Request for Board of Commissioners' Action

From: Faye Hughes, County Administrator **Date:** 8/2/2019

Subject: Passero – Airport Layout Plan **Item Number:** VIII-B

In order for Passero to conduct the Airport Layout Plan and Narrative required by FAA and DOT, Cook County must enter into a contract with them. This is Work Order 19-03. The cost of Passero's work and all subcontractors is $125,000.

Each time they are required to perform a task it will have to be approved by the Board. The Airport Authority and DOT have reviewed and recommend it be approved by the County Commissioners.

This project will be funded by Airport SPLOST.

The Chairman will need a motion to approve the Passero – Work Order19-03 for the Airport Layout Plan and Narrative Report Update.

Motion made by _____

Second made by _____

Any discussion: _____

_____

Votes_____ yes _____ no Motion carried/ failed

Cook County, Georgia

Airport Layout Plan (ALP) and Narrative Report Update

by

Passero Associates, LLC

(PA Project No. 20182617.0003)

Work Order 19-03

Work Order 19-03
Airport Layout Plan (ALP) and Narrative Report Update

Cook County Airport (15J), Adel, Georgia

Passero Associates (PA or Consultant) agrees to perform the following services, in accordance with the terms and conditions of this Work Order and the Master Consulting Services Agreement with the Cook County Board of Commissioners (Client or County), dated July 2, 2018, all of which terms and conditions are incorporated herein by reference:

Project Location: Cook County Airport (15J), Adel, Georgia.

Project Description: Updating the Airport Layout Plan (ALP) and providing an associated Narrative Report.

Scope of Basic Services: (See attached Scope of Work – Exhibit A.)

Scope of Special Services: Special Services for this project, and the firms who will perform them, are as follows:

1. GPI Geospatial, Inc. – Surveying and Mapping
2. Folsom Surveying, Inc. – Airport Property Survey and Airport Property Map/Exhibit A Completion

Client Manager: Faye Hughes, County Administrator, CCC, CFO

PA Program Manager: Mr. Andrew M. Holesko, CM, Vice President.
PA Regional Director: Mr. Bradley J. Wente, P.E.
PA Project Manager: Mr. Christopher L. Johnson

Basic Services Compensation and Method of Payment:	Lump Sum: **$76,505.00**
Special Services Compensation and Method of Payment:	
1. GPI Geospatial, Inc. –	Lump Sum: **$35,125.00**
2. Folsom Surveying Inc. –	Lump Sum: **$13,370.00**
Total Compensation (see attached Exhibit 1)	Total Lump Sum: **$125,000.00**

Schedule: Services to begin when Notice-to-Proceed is issued. Anticipated start August 2019.

Meetings: Attendance at ALP Kickoff Meeting, Working Paper 1 Meeting, Working Paper 2 Meeting, Public Information Workshop.

Deliverables: Final ALP Narrative Report (5 copies), ALP Drawing set (5 copies). Interim drafts (i.e., Working Paper 1 and Working Paper 2) will also be delivered to Client for approval.

"Client"
Cook County Board of Commissioners

BY: _____
Lindsey Parrish, Chairman
Typed Name & Title

ATTEST:

BY: _____

Faye Hughes County Administrator
Name, Title

_____
Date

"Consultant"
Passero Associates, LLC

BY: Bradley J. Wente, P.E.
Bradley J. Wente, P.E., SE Aviation Director
Typed Name & Title

ATTEST:

BY: Angela Witt

Angela Witt, Administrative Assistant
Name, Title

7/18/19
Date

Cook County Airport
ADEL, GEORGIA

EXHIBIT A

SCOPE OF WORK
for
AIRPORT LAYOUT PLAN UPDATE

INTRODUCTION

This scope of services identifies requisite elements necessary to update the existing Cook County Airport Layout Plan (ALP) drawing set and narrative report on file for the Cook County Airport Authority (Sponsor). An ALP drawing set and narrative report will be the final products of this project and will identify improvements necessary to accommodate aviation activity at the airport during the 20-year planning period, serve as the airport's guide to future development, and meet grant assurance requirements to maintain a current, approved ALP. The Aviation Program Office of the Georgia Department of Transportation (Department) will review and conditionally approve these ALP documents on behalf of the Federal Aviation Administration (FAA), under the State Block Grant Program.

Components and preparation for both the Airport Layout Plan (ALP) narrative and the drawings set include all items in the FAA's Standard Operating Procedures (SOPs) 2.00, *Standard Procedure for FAA Review and Approval of Airport Layout Plans (ALPs)*, dated October 1, 2013, and FAA Advisory Circular (AC) 150/5300-13A (latest change), *Airport Design*, and other applicable FAA Orders, Federal Aviation Regulations (FAR) and ACs. Additionally, the ALP update will be completed in accordance with applicable portions of the following (latest change):

- FAA Order 8260.3B, *United States Standard for Terminal Instrument Procedures (TERPS);*
- 14 CFR Part 77, *Objects Affecting Navigable Airspace*;
- FAA Order 5000.3D, *Coordination with the Federal Highway Administration*;
- FAA Order 7400.2, *Procedures for Handling Airspace Matters;*
- FAA Order 5090.3C, *Field Formulation of the National Plan of Integrated Airport Systems (NPIAS);*
- FAA Order 5100.38D, *Airport Improvement Program (AIP) Handbook;*
- FAA Order 7031.2C, *Airway Planning Standard Number One – Terminal Air Navigation Facilities and Air Traffic Control Standard;*
- Other FAA Advisory Circulars, Orders and Regulations, as required.

Passero Associates, LLC. (Consultant) will be responsible for submitting a completed copy of the ALP checklist with the ALP submittal to the airport, the Department, and FAA. The ALP will contain sufficient data to obtain approvals from the FAA.

ELEMENT 1A: NARRATIVE REPORT

- **INTRODUCTION**

  The Consultant will start the report off with a succinct introduction that will explain and identify the history of the Airport, key issues, and the purpose of the ALP update and narrative report update.

- ***EXCLUSIONS***
  - *Master Plan goal setting will not be a part of this ALP and narrative report update.*

- **INVENTORY OF EXISTING CONDITIONS**

  The Consultant will conduct an on-site visit to Cook County Airport, and perform desktop exercises to collect Airport and community data from the FAA, the Department, the airport sponsor and other available sources. This will include both data relative to Cook County Airport and the surrounding community, such as comprehensive plans and zoning regulations. Known environmental considerations, from Federal databases, will be noted during this element. An Environmental Assessment (EA), or comprehensive environmental assessment, will not be completed as part of this ALP and Narrative Report Update. However, the Consultant will use the most recent EA provided by the Sponsor, FAA, and/or the Department if applicable.

