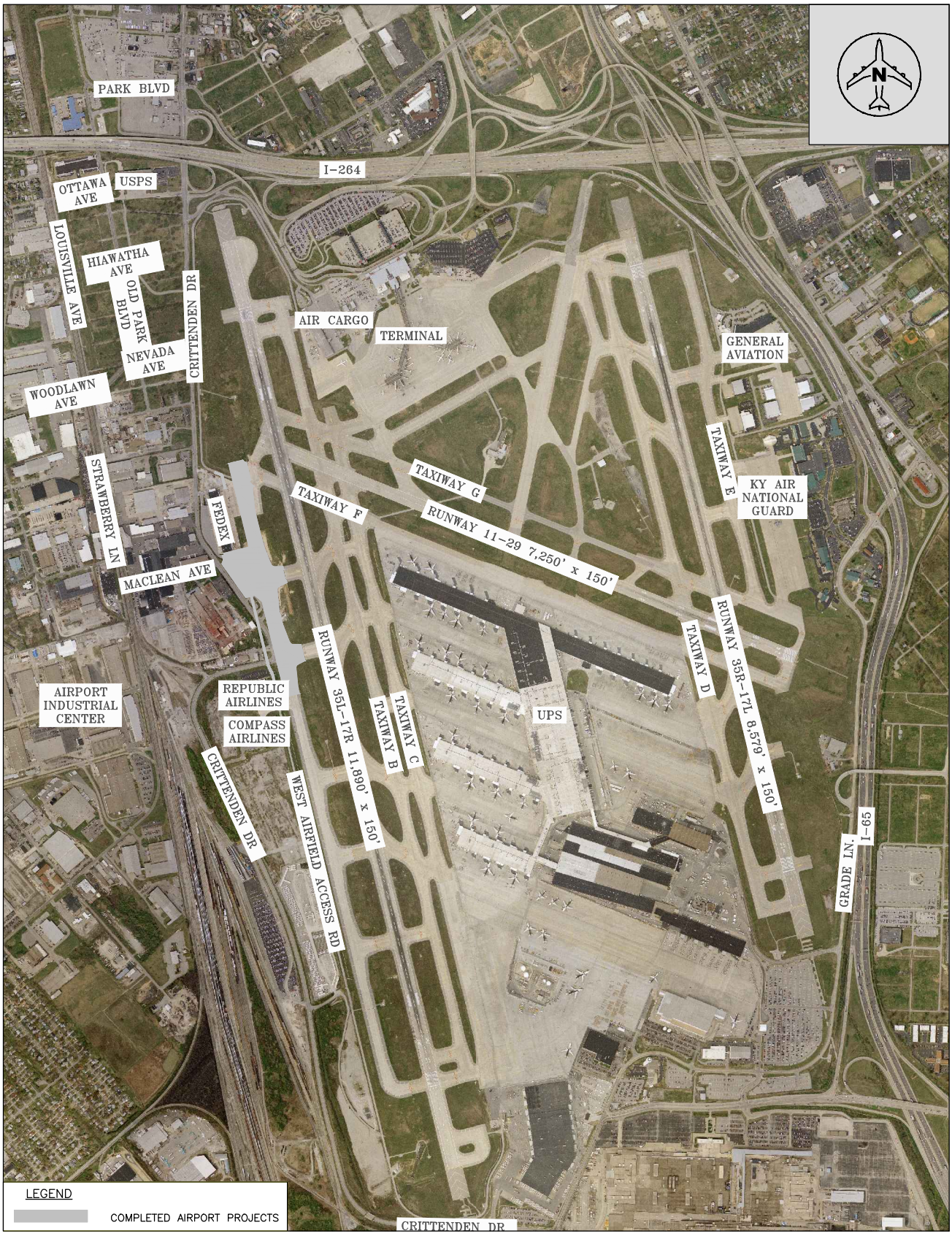

FIGURE 2 – EXISTING AIRPORT

LOUISVILLE REGIONAL AIRPORT AUTHORITY®

HNTB

LOUISVILLE INTERNATIONAL AIRPORT

