

NEW BUSINESS



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DLH

MEMORANDUM

TO: Tom Werner

FROM: Kaci Nowicki

DATE: June 11, 2019

RE: DLH FAR Part 150 Noise Compatibility Study Scope and Fee Proposal

We are pleased to provide you with the attached Work Order for a FAR Part 150 Noise Compatibility Study for the Duluth International Airport (DLH). The attached Work Order reflects the detailed scope of services we developed in scoping meetings with DAA staff, SEH, and Landrum & Brown during the months of February through May 2019. The attached proposals also reflect the feedback received from FAA as a result of their review of the detailed scope, as well as during our DAA-FAA-SEH scoping meeting and follow-up emails.

FAR Part 150 Noise Compatibility Study

This project will prepare new Noise Exposure Maps and Noise compatibility Program for DLH. The previous Part 150 Study was completed in 1997. This project is being completed concurrently with the Master Plan and will include coordination between the two projects. This scope has been reviewed and approved by the FAA Dakota-Minnesota Airport District Office (ADO).

Scope Summary

The following is a summary of major scope items:

1. **Project initiation, coordination and administration**
2. **Part 150 Noise Compatibility Study Update**
 - a. **Identification of affected environment**
 - b. **Conversion of Master Plan Forecasts**
 - c. **Noise Monitoring**
 - d. **Existing Noise Exposure Map**
 - e. **Future Noise Exposure Map**
 - f. **Noise Abatement Alternatives**
 - g. **Land Use Alternatives**
 - h. **Noise Compatibility Program update**
3. **Grant Closeout Report**
4. **Optional Tasks**
 - a. **Additional Public Outreach**
 - b. **Supplemental Noise Metrics**

Budget Summary

The following summarizes the budget for the Part 150 Study Work Order. The project is 100% eligible for FAA funding. The anticipated cost shares for the project are also summarized below.

Engineers | Architects | Planners | Scientists

Short Elliott Hendrickson Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110-5196

SEH is 100% employee-owned | sehinc.com | 651.490.2000 | 800.325.2055 | 888.908.8166 fax

Total Project Cost:	\$791,400
FAA Share (80%):	\$633,120
MnDOT Share (10%):	\$79,140
DAA Share (10%):	\$79,140

In compliance with FAA Advisory Circular (AC) 150/5100-14E - Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects, an independent fee evaluation (IFE) is required for work orders that exceed \$100,000. According to the AC, a general review standard used within the FAA and industry is whether the total fee proposal is within 10% of the IFE. We understand that this process was completed by the DAA, and the proposed costs are within the acceptable range from the IFE.

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Attachments
document2

DLH Master Plan, ALP Exhibit A Update
IFE Review Summary
As of 1APR19

Part 150 Noise Study	S E H	Mead & Hunt	
	\$791,400	\$1,053,500	
	<hr/>		
	\$791,400	\$1,053,500	% -/+ - 33.12%

*The independent fee review indicates that the fee for services is a value at 33.12% below the reviewer's estimate.

Prepared By:  Date: 11 June, 2019

Duluth International Airport
Independent Fee Estimate for Part 150 Noise Compatibility Study Update

Landrum & Brown

Assumption 1: Many of the provided titles in the spreadsheet do not exist in our company. Therefore, those responsibilities were allocated to other positions.

Task 4.2: Development of Current Conditions Noise Exposure Map Contours

- Assumption of up to two sets of revisions

Task 5.2: Development of 2025 Future Noise Exposure Contours

- Assumption of up to two sets of revisions

Task 9.2: Advisory Committee Meetings

- Assumption of 3 people for two nights (overlaps with Public Workshops)

Task 9.4: Public Information Meetings

- Assumption of 3 people for two nights (overlaps with Advisory Committee Meetings)

Task 9.5: Public Hearings/Comment Collection

- Held concurrent with Public Information Meeting/Advisory Committee Meeting trip

Task 9.6: Comment Responses

- Assumption of up to two sets of revisions

Task 10.3: Draft Report

- Assumption of up to two sets of revisions

Task 10.4: Final Report

- Assumption of one set of revisions

Task S2.1: Supplemental Noise Metrics

- Without specific information on which (how many) supplemental metrics, how many associated graphics or boards would be produced, estimation is difficult to develop.

SEH

Assumption 1: Many of the provided titles in the spreadsheet do not exist in our company. Therefore, those responsibilities were allocated to other positions.

Assumption 2: Used loaded rates for positions, therefore deleted Overhead and Additional Fee.

ATTACHMENT B
Indepent Fee Estimate
 FAR Part 150 Noise Compatibility Study Update
 DULUTH INTERNATIONAL AIRPORT (DLH)
 Duluth Airport Authority (DAA)
 Duluth, Minnesota

Task No.	Task Description	Principal	Project Manager/Sr. Planner	Planner	Graduate Planner	FAA Doc. Specialist	Admin Technician
		\$210	\$173	\$139	\$156		\$75
Project Initiation, Coordination and Administration							
1.1	Project Scoping and Contract Development	12	24		6		8
1.2	Project Administration and Management Services	24	48		12		16
1.3	Quality Assurance and Control	24	40		60		60
1.4	Meetings	32	60		40		10
1.5	Subcontractor Coordination	20	60				
Task Total		\$23,520.00	\$40,136.00	\$0.00	\$18,408.00	\$0.00	\$7,050.00
Exhibit A Property Map							
2.1	Affected Environment	4	8		10		14
2.2	Forecasts	4	8		10		14
2.3	Noise Monitoring	4	8		10		14
2.4	Existing Noise Exposure Map	4	8		10		14
2.5	Future Noise Exposure Map	4	8		10		14
2.6	Noise Abatement Alternatives	4	8		10		14
2.7	Land Use Alternatives	4	8		10		14
2.8	Noise Compatibility Program	4	8		10		14
Task Total		\$4,200.00	\$11,072.00	\$0.00	\$12,480.00	\$0.00	\$8,400.00
FAA Closeout Report							
3.1	FAA Closeout report		10				
Task Total		\$0.00	\$1,730.00	\$0.00	\$0.00	\$0.00	\$0.00
Optional Tasks							
4.1	Additional Public Outreach	20	24				
5.1	Supplemental Noise Metrics		10		8		
Task Total		\$4,200.00	\$5,882.00	\$0.00	\$1,248.00	\$0.00	\$0.00
Total hours per labor category		164	340	0	206	0	206

ESTIMATE OF LABOR COSTS:

Labor Category	Hours	Rate	Extension
Principal	164	\$210.00	\$34,440.00
Project Manager/Sr. Planner	340	\$173.00	\$58,820.00
Planner	0	\$139.00	\$0.00
Graduate Planner	206	\$156.00	\$32,136.00
FAA Doc. Specialist	0		\$0.00
Admin Technician	206	\$75.00	\$15,450.00
Total Direct Labor Costs:		916	\$140,846.00
Direct Salary Costs plus Overhead (66.03%)			
Total Labor Costs			\$140,846.00

Fee (15%) on Total Labor Costs:

ESTIMATE OF EXPENSES:

Direct Expenses	Quantity	Rate	Extension
Subconsultant - L&B - Base Scope	1	\$771,375.00	\$771,375.00
Subconsultant - L&B - Optional (Supplemental) Tasks	1	\$136,843.00	\$136,843.00
Equipment usage	916.0	\$3.00	\$2,748.00
Mileage (10 trips to DLH)	2940	\$0.58	\$1,705.20
Total Expenses			\$912,671.20

SUMMARY:

Total Labor Costs + Expenses + Fee	\$1,053,517.20
Estimated Total	\$1,053,500.00

WORK ORDER
No. 2019-3
Between

**The Duluth Airport Authority (DAA) (Owner) and
Short Elliott Hendrickson Inc. (SEH) (Consultant)**

Dated: June 18, 2019

**FAR PART 150 NOISE COMPATIBILITY STUDY UPDATE
DULUTH INTERNATIONAL AIRPORT (DLH)**

This work order includes preparation of an FAR Part 150 Noise Compatibility Study Update for the Duluth International Airport (DLH). The contract provisions included in the Master Agreement (dated 11-20-18) between the DAA and SEH remain in effect for this work order.

Estimated start date is June 18, 2019; estimated end date is June 18, 2021.

Compensation by the Owner to the Consultant shall be a lump sum amount of \$791,400

A description of the services to be provided is included in Attachments A.

