

**LOUISVILLE REGIONAL AIRPORT AUTHORITY
BOARD MEETING
SEPTEMBER 19, 2018**

The regular meeting of the Board of the Louisville Regional Airport Authority was held on September 19, 2018. Chairman Jim Welch convened the meeting at 3:05 p.m. in the Boardroom of the Louisville Regional Airport Authority, Louisville, Kentucky.

Those in attendance were: Mr. Dale Boden, Mr. Bill Byrley, Ms. Mary Rose Evans, Mayor Greg Fischer, Ms. Nikki Jackson, Mr. Pat MacDonald, Mr. John A. Moore and Mr. Jim Welch. Not in attendance: Mr. Earl Jones and Ms. Lesa Seibert. Mr. Tom Halbleib attended as counsel to the Board.

Staff Members in attendance were: Ms. Brenda Allen, Mr. Josh Ball, Ms. Sara Brown, Ms. Dodie Caulk, Mr. Dwight Clayton, Ms. Jorgie Dermody, Mr. Anthony Gilmer, Mr. Sean Guihan, Ms. Noel Jolly, Mr. Dan Mann, Mr. Curtis Monroe, Ms. Antissa Riley, Mr. Brian Sinnwell, Ms. Megan Atkins Thoben, Mr. Adam Thomas, and Mr. Darrell Watson.

Also in attendance: Mr. Brian Aldridge, Mr. Bobby Campbell, Mr. Kyle Chism, Mr. Chuck Dennie, Mr. Pat Dominik, Ms. Patty Dunaway, Mr. Greg Groves, Mr. John Kraft, Mr. Steve McDevitt, Ms. Barbara Michael, Mr. Alfred Miller, Mr. Clair Nichols, Mr. Luke Schmidt, Mr. Bob Schultz, Ms. Karen Scott, Ms. Julie Taylor, Ms. Melissa Vasher, and Mr. Jonathan West.

CONSIDERATION OF MINUTES

The minutes of the regular board meeting and the annual board meeting held July 18, 2018 were reviewed and, upon motion duly made and seconded, unanimously approved.

MARKETING REPORT

Mr. Darrell Watson updated the Board on upcoming SDF Cares program events. On Saturday, September 22, The Arc of Kentucky, FEAT of Louisville, the Louisville Regional Airport Authority, Delta Air Lines and The Arc of the United States will co-host a Wings for Autism® event at Louisville International Airport. This event is being held in partnership with the Transportation Security Administration (TSA). The Wings for Autism®/Wings for All® program is an airport “rehearsal” created to alleviate some of the stress that individuals with intellectual and developmental disabilities and their families experience when traveling by air. During the event, participants will check-in to receive their boarding passes, pass through the TSA security checkpoint, wait in the boarding area and board the aircraft. On Friday, September 28 and Thursday, October 4, staff will volunteer at Engelhard Elementary with the Blessings in a Backpack program. Blessings in a Backpack mobilizes communities, individuals, and resources to provide food on the weekends for elementary school children across America who might otherwise go hungry.

Mr. Watson presented the Air Service Report for the month ending August 31, 2018. The report shows 78 daily flights, which is an increase of five daily flights and 434 daily seats from the same

period last year. For the month August 31, 2018, Louisville International has 29 non-stop flights which is an increase of two non-stop flights from the same period last year.

Mr. Watson informed the Board on June 29, Southwest Airlines announced new daily non-stop service to Dallas Love Field, which will begin January 2019. In October, Southwest Airlines will begin non-stop service to Houston-Hobby. In addition, Delta Air Lines has added additional capacity for Breeder's Cup.

Ms. Nikki Jackson thanked Mr. Watson and Mr. Mann for the Authority's increased visibility in West Louisville, and their diligent and intentional efforts to ensure the minority community understands the rigor involved in doing business with the airport. The community feedback she has received about the Authority's efforts has been very positive. Mr. Mann advised the Board the Authority plans to hold a panel on October 22, 2018 for DBE businesses to learn how to do business with the airport.

Mr. Mann also informed the Board the new comparative cities dashboard would be provided to the Board in October.

FINANCIAL REPORT

Ms. Dodie Caulk presented the financial report for the month ending August 31, 2018. Passenger enplanements are up 12.3% over prior year for the month, 12.9% over prior year for the fiscal year, and 10.6% over prior year for the calendar year. Landed weight for both passengers and cargo is also performing well. Landed weight for passengers is up 5.7% over prior year for the month, 5.5% over prior year for the fiscal year, and 4.1% over prior year for the calendar year. Landed weight for cargo is up 8.9% over prior year for the month, 10.0% over prior year for the fiscal year, and 10.3% over prior year for the calendar year. Ms. Caulk informed the Board the results are marked preliminary because the prior fiscal year audit is not yet complete. Operating revenues for the month of August and fiscal year-to-date exceeded their budgeted levels. The operating revenues for the month were \$6,121,280 which is 7.1% above budget, and year-to-date operating revenues for FY 18 were \$12,443,237 which is 8.3% above the budgeted amount. Revenues derived from landing fees, terminal rents and ground transportation exceeded year-to-date budget expectations.

Operating expenses for August 2018 were \$2,888,007 which was 8.1% below budget, and fiscal year-to-date operating expenses were \$12,443,237 which was 10.9% below budget. Expenses related to contract services fell below their budgeted levels.

CONSTRUCTION REPORT

Mr. Brian Sinnwell presented the construction report.

At Louisville International Airport the Airfield Electrical Upgrade, Phase 10 project to remove and replace Taxiway in-pavement centerline light fixtures and transformers and remove and replace airfield guidance signs is substantially complete. The Airfield Pavement Rehabilitation Phases A and B projects are complete, and final close-out paperwork and credit change orders are being

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executed. The East Terminal Apron Rehabilitation, Phase II project is complete, and final paperwork and closeout documentation is being prepared. The Parking Structure Maintenance Level 4 Rehabilitation project that consisted of joint repairs, concrete spall and crack repairs, seal coating and restriping of the eastern part of the 4th floor parking garage is now complete. For the Terminal Renovation & Enhancement Project, coordination continues regarding the design and fabrication of the terminal airside rotunda art piece. New electric and USB charging stations have been installed at various locations in the terminal, and the passenger services screening wall near the checkpoint has been installed. A Mother's Room in Concourse "A" has been designed and advertised for construction. Design work has begun for Phase II of the Terminal Renovation, with building systems inspections and evaluations. Design concepts and early bid packages are being developed. The AT&T Duct Bank Relocation project is approximately 90% complete. This project is part of the Northwest Quadrant improvements and consists of installation of new AT&T duct banks and manholes. The Rental Car – Quick Turnaround Facility (QTA) project is approximately 75% complete. This project will improve drainage and pavement conditions adjacent to the QTA car wash facility with the addition of concrete pavement and a trench drain.

At Bowman Field, work continues on the Bowman Field Airport Area Safety Program to evaluate and identify current or near-term obstructions to Runway approach surfaces. Tree removals and trimming of previously identified obstructions is complete. Work continues to install trees and landscaping as part of the Phase 2 restoration and mitigation project. The Bowman Field 2018 Airfield Asphalt Rehabilitation project to mill and overlay various locations along Taxiway "H" and Taxiway "J" to correct pavement heaving; and remove asphalt, re-grade, repave, and remove and replace fence in the west "T" Hangar area to mitigate water intrusion into existing hangars is 100% complete and close-out documentation is underway.