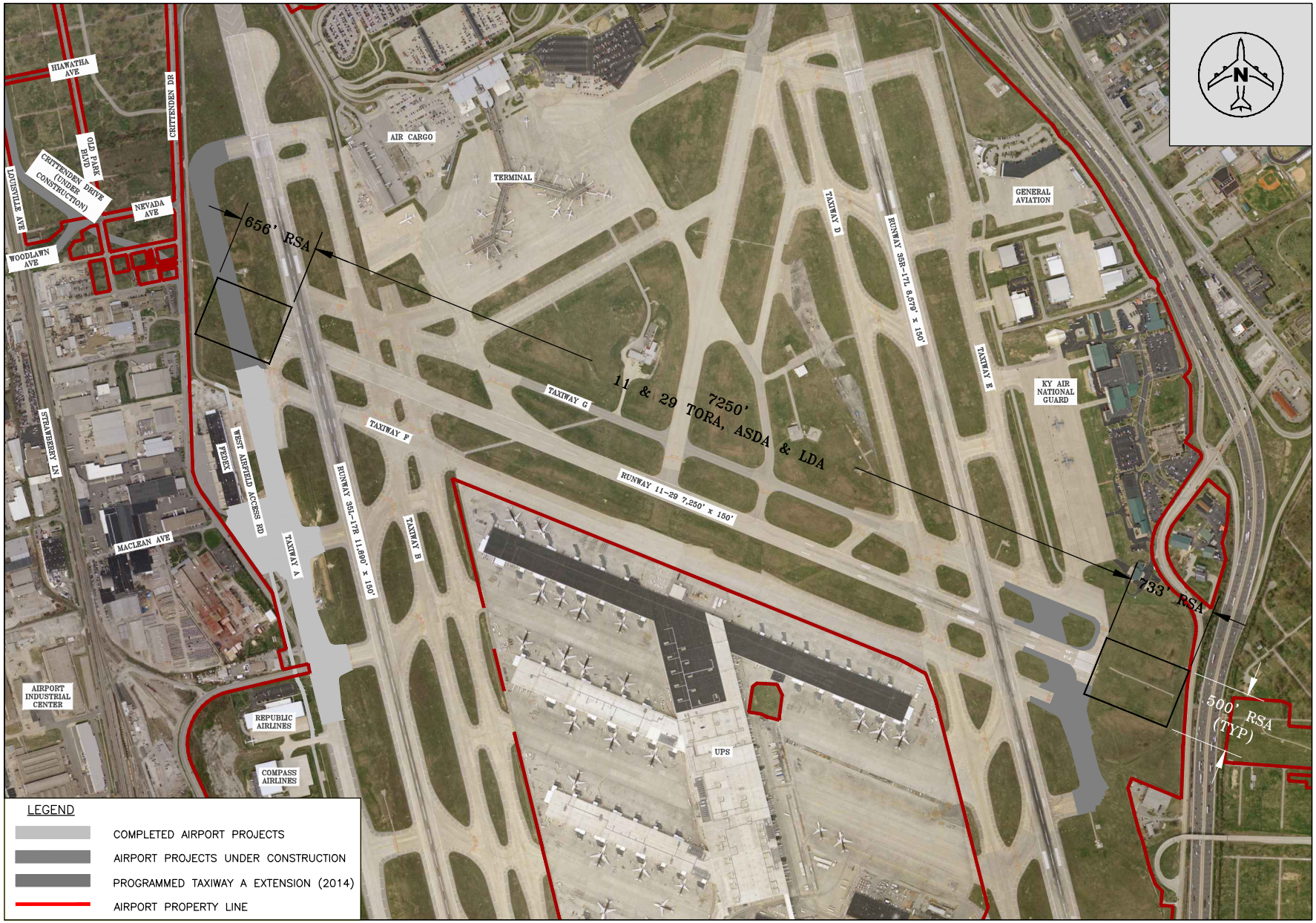

FIGURE 3 – RUNWAY 11–29 EXISTING CONDITIONS

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FIGURE 4 – NO ACTION ALTERNATIVE