A detailed estimate of labor cost and expenses is included in Attachment B.

Point of Contact: Kaci Nowicki

APPROVED:

Duluth Airport Authority (DAA)

Short Elliott Hendrickson Inc.

Title: _____

Title: _____

Date: _____

Date: _____

Title: _____

Date: _____

Attachment A
Duluth International Airport (DLH)
FAR Part 150 Noise Compatibility Study Update
Scope of Work
May 10, 2019

The Duluth Airport Authority (DAA) desires to complete a FAR Part 150 Noise Compatibility Study Update for the Duluth International Airport (DLH). The previous Part 150 Study included a Noise Exposure Map and Noise Compatibility Study and was completed in 1997. This study is being completed in the same general timeframe as an Airport Master Plan Update. Where possible, data sharing and coordinating public outreach will occur between the two projects.

Project Deliverables – The project deliverables of this scope include the following:

1. FAR Part 150 Report including final Noise Exposure Map (NEM) and Noise Compatibility Program (NCP)
2. Closeout Report

Study Element 1: Project Initiation, Coordination and Administration

Task 1.1 – Project Scoping and Contract Development – Short Elliott Hendrickson (SEH and/or Consultant) will coordinate with the DAA to develop the appropriate work scope, define tasks, lines of communication and establish project goals, objectives or areas of interest. Project fees will be prepared using the final Scope of Work. This task includes project scoping meetings with DAA and FAA and MnDOT Aeronautics. An agreement will be developed from the final Scope of Work and approved fees. The agreement will be provided to the FAA and MnDOT for review and approval prior to a contract being executed. This task also includes time to coordinate scopes of services with subconsultants (Landrum & Brown (L&B)) and development of subconsultant contracts.

Task 1.2 – Project Administration and Management – SEH will provide project administration and management services as required to complete the project within the conditions of this agreement. Administration and management duties include project setup, monthly invoicing and preparation of a budget and schedule. SEH will attend (in person or via conference call) monthly project updates. These monthly updates will be led by L&B. Additionally, SEH will coordinate monthly progress submittals, prepared by L&B, to DAA.

This task includes time to prepare and submit FAA Quarterly Reports.

Task 1.3 – Quality Assurance and Control – SEH will implement and carry-out internal quality control for the project. Peer review will be conducted at each phase of the project to check content and product quality. Throughout the project, SEH will be responsible for draft and final proof-reading, final word processing, editing, graphics, reports and other products included in this Scope of Work.

Task 1.4 – Meetings – SEH will assist L&B in establishing an advisory committee for the study. SEH will attend up to three (3) advisory committee meetings. SEH will attend special presentations and/or focus groups throughout the project, one (1) is anticipated. Additionally, up to three (3) open houses are anticipated in the project. SEH will attend and assist L&B and DAA staff in preparing for the Open Houses. SEH will attend and assist L&B in preparing for the Public Hearing. For all meetings, meeting minutes and summaries will be prepared by L&B.

Task 1.5 – Subcontractor Coordination – SEH will assist in scheduling, coordination, and providing review and comment on subcontractor deliverables, including subcontracts, reports and data.

Deliverable: Project scope, agreement, budget, schedule, monthly progress reports and meetings.

Study Element 2: Part 150 Noise Compatibility Study Update

Task 2.1 Affected Environment - L&B will collect information for this task as outlined in the attached L&B scope of work. SEH will coordinate with L&B throughout this task to share data collected as part of the Master Plan. SEH will assist L&B by providing airfield facilities data as well as information on any affected environment data available from the Master Plan effort.

Task 2.2 Forecasts - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task.

Task 2.3 Noise Monitoring - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task.

Task 2.4 Existing Noise Exposure Map - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Task 2.5 Future Noise Exposure Map - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Task 2.6 Noise Abatement Alternatives - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Task 2.7 Land Use Alternatives - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Task 2.8 Noise Compatibility Program - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Study Element 3: FAA Closeout Report

Task 3.1 Grant Closeout Report - A grant closeout report will be completed as part of this scope of work. The grant closeout report will also include other projects included in the FAA grant.

Study Element 4: Optional Tasks

The following tasks will be included in the final scope of work and budget but will be authorized individually by the DAA. If not authorized by the DAA in writing, work will not proceed and the DAA will not be billed for these items. These tasks will be included in the FAA grant but will be change ordered out of the project and grant at closeout if not completed.

Task 4.1 Additional Public Outreach - L&B will collect information for this task as outlined in the attached L&B scope of work. SEH will attend any additional public outreach completed as part of this task.

Task 4.2 Supplemental Noise Metrics - L&B will collect information for this task as outlined in the attached L&B scope of work.

ATTACHMENT B
FAR Part 150 Noise Compatibility Study Update
DULUTH INTERNATIONAL AIRPORT (DLH)
Duluth Airport Authority (DAA)
Duluth, Minnesota

Task No.	Task Description	Principal	Project Manager/Sr. Planner	Planner	Graduate Planner	FAA Doc. Specialist	Admin Technician
Project Initiation, Coordination and Administration							
1.1	Project Scoping and Contract Development	1	8			1	1
1.2	Project Administration and Management Services	1	36			4.5	
1.3	Quality Assurance and Control	2	16				
1.4	Meetings		64				
1.5	Subcontractor Coordination		72				
Task Total		\$39,805.90					

Exhibit A Property Map							
2.1	Affected Environment		4		8		
2.2	Forecasts		2		2		
2.3	Noise Monitoring		2				
2.4	Existing Noise Exposure Map		4				
2.5	Future Noise Exposure Map		4				
2.6	Noise Abatement Alternatives		4		4		
2.7	Land Use Alternatives		4		4		
2.8	Noise Compatibility Program		4		4		
Task Total		\$7,541.29					

FAA Closeout Report							
3.1	FAA Closeout report					20	
Task Total		\$3,097.28					

Optional Tasks							
4.1	Additional Public Outreach		20				
5.1	Supplemental Noise Metrics		8				
Task Total		\$5,429.24					

Total hours per labor category		4	252	0	22	25.5	1
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ESTIMATE OF LABOR COSTS:

Labor Category	Hours	Rate	Extension
Principal	4	\$71.03	\$284.12
Project Manager/Sr. Planner	252	\$63.38	\$15,971.76
Planner	0	\$41.10	\$0.00
Graduate Planner	22	\$31.38	\$690.36
FAA Doc. Specialist	25.5	\$50.62	\$1,290.81
Admin Technician	1	\$26.24	\$26.24
Total Direct Labor Costs:	304.5		\$18,263.29
Direct Salary Costs plus Overhead (66.03%)			\$30,322.54
Total Labor Costs			\$48,585.83
Fee (15%) on Total Labor Costs:			\$7,287.87

ESTIMATE OF EXPENSES:

Direct Expenses	Quantity	Rate	Extension
Subconsultant - L&B - Base Scope	1	\$640,300.00	\$640,300.00
Subconsultant - L&B - Optional (Supplemental) Task:	1	\$92,640.00	\$92,640.00
Equipment usage	304.5	\$3.00	\$913.50
Mileage (10 trips to DLH)	2940	\$0.58	\$1,705.20
Total Expenses			\$735,558.70

SUMMARY:

Total Labor Costs + Expenses + Fee	\$791,432.40
Estimated Total	\$791,400.00

Note: \$98,069 of the Estimated Total is for Optional Tasks which will only be executed if and when directed by DAA.

DRAFT SCOPE OF WORK

The following presents Landrum & Brown's (L&B) scope of work for a Federal Aviation Regulation (FAR) Part 150 Noise Compatibility Study Update (Part 150 Study Update) at Duluth International Airport (DLH) for the Duluth Airport Authority (DAA). This scope of work has been tailored to the specific issues and concerns at DLH. It is understood that a Master Plan Update will be prepared in the same general timeframe. There will be opportunities for sharing data and coordinating public outreach. These points will be highlighted in the scope.

TASK 1: AFFECTED ENVIRONMENT

Subtask 1.1: Existing Airfield Facilities and Operations

Description: The physical airfield facilities at DLH will be inventoried and updated through document reviews.

Current operations data will be collected from the Official Airline Guide (OAG) data, Airport Traffic Control Tower (ATCT) statistics, airline landing fee reports, FBO operational reports, and any airport operation database that DAA may maintain. This information will include existing and recent historical records of operations by aircraft type, time of day, aircraft weight and engine type (where available), and based aircraft ownership. Departure and arrival procedures by the principal contributors to the noise environment will be reviewed and updated, if necessary, for inclusion in the noise evaluation process.