  The Consultant will perform inventories of all physical facilities within the present boundary of the airport, including buildings, runways, taxiways, aprons, internal roadways, visual and electronic approach aids and graphically depict each facility within different functional areas.

  The Consultant will verify existing based aircraft and total operations counts, per the FAA 5010 Master Record, with the Sponsor. If the Sponsor provides more recent data that is different from the FAA 5010, the Consultant will use the Sponsor's data for the forecasts of aviation activity and recommend that the FAA updates the FAA 5010 upon the completion of this ALP and narrative report update.

- ***EXCLUSIONS***
  - *Field Facility assessment for deficiencies will not be completed as part of this ALP and Narrative Report Update. However, if the Sponsor alerts the Consultant of facility deficiencies (e.g., a leak in the roof of a hangar) during the on-site visit, the Consultant will include those deficiencies in the narrative report.*
  - *Field assessment of the airfield pavement condition and pavement strength assessment will not be completed as part of this ALP and Narrative Report Update. However, the Consultant will use the most recent airfield pavement assessment provided by the Sponsor, FAA, or the Department.*

- **FORECASTS OF AVIATION ACTIVITY**

  The Consultant will utilize historical data on aeronautical activity collected in the Inventory of Existing Conditions task above, and in consideration of FAA Terminal Area Forecasts (TAF), FAA Traffic Flow Management System Counts (TFMSC) and any other relevant aviation forecasts (e.g., state system plan forecasts), as well as appropriate local and regional socioeconomic data.

Activity projections for the 5-, 10-, and 20-year time frames will be prepared by the Consultant. These forecasts will form the basis for the future airport development program. Socio-economic projections, past trends, and existing FAA and Georgia Statewide Airport System Plan forecasts will be reviewed and analyzed. The analysis will result in either the re-validation of a prior forecast or the establishment of newer simplified forecasts including:

- Based aircraft by type and number;
- Local/itinerant and total operations; and,
- Operations by activity types

As a part of this forecast, the future critical aircraft will be identified, and analyzed further in the Facility Requirements section of the narrative report.

CLIENT AND DEPARTMENT DELIVERABLE 1

Upon Sponsor approval, the first three (3) sections of the narrative report (i.e., Introduction, Inventory of Existing Conditions and Forecasts of Aviation Activity) will be submitted, in PDF format, to the Department as Working Paper 1 for review and approval.

- **FACILITY REQUIREMENTS**

The re-validation of the existing and future critical aircraft anticipated to use Cook County Airport throughout the 20-year planning period will be used to determine the airport design standards as defined in the FAA AC 150/5300-13A, *Airport Design*; Federal Aviation Regulation (FAR) Part 77; and other FAA ACs and Orders as appropriate. This element will be critical in the development of the ALP drawing set and will identify the following requirements:

- Airport Reference Code (ARC);
- Runway length;
- Runway and taxiway width;
- Runway Design Code (RDC);
- Approach Reference Code (APRC);
- Departure Reference Code (DPRC);
- FAR Part 77 Surfaces;
- All appropriate runway and taxiway design standards;
- Obstruction clearing;
- Instrument approaches requirements;
- Lighting, marking, and signage; and,
- Wind coverage.

In addition to FAA ACs various Airport Cooperative Research Programs (ACRPs), specifically for terminal and aircraft parking apron planning, will be used to determine the requirements for the following facilities requirements:

- T-hangar and conventional hangar space;
- Tie-down and transient aircraft apron;
- Terminal Facilities;

- Fuel storage;
- Navigational aids;
- Weather reporting capability;
- Maintenance requirements; and,
- Land acquisition.

- ***EXCLUSIONS***
  - *Field assessment of the airfield pavement condition and pavement strength assessment will not be completed as part of this ALP and Narrative Report Update. However, the Consultant will use the most recent airfield pavement assessment provided by the Sponsor, FAA, and/or the Department and include this information in the Facility Requirements section.*

- **ALTERNATIVE ANALYSIS**

  Alternative development layouts will be produced on an as-needed basis for each functional area, depending on the findings of the facility requirements. Any and all alternatives developed will comply with the applicable FAA design standards. A maximum of two (2) alternative layouts will be evaluated for each element analyzed, where applicable. The merits and shortcomings for each alternative and the rationale for the preferred alternative will be explained in the narrative report. Conditions requiring analysis, such as declared distances, displaced threshold, or non-standard airport features that may require a Modification of Standards (MOS) will be documented in the narrative report and in the ALP drawing set. All preferred alternatives will be depicted in the ALP drawing set.

- ***EXCLUSIONS***
  Environmental grading criteria, outside of known environmental considerations, will not be included as a comparative factor in the evaluation of each alternative.

- **IMPLEMENTATION PLAN**

  This section of the narrative report will provide guidelines for recommended preferred alternatives that were identified in previous sections of the narrative report. The Consultant will work with the Sponsor to determine which of the preferred alternatives to include in the next five-year (Phase 1) Capital Improvements Plan (CIP). An explanation will be provided for each CIP project in the narrative report, and also listed in a table that shows each proposed project and the estimated federal, state and local cost for each project in the five-year CIP. All projects listed in the CIP will be shown in the ALP drawing set to be considered for federal and state funding.

- ***EXCLUSIONS***
  - *Estimated costs for potential projects that may occur in Phases 2 and 3 (i.e., Years 6-10, 11-20) at the Airport will not be determined as a part of this ALP and narrative report update. However, the Consultant will include existing projects listed in the Contract Management Information System (CMIS) for Phases 2 and 3 in the Implementation Plan of the narrative report.*
  - *Revenue and expense analysis, and determination of local funding sources will not be included in the Implementation Plan of the narrative report.*

- **CAPITAL IMPROVEMENT PLAN**

  Working with the Sponsor, the Consultant will update the Airport Capital Improvement Plan (CIP) submitted annually to the Department. The CIP lists costs and phasing of proposed improvements at the airport and is required when applying for Federal and State funding assistance.

  As a part of the ALP and narrative report update, the Consultant will update the next five years of the CIP with the preferred projects and estimated development costs identified in the Implementation Plan section of the narrative report. The development costs will be broken into amounts eligible for Federal and State funding programs and amounts requiring local participation. A detailed five-year CIP will be provided to the FAA and the Department.