Mr. Sinnwell reported on the Relocation Program. Under the environmental survey, asbestos sampling contract, property sampling was ordered on two properties and one property was abated. There several properties being processed for demolition.

For the Residential Sound Insulation Program, for the sound insulation of residences within the DNL 65 contour on the 2021 Noise Exposure Map, the recommended program boundary and acoustical testing plan have been sent to the FAA for review and approval, and program policies and procedures are being updated. An initial review of cultural resources in areas northeast of Louisville International Airport is also underway. For the University of Louisville Noise Mitigation Project, Phase II of the project, which includes an Environmental Assessment (EA) and design work for noise mitigation measures is underway. The draft EA was completed and sent to FAA for review, and currently the FAA is completing their review.

BOARD CONSENT ITEMS

1. Terminal Use and Lease Agreement and Airfield Use and Lease Agreement with Allegiant Travel Company — Louisville International — Approval

In order for an airline operating at Louisville International Airport to meet the definition of a Signatory Airline, the airline must: (i) execute an Airfield Use Agreement, (ii) enter into a Terminal Use and Lease Agreement directly or through a partial assignment from another

Signatory Airline to lease at least 500 sq.ft. of exclusive use space in the terminal, or lease or sublease at least five acres or enter into a “through the fence” agreement with the Authority. Allegiant Travel Company (Allegiant) has operated as a Non-Signatory Airline since May 2017. Subsequently, Allegiant has expressed a desire to lease 628 square feet of exclusive use space in the Landside Terminal Building and enter into Terminal Use and Lease Agreement which would meet the qualifications to become a Signatory Airline. Additionally, Allegiant desires to enter into an Airfield Use Agreement. By Allegiant executing the Terminal Use and Lease Agreement and by executing an Airfield Use Agreement, Allegiant would qualify as a Signatory Airline. The terms, conditions and rate-making methodology of the Terminal Use and Lease Agreement and Airfield Use Agreement with Allegiant will be the same as the Board previously approved for all Signatory Airlines. The expiration of the Terminal Use and Lease Agreement and Airfield Use Agreement will be June 30, 2021.

Mr. Mann recommended the Board approve the Terminal Use and Lease Agreement with Allegiant Travel Company; approve the Airfield Use Agreement with Allegiant Travel Company; and, authorize the Executive Director to execute the Terminal Use and Lease Agreement and Airfield Use Agreement subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann’s recommendation.

2. Harris Corporation Aircraft Flight Tracking and Noise Management System Contract — Contract Amendment No. 4 — Louisville International — Approval

In the Part 150 Noise Compatibility Program for Louisville International Airport, program management measures were included to track the flights at Louisville International Airport. The flight tracking system allows staff to address complaints from the community, monitor compliance with the runway use agreement with the Air Traffic Control Tower and serves as a rich source of data for analysis and compliance initiatives such as completing updates to the Noise Exposure Maps. The system also provides a component that can be viewed by the public via the Authority’s website, allowing near real time flight tracking and monitoring. On July 19, 2012, the Board awarded the contract for an Aircraft Flight Tracking and Noise Management System to Exelis Inc. of McLean, VA (acquired by Harris Corporation in December 2015) in the amount of \$278,561.59. This contract was awarded for a three-year period with five one-year renewable options, and the Authority has exercised options one, two and three. Authority staff recommends exercising contract option four in the amount of \$103,216.83, bringing the total contract value to \$694,355.41. Funding for this effort was approved in the Authority’s FY 19 Budget.

Mr. Mann recommended the Board approve Contract Amendment No. 4 for the Aircraft Flight Tracking and Noise Management System to Harris Corporation of Herndon, VA, in the amount of \$103,216.83 for a total not-to-exceed contract value of \$694,355.41; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann’s recommendation.

3. 2018 West Airfield Pavement Shoulder Rehabilitation — Louisville International — Approval

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This project consists of ongoing efforts to maintain the integrity of airfield pavements and involves the removal and replacement of approximately 26,195 tons of asphalt shoulder pavement, removal and re-installation of elevated and in-pavement lights, and grading of infield areas on the west airfield at Louisville International Airport. The project was advertised in *The Courier-Journal* and the *Louisville Defender*, was provided to the Tri-State Minority Supplier Development Council, and was posted on the Authority's website. Three bids were received and the lowest, responsive bidder was Louisville Paving Co., Inc. of Louisville, KY with a unit price base bid of \$3,679,661.60. Authority staff and our consultant have reviewed the bid documents submitted by Louisville Paving Co., Inc., have verified the bid to be responsive and recommend the contract award. An FAA grant will fund 90% of the costs associated with this effort.

Mr. Mann recommended the Board award the contract for the 2018 West Airfield Pavement Shoulder Rehabilitation project to Louisville Paving Co., Inc. in accordance with the unit prices set forth in the bid for a total-not-to-exceed cost of \$3,679,661.60, and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

4. 2018 Reseal Terminal Apron Pavement Joints — Louisville International — Approval

This project consists of the removal and replacement of approximately 199,000 linear feet of terminal apron concrete pavement joint sealant at the Louisville International Airport. This project is part of ongoing efforts to maintain integrity of airfield pavements. The project was advertised in *The Courier-Journal* and the *Louisville Defender* and was posted on the Authority's website. Three bids were received and the lowest, responsive bidder was Interstate Sealant & Concrete, Inc. from Waukesha, Wisconsin with a unit price bid of \$636,880.00. Authority staff and our airport consultant have reviewed the bid documents submitted by Interstate Sealant & Concrete, Inc, have verified the bid to be responsive and recommend the award. This project is fully funded by Passenger Facility Charges (PFC's).

Mr. Mann recommended the Board award the contract for the 2018 Reseal Terminal Apron Pavement Joints project to Interstate Sealant & Concrete, Inc. in accordance with the unit prices set forth in the bid for a total not-to-exceed cost of \$636,880.00; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

5. Concourse "A" Terminal Mother's Room — Louisville International — Contract Award

At the November 15, 2017 board meeting, the Board approved an amendment to increase the Terminal Enhancement Project and Capital Budget. This contract award addresses one of the elements of that amendment, which was the construction of Mother's Room facilities in the airside terminal. The project was advertised in *The Courier-Journal* and the *Louisville Defender* and was posted with the Tri-State Minority Supplier Development Council and on the Authority's website. Three bids were received, with Badgett Constructors of Louisville, KY providing the lowest, most

responsive lump sum bid of \$197,000. Authority staff have reviewed the bid documents submitted by Badgett Constructors, have verified the bid to be responsive, and recommend the award.

Mr. Mann recommended the Board award the contract for the Concourse "A" Terminal Mother's Room to Badgett Constructors, LLC from Louisville, Kentucky for a total contract amount of \$197,000; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

6. 2019 Airfield Pavement Rehabilitation — Louisville International — Approval

This project consists of ongoing efforts to maintain the integrity of airfield pavements and involves the removal and replacement of 17" thick concrete runway 17L-35R pavement slabs, mill and overlay of 29,224 square yards of asphalt shoulder pavement, and removal and installation of elevated and in-pavement lights on the east airfield at Louisville International Airport. The project was advertised in *The Courier-Journal* and the *Louisville Defender*, was posted on the Authority's website, and was provided to the Tri-State Minority Supplier Development Council. Three bids were received and the lowest, responsive bidder was Louisville Paving Co., Inc. of Louisville, KY with a unit price base bid of \$2,315,000.00. Authority staff and our consultant have reviewed the bid documents submitted by Louisville Paving Co., Inc. have verified the bid to be responsive and recommend the contract award. An FAA grant will fund 90% of the costs associated with this effort.