Additional ongoing studies that provide information regarding updates to current facilities and operational characteristics of DLH will also be reviewed as part of this subtask.

Deliverables: Input to later tasks and working papers.

Subtask 1.2: Future Airfield Facilities and Operating Procedures

Description: Through consultation with the DLH staff, any changes to operating conditions that may occur as a result of modifications to the airport facilities will be identified. Particular attention will be paid to modifications anticipated to occur in the next 5-10 years. All findings will be documented and included in subsequent tasks that deal with future conditions. This task will require consultation with the Master Plan team throughout the conduct of both studies.

Deliverables: Input to later tasks and working papers.

Subtask 1.3: Current Noise Abatement Procedures

Description: Airspace and air traffic control inventories will be verified and updated as necessary. Any proposed changes in aircraft operational procedures will be discussed with the Airport Traffic Control Tower (ATCT) and others within the FAA as necessary. A clear definition of the current accepted noise abatement procedures will be made to provide all study participants with an understanding of where the emphasis has been and the current status of any noise abatement procedures.

Deliverables: L&B will update input to later tasks and working papers, organized in report format.

Subtask 1.4: Noise Complaint History

Description: This subtask will evaluate the general locations of noise complaints, relative to the times they were made. Relationships between noise complaint locations and the implementation of specific noise abatement procedures will be researched. The increases of noise complaints in certain areas are usually related to changes in specific user activities, changes in fleet mix, or noise abatement procedures in use at an airport. It is important to identify the areas that are impacted (as reflected by the noise contours and complaint distribution), while understanding the nature of complaints. Mapping and attribution of the noise complaints will be verified through consultation with DLH staff.

Deliverables: L&B will gain a background understanding of the noise issues for input to later tasks and working papers.

Subtask 1.5: Study Area Mapping

Description: Through consultation with DLH staff, L&B will establish the boundaries of the Detailed Study Area for this project. The Study Area boundary, which will generally follow the boundaries of locally established census tracts, will encompass an area large enough to show the 65 Day-Night Average Sound Level (DNL) noise contour. However, land use data will be collected for a much larger areas to show land patterns under flight tracks far enough away from the Airport to represent aircraft altitudes at 10,000 feet.

Maps at the largest practical scale for report purposes and meeting the requirements for the preparation of Noise Exposure Maps (NEMs) set forth by the Federal Aviation Administration (FAA) will be developed and used as base maps throughout the entire study. The maps will show updated Airport property lines, existing political jurisdictions, housing and population data, other noise-sensitive land uses, transportation systems, road names, physical constraints, and generalized zoning. L&B will be responsible for the base maps and any display board preparation.

A Geographic Information Systems (GIS) database will be developed for use during the Part 150 Study Update that will include existing land use, residential and other noise-sensitive facilities, and other important physical features. Data will be obtained

from St. Louis County, Carlton County, and other available sources. Land use will be categorized according to land use categories contained in 14 CFR Part 150 land use compatibility guidance. L&B will conduct a field survey of those areas that were within previous noise contours at DLH and update the database to reflect any areas of new development. Where possible, the land use data will be modified to reflect previous noise mitigation efforts conducted by the DAA.

Deliverables: L&B will provide updated and most appropriately scaled base map(s) of the study area to be used throughout the study and for submission to the FAA. Electronic versions of base mapping data for use by DLH staff in ESRI shapefile or AutoCad format.

Subtask 1.6: Land Use Database

Description: The analysis will use all material previously prepared, such as aerial photos with overlays displaying land use and dwelling counts, land use maps, etc. Current land holdings at DLH will have to be reviewed and updated if necessary. This inventory will also include the collection of historic resource data and demographic data from the U.S. Census.

Additional data and surveys may also be required to update and complete the coverage of the study area. Any new existing land use maps, recent locally produced aerial photography, comprehensive plans, and other documentation pertaining to land use in the vicinity of DLH will be obtained and reviewed. This information will be verified by means of field surveys of the environs of DLH. A new land use map for the study area will be prepared showing compatible land uses as well as noise-sensitive uses.

Existing comprehensive plans, land use plans, zoning ordinances, subdivision regulations, building codes, easements, and other documentation pertaining to land use planning and management in the vicinity of DLH will be obtained from local planning agencies and reviewed. County and City planning agencies will be visited and information currently available will be verified and updated as part of the interviews. Meeting Summaries of the meetings will be prepared.

Deliverables: L&B will produce:

- A land use map showing any expanded areas and updated land uses in the defined study area;
- A database of sensitive land uses in the study area; and
- A database of local plans and ordinances pertaining to land use control.

TASK 2: FORECASTS

Subtask 2.1: Convert Master Plan Forecast data for Part 150 Purposes

Description: L&B will review the soon to be completed Master Plan aviation demand forecast for selecting items needed to support the Part 150 process. This will include annual average day derivative flight schedules, detailed fleet mix assignments, and day-night percentages.

Deliverables: Input into future tasks.

Subtask 2.2: Document Forecasts for Part 150 Purposes

Description: L&B will incorporate the relevant portions of the Master Plan forecast into the Part 150 Study document so that it can stand alone for submittal to FAA for Part 150 review. This will include reformatting and highlighting certain elements in the document and appendices.

Deliverables: Final documentation of the forecasts to comply with Part 150 guidelines.

TASK 3: NOISE MONITORING

Subtask 3.1: Program Design

Description: A noise measurement program will be designed in consultation with DLH staff. This program will include short-term (1-2 hours) monitoring of both military and civilian aircraft. This program will focus on single-event noise levels for direct correlation with specific aircraft flight data collected from radar data. This correlation is valuable in verifying the applicability of the Aviation Environmental Design Tool (AEDT) input parameters and, if warranted, to adjust such input parameters regarding actual flight characteristics of aircraft using the airport. It is expected that the radar data will include flight track location data that is sufficient for correlation to the noise monitoring data.

The L&B Team will perform short-term (1-2 hours) noise monitoring at up to sixteen (16) sites located around the airport with portable noise monitoring equipment. General site locations will be determined in consultation with DLH staff; however, specific sites may need to be adjusted in the field based on operating conditions and availability of suitable sites for conducting the noise monitoring. General locations will be defined prior to entering the field. Criteria for identifying sites will include: proximity to residential areas and other noise-sensitive community facilities, proximity to major flight corridors, locations of concentrated noise complaints, and other sites that DLH staff specifically requests. DLH staff will be responsible for obtaining permissions for accessing sites that require it and for alerting local jurisdictions and law enforcement of the presence of the L&B Team staff in the area during the monitoring period.

The measurements will capture both military and civilian aircraft. The analyst in the field will make notes of the type of aircraft through visual efforts. After the monitoring is conducted, radar data will be collected to verify the aircraft types occurring during the monitoring periods. L&B will work with DLH and the ANG to identify typical flight schedules to assist in capturing both civilian and military operations.

Deliverables: Included in this task is the rental, set-up, and calibration of the noise monitors. L&B will receive the monitors in advance of the monitoring period and will test the functionality of each piece of equipment, in addition to setting the input parameters and preparing the monitors for the field.

Subtask 3.2: Short-Term Air/Ground Noise Monitoring

Description: Single event noise levels will be measured for the following situations: daytime flights, nighttime flights, and engine run-ups. L&B will be on site for one work week to conduct short term monitoring during daytime and selected hours in the early morning and late evening at up to sixteen(16) sites for about 1-2 hours at each site.

Operators of the equipment will record relevant information observed during the measurement periods for inclusion in a report and use in correlation with radar data and with known aircraft activity. To the extent practicable, all measurements will be conducted in the vicinity of impacted residential areas or other noise-sensitive land uses. In each case, the ambient noise levels without aircraft activity will also be noted.

The focus of the measurement program will be the collection of SEL and Lmax data for later correlation with specific flight operations on tracks at varying slant range distances as determined from radar data processing. The time that each location will be measured will depend on the scheduling of traffic and the actual activity to which the site is exposed at the time of measurement.

Deliverables: L&B will present results of the short-term monitoring to DLH staff and will include the results in a table in the Part 150 Update Document.