- ***EXCLUSIONS***
  - *The Consultant will not identify potential projects in Phases 2 and 3 (i.e., Years 6-10; 11-20). However, the Consultant will work with the Sponsor to identify potential airport projects in Phases 2 and 3 as a separate effort outside of this ALP and narrative report update.*

  CLIENT AND DEPARTMENT DELIVERABLE 2

  Upon Sponsor approval, the Facility Requirements, Alternative Analysis and Implementation Plan sections will be submitted in PDF format to the Department as Working Paper 2 for review and approval.

ELEMENT 1B: AIRPORT LAYOUT PLANS

The Airport Layout Plan (ALP) drawing set will be prepared in digital drawing format. Shading and other techniques will be used to indicate the phasing of proposed airport improvement projects. The Consultant will work with the Department and/or the Sponsor and a subconsultant to obtain survey planimetric data and Orthorectified Aerial Imagery for Cook County Airport in accordance to Chapter 5 of the FAA AC 150/5300-18B, *Survey and Data Standards for Submission of Aeronautical Data Using Airports GIS*. The Planimetric data will be in AutoCAD format, and the aerial imagery will be in .SID or .TIFF format. Both the planimetric data and aerial imagery will be projected to the NAD 83 Georgia West State Plane Coordinate System.

All sheets within the ALP drawing set must follow the requirements listed in the FAA Checklist, and adhere to requirements set forth by the FAA AC 150/5300-13A, *Airport Design*; Federal Aviation Regulation (FAR) Part 77; and other FAA ACs and Orders. It is estimated that there will be no more than 15 drawing sheets. Drawings that will be included in the ALP drawing set are as follows:

- **Title Sheet (1 Sheet)** - This sheet serves as the plan set cover sheet and provides information to include the airport name, airport sponsor and contact information, grant number, location, and ALP preparer. An index of drawings, graphic representations of the airport location (Scale 1”=500,000” or aeronautical sectional chart), and airport vicinity (Scale 1”=24,000” or USGS quadrangle map) will also be shown on the title sheet.

- **Airport Data Sheet (1 Sheet)** – This sheet will provide vital information pertinent to the airport, such as: runway and taxiway geometry information, safety critical information, wind information, etc.

- **Airport Layout Drawing (3 Sheets)** – These sheets show existing and future airport facilities and serves as the airport's 20-year development guide. The drawing will include existing and future airside and landside facility identifications, description labels, imaginary surfaces, and all required dimensions set forth by FAA requirements. The drawing viewport(s) will be drawn at a minimum scale of 1"=200'.

- **Terminal Area Plan Drawing (2 Sheets)** – These sheets consist of one or more drawings with a large-scale depiction of areas with significant terminal facility development. Such a drawing is typically an enlargement of a portion of the ALP. All separations between hangars and airside facilities, taxilanes, and immovable objects will be shown with dimensions. The drawing viewport(s) will be drawn at a minimum scale of 1"=50'.

- **Airport Airspace Drawing (2 Sheets)** – These sheets depict airport imaginary airspace surfaces based on 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace* for the full extent of all airport development. This drawing will show, in plan view over a USGS Quadrangle base map, all Part 77 surfaces, based on the ultimate runway lengths. The profile views of the imaginary airspace surfaces will also be provided.

  The Airport Airspace Drawing sheet will also include obstruction data tables. Obstructions within the inner approaches will not be listed in these obstruction data tables, or shown on the drawing. These inner approach obstructions will be shown and listed on the Inner Portion of the Approach Surface Drawings. All airspace obstructions for the portions of the surfaces excluded from the Inner Portion of the Approach Surface Drawing (i.e., FAR Part 77 primary, outer approach, horizontal, transitional, and conical surfaces) will be shown on the drawing, and drawn at a minimum scale of 1"=1000' Horizontal; 1"=100'.

- **Inner Portion of the Approach Surface Drawing (5 Sheets)** – These sheets depict the plan and profile view of the inner portion of the approach surface to the runway and a tabular listing of all surface penetrations. The drawing will depict the airport imaginary airspace surfaces contained in 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*. The drawing will also depict threshold siting surfaces associated with United States Standards for Instrument Procedures (TERPS), and also reflect recent changes outlined in the FAA Engineering Brief No. 99 *Changes to Tables 3-2 and 3-4 of Advisory Circular 150/5300-13A, Airport Design*. The drawing viewport(s) will be drawn from the runway threshold to a point on the approach slope 100 feet above the runway threshold elevation. The size of the viewport may restrict each sheet to just one runway end in the plan and profile viewports. Obstruction data for these surfaces will be shown in data tables. The drawing viewport(s) will be drawn at a minimum scale of 1"=200' Horizontal; 1"=20' Vertical.

- **Runway Departure Surface Drawing (1 Sheet)** – This sheet is required for each runway that is designated with instrument approach procedures at Cook County (i.e., Runways 5 and 23). The drawing will depict departure surfaces for these runways in plan and profile, and adhere to the requirements set forth by the AC 150/5300-13A, *Airport Design*. The size of the viewport may restrict each sheet to just one runway end for the plan and profile drawings. Obstruction data for these surfaces will be shown in data tables. The drawing viewport(s) will be drawn at a minimum scale of 1"=1000' Horizontal; 1"=100' Vertical to show the entire 40:1 departure surface.

- **Airport Property Map/Exhibit A Property Inventory Map (1 Sheet)** – The Consultant must adhere to the requirements of the FAA AC 150/5100-17, *Land Acquisition and Relocation*. The Sponsor will decide

in the scoping meeting with the Consultant if an Airport Property Map or Exhibit A Property Inventory Map will be required. The Consultant will use the FAA ARP SOP 2.00 and/or 3.00 Exhibit A Guidance while preparing the Airport Property Map/Exhibit A Property Inventory Map and all associated data tables. The drawing viewport(s) will be drawn at a minimum scale of 1"=200'.

- ***Special Services***
  The following special services will be included in the completion of the Airport Layout Plan Update:
  1. ***GPI Geospatial, Inc.*** *– Surveying and Mapping*
  2. ***Folsom Surveying, Inc.*** *– Airport Property Survey and Airport Property Map/Exhibit A Completion*

- ***EXCLUSIONS***
  - *The Consultant will not complete a Land Use Map.*
  - *The Consultant will not complete a Ground Transportation Plan.*

CLIENT AND DEPARTMENT DELIVERABLE 3

Upon Sponsor approval, the third Department deliverable will consist of both the ALP drawing set and the revised narrative report based on requested revisions by the Department. The narrative report will be saved in PDF format. The paper size of the ALP set will be 24"x36" (ARCH D).