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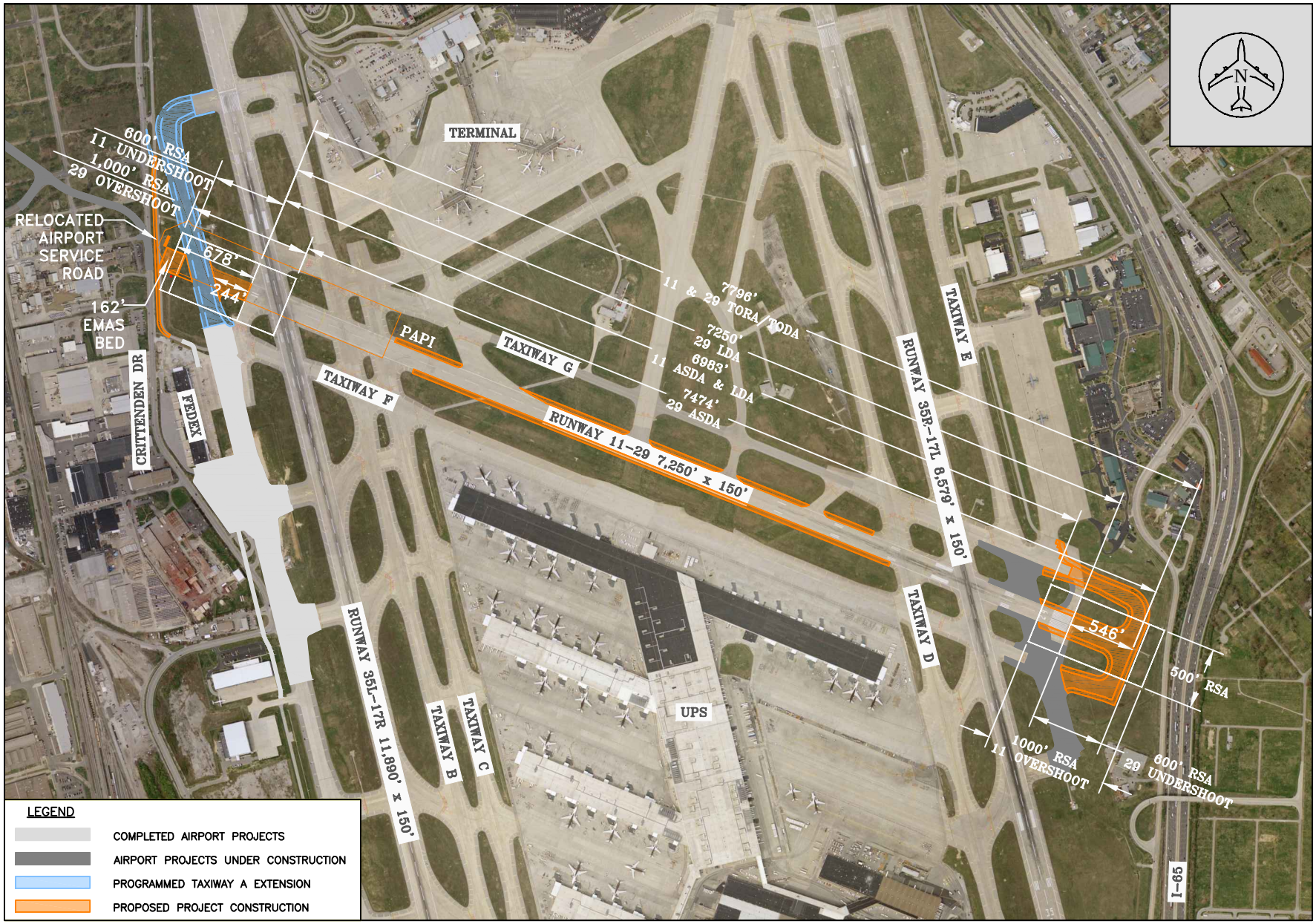

FIGURE 5 – PROPOSED PROJECT

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LOUISVILLE INTERNATIONAL AIRPORT