Subtask 3.3: Radar Data Correlation and Evaluation

Description: In order to correlate flight activities with measured noise events and to obtain accurate flight track and performance profile data, radar data will be collected for periods of time during which aircraft noise is measured. The radar data will be obtained from the FAA flight tracking system and is expected to include appropriate information on time, velocities, flight location (latitude/longitude), altitude, runway end used, aircraft type, airline/operator, and other data as recorded by the radar system. This will assist in discerning between military and civilian aircraft operations.

Deliverables: Results of the data correlation will be presented to the DLH staff and will be included in the Part 150 Update Document.

Subtask 3.4: Comparison with AEDT Data Libraries

Description: The noise measurement data and the radar data from previous tasks will be compared with the data libraries of the AEDT to determine the applicability of the input assumptions and any default assumptions of the model. As warranted, based on these findings and material gathered from other tasks, input assumptions will be adjusted to reflect actual flight conditions at DLH. If necessary, FAA approval of any adjustments to the AEDT default input data will be obtained prior to finalizing the Part 150 Update Document. Adjustments will not be made to the algorithms in the models or to the noise curves (noise/distance relationships established by the FAA).

Deliverables: L&B will present initial results of the data correlation during a coordination conference call (under Task 9.1) if necessary and full results will be included in a table in the Part 150 Update Document.

TASK 4: EXISTING NOISE EXPOSURE

Subtask 4.1: Preparation of AEDT Input

Description: This task will process operational data for use in the AEDT. In order to thoroughly assess and prepare noise exposure contours, five categories of operational data must be assessed for the last full calendar year of operations (2018), or for the last 12 months of available data, for input into AEDT: Runway Layout; Annual Operations; Aircraft Fleet Mix; Runway End Utilization; and Flight Track Location and Utilization. Each category of operational information is described below:

- Runway Layout – The latest Airport Layout Plan (ALP) data sheet will be utilized to define the spatial layout of the runway ends in AEDT.
- Annual Operations – A variety of sources will be used for updating the number of annual operations at DLH. These will include the ATCT statistics, airline landing fee reports, and any airport operation databases DAA maintains. If DAA does not maintain any airport operation databases, data will be collected from the FAA through Sector Design Analysis Tool (SDAT). L&B will evaluate all available information and then present an annual operations report to the DAA for comment and approval.
- Aircraft Fleet Mix – Much like the number of annual operations, the aircraft fleet mix will be updated through evaluating a variety of sources, including airline landing fee reports, OAG reports, and any airport operation databases DAA maintains. If DAA does not maintain any airport operation databases, data will be collected from the FAA through SDAT.
- Runway End Utilization – The proportional use of each runway end by daytime versus nighttime and by aircraft category will be updated using the ATCT statistics, wind/weather data, radar data, and any airport operation

databases DAA maintains. If DAA does not maintain any airport operation databases, data will be collected from the FAA through SDAT.

- Flight Track Location/Utilization – Flight tracks for use in the AEDT will be based on discussions with DLH staff and ATCT staff and any airport operation databases DAA maintains. If DAA does not maintain any airport operation databases, data will be collected from the FAA through SDAT. The utilization of each flight track by aircraft category will be determined through analysis of DLH's noise and flight tracking system.

Deliverables: L&B will produce a database of operational information to be used as input to the AEDT. A memo presenting the AEDT input data will be provided to DLH staff for review and concurrence.

Subtask 4.2: Development of Current Conditions Noise Exposure Map Contours

Description: Contours of DNL 60, 65, 70, and 75 will be prepared for existing conditions using the latest version of AEDT (currently Version 2d).

Per FAA guidance, an existing year Noise Exposure Map (NEM) must be labeled the same as the year of submittal. Based on the schedule for this Part 150 Update, it is expected that the NEMs will be submitted to the FAA for acceptance in 2020. Therefore, the existing conditions NEM will be labeled 2020.

Deliverables: L&B will produce AEDT noise contours on base maps of the current conditions. Electronic versions of the NEM to be prepared for use by the DAA will also be provided.

Subtask 4.3: Impact of Existing Aircraft Noise

Description: Population and housing unit impacts will be calculated for the significant ranges of the DNL contours of baseline noise exposure. L&B's in-house models will be utilized to determine population levels within each noise contour. The resulting impact totals, by noise level, will establish a base for existing conditions against which future and alternative airport operating configurations may be compared for noise abatement effectiveness. Impacted homes that are currently eligible for noise mitigation will be identified.

Existing baseline noise exposure contours will also be assessed for land use impacts including impacts to noise-sensitive uses such as churches, schools, hospitals, libraries, nursing homes, and other such uses. Impacted land uses will be tabulated and identified on a map. If necessary, L&B will confirm the exact locations of incompatible land uses by making field observations.

Deliverables: L&B will provide:

- Calculated numbers of population and housing units located within the significant ranges of the DNL contours of current conditions noise exposure summarized by jurisdiction; calculations will be made using the mapping developed in Subtask 1.4;
- Numbers of noise-sensitive land uses impacted by aircraft, by level and by type of use and summarized by jurisdiction;
- DNL values for up to 20 sites near the Airport; and
- A map depicting noise-impacted land uses.

TASK 5: FUTURE NOISE EXPOSURE MAP

Subtask 5.1: Preparation of AEDT Input

Description: AEDT noise exposure input will be prepared based on the aviation forecasts being prepared as part of this Part 150 Update (Task 3). The noise scenario modeled will include the facilities and services as expected to occur in 2025. Contours of equal noise exposure of 60, 65, 70, and 75 DNL will be calculated for this anticipated scenario and will provide the basis of the 5-Year future baseline noise exposure contour for DLH. The 60 DNL will be shown as a dashed line with a caveat stating "60 DNL is for informational purposes only".

Deliverables: L&B will produce aircraft baseline noise exposure contour input for the year 2025.

Subtask 5.2: Development of 2025 Future Noise Exposure Contours

Description: Contours of DNL 60, 65, 70, and 75 will be prepared for the forecast conditions for the operating year 2025.

Deliverables: L&B will produce noise exposure contours for the 2025 operating conditions for DNL 60, 65, 70, and 75.

Subtask 5.3: Future Impacts on Existing Population

Description: Using the same methodology discussed under Subtask 4.3 to determine current noise impacts, the estimated impacts on population and noise-sensitive land uses will be determined for the noise exposure conditions for the future time frame. If necessary, L&B will verify the exact locations of future incompatible land uses by making field observations.

Deliverables: L&B will produce updated tables and maps indicating the quantities and locations of current incompatible land uses and impacted existing population for the future baseline noise contours, calculated in Subtask 5.1 and Subtask 5.2.

TASK 6: NOISE ABATEMENT ALTERNATIVES

Subtask 6.1: Evaluation of Current Procedures

Description: Current noise abatement procedures will be reviewed and evaluated to identify any procedures that are not fully implemented, are insufficient, or have become obsolete. Noise abatement procedures that continue to be warranted will be identified. These determinations will be developed on the basis of extensive consultations with DLH staff, the AC, the FAA, and the general public (through public information workshops described in Subtasks 9.3 and 9.4).

Deliverables: L&B will provide identification of current noise abatement procedures and determination regarding retention or reevaluation.

Subtask 6.2: Identification of Additional Noise Abatement Alternatives

Description: L&B will identify up to five (5) aircraft procedural alternatives that may help to improve the noise environment around DLH. Various turns from each runway will be considered, as well as turn points and Navigational Aid changes. Attention will be given to ground noise restrictions, opportunities offered through NextGen procedures, and facilities improvements as necessary.

Deliverables: L&B will provide specified noise abatement procedures for detailed evaluation and noise modeling.

Subtask 6.3: Modeling and Evaluation of Alternative Procedures

Description: Using the procedures identified in Subtask 6.2, potentially feasible alternatives will be tested for future baseline operating conditions. An alternative is defined as an operating procedure, or group of interdependent operating procedures, that is to be evaluated.

Evaluation criteria include:

- The number of residences;
- The number of residents and noise-sensitive non-residential uses impacted at exposure levels of 65 DNL and higher;
- Effects on margins of flight safety and operational efficiency;
- Cost of implementation;
- Effects on air service and interstate commerce; and
- The ability to be implemented effectively.

Deliverables: L&B will produce up to 5 sets of contours for noise abatement alternatives. Quantitative and qualitative measures of comparison of the assessed alternatives to aid in selection of the preferred alternative will also be provided. L&B will develop an evaluation matrix, which will graphically depict each alternative and its evaluation.