Mr. Mann recommended the Board award the contract for the 2019 Airfield Pavement Rehabilitation project to Louisville Paving Co., Inc. in accordance with the unit prices set forth in the bid for a not-to-exceed amount of \$2,315,000.00; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

7. Bowman Field Fence Replacement, Phase 2 — Bowman Field — Approval

This project consists of a base bid to replace approximately 3,250 linear feet of old airport fencing at Bowman Field with welded, ornamental steel fencing around the Bowman Field Administration Building, along Dutchmans Lane, Gast Boulevard, and Roger E. Schupp Street, and includes an additional alternative to replace approximately 683 linear feet of old fencing with ornamental fencing along Pee Wee Reese Road. The project was advertised in *The Courier-Journal* and in the *Louisville Defender*, was provided to the Tri-State Minority Supplier Development Council, and was posted on the Authority's website. Three bids were received with the lowest bid from Professional Fence Company of Louisville, KY with a lump sum base bid of \$329,978.00 and an additional alternative lump sum bid of \$63,000.00 for a total bid of \$392,978.00. Authority staff have reviewed the bid documents submitted by Professional Fence Company, have verified the bid to be responsive, and recommend the award.

Mr. Mann recommended the Board award the contract for Bowman Field Fence Replacement, Phase 2 to the Professional Fence Company of Louisville, KY including the base bid and additional

alternative for a total contract amount of \$392,978.00; and, authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

8. 2019 Airfield Electrical Upgrade — Bowman Field — Contract Award

This project consists of edge light replacements with LED fixtures, isolation transformers, cabling, runway end identifier lights, wind cones, a constant current regulator and associated supporting items at Bowman Field. This project was advertised in *The Courier-Journal*, the *Louisville Defender*, was provided to the Tri-State Minority Supplier Development Council and was posted on the Authority's website. Four bids were received with the lowest bid from Montgomery Brothers Contracting, Inc. of Danville, KY with a unit price bid of \$598,634.05. Authority staff and our consultant have reviewed the bid documents submitted by Montgomery Brothers Contracting, Inc., have verified the low bid to be responsive, and are recommending the contract award. An FAA grant will provide 90% of the funding for this project.

Mr. Mann recommended the Board award the contract for the 2019 Airfield Electrical Upgrades at Bowman Field to Montgomery Brothers Contracting, Inc. of Danville, KY in accordance with the unit prices set forth in the bid for a total not-to-exceed cost of \$598,634.05, and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

9. Stantec — Civil Design Services Contract Amendment No. 5 — Louisville International and Bowman Field — Approval

In May 2015, the Board approved the award of a master indefinite delivery contract with Stantec as the Airport Authority's consulting firm for design and construction administration services including various land development, capital improvement and major maintenance projects. The contract was extended for two additional years by the Board on April 25, 2018, but no additional funds were added to the contract. This amendment authorizes an additional amount of \$300,000 for the continued use of Stantec for various civil design services for capital and major maintenance projects.

Mr. Mann recommended the Board approve Contract Amendment No. 5 with Stantec of Louisville, KY for civil design services in the amount of \$300,000, bringing their total contract amount to \$1,392,489.00; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

10. Wood — On-Call Material Testing Services Contract Amendment No. 3 — Louisville International and Bowman Field — Approval

On March 17, 2015, the Authority approved the award of an "On-Call Material Testing Services" contract with Amec Foster Wheeler, now operating as Wood, for ongoing material testing services

of soils, concrete and asphalt at Louisville International Airport and Bowman Field. The contract was for three years with an option for two additional years. On July 19, 2017, the Airport Authority amended the contract amount by authorizing an additional \$300,000 for professional services. On April 25, 2018, the Airport Authority exercised the option to extend the contract with Wood an additional two years, but no additional funds were added to the contract at that time. The \$300,000 budget approved in 2017 is nearly exhausted from the heavy amount of construction completed this year. Therefore, this amendment authorizes an additional amount of \$300,000 for the continued use of Wood for on-call material testing to address ongoing and anticipated material testing needs.

Mr. Mann recommended the Board approve Contract Amendment No. 3 with Wood of Louisville, KY in the amount of \$300,000, bringing the contract fees to \$900,000; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

BOARD ACTION ITEMS

11. Proprietary Maintenance Agreement for Authority Fire Alarm Systems — Approval

In 2005, the Authority awarded a contract to Simplex Grinnell to upgrade the fire alarm system at Louisville International Airport. Since then, repairs have been made on an as needed basis to failed system components at both the terminal and other Authority owned property. Under this approach, repair and system testing has been made on a time and material basis directly with the manufacturer. A proactive approach to updating and maintaining these systems is necessary. Upon assessment, it has been determined that miscellaneous parts for five of the thirteen existing systems are obsolete and are scheduled for replacement under separate airport projects.

Simplex Grinnell has been acquired by Johnson Controls which is on an approved contract with the Commonwealth of Kentucky (Master Agreement MA 758 1600000955). State law affords the Authority, as a political subdivision of the Commonwealth, the opportunity to participate in state contracts to the same extent as the Commonwealth without the need to conduct an additional solicitation. This contract is for the establishment of a three-year proprietary maintenance agreement and upgrades to existing Simplex Grinnell Fire Alarm Systems installed in 13 locations in Authority owned facilities including Louisville International Airport and Bowman Field.

Maintenance for these systems is performed on a labor only basis. Under this maintenance contract, upgrades include Simplex Grinnell specified equipment to match the existing Simplex Grinnell equipment. Pricing terms and conditions are based upon the State Master Agreement that runs through 2021 with renewal options. Pricing would be held firm during the three-year contract.

Mr. Mann recommended the Board approve a three-year fire alarm system maintenance contract with Johnson Controls in the amount of \$185,532.00; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

12. Resolution Authorizing Implementation of a Passenger Facility Charge and Application Submission — Louisville International — Approval

The Federal Aviation Administration (FAA) requires that airport operators submit applications for approval to implement a Passenger Facility Charge (PFC). PFCs are user fees authorized by the FAA, established by the Authority and collected on behalf of the Authority by the airlines with each airline ticket purchased for travel from Louisville International Airport. In order to submit a PFC application, the Authority's Board must pass a resolution authorizing the Executive Director to submit the application and implement the PFC. The existing PFC is \$3.00. An increased PFC of \$4.50 for each enplaned passenger is anticipated to generate \$20,000,000 to support the purchase of new boarding bridges to replace fifteen existing remanufactured boarding bridges ranging in age from 25 to 39 years old that are constantly in need of repair and negatively impact operational efficiency. Prior to submission of the application, the Authority must provide notice to the airlines and the public with an opportunity to comment.

Mr. Mann recommended the Board approve the resolution (copy attached) authorizing the implementation of a Passenger Facility Charge; and, authorize the Executive Director to file an application subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

13. 2019 Airfield Electrical Upgrades — Louisville International — Contract Award

This project involves removal and replacement of approximately 187,000 linear feet of airfield cabling, and removal and re-installation of in-pavement runway edge lights, in-pavement taxiway centerline lights, elevated taxiway edge lights, isolation transformers, and airfield guidance signs at the Louisville International Airport. This project was advertised in *The Courier-Journal*, the *Louisville Defender*, was provided to the Tri-State Minority Supplier Development Council and was posted on the Authority's website. Four bids were received with the lowest bid from Appalachian Foothills Contracting, Inc. of Lexington, KY with a unit price bid of \$751,330.00. The second lowest bid was submitted by the TEM Group, Inc. of Louisville, KY at \$807,469.00.