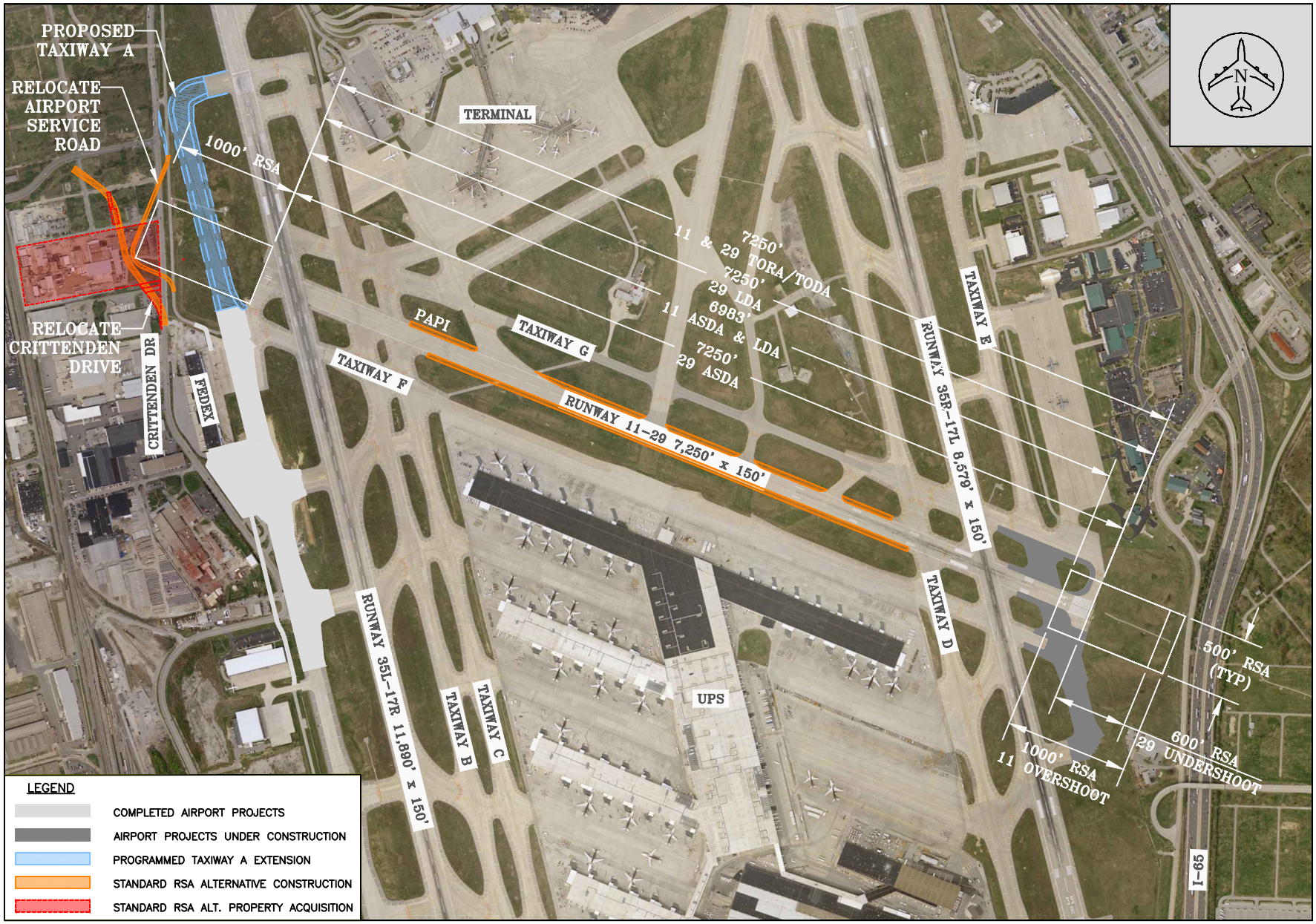

FIGURE 6 – STANDARD RSA ALTERNATIVE ELIMINATED

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LOUISVILLE INTERNATIONAL AIRPORT