ELEMENT 2: PROJECT DOCUMENTATION

The steps of the deliverables process during the draft and final stages are as follows:

- **Initial Draft Submittal to the Department** – Upon concurrence of the revisions based on Department comments, the first (full) draft narrative report will be submitted in PDF format, and the Draft ALP drawing set will be delivered to the Department Planning Manager on ARCH D paper (i.e., Department Deliverable 3). A completed FAA checklist will be included with this submittal.

- **FAA Circularization Draft Submittal to the Department** – Upon concurrence of the revisions based on Department comments, the Consultant will send the second draft narrative report in PDF format, and two (2) ARCH D paper copies of the ALP drawing set to the Department Planning Manager. A completed FAA checklist will be included with this submittal.

  The Department Planning Manager will coordinate the circularization of the ALP and narrative report with the FAA, via the OE/AAA database**.**

- **Final Submittal to the Department** – Upon concurrence of revisions based on FAA and Department comments, the Consultant will send five (5) locally approved ARCH D paper copies of the ALP drawing set to the Department Planning Manager for Conditional Approval, and five (5) spiral bound copies of the narrative report to the Department Manager.

  - Interim electronic copies or paper copies may be required as needed for additional review. The Department will send the final narrative report and conditionally approved copies of the ALP drawing set to the Sponsor, FAA, and Consultant. The Consultant will require an additional fee for any additional spiral-bound narrative report, and/or ALP drawing set requested by either the Sponsor or Department.

In addition to final ALP copies, the Consultant will also provide final copies of AutoCAD files to the Airport Sponsor and the Department. These files will be in 2010 .DWG format, and saved on a Universal Serial Bus (USB).

ELEMENT 3: MEETINGS and COORDINATION and DELIVERABLES

Four (4) meetings with the Consultant and the Sponsor are assumed for the ALP and narrative report update described in this scope of services. The Consultant will send materials to the Sponsor two weeks prior to each meeting, and bring hard copies of the meeting materials.

A breakdown of each meeting is as follows:

1. The first meeting will be an ALP kickoff meeting between the Sponsor, the Consultant, and the Department. The Consultant will also perform the on-site inventory task after this meeting.
   - **Deliverable: None**
2. The second meeting will be between the Sponsor, and the Consultant to present Working Paper 1 (Introduction, Data Sheet and Forecast sections).
   - ***Deliverable: Working Paper 1 submission (PDF) to the Department for review and Forecast Approval.***
3. The third meeting will be between the Sponsor, and the Consultant to present the Facilities Requirement, Alternatives Analysis and Implementation Plan sections of the Narrative Report.
   - ***Deliverable: Working Paper 2 submission (PDF) to the Department for review after Sponsor approval.***
4. The fourth meeting will be a Public Information Workshop where the Sponsor, and members from the Consulting team present each of the preferred alternatives to interested members of the public. The Consultant will use easels and other digital mediums to allow members of the public to come up to the project team and ask questions.
   - ***Deliverable: Full narrative report containing revised Working Papers 1 and 2 and full Draft ALP.***

GPI

PROPOSAL

for PROFESSIONAL SERVICES

Cook County Airport (15J)

Adel, Georgia

Passero Associates, LLC

GPI Geospatial, Inc.

423 South Keller Road, Suite 300
Orlando, FL 32810
407.851.7880 | 407.855.8250

LiDAR | Photogrammetry | Asset Management

June 13, 2019

Mr. **Christopher "CJ" Johnson**
Airport Planner II
PASSERO ASSOCIATES, LLC
4730 Casa Cola Way
Suite 200
St. Augustine, FL 32095

Subject: Cook County Airport (15J) Adel, Georgia
GPI Geospatial Proposal No. 19293