Subtask 6.4: Aviation Alternatives / Alternative Screening

Description: The noise exposure contours and the evaluation of alternatives produced in the above tasks will be presented to the AC for review and comment. Based on that review, and in consultation with DLH staff, a selection will be made of optimal procedures for each of the four runway ends. The optimal procedures will be modeled using AEDT in Subtask 6.5. The AC membership may be supplemented by other technical specialists, as appropriate. Invitations will be distributed by DLH staff, with the assistance of L&B.

Deliverables: A technical conference resulting in optimal alternative noise abatement measures for subsequent detailed evaluation.

Subtask 6.5: Modeling and Evaluation of Optimal Alternatives

Description: An optimal noise abatement scenario will be developed based on discussions held with AC members from Subtask 6.4. This scenario will consist of a combination of operational, procedural, and facilities alternatives, as found feasible under earlier tasks. This effort will focus on the formulation of the optimum achievable modifications. More than one refined scenario may be prepared at this point if there remain major alternatives which are mutually exclusive and which continue to hold promise for implementation. This optimal scenario will provide the basis for development of land use alternatives in Task 7.

Deliverables: L&B will produce refined noise abatement scenarios to serve as the basis for land use alternatives in Task 7.

TASK 7: LAND USE ALTERNATIVES

Subtask 7.1: Evaluation of Current Program

Description: The noise abatement procedures to be evaluated in this Part 150 Update may result in changes to the noise contours on which the land use mitigation should be based.

This Subtask provides for a review of all current programs. Current measures that are no longer considered to be effective, acceptable, or implementable will also be identified in consultation with DLH staff, AC members, and the general public. Coordination with DLH staff, the AC members, and the general public will ensure that the process of consensus building continues through this part of the analysis. This coordination will ensure that L&B has been updated on the current land use mitigation programs.

Deliverables: L&B will identify areas requiring more, less, or different land use mitigation than presently planned.

Subtask 7.2: Evaluation of Alternatives

Description: Alternative land use mitigation techniques will focus on development controls within the noise contours. Options for corrective mitigation will be considered

if the future noise contours are larger, due to growth in the forecasts, or if DLH staff determines that mitigation outside of the 65 DNL will be offered. Such options will be evaluated on a case-by-case basis with respect to such factors as need, cost, effectiveness, impact on adjacent neighborhoods, public acceptability, and ability to be implemented. Members of the public and representatives of local governments will be provided an opportunity to participate in this review through AC committee meetings and public workshops, as outlined in Subtask 7.3 and Task 9.

Deliverables: L&B will evaluate land use mitigation alternatives.

Subtask 7.3: Land Use Alternatives / Alternative Screening

Description: Alternative land use mitigation techniques will focus on development controls within the noise contours. Land use alternatives evaluated in Subtask 7.2 will be screened to a list of favored measures at a meeting with members of the AC and other representatives of the communities surrounding DLH. These participants will not only include DLH staff, AC members, the FAA, but also DLH's neighbors, the land use planning agencies, and the business community. Rationales will be provided for eliminating those land use alternatives not worthy of further consideration. General parameters will be established for the use of the surviving alternatives, such as noise problems to be addressed by the alternatives, locations for use of the alternatives, and the probable effectiveness of the alternatives. The DAA will extend invitations, with the assistance of L&B.

Deliverables: L&B will produce an evaluated list of land use mitigation alternatives for consideration in developing the final noise abatement plan in Subtask 8.1.

TASK 8: NOISE COMPATIBILITY PROGRAM

Subtask 8.1: Selection of Noise Abatement Measures

Description: After the initial NEMs are prepared, the Noise Compatibility Program (NCP) will be reviewed to determine if there are land use impacts that are not being addressed through the airport's current mitigation programs. If the analysis identifies such impacts, the procedures necessary to update the current NCP will be developed. This includes, L&B coordinating with DLH staff to determine if it is necessary to modify the current noise abatement and/or land use mitigation measures in the NCP. This process will also include a technical and public review level with stakeholders; including the FAA, airline representatives, local pilots, local government agencies, and the public; to ensure a fully transparent and collaborative process is used to develop the measures to ensure any new measures are feasible and have public acceptance.

This step will include the organization of the measures into final scenarios for immediate, near-term, and long-term implementation, as appropriate.

Noise exposure contours will be included for the mitigated 2025 conditions at 60, 65, 70, and 75 DNL levels. Any contours that will be designated as the new NEM with

program implementation will be so identified. The 60 DNL will be shown as a dashed line with a caveat stating "60 DNL is for informational purposes only".

Deliverables: L&B will produce noise exposure patterns for the mitigated conditions for 2025 that will clearly identify program elements for noise abatement and land use mitigation organized by time frame/operating configuration.

Subtask 8.2: Evaluation of Impacts

Description: Based upon the recommended noise abatement procedures, the effects of the selected noise abatement program will be determined. Residual existing and future off-airport population and land use impacts will be identified and documented. These impacts are those that will remain regardless of all planned efforts to abate noise. Population impacts will be measured for existing population in absolute terms and by the Level Weighted Population (LWP) methodology.

Deliverables: L&B will provide documentation of the noise impact reduction resulting from the selected noise abatement program. Calculation of unresolved residual land use impacts.

Subtask 8.3: Selection of Recommended Land Use Measures

Description: Based upon the aircraft noise exposure contours prepared in Subtask 8.1 and the residual impacts identified in Subtask 8.2, a recommended set of land use management measures will be formulated from the tentative selections made in Subtask 7.3. The recommended land use mitigation measures will be reviewed with the AC, as well as DLH staff and the FAA. The recommendations will identify strategies to control the development of new incompatible land uses within undeveloped areas that may be impacted by the changes in aircraft operations and facility changes discussed in Subtask 6.2. These strategies may be continuations of the current methods, modifications to the program, or entirely new strategies. Recommendations will also be provided to mitigate residual impacts that cannot be eliminated by planning and regulation.

Deliverables: L&B will produce recommended land use mitigation measures.

Subtask 8.4: Selection of Implementation Measures

Description: Implementation measures typically consist of actions taken to facilitate the execution of the program's recommendations, to operate the program on a daily basis, and to periodically review and update the program. These measures will be identified in the final stages of the planning effort, based on the types of noise abatement and land use mitigation measures that are selected. Identification of these measures will be made in consultation with DLH staff, AC members, and the FAA to ensure compliance with the Part 150 NCP Checklist.

Deliverables: L&B will produce recommended implementation measures.

Subtask 8.5: Implementation Actions/Schedule/Costs

Description: Well-developed strategies will be designed that provide step-by-step implementation of those noise abatement and land use management measures recommended by this Part 150 Update. These recommendations will include management policies and strategies, as well as agreements or publicity documents. Each action will be identified in terms of the responsible agency, the nature of that responsibility, and actions that must be taken to initiate implementation. Each must be closely coordinated with the FAA, DLH's users, and local planning agencies to ensure full understanding of the intent of the measure throughout its implementation. A schedule for implementing each action, including both beginning and ending years, will be defined in consultation with DLH staff. Estimated costs for implementing each action will be calculated and potential sources of funds will be identified.

Deliverables: L&B will provide implementation strategies and documents for the NCP.

TASK 9: MEETINGS AND COORDINATION

Subtask 9.1: Establish Advisory Committee

Description: An AC will be established for participation in the Part 150 Update. The AC membership will be composed of roughly 20 - 30 representatives. The committee may be made up of the following types of groups:

- (a) Representatives of local, regional, state, and Federal agencies, as necessary;
- (b) Airport users and tenants;
- (c) Representatives of the local business community;
- (d) FAA and ATCT;
- (e) Local planning agencies; and
- (f) Airport staff.

The AC will be established to advise the DAA and L&B on the conduct and recommendations of the study through meetings and review of interim and draft reports. Members of any previous committees of this type will be considered for appointment, where appropriate. The principal purpose of the AC will be to provide a forum in which consensus or general agreement can be sought on L&B's recommendations to the DAA.

Potential members to serve on the AC will be identified by utilizing staff from pre-existing committees, if available, or DAA will provide L&B suggestions for possible committee members. If directed by the DAA, L&B will contact prospective members to establish their interest in becoming a member of the AC, as well as their availability to participate. Membership for the AC will be determined through a consensus of DLH staff, the FAA, and L&B. It is anticipated that the AC membership for the Part

150 will be the same or similar as that for the Master Plan. Therefore, every effort will be made to consider both studies as the group is formed and meeting dates established.