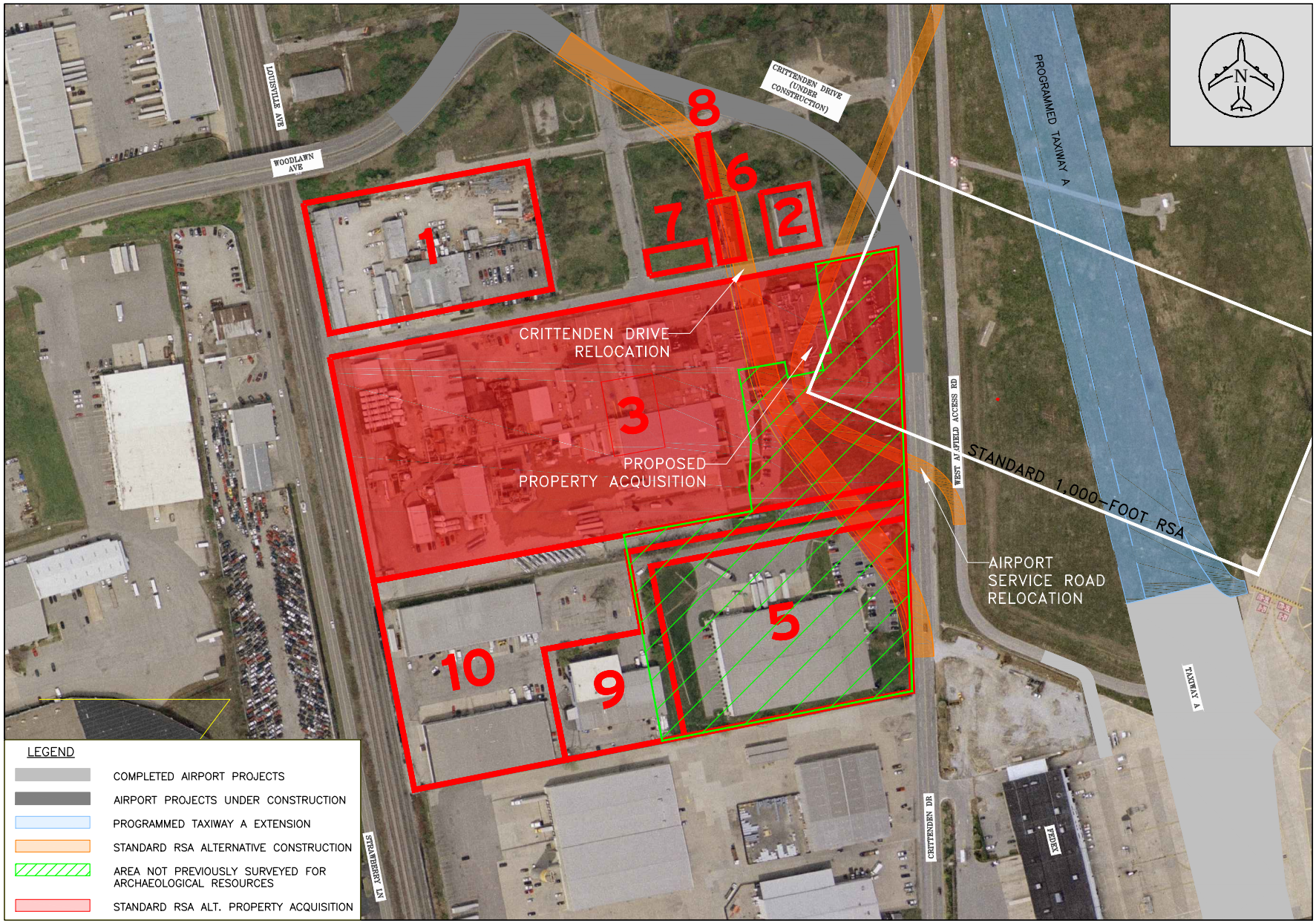

FIGURE 6A – STANDARD RSA ALTERNATIVE ELIMINATED

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LOUISVILLE INTERNATIONAL AIRPORT

FIGURE 7 – LONG TERM AIRPORT PLAN

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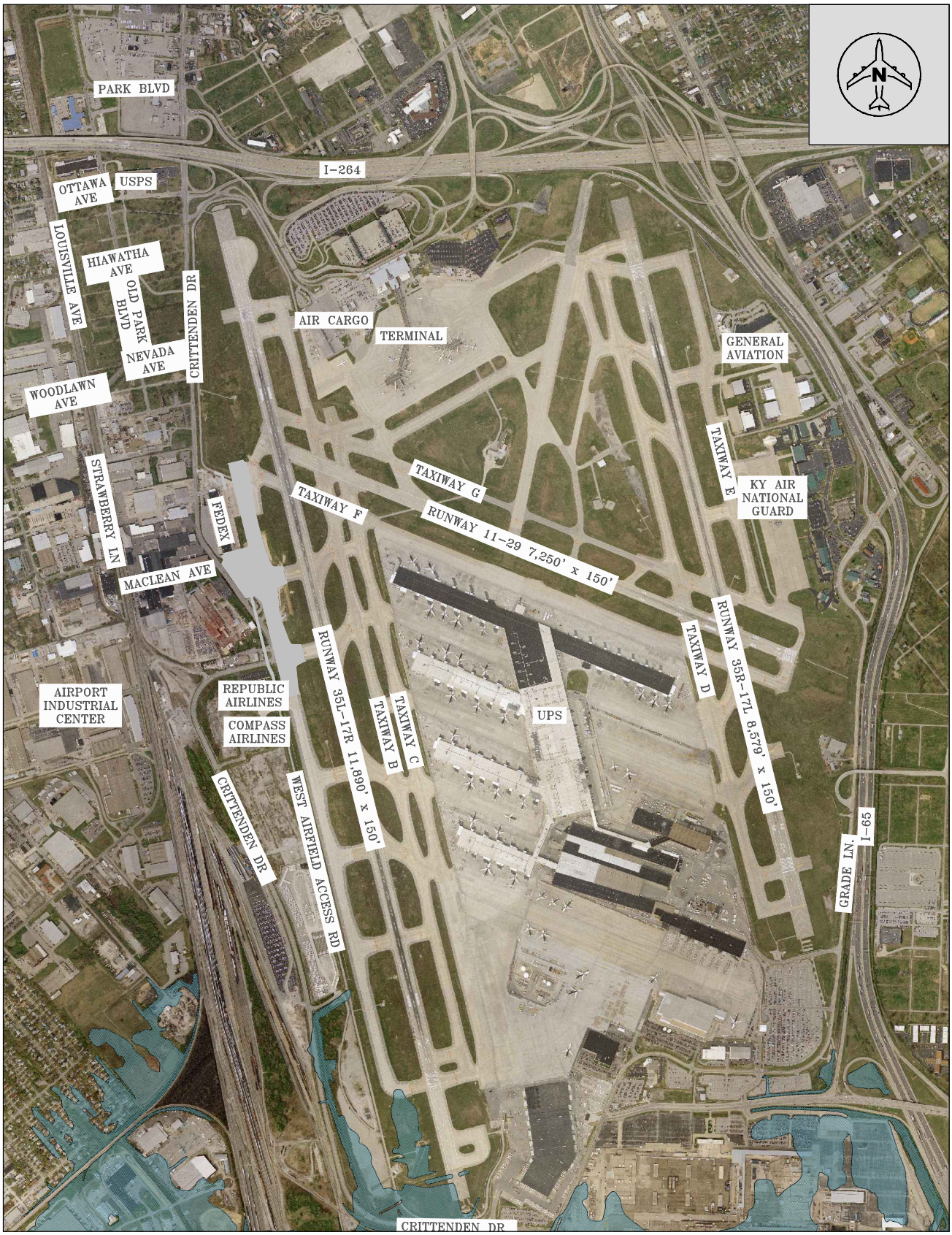