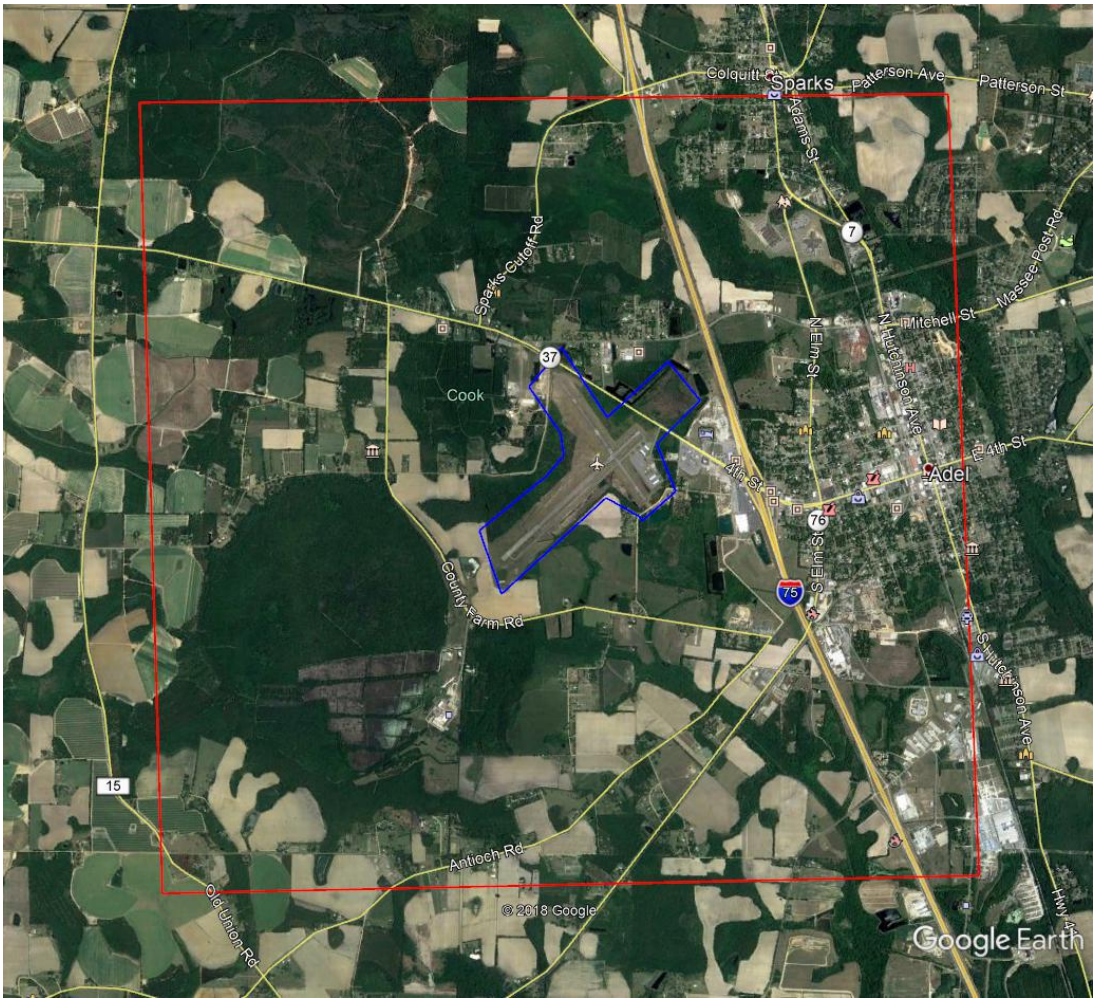
Dear Mr. Johnson,

GPI Geospatial, Inc. greatly appreciates this opportunity to provide Passero Associates, LLC, hereafter referred to as Client, with our proposal to perform professional geospatial services as requested. The following proposal is based on our understanding of the scope of work.

PROJECT DESCRIPTION

GPI Geospatial understand that Client requires topographic, obstruction mapping and digital Orthophotos at the Cook County Airport (15J) in Adel, Georgia. This mapping will be used to support the updating of the Airport Layout plans for 15J. The areas of mapping and imagery required as shown below and were provided in an email received on May 10, 2019. GPI's scope of services will provide all items requested by the highlighted fields in the attached Table 2.1 received from Client on same date. We understand that an 18b analysis project for runway 5/23 was completed in the last 2 years and we will make use of the data provided from that project. This will include tie-in, checking and verification of the existing control and updating the limited mapping data to full plan and topographic data required for your ALP updates.

PROJECT LIMITS



The Total area outlined by the red polygon (11,259 acres) will have digital orthophoto imagery at .25' resolution and the airport property areas bounded by the blue polygon (+/- 400 acres) will include aerial topographic mapping and show the heights of objects such as trees, poles, buildings etc. for the purpose of identifying obstructions and hazards to aviation. Additionally, this area will extend 5,000 feet from each runway end (5/23 and 15/33) to depict all penetrations to the proposed and existing approach surfaces.

AERIAL DATA ACQUISITION

Aerial Mission

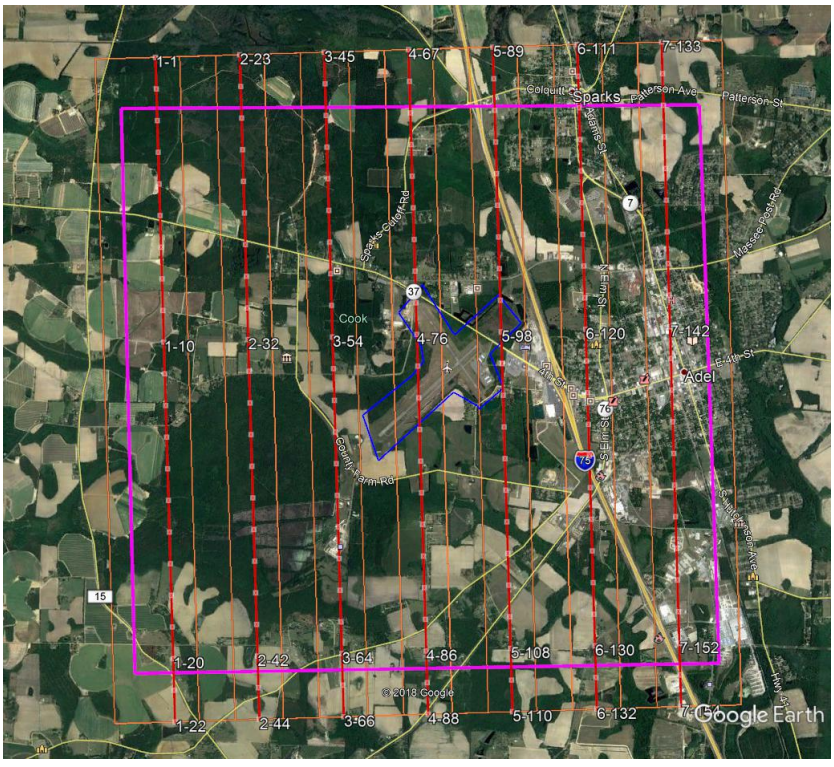
GPI Geospatial proposes capturing digital Imagery our Vexcel Imaging UltraCAM Eagle large format mapping camera.

The imagery data shall be integrated with our Applanix POS AV Inertial Measuring Unit and GPS to provide the highest degree of positional and orientation accuracy required for meeting the project specifications.

Simultaneous Acquisition	N

Imagery Acquisition	
Sensor	Eagle
Flight Altitude	4,500 AGL
Sidelap	30%
Forward Lap	60%
Ground Sample Distance (GSD)	7.5 cm
Project Area	11,259 Acres

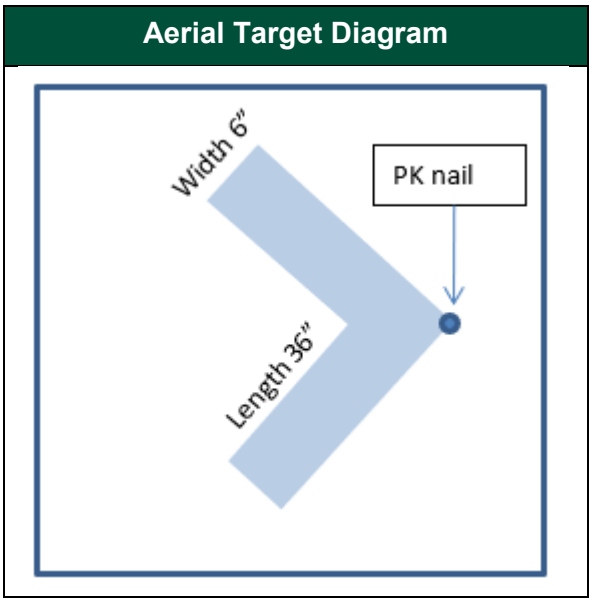
- The imagery shall be free of haze, snow, clouds and smoke.
- The photography shall not contain any excessive tip, tilt, or crab.
- All flight plans shall be designed by a Certified Photogrammetrist and approved prior to acquisition.
- Weather conditions and access to airspace can affect acquisition schedules.
- Certain restricted airspace may require the presence of an appropriate law enforcement official.