Due to outstanding and unresolved contractual issues with the low bidder on current Authority projects, staff recommends against awarding a new contract to Appalachian Foothills Contracting, Inc. Therefore, Authority staff and our consultant have reviewed the bid documents submitted by the TEM Group, Inc., have verified their bid to be responsive, and recommend the contract award. An FAA grant will provide 90% of the funding for this project.

Mr. Mann recommended the Board award the contract for the 2019 Airfield Electrical Upgrade at Louisville International Airport to the TEM Group, Inc. of Louisville, KY in accordance with the unit prices set forth in the bid for a total, not-to-exceed cost of \$807,469.00; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

14. Kimley-Horn — Airport Master Planning, Initial Authorization, Phase 1 Consultant Contract Scope and Fee — Louisville International — Approval

At the July 18, 2018 Board Meeting, Kimley-Horn was approved by the Board to provide airport planning services for the development of a new Airport Master Plan for Louisville International Airport. The Authority requests the Board approve a Phase 1 effort for initial critical services while the entire Master Plan scope and fee is further developed. The initial authorization in Phase 1 includes several critical, seasonal, and long lead time items for the development of the Airport Master Plan. These items include analysis involved for the development of the aviation forecasts, and the comprehensive aerial surveying/mapping according to the FAA Airport Geographic Information System (AGIS) guidance. Authority Staff and the FAA have found the proposed scope and fee as submitted by Kimley-Horn for Phase 1 of the airport planning services to be acceptable and in conformance of industry standards.

Mr. Mann recommended the Board approve the consultant contract scope and fee with Kimley-Horn for airport planning services, Initial Authorization – Phase 1, for the development of the LRAA's Airport Master Plan in the lump sum amount of \$422,540; and authorize the Executive Director to execute the necessary contract documents subject to approval and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

15. Atkins — Task Orders No. 15, 16, 17 — Louisville International and Bowman Field — Approval

On July 19, 2017, the Board approved the award of a master contract with Atkins as the Airport Authority's Airport Improvement Program (AIP) consultant. As required by the contract, the Authority requests the Board's approval of the following Task Orders:

Task Order 15 authorizes Atkins to provide data collection, design, and bid phase services for the upgrade of airfield electrical facilities at Bowman Field. The conceptual design phase will determine the scope of the rehabilitation, which will likely include the replacement of airfield electrical elements including the modification of airfield signage or other measures to mitigate potential runway incursions.

Task Order No. 16 authorizes Atkins to provide construction administration and observation services associated with resealing approximately 200,000 linear feet of deteriorating concrete expansion and contraction joints on the terminal apron at the Louisville International Airport.

Task Order 17 authorizes Atkins to provide construction administration and observation services associated with the upgrade of airfield electrical facilities at Bowman Field. The scope of the rehabilitation includes the replacement of airfield electrical cables, fixtures, wind cones, and constant current regulators.

The total amount of Task Orders No. 15, 16, and 17 is \$295,000 in accordance with the hourly rates negotiated with Atkins. A FAA grant or Passenger Facility Charges should fund 90% of the costs associated with this effort.

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Mr. Mann recommended the Board approve Task Orders No. 15, 16, and 17 to the contract with Atkins in amount of \$295,000; and authorize the Executive Director to execute the necessary contract documents subject to review and approval by counsel as to legality of form and content. On motion duly made and seconded, the Board approved Mr. Mann's recommendation.

OTHER BUSINESS

Mr. Mann announced to the Board that Josh Ball, Director of Public Safety and Jessica Sims, Facilities Coordinator earned their Certified Member (C.M.) certification from A.A.A.E. To earn the C.M. certification, the candidate must pass a comprehensive, very difficult test with a fairly high fail rate. This certification is the first step to becoming an Accredited Airport Executive.

Mr. Mann announced that Book & Bourbon Southern Kitchen was announced as the newest destination on the Urban Bourbon Trail.

Mr. Mann introduced the Authority's new hires. Ms. Megan Atkins Thoben is the Authority's Director of Operations and Business Development. Before joining the Airport Authority, Ms. Thoben was the Operations Manager at Columbia Metropolitan Airport (CAE) in Columbia, South Carolina for more than two years. She also worked in the Operations Department at Blue Grass Airport (LEX). Originally from Louisville, she has a bachelor of science in Aviation Management from Eastern Kentucky University. She also received her A.A.E. certification in January 2018, and she is a private pilot.

Mr. Anthony Gilmer is the Authority's Director of Air Service and Marketing. Before joining the Airport Authority, Mr. Gilmer was the Director of Marketing and Air Service Development at Columbia Metropolitan Airport (CAE) in Columbia, South Carolina for nearly two years. He also worked at The Quotient Group as the Director of Marketing for nearly one year and at Yeager Airport (CRW) as the Marketing Coordinator for almost five years. Originally from Charleston, West Virginia, he has a bachelor of science in Business Administration from the University of Charleston.

Ms. Jorgie Dermody is the Authority's Operations Supervisor. Before joining the Airport Authority, Ms. Dermody was the Operations Specialist at Columbia Metropolitan Airport (CAE) in Columbia, South Carolina for nearly two years. She also worked in line service at TAC Air in Lexington, KY for two years. Originally from Louisville, she has a bachelor of science in Aviation Management from Eastern Kentucky University. She also plans to coach lacrosse for her alma mater, Assumption High School.

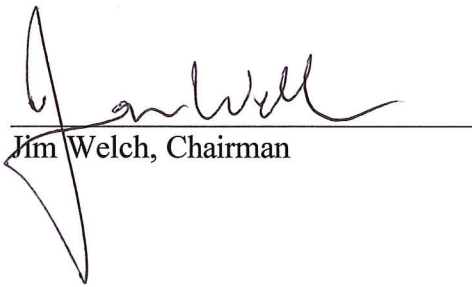
Mr. Mann informed the Board in lieu of the annual holiday open house the Authority will host a hospitality tent at the Bowman Field Aviation and Military Heritage Festival on October 6 and 7, 2018.

Mr. Pat MacDonald gave kudos to the Authority for the welcome we gave the recent Honor Flight on its return from Washington, D.C.

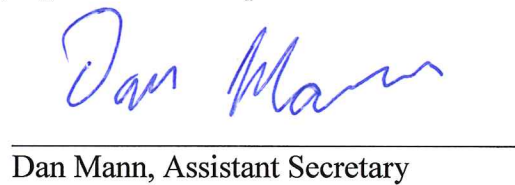
iPads were distributed to the Board members for use at future Board meetings. Going forward the Board meetings will be paperless.

Chairman Welch thanked the Board members for making time in their schedules to meet with Ms. Karen Scott of Inspired Strategies in preparation for the Board retreat on November 5, 2018.

There being no further business, the meeting adjourned at 3:52 p.m.



