

AMENDMENT NO. 1

to Task Order One: Runway 14 and Runway 32 Airspace Analysis

DATE: February 21, 2020

CROY PROJECT #: 2106.001

CHANGES TO TASK ORDER NO. ONE WITH THIS AMENDMENT

Scope of Services

The work shall be amended to include the following:

Introduction – This scope of services identifies requisite elements necessary to conduct a LiDAR obstruction survey, a limited airspace analysis study, land acquisition plan, and runway geotech for the Dalton Municipal Airport.

Element 1 – Project Formulation and Coordination shall include the preparation of work scope, fees, client meeting, and coordination with regulatory agencies.

Element 2 – LiDAR Obstruction Survey, Limited Airspace Obstruction Analysis, and Land Acquisition Plan

Element 3 – Runway Geotechnical Services

LiDAR Obstruction Survey

High resolution (10 ppsm or greater) Lidar data will be acquired for this project. The aerial survey and vegetation analysis will cover the Dalton Municipal Airport (DNN). Specifically the area to be covered is 10,000 ft in length and 3,400 ft wide beginning 500 prior to the runway end. Reports will be generated for Part 77, Departure, TERPS, GQS, and State Approach surfaces on each runway end. From the 10 pulse per square meter (ppsm) lidar data, the following will be produced:

- Custom Vegetation Obstruction Data Reports including location, height, distance above each obstructed surface, and land parcel data.
 - Google Earth .KML file with attributed obstruction data for easy access and navigation
- Introduction.

All LiDAR derived classified point clouds meet or exceed Lidar Base Specifications Version 1.0 (USGS, 2012), Guidelines for Digital Elevation Data (NDEP, 2004), and LAS Specification v1.2 (ASPRS, 2009).

The following deliverables shall be produced:

- Summary Table of Contents: An excel table including airport and runway details names, .jpg of airport extent, parcels and obstruction page number location
- Summary Table including: An excel table of all obstructions points, airport name & location, runway names and details.
- Parcel Report Booklet: 1 PDF format 11x17 per parcel including, airport name/location, obstructions found, individual parcel data, obstruction surface polygons, imagery of obstruction surfaces extent, plan imagery, above surface obstructions, near surface obstructions
- Google Earth .KML including attributed obstructions and parcels with links to parcel reports

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All digital files will be delivered via FTP or external hard drive.

Time spent coordinating with the LiDAR obstruction survey sub consultant is included in this element. Consultant shall provide ground survey support to the sub consultant including the following tasks:

- NGS monument(s) will be survey controlled - if present at airport. (field)
- Ground control points (12-14 points) provided by sub consultant will be survey controlled. (field)
- Both end of runways/thresholds will be survey controlled. (field)
- Survey data will be processed and passed on to sub consultant (office)

Limited Airspace Analysis and Land Acquisition Plan

The airspace obstruction analysis includes the time spent coordinating with GDOT and the client in determining the obstructions to be removed and the parcels to be acquired (easement versus fee) if any. This element also includes the development of up to two (2) drawings supporting the discussion and coordination. Approach surfaces to be analyzed include FAR PART 77, TERPS for Runways 14 and 32 (including Threshold Siting and Vertical Guidance Surface), and the state approach surface. Data to be analyzed consists of obstruction data provided by the FAA, 2018 aeronautical survey data, and 2020 LiDAR survey data. A land acquisition phasing plan shall be produced that will prioritize land acquisition efforts based on the severity of obstructions on each parcel. The plan shall consider estimated cost and anticipated funding levels to provide a plan and estimated timeline for acquiring and clearing parcels with obstructions. Parcels with obstructions to the threshold siting surface shall be considered the highest priority for acquisition and clearing.

Runway Geotechnical Services

This element includes a pavement evaluation of the existing runway. A pavement distress survey of the existing pavements shall first be performed. The survey will include observing the pavement surface to identify general areas of distress. Observed distressed areas shall be logged on a site plan. After the distress survey is completed, asphalt coring will be performed to measure existing pavement section as well as the consistency of the underlying subgrade materials. The exploration will include 10 core holes spaced across the existing pavement sections. A subconsultant representative will locate the coreholes in distressed and non-distressed areas. A The subconsultant will perform dynamic cone penetrometer testing below the base stone at each corehole to evaluate the consistency of the subgrade materials to estimate CBR values of the subgrade using existing correlations. The resulting voids in the pavements will be backfilled with base stone, commercially-purchased gravel and capped with hand-compacted, bituminous cold patch material or fast-setting concrete patch – whichever the airport prefers.

An evaluation report will be produced to address but will not be necessarily limited to, the following issues:

- Discussions of the exploration and testing programs;
- A general description of each designated area including types, sizes and/or severity of defects;
- A summary of the thin wall coring results including thickness data for total section, asphalt, and base stone components, as well as photographs for each core;
- Recommendations for subgrade remediation, if necessary; and
- Recommendations for pavement rehabilitation methods.

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Project Schedule

Task	Date
Geotechnical Report	2 Weeks After NTP
LiDAR Aerial Survey	Spring
LiDAR Deliverables to Consultant	60 Days
Draft Obstruction Analysis Exhibit(s)/Acquisition Plan	2 Weeks
Comments from Airport	1 Week
Revised Obstruction Analysis Exhibit(s)/Acquisition Plan to GDOT	1 Week
Comments from GDOT	2 Weeks
Final Deliverables	2 Weeks

Components and preparation for the drawings shall adhere to FAA Advisory Circular (AC) 150/5300-13A (latest change), *Airport Design*, and other applicable FAA Orders, Federal Aviation Regulations (FAR) and ACs.

Description for necessity.

Compensation

The compensation shall be amended to include the following. The amended fees are as shown below:

Element 1 – Project Formulation	\$ 3,251
Element 2 – LiDAR Survey, Obstruction Analysis, and Land Acquisition Plan	\$30,940
Element 3 – Runway Geotechnical Services	\$ 4,599
<u>TOTAL AMENDED FEE, DESIGN PHASE</u>	<u>\$38,790</u>

IN WITNESS WHEREOF the parties hereto have made and executed this Task Order Amendment.

OWNER:

CITY OF DALTON

ANDREW WIERSMA
Airport Manager

ATTEST:

ENGINEER:

CROY ENGINEERING, LLC

GREGORY D. TEAGUE, P.E.
President

ATTEST:

RUSSELL D. MOOREHEAD, P.E.
Vice President