MAPPING CONTROL

GPI Geospatial will provide the necessary ground control surveys to support this project. We estimate that 10 points will be required. A combination of paneled points set prior to acquisition and photo identifiable points will be used for this project. Photo identifiable points will be used if sufficient physical features exist.

Sample of Target



All horizontal control shall be referenced to the appropriate State Plane Coordinate System in NAD 83(2011), all vertical control shall be referenced to NAVD88, or as specified by client.

The aerial imagery shall be controlled with POS AV Airborne GPS and ground control panels. This cutting-edge inertial position and orientation system will provide accurate photo center positions to triangulate the entire block of imagery in one bundle adjustment.
All surveys will utilize the existing PAC and SAC monuments and will validate the previous data provided.

LiDAR Processing

GPI Geospatial will download and post process GNSS / Inertial Measuring Unit (IMU) data, creation of scan best estimate trajectories (SBET) and analysis of relative agreement between individual scan runs using scan route data overlaps for comparison. This also includes separation of large point cloud data sets into manageable LAS files with corresponding graphic "tile" index.

Aerial Triangulation

Identified as the procedure of establishing geometric relationships among forward and side lapping imagery to extend and densify supplemental horizontal and vertical control points.

Using the Horizontal and Vertical control survey data, and the Exterior Orientation Parameters of all frames (AGPS & IMU), GPI Geospatial shall precisely perform manual and automatic digital aerial triangulation using our Trimble Inpho Match-AT or ISAT software.

Automatic and manual tie point matching shall be performed on the entire set of imagery to best contribute to the strength and quality of the block.

Image points will be established at the Von Gruber locations on each image and will be 3 ray points except for the first and last image on each strip. Appropriate XY&Z weight factors to the control points will be established based on mapping scale requirements.

Prior to commencement of photogrammetric map compilation, a Certified Photogrammetrist will study and approve the aero-triangulation results; a signed and sealed certification shall accompany the report if desired.

Accuracy

The accuracy analysis of Aerial LiDAR point cloud data shall conform to the NSSDA requirements for geospatial data classification as published by the FGDC in document FGDC-STD-007.3-1998 titled Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy.

A minimum of 20 independent horizontal and vertical check points should be tested, distributed to reflect the geographic area of interest and the distribution of error in the data sets. The surveyed project validation points will serve as the required horizontal and vertical check points. The resulting comparisons shall meet or surpass the positional accuracy requirements for the survey at the 95% confidence level based on the NSSDA and shall be included in the Survey Report.

GPI Geospatial, Inc. shall use the “compiled to meet” statement when the above guidelines for testing by an independent source of higher accuracy cannot be followed and an alternative means is used to evaluate accuracy.

Feature Extraction

GPI Geospatial uses DATEM, MicroStation, TopoDOT, LP360, Global Mapper, ArcGIS, Terra Solid, VrOne, and VrTwo for breakline collection and planimetric mapping. We will extract planimetric and topographic features from the triangulated imagery dataset using our extraction software. Detailed 3D lines and features will be extracted to allow the creation of topographic/planimetric surveys and accurate digital terrain models. Georeferenced imagery or stereo models will be used in the planimetric mapping. This mapping will included the pavement markings for runways, taxiways, ramps and all aircraft movement areas. Roadway striping or auto parking striping will not be shown.

ORTHOPHOTOGRAPHY

Using the Exterior Orientations from the triangulation and the surface model, GPI Geospatial shall perform a rigorous ortho rectification of all imagery. The high quality orthophotos shall

have a constant scale, and all man-made 3D objects shall be presented in their true locations at the ground without disturbing relief displacements. All orthos shall be processed to produce the client's specified pixel resolution, file format, and tiling scheme. GPI Geospatial shall use our Trimble Inpho OrthoVista to bring it all together in a seamless homogeneous mosaics. OrthoVista is a powerful professional mosaicking software that utilizes advanced imaging techniques to automatically adjust and compensate intensity and color variations, it also computes radiometric adjustments such as hot spots and lens vignetting on the entire block to match the color and brightness of adjacent images.

DELIVERABLES

Acquisition:

- Flight Plans
- Flight Report included in final project Report

Mapping Control:

- ASCII file
- Photos of control points

Aerial Triangulation:

- AT Report included in project report

Orthophotography:

- Resolution [0.25']
- [3] band
- 8 bit
- File Format: [TIFF, SID
- Overviews
- Sheet layout in CAD

Mapping:

- 2D and 3D Planimetric and Topographic mapping at 50 scale
- 3D elevations on elevated features within the topographic mapping area. Highest points on buildings will be located. Top elevations of trees are included within the mapping area. Large groups of trees may be identified together where individual trees cannot be located and the highest point within each 100 foot grid will be shown.
- File Format: [DWG, DGN]
- DTM format: [DWG, DGN]
- ASCII

Reports:

- Signed and Sealed Project Report

EXCLUSIONS

- FAA AGIS reporting or delivery
- Tree surveys (size, type, etc.)
- Obscured area survey
- Drainage surveys (pipe size, material, invert, etc.)
- Subsurface utilities
- File or data merging
- No boundary, property or right-of-Way determination
- Field reviews
- Sign identification
- Paint lines outside of the runway and taxiway areas
- Parking Stripes outside of the aircraft parking markings

SCHEDULE

Imagery

It is anticipated this project will require approximately 8 weeks to complete from Notice to Proceed (NTP) date. Weather and other factors such as access and flight restrictions may impact the schedule. A final schedule will be provided at NTP.

FEES

Field Control Surveys

Lump Sum (Total Fee) $9,500.00

Aerial Imagery

Lump Sum (Total Fee) $4,500.00

3D Planimetric / Topographic Mapping

Lump Sum (Total Fee) $16,125.00

Orthophotography

Lump Sum (Total Fee) $5,000.00

Total Project Fees

Lump Sum (Total Fee) $35,125.00

Notes:

This proposal can be individually modified to meet your requirements, upon request.