Jim Welch, Chairman



Dan Mann, Assistant Secretary

RESOLUTION OF THE LOUISVILLE REGIONAL AIRPORT AUTHORITY APPROVING IMPLEMENTATION OF A PASSENGER FACILITY CHARGE AT THE LOUISVILLE INTERNATIONAL AIRPORT

WHEREAS, the Louisville Regional Airport Authority ("the Authority"), has investigated the feasibility of implementing and collecting a Passenger Facility Charge ("PFC") on eligible enplaned passengers at the Louisville International Airport ("the Airport") in accordance with the Aviation Safety and Capacity Expansion Act of 1990 ("Act") as approved by the Federal Aviation Administration ("FAA") and desires to impose and collect a PFC upon eligible enplaned passengers at the Airport under terms and conditions that are consistent with said Act as approved by the FAA and to expend such funds on FAA approved eligible projects; and

WHEREAS the Authority operates, maintains and develops the Airport with federal and state grants, user fees, and other local funds; and

WHEREAS, a PFC is not to be considered a tax, but is a user fee authorized by Federal Law and imposed only on eligible enplaned passengers using commercial service airports; and

WHEREAS, the Authority after thorough investigation has determined that the funds generated by adopting and collecting a PFC are needed to accomplish projects designed to preserve and enhance the capacity, safety and development of the Airport, more specifically, the replacement of passenger boarding bridges; and

WHEREAS, the Authority has provided written notice regarding the proposed PFC to air carriers and foreign air carriers having a significant business interest at the Airport and will provided written notice and an opportunity for public comment thereon, all as required by 14 CFR Part 158, Subpart B.

NOW, THEREFORE, BE IT RESOLVED BY THE LOUISVILLE REGIONAL AIRPORT AUTHORITY, LOCATED IN JEFFERSON COUNTY, KENTUCKY:

That the Executive Director of the Louisville Regional Airport Authority is authorized and directed to file an application with the Federal Aviation Administration, seeking authorization to impose a Passenger Facility Charge, and the expenditures of revenues from the PFC, in accordance with the Airport's Capital Improvement Program, and the assurances and understandings contained in the application.

IN WITNESS WHEREOF, after vote of the majority of the Board of the Louisville Regional Airport Authority, I have hereunto set my hand signifying the official action taken by the Board this 19th day of September 2018.



Jim Welch, Chair

Scope of Work – *Initial Authorization*

Louisville International Airport Master Plan

Prepared for:

Louisville Regional Airport Authority

September 12, 2018



Scope of Work – Initial Authorization

Louisville International Airport Master Plan

The Louisville Regional Airport Authority (the Authority) desires to develop a Master Plan for Louisville International Airport (the Airport) to help guide improvements over the near- and long-term. To assist in the development of the Master Plan, the Authority has selected a team of consultants led by Kimley-Horn (referred to herein as the Consultant). This document defines the initial work necessary to mobilize the project and complete certain tasks to maintain the overall schedule desired by the Authority. The budget associated with this scope is attached at the end of this document.

1. Project Management and Coordination

The project management and coordination process includes the following task.

1.2 Internal Project Management

This effort includes communication among the project team for purposes of monitoring the progress of the study. Managing the various technical work tasks among the project team is necessary for a successful project. Project management duties, for this initial authorization, will include organizing the project team working on the ALP and forecast tasks, launching the project activities with clear milestones, timeline and goals, and monitoring progress.

3. Existing Conditions

The objective of Element 3 is to assemble portions of the critical information needed to prepare the Master Plan – specifically related to ALP and forecasting.

3.4 Airport GIS Survey and Mapping

This element includes data collection and analyses required for an aeronautical obstruction survey at Louisville International Airport. The project will be completed in compliance with the FAA Airport Geographic Information System (AGIS) policies and will include an airport airspace analysis for vertically-guided operations for existing Runways 17R-35L, 17L-35R, and 11-29.

The Advisory Circulars identified below detail the data collection requirements and accuracies for the project and the verification process by the FAA and the National Geodetic Survey (NGS).

- AC 150/5300-16A General Guidance and Specifications for Aeronautical Surveys: Establishment of Geodetic Control and Submission to the National Geodetic Survey
- AC 150/5300-17C Change 1, Standards for using Remote Sensing Technologies in Airport Surveys
- AC 150/5300-18B Change 1, General Guidance and Specifications for Aeronautical Surveys: Airport Survey Data Collection and Geographic Information System (GIS) Standards

3.4.1 Quality Control and FAA Coordination

At the outset of Task 3.4, the Consultant will develop and submit a Statement of Work (SOW), along with uploading of the SOW to the project's AGIS site. The Consultant will assist Authority staff in creation of the AGIS project on the FAA's AGIS portal.

Prior to commencement of field work a Survey and Quality Control Plan will be completed and submitted to the Airports GIS project website. This report shall be used to provide guidance throughout the course of the project to assure that the data is complete, reliable, and accurate. Prior to commencing field work and capturing imagery, a comprehensive plan will be developed which outlines

the means and methods in which the imagery acquisition work will be completed. The plan will include a flight plan, approximate locations for targets, method for geo-referencing the imagery, method for feature extraction, and accuracy expectations. This plan will be submitted to the NGS for approval prior to performing the flights.

A weekly status report will be prepared and submitted to the FAA Airport GIS project website. This report will contain the status of ongoing work, expected completion date of tasks, unexpected problems or deviations from the approved plan, and other items impacting schedule, scope, or cost. In addition, a comprehensive schedule will be created in MS Project at the start of the project for use in anticipating task completion dates, data upload schedule, report submissions, FAA review time, and critical path. Schedule will be reviewed monthly and updated as required to make the project team aware of the projects progress.

The airspace analysis survey results will be submitted for review by the NGS and usage in development of flight procedures by the FAA. All data will be uploaded to the AGIS website for approval and use. If any data is not accepted by the FAA/NGS it will be reviewed and resolved in cooperation with the FAA/NGS reviewer, and resubmitted to the AGIS web site.

3.4.2 Geodetic Control

All work contained within this master task shall be in accordance with FAA AC 150/5300-16A. References to sections, tables, chapters, etc. within the subtasks are specific to this AC. Work completed under this task shall be performed by or under the supervision of a land surveyor licensed in the state of Kentucky. Following is the project control datum: Horizontal: North American Datum of 1983/2011 (NAD 83(2011)), in the KY State Plane Coordinate System, North Zone in US survey feet; Vertical: North American Vertical Datum of 1988 (NAVD 88).

- **Verification of Primary Survey Control.** Prior to the commencement of work, the Consultant will perform reconnaissance of the project site and verify the airports survey control. One PACS (PID AC6014) and two SACS (PID AC6015 & HZ2664) were found in the National Geodetic Surveys Integrated Database (NGSIDB) for SDF. Each of the three control monument sites will be visited to check that they meet the siting requirements as per Chapter 8.4.5 for usability, accessibility, condition, stability and intervisibility. If the requirements in Chapter 8.4 are met for all monuments then two independent GPS sessions, each at least 10 minutes long, will be made between the PACS and each SACS to verify their accuracy. If the monuments and measurements between them satisfy the requirements in Chapter 2.6.10.1 of AC 150/5300-18B, then a recovery report will be submitted for the PACS and SACS to the NGS. Should the existing airport control not meet the requirements of AC 150/5300-18B, and the airport require the setting of new PACS and/or SACS; then this additional effort will be considered beyond the scope of this contract.
- **Supplemental Survey Control.** Additional temporary control stations will be added to the airfield as required to assure that all survey field work can be completed to the required accuracy. Existing control points on the airfield will be analyzed for acceptance as supplemental control points. If found acceptable the points will be checked for accuracy to the PACS and SACS, otherwise new coordinates will be established from the PACS and SACS.

3.4.3 Airport Imagery Acquisition, Photogrammetric Mapping, and Ground Survey Support

For this project, the Consultant will acquire vertical stereo digital imagery at a physical image scale of 1"= 4,328' of the obstruction surface areas and 1"= 801' of the airport property. The aerial imagery will cover the Federal Aviation Regulations (FAR) Part 77 and Vertically Guided Airspace Analysis surfaces using an Ultracam Eagle Digital Aerial Mapping System, or comparable, during leaf-on conditions.