SOURCE: 2011 aerial, and airfield projects completed through 2012. Q3 data based on FEMA 2005 update obtained from LOJIC.org. Flood data does not include airfield projects amended since 2005 FEMA update.

AE 1-PERCENT ANNUAL CHANCE FLOODPLAIN
BASE FLOOD ELEVATIONS DERIVED FROM THE DETAILED HYDRAULIC ANALYSES ARE PROVIDED AT SELECTED INTERVALS WITHIN THIS ZONE.

FIGURE 8 – FLOODPLAINS

LOUISVILLE REGIONAL AIRPORT AUTHORITY®

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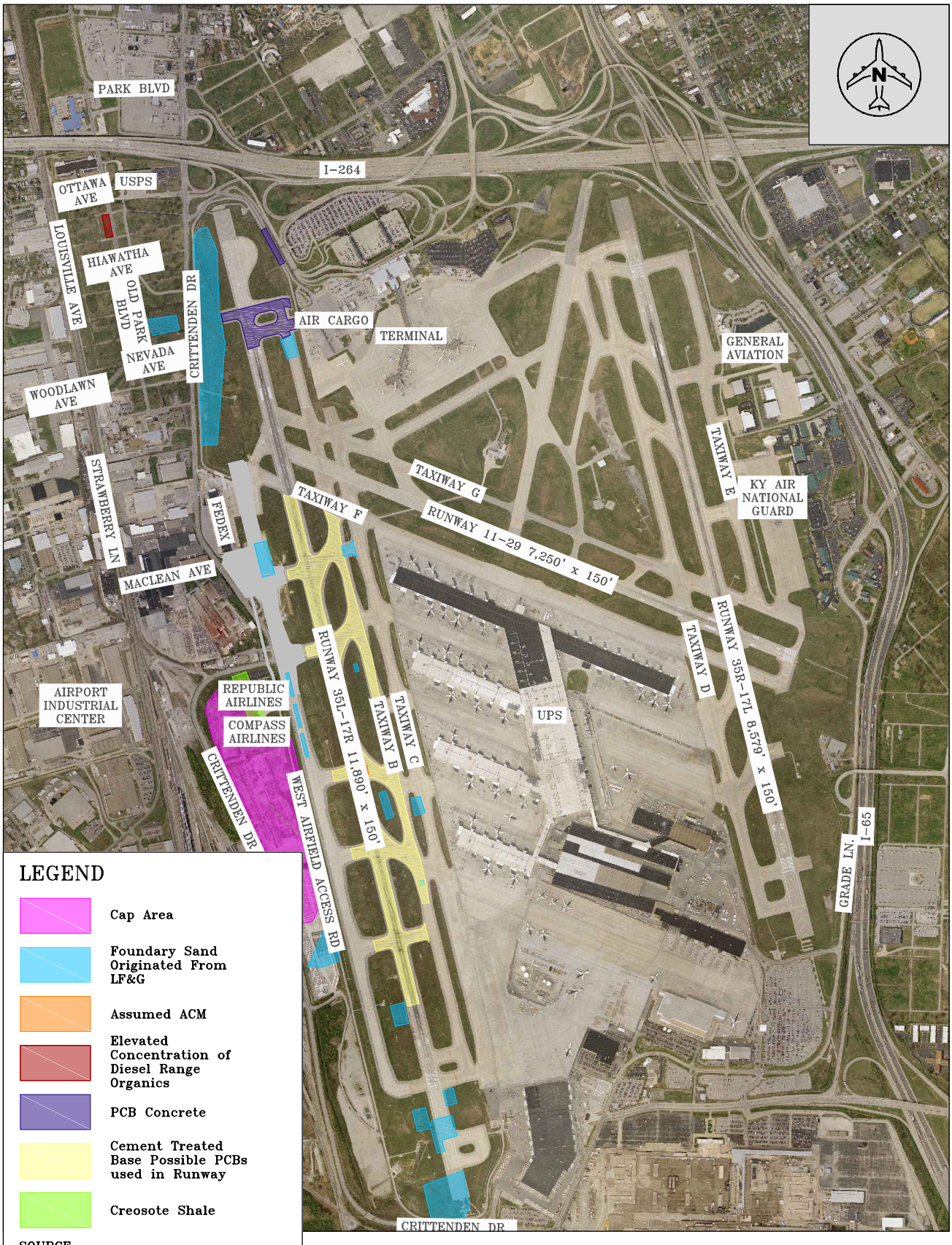
LOUISVILLE INTERNATIONAL AIRPORT