All geospatial tasks will be performed in accordance with the current Standards of Practice for Surveying and Mapping in the State of Georgia.

CONTRACT TERMS

Time for Acceptance

This proposal may be accepted only if it is signed and received by GPI Geospatial within ninety (90) days from the date of the proposal.

Good afternoon Mr. Johnson

Scope of Services to be provided by Folsom Surveying LLC:
1-Perform a boundary retracement survey of the entire boundary of the Cook Co Airport property consisting of
approximately 381 +/- acres according to the current tax records for Cook County and prepare a plat/map of survey suitable for recording in the public records of Cook County.
The survey will be made in accordance with the Minimum Technical Standards For Property Surveys in Georgia as set forth in The Rules and Regulations of the Georgia Board of Registration for Professional Engineers and Land Surveyors and as set forth in O.C.G.A. Section 15-6-7.
This survey will be made in NAD83 Ga. West Zone SPG.
The distances will be reported in ground distance as required by O.C.G.A. and not grid distance.

2-Prepare an Exhibit "A" Property inventory map of the Cook County Airport property as per the ARP SOP 3.00 Checklist provided in your email dated 03 May 2019 using the last Exhibit "A" property inventory map dated Feb. 2003 as an example of the finished product.
As per our conversation on Friday 10 May, your office will provide the line work for the planimetric features to be shown on the Exhibit "A" inventory map.

3. Prepare metes and bounds legal descriptions of each individual tract owned by the Cook County Airport Authority.

My fee for the work described above will $13,370. (Thirteen thousand three hundred and seventy dollars)

Thank you for your consideration

Stan Folsom

R. Stan Folsom GA RLS #2284
Owner/Licensed Land Surveyor
Folsom Surveying LLC
1309 Edgewood Drive
Valdosta GA 31601
Office (229) 244-2920
folsom22@bellsouth.net

Exhibit 1
(Cook County) Airport Layout Plan Update
Cost Summary

LABOR COST

ELEMENT 1A: NARRATIVE REPORT		
	Labor Subtotal	**$30,582.55**
	TOTAL (Lump Sum)	**$30,582.55**
ELEMENT 1B: AIRPORT LAYOUT PLANS		
	Labor Subtotal	**$29,533.82**
	Surveying and Mapping	**$35,125.00**
	Airport Property Map/Exhibit A	**$13,370.00**
	TOTAL (Lump Sum)	**$78,028.82**
ELEMENT 2: PROJECT DOCUMENTATION		
	Labor Subtotal	**$1,697.42**
	Final Document QA/QC and FAA Checklist	**$5,000.00**
	Direct Expense	**$1,228.70**
	TOTAL (Lump Sum)	**$7,926.12**
ELEMENT 3: MEETINGS AND COORDINATION AND DELIVERABLES		
	Labor Subtotal	**$7,523.58**
	Direct Expense	**$947.20**
	TOTAL (Lump Sum)	**$8,470.78**
	TOTAL LABOR COST	**125,008.27**
	SAY	***$125,000***

YEAR 2019

BILLING HOURLY RATES Positions		PROFIT %	OVERHEAD %	LABOR
Principal	$269.22	15.00%	164.52%	$ 88.50
Program Manager	$0.00	15.00%	164.52%	
Project Manager	$220.54	15.00%	164.52%	$ 72.50
Senior Engineer	$171.11	15.00%	164.52%	$ 56.25
Mid Level Engineer	$132.33	15.00%	164.52%	$ 43.50
Junior Engineer	$82.13	15.00%	164.52%	$ 27.00
Senior Planner	$146.78	15.00%	164.52%	$ 48.25
Mid Level Planner	$123.20	15.00%	164.52%	$ 40.50
Junior Planner	$82.13	15.00%	164.52%	$ 27.00
Environmental Manager	$0.00	15.00%	164.52%	
Environmental Planner	$93.54	15.00%	164.52%	$ 30.75
Construction Inspector	$0.00	15.00%	164.52%	
Sr. CADD Tech	$0.00	15.00%	164.52%	
Jr. CADD Tech	$0.00	15.00%	164.52%	
Contract Administrator	$0.00	15.00%	164.52%	
Clerical	$67.32	15.00%	164.52%	$ 22.13

NOTE:
Insert labor, audited overhead and profit.
Spreadsheet will calculate billing rate.

NARRATIVE REPORT

Element 1A: Preparation of Narrative Report Chapters IFE From Passero for Cook County ALP Man Hours	Hourly Breakdown														Total Man Hours	Labor Cost
	Principal	Program Manager	Project Manager	Senior Engineer	Mid Level Engineer	Junior Engineer	Senior Planner	Mid Level Planner	Junior Planner	Environmental Manager	Admin.	Construction Inspector	Sr. CADD Tech	Jr. CADD Tech		
	269.22	0.00	220.54	171.11	132.33	82.13	146.78	123.20	82.13	0.00	93.54	0.00	0.00	0.00		
Introduction								6	6						12	$ 1,232.00
Inventory of Existing Conditions								20	5						25	$ 2,874.67
Forecasts of Aviation Activity			1				2	40							43	$ 5,442.10
Facility Requirements								60							60	$ 7,392.01
Alternative Analysis			1				2	20	40						63	$ 6,263.44
Implementation Plan								10	20						30	$ 2,874.67
Capital Improvement Plan			1				4	10	30						45	$ 4,503.65
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
															0	$ -
Coordination and Admin. For subconsultant (no hours, percentage)																$ -
LABOR TOTAL	0	0	3	0	0	0	8	166	101	0	0	0	0	0	278	$ 30,582.55