The Consultant will establish the locations of 55 photo control points and 5 OPUS check points to be ground surveyed and used to geo reference the aerial imagery. All image control points will be tied to the National Spatial Reference System (NSRS). Each image check point shall be observed with Static GPS for at least 40 minutes and a position determined using the NGS OPUS-RS program. All image control points surveyed using RTK shall be observed in two independent GPS sessions. Sketches, pictures and forms for all the photo control and OPUS check points will be created. One picture shall be taken clearly showing the location of the GPS rod on the control point and one picture shall be taken showing an identifiable object in the background (i.e., fence, power pole, building, etc.); all pictures shall be noted as to what direction they are taken (i.e. facing north, facing southwest, etc.).

3.4.4 Photogrammetric Mapping

The Consultant will collect the features normally shown on 1"= 40' scale mapping within the mapping limits as shown on Figure 1. Mapping will conform to the National Map Accuracy Standards for 1"=40' scale mapping. Consultant will build a digital terrain model (DTM) by collecting mass points and break lines. These DTM elements will be used to construct a triangulated irregular network (TIN) surface from which 1' contours will be interpolated. Contours will be dashed in areas where the ground is obscured by trees, dense brush, deep shadows or other obstructing features. Dashed contours indicate a lower level of accuracy. Additional field surveys should be performed in areas of dashed contours prior to design. All contours will be continuous polylines. The final data will be delivered in ESRI Shapefile format.

Following completion of acquiring and geo-referencing the aerial imagery, the Consultant shall submit digital stereo imagery, imagery control points, geo-referencing results and Imagery Acquisition Report to the NGS for review and acceptance. Digital orthoimagery of the entire project area will be developed with a 1.0' pixel resolution, and for the project mapping area at a 0.5' pixel resolution. Imagery will be delivered in a GeoTIFF file format.

3.4.5 Airport Airspace Analysis

Under this task the Consultant will conduct an Aeronautical Survey for existing runways 17R-35L, 17L-35R, and 11-29 using the Vertically Guided Operations standards established FAA AC 150/5300-18B. Accuracy of work performed under this task shall meet the requirements set forth within AC-18B.

Completion of these tasks will require access to the airfield, including runways and navigational aids. The Consultant shall be properly badged and operate vehicles with the proper marking and lighting. Since this survey work must be accomplished while a runway is closed, our team will work with the Authority to schedule this work during scheduled maintenance closures (typically Monday and Tuesday morning through mid-afternoon). The Authority will schedule other times as needed, but we will make it a priority to work within the typical closure timeframes as much as possible.

- **Runway Data.** Runway data points identified in Table 2-1 of AC-18B for the Instrument Approach Procedure type survey will be surveyed. This consists of the following:
 - Document Runway end points (monument as required).
 - Document Runway displaced threshold locations (monument as required).
 - Centerline of Runway(s) will be surveyed on 10-foot intervals.
 - Collect and provide 10-foot supplementary offset runway elevation profiles.
 - Determine/validate Runway width and length
- **Navigational Aid (NAVAID) Survey.** The Consultant will collect the position, elevation, (including elevation of the light head), associated NAVAID buildings and equipment, and where required,

the appropriate navigational aid perpendicular point of all electronic and visual NAVAIDs on the airport as per Chapter 2.6.10.3 of AC-18B. The following NAVAIDs are included:

Runway 17R-35L	Runway 11-29
Runway 17R Glideslope, Localizer, PAPI, MALSR Runway 35L Glideslope, Localizer, PAPI, ALSF-II, TDZ lights, RVR	Runway 11 PAPI Runway 29 PAPI
Runway 17L-35R	Airfield
Runway 17L Glideslope, Localizer, PAPI, MALSR Runway 35R Glideslope, Localizer, PAPI, ALSF-II, TDZ lights, RVR	Airport surface detection equipment (ASDE) Airport surveillance radar (ASR) Airport beacon and windcones

- **Airport Airspace Analysis / Obstruction Survey.** By means of field survey and remote sensing the Consultant shall perform an airport airspace analysis survey for existing runways. Consultant shall identify, collect, and analyze objects on and around the airport and are located within the Runways with Vertical Guidance specified Object Identification Surfaces (OIS), as detailed in Chapter 2.7.1.1; including the VGRPS, VGPCS VGAS, VGPS, VGATS, VGHS, and VGCS. Analysis of each OIS shall be performed in accordance with Chapter 2.7.1.2. Special cases and exemptions will be applied in accordance with Chapter 2.7.1.5.
- **FAR Part 77.** The appropriate Federal Aviation Regulation (FAR) Part 77 Imaginary Surfaces for the current and planned airport facility will be analyzed under this task. By utilizing the airspace analysis completed under Task 4.3, and supplementing with additional remote sensing and field survey, the Consultant shall create data for use in evaluating the Part 77 Imaginary Surfaces and displaying object heights on the required ALP hard copy pages. Part 77 surfaces to be reviewed include: Precision approach analysis of Runway 17R-35L, 17L-35R, and Runway 29; modified visual type B for Runway 11. Any obstructions that meet the requirement of the circular, but are of a nature that elevations at the highest point of the obstruction are virtually impossible to read through photogrammetric methods (cell tower, electrical tower, etc.), will be identified and relayed to the surveyor to initiate field surveyed elevations for the obstruction.

3.4.6 GIS Planimetric and Cadastral Data

With this task the object data and airport information used to create the airport CAD and GIS base map will be developed. Data will either be obtained from existing sources or created from field surveys and remote sensing of aerial imagery. For all data (field collected or existing) the source will be documented and included as part of the database as metadata. The Consultant will make maximum use of existing data supplied by the Airport, FAA, utility providers, and other sources. Existing data may be in the form of CAD files, GIS data, and engineering plans. Existing data must be traceable to the source to meet FAA 18B requirements. All existing data will be classified as Quality Level "D" and unless confirmed by field survey. Existing data not meeting accuracy requirements or not traceable will be omitted from the GIS database. A project will be created on the FAA AGIS site to upload the data. Project type will be "Airport Mapping Database – Initial Development" or "Airport Layout Plan – Airport Design or Planning" as directed by the FAA.

- **Planimetric Data.** Under this task the following features, as defined in Chapter 5 of AC 150/5300-18B, and located within the planimetric mapping limits as shown on Figure 1 will be included.