Deliverables: L&B will develop a list of appropriate AC membership.

Subtask 9.2: Advisory Committee Meetings

Description: The DAA and L&B will work with the AC, which will be established as part of Subtask 9.1, during the course of the NCP portion of the Part 150 Update. The AC will be advisory in nature as they will be a non-voting committee, serving as the principal forum for obtaining review and input from local officials, public interest groups, and aviation interests. The AC will be advisory only. DAA's Project Manager will provide all direction to L&B regarding the final recommendations in the NCP.

AC meetings will be held in conjunction with other meetings (public information meetings, focus groups, etc.) for the study, as well as in coordination with the Master Plan. L&B will send out meeting notices and materials for review, will provide meeting agendas, keep meeting summaries for file documentation purposes, prepare presentation materials, and make technical presentations.

Up to three (3) AC meetings will be conducted. The following are opportunities for such meetings to occur:

- 1) Kick-off meeting;
- 2) Review NEMs and discuss general noise abatement concepts;
- 3) Meeting to disclose preliminary noise abatement alternative findings and recommendations of L&B;

Meeting to disclose preliminary land use alternative findings and recommendations of L&B; and

- 4) Meeting to discuss the recommendations that will be presented for public hearing, if desirable.

The meetings will be a combination of presentation by L&B staff and working group sessions where appropriate. In general, presentations will be used to disseminate information to the AC. Small working groups will be used to gather information from the AC. L&B staff will staff all AC meetings. Opportunities for DLH staff to directly participate will be available, if so desired.

Deliverables: Up to three (3) AC meetings. L&B will provide an accurate roster of members of the AC, agendas, and meeting summaries for distribution among the committee members, DLH staff, and L&B.

Subtask 9.3: Special Presentations/Focus Group Meeting

Description: L&B will conduct one (1) special presentation to public bodies or focus groups affected by, or having oversight responsibilities for, matters covered by the Part 150 Update. "Focus groups" have a special interest in the study, either as users of DLH, as affected neighbors/community advocacy groups, or as a member of the 148th. This presentation will be made by the Project Manager and will be coordinated with other project trips.

The DAA or its Project Manager may authorize L&B to arrange additional presentations and to respond to any comments and requests made during the course of such presentations. This additional effort could be funded through Supplemental Task S1.

Deliverables: One (1) special presentation to public bodies and focus groups.

Subtask 9.4: Public Information Meetings

Description: Technical analyses of the potential aviation noise, land use and other mitigation will be discussed with the public through three (3) open-house informational meetings. The meetings will be held at agreed upon locations in conjunction with the AC meetings. Meeting participants will be asked to respond to the merits of the preliminary evaluations.

L&B will provide publicity for the meetings, as well as the necessary materials for presentations. In addition, L&B will conduct all presentations and prepare a summary of comments for documentation purposes.

DLH staff will direct, collaborate regarding, and have final approval of all material presented at the public information meetings and hearings, including invitations, post-cards, handouts, fact sheets, brochures, and presentation boards.

The first meeting will occur after preparation of the NEM update to review findings on noise impacts and discuss potential mitigation measures. A second meeting will occur during consideration of the alternatives and will present the preliminary recommended alternatives. The third meeting will be conducted in conjunction with the Public Hearings and will present the recommended NCP. The specific format of each meeting will be discussed with DAA staff prior to scheduling the meeting.

Deliverables: L&B will develop a public workshop outreach plan for each meeting, up to three (3) public information meetings, and a summary record of comments shared and obtained at these meetings.

Subtask 9.5: Public Hearing/Comment Collection

Description: One (1) duly advertised, formal Public Hearing will be conducted at the appropriate time in conjunction with the final public workshop upon the availability of the Draft Part 150 report (prepared under Subtask 10.3). Verbatim transcripts of the public hearing will be prepared for inclusion in the Final NCP document. L&B will

review, categorize, and provide responses to all public comments in the form of oral and written testimony.

L&B will provide media materials, a public hearing officer, and a transcriptionist for the Public Hearing. DLH staff may provide meeting facilities at their discretion.

Deliverables: One (1) formal public hearing to be held in conjunction with the last Public Information Meeting (Subtask 9.4). Comments received at the Public Hearing through oral and written testimony, as well as comments received during the comment period will be organized and provided to DAA.

Subtask 9.6: Comment Responses

Description: All comments received during the comment period on the Draft Part 150 will be organized and coded by topic and commenter name. Draft responses to the comments will be prepared by L&B for review by DAA. After all edits are made, the comments and responses will be shared with FAA for review and comment. L&B will make final edits to the comment/response data and provide it in a format ready for submission as part of the Final Part 150 documentation. This task assumes no more than fifty (50) comments will be received during the public comment period.

Deliverables: Draft and final comment/response matrix with comments coded by topic and commenter.

Subtask 9.7: Project Website/Social Media

Description: In an effort to distribute project information to the public and agencies in a timely and efficient manner, a project website will be created to present study information, including graphics and text pertinent to the study, as well as providing notices of upcoming meetings and the study process and draft findings. DAA will host the website. L&B will provide graphics and content that can be pushed through the website and DAA's social media platforms.

Deliverables: L&B will content for website and social media updates.

TASK 10: PUBLICATIONS AND REPORTS

Subtask 10.1: Meeting Graphics

Description: L&B will prepare graphics for use in all public meetings. Presentation media will include display boards and plotted maps, handouts, slides and digital media. Workshops will employ 20-25 display boards and plotted maps to educate attendees on the planning process, describe noise metrics, display inventory information, show noise contours and impacts, demonstrate the potential alternatives, and define the exact recommendations. Some materials may also be prepared as page-size handouts during the course of the study for focus groups and

small meetings. Completed presentation boards and website-ready material will be provided to DLH staff for their use during and after the study.

Deliverables: L&B will produce graphics (boards, handouts, PowerPoints, etc.) for use in public meetings.

Subtask 10.2: Public Information Handouts

Description: An informational handout will be prepared for each public information workshop. This handout, in newsletter format, will contain a brief summary of significant findings and progress of the study to date. Maps, graphs, tables, and other materials will be attached, as necessary. Materials will be distributed at public information workshops. A sufficient number of copies will be provided to DLH staff for handouts or mailings through special requests from people who missed the meeting or to people included on a mailing list. The handout will also be made available in a digital format ready for use in social media/website.

Deliverables: L&B will produce a public information handout in digital format and printed format in sufficient numbers for distribution to meeting attendees and for limited mail out for each of the three meetings (300 copies per meeting).

Subtask 10.3: Draft Report

Description: Task summaries will provide the basis for development of Draft Part 150 Report chapters. This Draft Part 150 Report will include all background information, methodology, noise and land use computability analysis, and a discussion of the validity of, or recommended updated to, the current NCP. The document will also include information describing the stakeholder/public consultation process that was undertaken for this Part 150 Update. A Review Draft (10 copies) will be provided to DLH staff and the FAA for review and comment prior to release of the Draft Part 150 Report. The Draft Part 150 Report will include a draft NEM/NCP checklist. For public hearing review, draft reports will be provided for placement in public repositories. L&B or DLH staff will distribute the Draft Part 150 Report. Adobe Acrobat (PDF) versions of the Draft document will be prepared for use on the website.

Deliverables: L&B will provide up to ten (10) copies of a review draft and thirty (30) copies of the Draft Part 150 Reports.

Subtask 10.4: Final Part 150 Report

Description: On completion of the Public Hearings, all revisions to text and graphics will be made and a Final Part 150 Report will be prepared, which will contain the NEMs and the NCP, as well as the final NEM/NCP checklist. A Final Review Draft will be provided to DLH staff and the FAA for comment prior to release of the Final Report. Descriptions of public involvement and coordination with the appropriate public and private organizations as required under FAR Part 150 will be included. Up to thirty (30) copies will be provided for DLH staff's needs and for FAA review. An Adobe Acrobat (PDF) version of the Final document will be prepared for use on the website.

Thirty (30) CDs of the Final Document (PDF version) will be created for use by the DAA.

Deliverables: L&B will provide up to thirty (30) copies of the Final Document for the DAA and the FAA, and thirty (30) CDs of the Final Document in Adobe Acrobat (PDF) format. Distribution list will be finalized prior to printing documents and CDs for final counts.