AIRPORT LAYOUT PLANS

Element 1B: Preparation of the Airport Layout Plan (ALP) Drawing Set IFE From Passero for Cook County ALP Man Hours	*Hourly Breakdown*														*Total Man Hours*	*Labor Cost*
	Principal	*Program Manager*	*Project Manager*	*Senior Engineer*	*Mid Level Engineer*	*Junior Engineer*	*Senior Planner*	*Mid Level Planner*	*Junior Planner*	*Environmental Manager*	*Admin.*	*Construction Inspector*	*Sr. CADD Tech*	*Jr. CADD Tech*		
	269.2152	*0*	*220.5436*	*171.1114*	*132.3261*	*82.1335*	*146.776*	*123.20019*	*82.13346*	*0*	*93.541*	*0*	*0*	*0*		
Title Sheet								*6*	*6*						*12*	*$ 1,232.00*
Airport Data Sheet			*1*				*1*	*10*	*20*						*32*	*$ 3,241.99*
Airport Layout Drawing			*1*				*1*	*10*	*60*						*72*	*$ 6,527.33*
Airport Airspace Drawing			*1*				*1*	*10*	*50*						*62*	*$ 5,705.99*
Inner Portion of the Approach Surface Drawing			*1*				*1*	*10*	*50*						*62*	*$ 5,705.99*
Runway Departure Surface Drawing			*1*				*1*	*10*	*20*						*32*	*$ 3,241.99*
Terminal Area Plan Drawing			*1*				*1*	*10*	*20*						*32*	*$ 3,241.99*
Airport Property Map/Exhibit A	*1*		*1*				*1*								*3*	*$ 636.53*
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
GPI Geospatial, Inc: Surveying and Mapping (Including Coordination and Admin.)															*0*	*$ 35,125.00*
Folsom Surveying, Inc: Airport Property Map/Exhibit A (Including Coordination and Admin.)															*0*	*$ 13,370.00*
Coordination and Admin. For subconsultant (no hours, percentage)																
LABOR TOTAL	*1*	*0*	*7*	*0*	*0*	*0*	*7*	*66*	*226*	*0*	*0*	*0*	*0*	*0*	*307*	*$ 78,028.82*

PROJECT DOCUMENTATION

Element 2: Project Documentation *IFE From Passero for Cook County ALP Man Hours*	*Hourly Breakdown*														*Total Man Hours*	*Labor Cost*
	Principal	*Program Manager*	*Project Manager*	*Senior Engineer*	*Mid Level Engineer*	*Junior Engineer*	*Senior Planner*	*Mid Level Planner*	*Junior Planner*	*Environmental Manager*	*Admin.*	*Construction Inspector*	*Sr. CADD Tech*	*Jr. CADD Tech*		
	269.21523	*0*	*220.54355*	*171.1114*	*132.3261*	*82.1335*	*146.776*	*123.20019*	*82.13346*	*0*	*93.541*	*0*	*0*	*0*		
Initial Hard Copy Draft Preparation and Submital of Narrative Report and ALP to the Department for Review								*1*			*4*				*5*	*$ 497.36*
FAA Circularization Hard Copy Draft Preparation and Submittal of the ALP and Final Copy Narrative Report								*1*			*4*				*5*	*$ 497.36*
Final Hard Copy Draft Preparation and Submittal of the ALP for Department Conditional Approval								*1*			*4*				*5*	*$ 497.36*
Submittal of AutoCAD files in 2010 DWG format to the Department and Airport Sponsor								*1*	*1*						*2*	*$ 205.33*
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
Maesawyr: FAA Checklist Completion and Narrative Report QA/QC (Coordination and Admin. Included)															*0*	*$ 5,000.00*
Coordination and Admin. For subconsultant (no hours, percentage)																
LABOR TOTAL	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*4*	*1*	*0*	*12*	*0*	*0*	*0*	*17*	*$ 6,697.42*

Direct Expenses: **$1,228.70**

Eliment 2 - Mailing Expenses	Number of Boxes/ Tubes	2019 FedEx One Rate	Cost
ALP and Narrative Report (PDF on USB) Initial Draft Submittal	*1*	*$87.40*	*$87.40*
ALP Submittal for FAA Circularization and Narrative Report (PDF on USB) for FAA Circularization	*1*	*$87.40*	*$87.40*
Five Copies Locally Approved ALP Drawing set for Conditional Approval	*2*	*$87.40*	*$174.80*
Five Copies of Final ALP Narrative Report	*2*	*$64.55*	*$129.10*
Total Travel Expenses			*$478.70*

Element 2 - Production Expenses	Number of Reports	Cost
Final Narrative Report with Spiral Binding	*5*	*$500.00*
Misc. Expenses		*$250.00*
		$750.00

MEETINGS AND COORDINATION AND DELIVERABLES																
Element 3: Meetings and Coordination IFE From Passero for Cook County ALP Man Hours	*Hourly Breakdown*														*Total Man Hours*	*Labor Cost*
	Principal	*Program Manager*	*Project Manager*	*Senior Engineer*	*Mid Level Engineer*	*Junior Engineer*	*Senior Planner*	*Mid Level Planner*	*Junior Planner*	*Environmental Manager*	*Admin.*	*Construction Inspector*	*Sr. CADD Tech*	*Jr. CADD Tech*		
	269.21523	*0*	*220.5436*	*171.1114*	*132.3261*	*82.1335*	*146.776*	*123.20019*	*82.13346*	*0*	*93.541*	*0*	*0*	*0*		
Meeting 1 - ALP Kickoff Meeting			*4*					*5*			*4*				*13*	*$ 1,872.34*
Meeting 2 - Working Paper 1			*4*					*4*			*4*				*12*	*$ 1,749.14*
Meeting 3 - Working Paper 2			*4*					*4*			*4*				*12*	*$ 1,749.14*
Meeting 4 - Public Information Workshop			*4*					*5*			*7*				*16*	*$ 2,152.96*
Use below if subconcultant preforms this task and not above																
Subconsultant's Rates ----->																
															0	*$ -*
Coordination and Admin. For subconsultant (no hours, percentage)																*$ -*
LABOR TOTAL	*0*	*0*	*16*	*0*	*0*	*0*	*0*	*18*	*0*	*0*	*19*	*0*	*0*	*0*	*53*	*$ 7,523.58*

Direct Expenses: **$947.20**

Eliment 3 - Travel Expenses	Mileage (Roundtrip)	2019 IRS Rate	Cost
Meeting 1 - ALP Kickoff Meeting	*360*	*$0.58*	*$208.80*
Meeting 2 - Working Paper 1	*360*	*$0.58*	*$208.80*
Meeting 3 - Working Paper 2	*360*	*$0.58*	*$208.80*
Meeting 4 - Public Information Workshop	*360*	*$0.58*	*$208.80*
Total Travel Expenses			*$835.20*

Element 3 - Per Diem	Number of Lunches	GSA 2019 Per Diem Rate	Cost
Lunch for Meeting 1	*2*	*$14.00*	*$28.00*
Lunch for Meeting 2	*2*	*$14.00*	*$28.00*
Lunch for Meeting 3	*2*	*$14.00*	*$28.00*
Lunch for Meeting 4	*2*	*$14.00*	*$28.00*
Total Per Diem Expenses			*$112.00*