AircraftGateStand	Apron	Building
AirfieldLight	TouchdownLiftOff	ConstructionArea
RunwayCenterline	MarkingArea	Fence
RunwayHelipadDesignSurface	MarkingLine	Gate
Apron	Runway	Tower
TouchdownLiftOff	RunwayBlastPad	NavaidCriticalArea
MarkingArea	RunwayEnd	NavaidEquipment
MarkingLine	RunwayLabel	NavaidSite
RunwayIntersection	RunwaySafetyAreaBoundary	Bridge
Stopway	Shoulder	ParkingLot
TaxiwayHoldingPosition	TaxiwayIntersection	RoadCenterline
AirportSign	TaxiwayElement	RoadSegment

- **Cadastral Data.** For this task, within the limits as shown on Figure 1, existing data that is traceable to the source for the following feature classes, based on information provided by the Authority, will be included as part of the project. Researching hard-copy county records to prepare historical property data is beyond the scope of this project.
- **Environmental Data.** For this task, within the limits of the Airport Property, environmental data that is traceable to the source for the following feature classes will be included as part of the project. Wetland delineations, environmental assessments, and other related services beyond field verification and conversion of available data is beyond the scope of this task. Noise exposure contours will be incorporated into the ALP.
- **Planning Data Conversion.** Elements typically associated with paper Airport Layout Plans shall be created and added to the GIS database.
- **Airfield Elements.** The following elements shall be added to the GIS data set in accordance with FAA AC 150/5300-13A.
 - Runway Object Free Area
 - Runway Safety Area
 - Runway Clearway / Stopway / Overrun
 - Runway Visibility Zone
 - Runway Protection Zone
 - Taxiway Object Free Area
 - Taxiway Safety Area
 - Precision Object Free Zone
 - Building Restriction Line

4. Aviation Forecasts

The objective Element 4 is to develop aviation demand forecasts of enplaned passengers, air cargo, and aircraft operations for the Airport. During forecast development, other key objectives will be met, including (1) identifying variables that are the most significant drivers of aviation demand at the Airport and (2) defining and evaluating assumptions that reflect the local population and economy, overall trends in the aviation industry (e.g. airfares, price of jet fuel, aircraft fleet mix, evolving technology, and regulatory changes), and other regional factors, such as leakage to other airports.

4.1 Historical and Current Aviation Activity

Data on historical and current aviation activity will be collected and organized. This data includes: enplanements and operations by air carriers (including commuter and charter carriers); mail and cargo volumes (belly haul and dedicated freight); general aviation operations by local and itinerant categories; military operations; and based aircraft by type. Information concerning peak hourly operations, daily, monthly, and annual activity will be quantified through data sources from the ATCT and from data maintained by the FAA and the Bureau of Transportation Statistics. The ATCT staff will also be contacted to determine what data they maintain relative to instrument operations at the Airport and the extent to which they have accounted for hourly demand. Data will be obtained from Airport records and recent studies, industry data sites, Airport tenants and users, FBO's, and sources at the FAA. Existing data sources will be sought for commercial service aviation activity, including historic monthly landing fee reports and other data that may be maintained. Specific data needs and potential data sources will include, but are not limited to the following:

- Passenger surveys, market studies and market leakage analyses (as available)
- Historic and anticipated changes in market pairs and commercial passenger service
- Monthly and annual passenger enplanements by major, regional, and charter air carriers
- Historic enplaned and deplaned belly cargo by carrier
- Current and near-term demand (if available) for RON parking
- Historic operations addressing hourly, daily, monthly and annual activity and any available related data from the Enhanced Traffic Management System counts
- Current airline gate assignments and known changes in gate allocations
- ANOMS data base
- Airport Surface Detection Equipment (ASDE-X) data download
- Existing passenger and cargo aircraft fleet data and fleet orders
- Historical socioeconomic data from the Bureau of Economic Analysis, Kentucky State Data Center at the University of Louisville
- Projected economic and socioeconomic data from the Kentucky State Data Center at the University of Louisville and Woods & Poole Economics.
- USDOT Origin-Destination Survey data and T-100 data by airline and market
- OAG schedule information for the most recent peak month and near-term operations
- Boeing and Airbus Aviation Industry Forecasts
- FAA Aerospace Forecasts
- 2017 Kentucky Freight Plan

Additionally, the Consultant will contact the FAA Headquarters Branch Forecast Group to review the basis for the most recent Terminal Area Forecasts (TAF) and to discuss any pending revisions and adjustments that the FAA may be considering to their most current TAF for the Airport. The most recently approved TAF will also be summarized.

4.2 Factors or Opportunities Affecting Activity

As a part of the forecast process, it is important to identify factors that may influence future activity in the industry and how those influences could affect the local market. In the recent past, changes in airline business models, emergence of a new ultra-low-cost carriers (ULCC), airline bankruptcies and mergers have all impacted both the overall industry and activity in Louisville. The Consultant will assess the impact of recent events that have the likelihood of reoccurrence in the future, along with possible events that have not been seen previously. This effort will establish a set of forecast risk factors that

may be used to identify events that could result in an adjustment to the baseline forecast trend line. Factors that may be considered may include but not necessarily be limited to:

- Foreign trade instability and potential impact to carriers or international air cargo demand
- Contraction in airline yields from rising costs and industry reaction
- Increases in jet fuel prices
- Change in security processes at small and medium markets
- New service by ULCC
- Market leakage and potential for recapture

The Consultant will meet with Authority staff to aid in the definition of various trends that are deemed of significance. Additionally, it is the intention of the Consultant to also coordinate with senior management of UPS and select passenger airlines to discuss emerging trends and their perceptions of the likelihood of those trends impacting the Airport.

4.3 Passenger Enplanements Forecasts

A set of regression based forecast models will be developed to project future passenger enplanements. These models will utilize data collected under Task 4.1 and may (in one or more models) include the generation of “dummy” variables to account for potential external events that could impact a more standard baseline regression based demand projection. The variables that may be considered in the forecast model may include, but not be limited to:

- Market area current and projected population trends
- Market area current and projected disposable personal income and/or per capita income
- Current and projected U.S. or regional GDP
- Overall current and project employment and/or employment in select sectors
- Current and projected fuel costs and or airline yields

Using several projection techniques and model inputs a series of projected passenger trendlines will be generated and these will form the basis for the definition of either a specific projection to use as the basis for the forecast of passenger activity or to define an envelope of future passenger levels. These techniques will include the utilization of a variety of projection methods including various single and multi-variable regression techniques as well as market share analyses. Coordination with the Authority will occur once the individual projections have been completed to discuss analysis findings and to take into consideration the potential forecast risk items developed in Task 4.2 to define the activity projection that is considered most representative of future passenger demand.

As data permits total annual enplanements over four (4) planning horizons (Base Year 2017, 2022, 2027, 2037) will be prepared and divided among major, regional and charter air carrier categories, along with a further projection to 2047 in support of the BCA in Task 2.

4.4 Commercial Service Forecasts

Using data collected in Task 4.1 historic information related to airline boarding load factors and fleet trends will be reviewed and projections of future load factors and fleet trends will be generated. These are key inputs to the methodology for deriving commercial passenger aircraft operations.

Commercial passenger aircraft operations forecasts will be prepared for planning horizon years identified and will be referred to as Operational Planning Design Levels (OPDLs). Note that development of the 30-year projection may require the extrapolation of 20-year socioeconomic,

employment and other independent variables out to the 30-year horizon as these data are typically projected forward by 20 years. As data permits the following forecasts will be generated:

- Total annual commercial passenger operations (derived from projected enplanements, load factors and fleet mix)
- Annual air carrier operations by major, regional and charter carriers
- Aircraft fleet data by major, regional and charter carriers
- Passenger carrier belly mail and freight

The projection of aircraft fleet mix will initially focus on seating ranges of aircraft likely to serve the Louisville market area, and then will be further refined to identify to the extent feasible specific aircraft types based on existing airline fleets and the announced orders for new aircraft by carriers both serving the Airport and those that may be considered likely candidates to serve the area in the future.