Subtask 10.5: Executive Summary

Description: Upon issuance of the Record of Approval (ROA), L&B will prepare an Executive Summary documenting the entire Part 150 Update process, findings, and recommendations, incorporating all comments and conditions that the FAA may place on the recommended measures during the review process. Thirty (30) copies of the Executive Summary (bound separately from the Final Part 150 Report) will be prepared and made available to DLH staff. An Adobe Acrobat (PDF) version of the Executive Summary will be prepared for use by the DAA on social media/websites.

Deliverables: L&B will provide up to thirty (30) copies of an Executive Summary for DLH staff and an Adobe Acrobat (PDF) version of the Executive Summary. Distribution list will be finalized prior to printing documents and CDs for final counts.

TASK 11: PROJECT MANAGEMENT

Description: This task involves the routine coordination and management of the Part 150 Update. Monthly coordination meetings will be held with DLH for the purpose of briefing DLH staff on the progress of the study, listening and responding to staff concerns, discussing the budget, and collecting any needed data or information. Subsequent meetings will continue on a monthly basis for the duration of the study. L&B will provide meeting agendas and meeting summaries of all coordination meetings.

L&B will submit monthly written reports on the progress of our work with concurrent copies to the FAA. The monthly reports shall describe the status of each aspect of the work, any problems encountered, the amount of work accomplished, and a comparison of actual accomplishments to the goals established for the period. In the event that established goals have not been met, the monthly report shall describe the reasons for slippage. The monthly report shall also describe recommendations for modifications to the Scope of Services, changes in methodology or schedules for completion, decisions or conclusions that would alter the course of the study, and dates of upcoming meetings. If required, L&B will prepare a draft Record of Approval to be submitted to the FAA with the Final Part 150 Report.

Deliverables: L&B will provide meeting agendas, handouts, and monthly study update reports.

SUPPLEMENTAL TASKS

The following tasks will be included in the Final Scope of Work and Budget but will be authorized individually by the DAA. If not authorized by the DAA in writing, work will not proceed and the DAA will not be billed for these items.

TASK S1: ADDITIONAL PUBLIC OUTREACH

Description: This task involves performing public outreach efforts that are above those described under Task 9. For purposes of preparing the budget, this task is assumed to cover five (5) additional meetings in Duluth to support the study, and/or the response to additional comments beyond what is anticipated in the scope.

Deliverables: The conduct of additional public outreach, above that already described under Task 9.

TASK S2: SUPPLEMENTAL NOISE METRICS

Description: If requested by the DAA, L&B will prepare noise analysis using supplemental noise metrics (e.g., Lmax, Time-Above, Number Above) to assist in describing potential impacts and benefits of mitigation alternatives. This information can be particularly helpful in describing changes in noise levels outside of the 65 DNL. This task will include both the technical work to prepare the supplemental metric data and the enhanced graphics that are needed to show the results.

Deliverables: The preparation of supplemental noise metric data and graphics for use in describing changes in noise levels.

Duluth International Airport Part 150 Noise Compatibility Study Update 4/17/2019					
Task	Description	Landrum & Brown			Grand Total
		Labor		L&B Expenses	
		Hours	Cost		
TASKS					
1	Affected Environment				
1.1	Existing Airfield Facilities and Operations	34	\$6,900	\$0	\$6,900
1.2	Future Airfield Facilities and Operating Procedures	34	\$6,900	\$0	\$6,900
1.3	Current Noise Abatement Procedures	34	\$6,900	\$0	\$6,900
1.4	Noise Complaint History	34	\$6,900	\$0	\$6,900
1.5	Study Area Mapping	34	\$6,900	\$500	\$7,400
1.6	Land Use Database	34	\$6,900	\$0	\$6,900
Subtotal Task 1		204	\$41,400	\$500	\$41,900
2	Forecasts				
2.1	Convert Master Plan Forecast Data for Part 150 Purposes	68	\$16,120	\$0	\$16,120
2.2	Document Forecasts for Part 150 Purposes	36	\$8,160	\$0	\$8,160
Subtotal Task 2		104	\$24,280	\$0	\$24,280
3	Noise Monitoring				
3.1	Program Design	18	\$4,100	\$0	\$4,100
3.2	Short-Term Air/Ground Noise Monitoring	66	\$14,660	\$8,000	\$22,660
3.3	Radar Data Correlation and Evaluation	78	\$15,660	\$0	\$15,660
3.4	Comparison with AEDT Data Libraries	62	\$11,980	\$0	\$11,980
Subtotal Task 3		224	\$46,400	\$8,000	\$54,400
4	Existing Noise Exposure				
4.1	Preparation of AEDT Input	138	\$23,860	\$0	\$23,860
4.2	Development of Current Conditions Noise Exposure Map Contours	130	\$22,020	\$0	\$22,020
4.3	Impact of Existing Aircraft Noise	74	\$13,060	\$0	\$13,060
Subtotal Task 4		342	\$58,940	\$0	\$58,940
5	Future Noise Exposure Map				
5.1	Preparation of AEDT Input	68	\$12,660	\$0	\$12,660
5.2	Development of 2025 Future Noise Exposure Contours	60	\$10,820	\$0	\$10,820
5.3	Future Impacts on Existing Population	34	\$6,620	\$0	\$6,620
Subtotal Task 5		162	\$30,100	\$0	\$30,100
6	Noise Abatement Alternatives				
6.1	Evaluation of Current Procedures	14	\$3,120	\$0	\$3,120
6.2	Identification of Additional Noise Abatement Alternatives	58	\$11,140	\$0	\$11,140
6.3	Modeling and Evaluation of Alternative Procedures	74	\$13,380	\$0	\$13,380
6.4	Aviation Alternatives/Alternative Screening	58	\$11,140	\$0	\$11,140
6.5	Modeling and Evaluation of Optimal Alternatives	138	\$24,340	\$0	\$24,340
Subtotal Task 6		342	\$63,120	\$0	\$63,120
7	Land Use Alternatives				
7.1	Evaluation of Current Program	14	\$3,120	\$0	\$3,120
7.2	Evaluation of Alternatives	74	\$13,380	\$0	\$13,380
7.3	Land Use Alternatives/Alternative Screening	58	\$11,140	\$0	\$11,140
Subtotal Task 7		146	\$27,640	\$0	\$27,640
8	Noise Compatibility Program				
8.1	Selection of Noise Abatement Measures	82	\$14,900	\$0	\$14,900
8.2	Evaluation of Impacts	82	\$14,900	\$0	\$14,900
8.3	Selection of Recommended Land Use Measures	42	\$8,180	\$0	\$8,180
8.4	Selection of Implementation Measures	30	\$6,220	\$0	\$6,220
8.5	Implementation Actions/Schedule/Costs	54	\$10,300	\$0	\$10,300
Subtotal Task 8		290	\$54,500	\$0	\$54,500
9	Meetings and Coordination				
9.1	Establish Advisory Committee	18	\$3,060	\$100	\$3,160
9.2	Advisory Committee Meetings	157	\$30,530	\$300	\$30,830
9.3	Special Presentations/Focus Group Meeting	42	\$8,900	\$300	\$9,200
9.4	Public Information Meetings	330	\$63,820	\$15,000	\$78,820
9.5	Public Hearings/Comment Collection	50	\$9,300	\$0	\$9,300
9.6	Comment Responses	64	\$12,880	\$0	\$12,880
9.7	Project Website/Social Media	74	\$14,500	\$0	\$14,500
Subtotal Task 9		735	\$142,990	\$15,700	\$158,690
10	Publications and Reports				
10.1	Meeting Graphics	82	\$16,020	\$1,000	\$17,020
10.2	Public Information Handouts	74	\$13,300	\$50	\$13,350
10.3	Draft Report	166	\$28,500	\$500	\$29,000
10.4	Final Part 150 Report	130	\$22,340	\$500	\$22,840
10.5	Executive Summary	58	\$11,060	\$100	\$11,160
Subtotal Task 10		510	\$91,220	\$2,150	\$93,370
11	Project Management				
11.1	Project Management	186	\$33,360	\$0	\$33,360
Subtotal Task 11		186	\$33,360	\$0	\$33,360
TOTAL		3245	\$613,950	\$26,350	\$640,300
SUPPLEMENTAL TASKS					
S1	Additional Public Outreach				
S1.1	Additional Public Outreach	288	\$60,320	\$15,000	\$75,320
Subtotal Supplemental Task 1		288	\$60,320	\$15,000	\$75,320
S2	Supplemental Noise Metrics				
S2.1	Supplemental Noise Metrics	84	\$17,320	\$0	\$17,320
Subtotal Supplemental Task 2		84	\$17,320	\$0	\$17,320
SUPPLEMENTAL TASKS TOTAL		372	\$77,640	\$15,000	\$92,640
GRAND TOTAL		3617	\$691,590	\$41,350	\$732,940



Attachment A
Duluth International Airport (DLH)
FAR Part 150 Noise Compatibility Study Update
Scope of Work
May 10, 2019

The Duluth Airport Authority (DAA) desires to complete a FAR Part 150 Noise Compatibility Study Update for the Duluth International Airport (DLH). The previous Part 150 Study included a Noise Exposure Map and Noise Compatibility Study and was completed in 1997. This study is being completed in the same general timeframe as an Airport Master Plan Update. Where possible, data sharing and coordinating public outreach will occur between the two projects.