LEGEND

- Cap Area
- Foundary Sand Originated From LF&G
- Assumed ACM
- Elevated Concentration of Diesel Range Organics
- PCB Concrete
- Cement Treated Base Possible PCBs used in Runway
- Creosote Shale

SOURCE

LAW
ENGINEERING AND ENVIRONMENTAL SERVICES INC.
9810 BLUEGRASS PARKWAY
LOUISVILLE, KY 40299
(502) 495-5800
FAX (502) 495-5801

FIGURE 9 – CONTAMINATED SITES

LOUISVILLE REGIONAL AIRPORT AUTHORITY®

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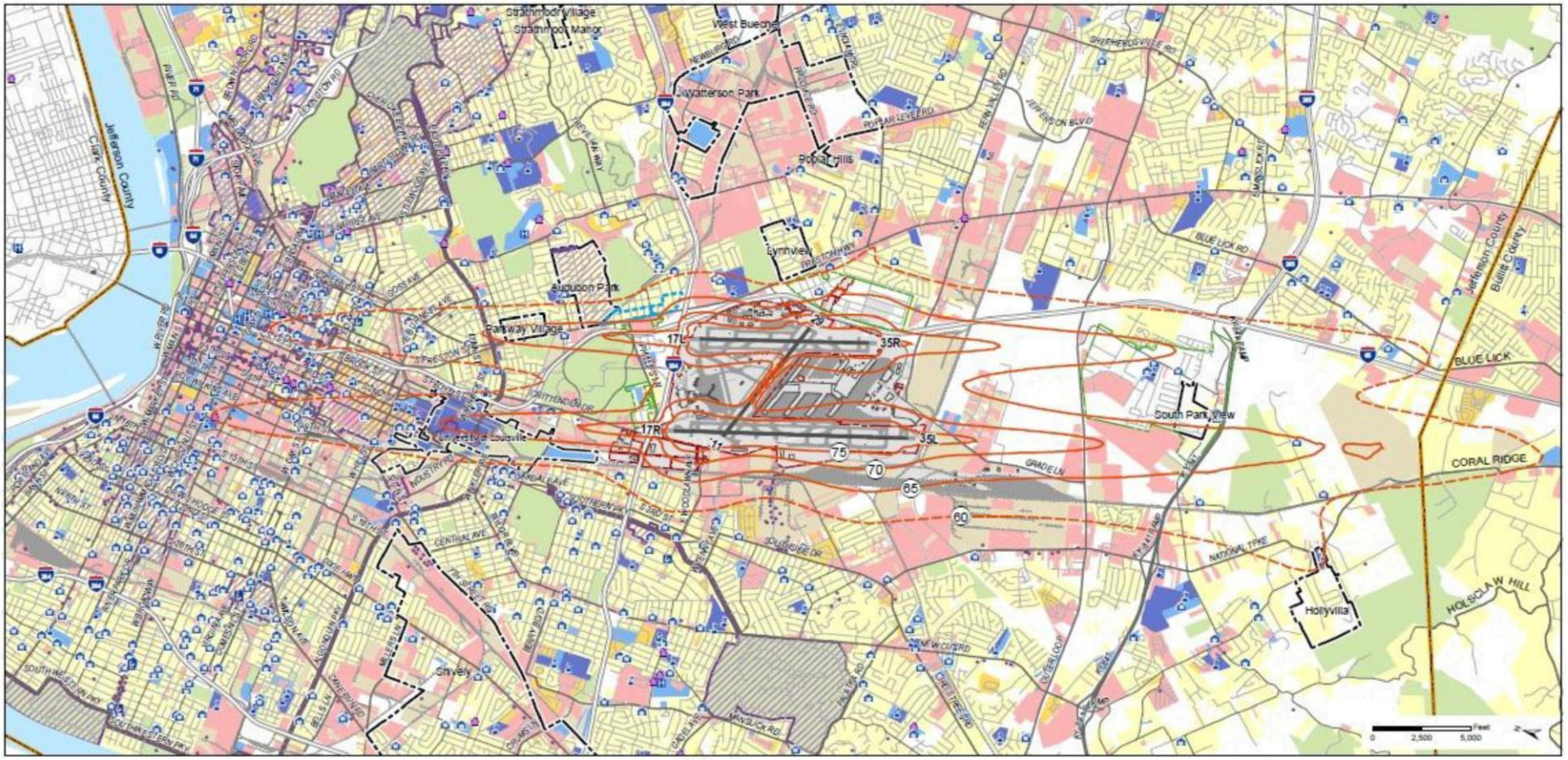