4.5 Dedicated Air Cargo Forecasts

This task will focus on the activity at the Airport associated solely with the handling of air cargo. Addressing the dedicated air freight/cargo activity will involve a two-tiered approach. The following will be derived separately for non-UPS and UPS activity for each planning horizon:

- Annual volumes of air cargo and mail in short tons
- Annual aircraft operations by carrier
- Aircraft fleet mix by carrier
- Peaking characteristics

4.5.1 Non-UPS Activity

The first tier would address non-UPS dedicated air freight/cargo volumes and operations. This data will be tested through a series of regression and market capture projection methods to identify a set of future trendlines. Regression variables that may be considered include U.S. GDP, Airport market area economic trends, and business profitability indices. From these trend lines either a single project or a projection envelop will be identified from which a preferred forecast of non-UPS cargo related activity will be identified. As a part of this effort, the Consultant will meet with representatives of cargo carriers (FedEx at a minimum) to discuss their activity levels, cargo stream components, load factors (weight vs. bulk) potential for service expansion at the Airport through additional aircraft of aircraft fleet gauge increases.

4.5.2 UPS Activity

A more interactive approach to the development of the UPS forecasts will be employed. The Consultant proposes an initial working session with UPS representatives to discuss available data and overall methodology for producing a forecast of UPS cargo activity. Key to this discussion would be gaining consensus on the central drivers of cargo activity within the international and domestic cargo markets that are served out of the Airport, along with potential risk factors that could require development of dummy variables to factor into the analysis. The following presents a preliminary list of potential cargo demand drivers:

International freight factors	Domestic freight factors
Global GDP	U.S. GDP
Overall credit conditions	Fluctuations in capital spending
Free trade environment	Competitive advantage
IT investment	Yields
Currency exchange rates	Domestic E-commerce growth

In addition to potential demand drivers there are other potential factors that could impact cargo levels at the Airport, in the U.S., and worldwide. These include but are not limited to

- Growth of Amazon Air and what business model this carrier may evolve into
- Refinement of 3-D printing technology providing an alternative to shipping some components
- Threat of trade war with multiple markets and growing protectionism worldwide
- Brexit and EU stability
- Air to ocean mode shift in some international markets (Latin America)

Concurrence on the relevance of these or other risk factors would be discussed as well as how best to incorporate these factors into the methodology.

A set of independent variables would be generated for use in both single- and multi-variable regression projection analyses of potential changes in cargo volumes handled through the Airport by UPS. The results of these analysis would be shared both with the Authority and with UPS representatives for their consideration against their internal projections. A follow up discussion with UPS representatives is proposed to discuss their review and to address adjustments, if needed, to the regression projections to fit more closely with internal assessments that may have been undertaken as a part of their business and facility planning efforts. At this same meeting the Consultant will discuss load factor assumptions, near and long-term fleet retirements and replacements and total estimated fleet size to be used for planning and simulation purposes.

4.6 General Aviation and Military Forecasts

General aviation activity forecasts will be prepared taking into consideration forecasts from other sources, such as the FAA's TAF and other studies. Consideration will be given to such trends as large-scale fractional ownership of general aviation business jets and utilization of general aviation as an alternative to commercial service. The methodology used will also consider the influence that local businesses, education, sporting events, proximity to major tourism resources both in the Louisville area and in nearby communities, special events (i.e., Kentucky Derby, etc.), and economic activity has on general aviation activity as well as the influence of various socioeconomic and demographic trends.

Historic activity data will be reviewed to identify historic based aircraft levels, activity peaking characteristics, fleet mix, and the split of local and itinerant aircraft operations. Projections of future general aviation operational activity, itinerant and based aircraft operations and fleet mix will be generated using regression analysis, market share and operations per based aircraft techniques depending upon which technique best fits the historic data for projection purposes and the projected fleet mix of both based and itinerant general aviation aircraft over the planning period. Adjusted projections of general aviation activity will be prepared for each planning horizon.

Historic military operational activity will be identified using both FAA and Airport activity statistics. These operational levels will be defined by type of operations with a focus on quantifying the extent of fixed wing activity from the Kentucky Air National Guard facilities versus other military activity that may transit through the area. Coordination with the Guard will be conducted to discuss current and any potential shifts in the Guard mission at the Airport and, if a mission change is a possibility, to identify potential mission related aircraft operational levels and the type of aircraft that will be involved. The discussion will also address anticipated levels of annual operations or range of operations that base personnel believe best represents future levels of activity. From this review, and contact with representatives from the Guard base a projection of the total operational levels by type (fixed vs. rotor),

based aircraft by type, and projected future operational levels will be derived and used as a basis for the military activity forecast.

4.7 Aviation Demand Peaking Analysis

For the determination of future facility needs it is necessary to identify the demand peaking characteristics associated with the various segments of aviation activity at the Airport. This relates to those times of the day, month, and/or year where the activity level of aircraft operations or passengers exceeds the normal or average values. These peaks are key elements in the determination of both airside and landside capacity enhancements, and the timing thereof. The items to be assessed include:

- Average and peak month operations by category and air carrier enplanements
- Average day enplanements and operations
- Average-day of the peak month (ADPM) enplanements and operations
- ADPM cargo operations
- Peak hour operations by carrier and category of user
- Peak hour enplanements by airline

4.9 Forecast Working Paper and FAA Approval

A summary of the preliminary results of the forecast process will be provided to the Authority and at their direction to the FAA Memphis ADO for review. A briefing meeting with the ADO would be conducted via WebEx to review results. Based on this meeting any FAA issues or questions will be identified and addressed. Following, a draft Forecast Working Paper will be prepared which will summarize the issues, methodology, background of the industry and information used as a basis for developing the aviation activity forecasts. Also addressed in this Working Paper will be a comparison of the enplanement and aircraft operations forecasts to the most current version of the FAA's TAF. The draft Forecast Working Paper will be provided to the Authority for review and comment. Upon completion of this review a revised draft Forecast Working Paper will be prepared and submitted to the FAA for review. It is assumed in both the scope and budget that the FAA review of forecasts will be carried out expeditiously to not delay the development of the overall Master Plan. The Consultant will respond in writing to FAA comments and make required changes to text, analyses and projections. FAA approval of the forecasts will be obtained prior to the initiation of analytical tasks on demand driven factors.

LOUISVILLE INTERNATIONAL AIRPORT MASTER PLAN
Proposed Master Plan Budget Summary
Initial Authorization

Scope of Work Element and Task	Kimley-Horn	EHI Consultants	Foth	Quantum	Total		Expenses	Grand Total
					Labor			
1. Project Management	\$15,000		\$13,300		\$28,300			\$28,300
1.2 Project Management	\$15,000		\$13,300		\$28,300			\$28,300
3. Existing Conditions	-	\$52,000	\$21,600	\$206,120	\$279,720			\$279,720
3.4 Airport GIS Survey and Mapping		\$52,000	\$21,600	\$206,120	\$279,720			\$279,720
4. Aviation Forecasts	\$114,520				\$114,520			\$114,520
4.1 Historical and Current Aviation Activity	\$9,000				\$9,000			\$9,000
4.2 Factors or Opportunities Affecting Activity	\$9,640				\$9,640			\$9,640
4.3 Passenger Enplanement Forecast Model	\$15,150				\$15,150			\$15,150
4.4 Commercial Service Forecasts	\$17,650				\$17,650			\$17,650
4.5 Dedicated Air Cargo Forecasts	\$26,080				\$26,080			\$26,080
4.6 General Aviation and Military Forecasts	\$7,240				\$7,240			\$7,240
4.7 Aviation Demand Peaking Analysis	\$8,120				\$8,120			\$8,120
4.9 Forecast Working Paper and FAA Approval	\$21,640				\$21,640			\$21,640
Total	\$129,520	\$52,000	\$34,900	\$206,120	\$422,540			\$422,540
Percent of Total Budget								
Percent DBE Spending								