FIGURE 10 – 2016 NOISE CONTOURS
NO ACTION ALTERNATIVE AND PROPOSED PROJECT

LOUISVILLE INTERNATIONAL AIRPORT

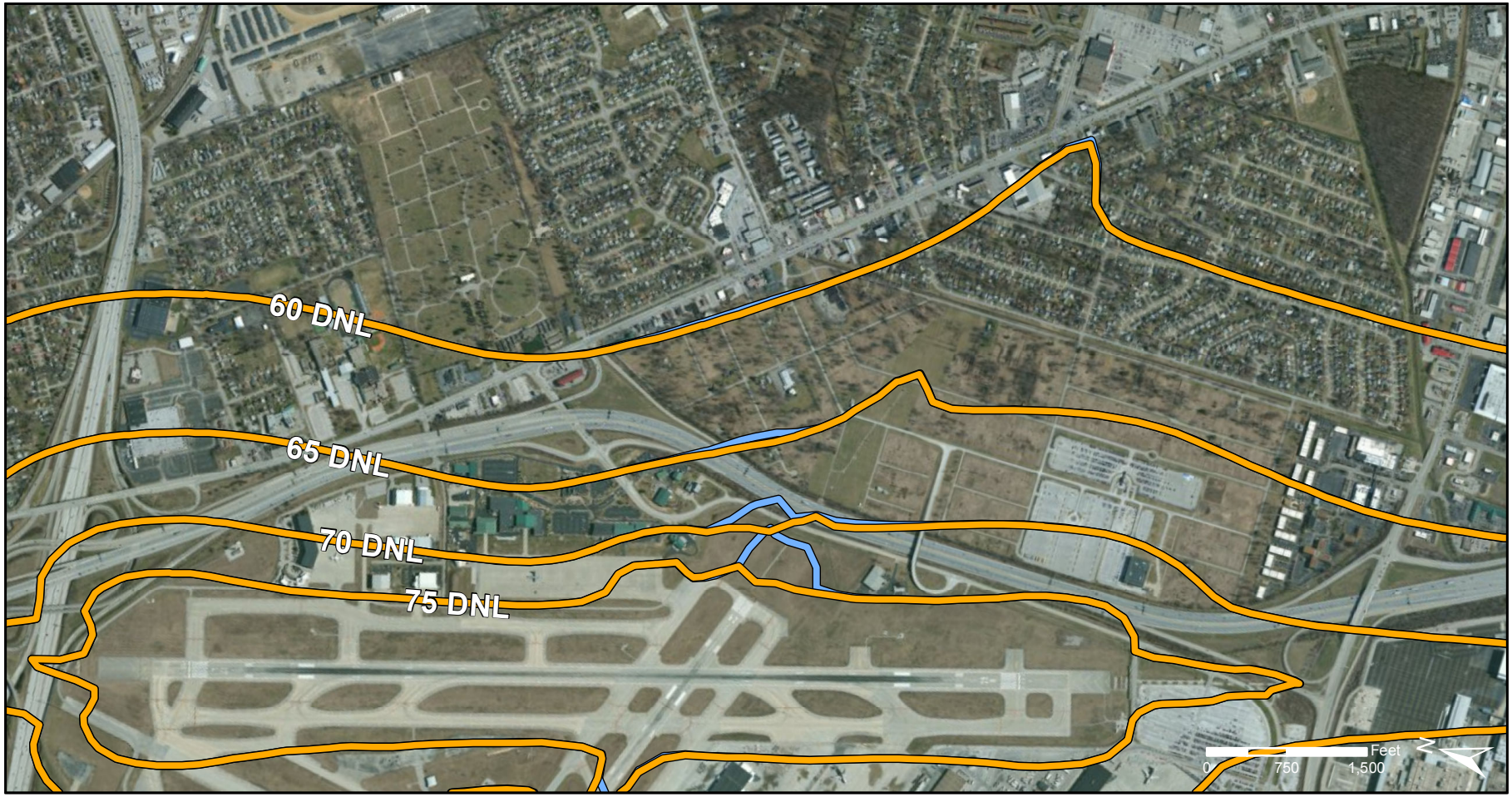

FIGURE 11 – 2016 NOISE CONTOURS
NO ACTION ALTERNATIVE, PROPOSED PROJECT

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