Project Deliverables – The project deliverables of this scope include the following:

1. FAR Part 150 Report including final Noise Exposure Map (NEM) and Noise Compatibility Program (NCP)
2. Closeout Report

Study Element 1: Project Initiation, Coordination and Administration

Task 1.1 – Project Scoping and Contract Development – Short Elliott Hendrickson (SEH and/or Consultant) will coordinate with the DAA to develop the appropriate work scope, define tasks, lines of communication and establish project goals, objectives or areas of interest. Project fees will be prepared using the final Scope of Work. This task includes project scoping meetings with DAA and FAA and MnDOT Aeronautics. An agreement will be developed from the final Scope of Work and approved fees. The agreement will be provided to the FAA and MnDOT for review and approval prior to a contract being executed. This task also includes time to coordinate scopes of services with subconsultants (Landrum & Brown (L&B)) and development of subconsultant contracts.

Task 1.2 – Project Administration and Management – SEH will provide project administration and management services as required to complete the project within the conditions of this agreement. Administration and management duties include project setup, monthly invoicing and preparation of a budget and schedule. SEH will attend (in person or via conference call) monthly project updates. These monthly updates will be led by L&B. Additionally, SEH will coordinate monthly progress submittals, prepared by L&B, to DAA. This task includes time to prepare and submit FAA Quarterly Reports.

Task 1.3 – Quality Assurance and Control – SEH will implement and carry-out internal quality control for the project. Peer review will be conducted at each phase of the project to check content and product quality. Throughout the project, SEH will be responsible for draft and final proof-reading, final word processing, editing, graphics, reports and other products included in this Scope of Work.

Task 1.4 – Meetings – SEH will assist L&B in establishing an advisory committee for the study. SEH will attend up to three (3) advisory committee meetings. SEH will attend special presentations and/or focus groups throughout the project, one (1) is anticipated. Additionally, up to three (3) open houses are anticipated in the project. SEH will attend and assist L&B and DAA staff in preparing for the Open Houses. SEH will attend and assist L&B in preparing for the Public Hearing. For all meetings, meeting minutes and summaries will be prepared by L&B.

Task 1.5 – Subcontractor Coordination – SEH will assist in scheduling, coordination, and providing review and comment on subcontractor deliverables, including subcontracts, reports and data.

Deliverable: Project scope, agreement, budget, schedule, monthly progress reports and meetings.

Study Element 2: Part 150 Noise Compatibility Study Update

Task 2.1 Affected Environment - L&B will collect information for this task as outlined in the attached L&B scope of work. SEH will coordinate with L&B throughout this task to share data collected as part of the Master Plan. SEH will assist L&B by providing airfield facilities data as well as information on any affected environment data available from the Master Plan effort.

Task 2.2 Forecasts - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task.

Task 2.3 Noise Monitoring - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task.

Task 2.4 Existing Noise Exposure Map - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Task 2.5 Future Noise Exposure Map - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Task 2.6 Noise Abatement Alternatives - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Task 2.7 Land Use Alternatives - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Task 2.8 Noise Compatibility Program - L&B will conduct this task as outlined in the attached L&B scope of work. SEH will provide support as needed throughout this task including stakeholder outreach support.

Study Element 3: FAA Closeout Report

Task 3.1 Grant Closeout Report - A grant closeout report will be completed as part of this scope of work. The grant closeout report will also include other projects included in the FAA grant.

Study Element 4: Optional Tasks

The following tasks will be included in the final scope of work and budget but will be authorized individually by the DAA. If not authorized by the DAA in writing, work will not proceed and the DAA will not be billed for these items. These tasks will be included in the FAA grant but will be change ordered out of the project and grant at closeout if not completed.

Task 4.1 Additional Public Outreach - L&B will collect information for this task as outlined in the attached L&B scope of work. SEH will attend any additional public outreach completed as part of this task.

Task 4.2 Supplemental Noise Metrics - L&B will collect information for this task as outlined in the attached L&B scope of work.

DRAFT SCOPE OF WORK

The following presents Landrum & Brown's (L&B) scope of work for a Federal Aviation Regulation (FAR) Part 150 Noise Compatibility Study Update (Part 150 Study Update) at Duluth International Airport (DLH) for the Duluth Airport Authority (DAA). This scope of work has been tailored to the specific issues and concerns at DLH. It is understood that a Master Plan Update will be prepared in the same general timeframe. There will be opportunities for sharing data and coordinating public outreach. These points will be highlighted in the scope.

TASK 1: AFFECTED ENVIRONMENT

Subtask 1.1: Existing Airfield Facilities and Operations

Description: The physical airfield facilities at DLH will be inventoried and updated through document reviews.

Current operations data will be collected from the Official Airline Guide (OAG) data, Airport Traffic Control Tower (ATCT) statistics, airline landing fee reports, FBO operational reports, and any airport operation database that DAA may maintain. This information will include existing and recent historical records of operations by aircraft type, time of day, aircraft weight and engine type (where available), and based aircraft ownership. Departure and arrival procedures by the principal contributors to the noise environment will be reviewed and updated, if necessary, for inclusion in the noise evaluation process.

Additional ongoing studies that provide information regarding updates to current facilities and operational characteristics of DLH will also be reviewed as part of this subtask.

Deliverables: Input to later tasks and working papers.

Subtask 1.2: Future Airfield Facilities and Operating Procedures

Description: Through consultation with the DLH staff, any changes to operating conditions that may occur as a result of modifications to the airport facilities will be identified. Particular attention will be paid to modifications anticipated to occur in the next 5-10 years. All findings will be documented and included in subsequent tasks that deal with future conditions. This task will require consultation with the Master Plan team throughout the conduct of both studies.

Deliverables: Input to later tasks and working papers.

Subtask 1.3: Current Noise Abatement Procedures

Description: Airspace and air traffic control inventories will be verified and updated as necessary. Any proposed changes in aircraft operational procedures will be discussed with the Airport Traffic Control Tower (ATCT) and others within the FAA as necessary. A clear definition of the current accepted noise abatement procedures will be made to provide all study participants with an understanding of where the emphasis has been and the current status of any noise abatement procedures.

Deliverables: L&B will update input to later tasks and working papers, organized in report format.

Subtask 1.4: Noise Complaint History

Description: This subtask will evaluate the general locations of noise complaints, relative to the times they were made. Relationships between noise complaint locations and the implementation of specific noise abatement procedures will be researched. The increases of noise complaints in certain areas are usually related to changes in specific user activities, changes in fleet mix, or noise abatement procedures in use at an airport. It is important to identify the areas that are impacted (as reflected by the noise contours and complaint distribution), while understanding the nature of complaints. Mapping and attribution of the noise complaints will be verified through consultation with DLH staff.

Deliverables: L&B will gain a background understanding of the noise issues for input to later tasks and working papers.

Subtask 1.5: Study Area Mapping

Description: Through consultation with DLH staff, L&B will establish the boundaries of the Detailed Study Area for this project. The Study Area boundary, which will generally follow the boundaries of locally established census tracts, will encompass an area large enough to show the 65 Day-Night Average Sound Level (DNL) noise contour. However, land use data will be collected for a much larger areas to show land patterns under flight tracks far enough away from the Airport to represent aircraft altitudes at 10,000 feet.

Maps at the largest practical scale for report purposes and meeting the requirements for the preparation of Noise Exposure Maps (NEMs) set forth by the Federal Aviation Administration (FAA) will be developed and used as base maps throughout the entire study. The maps will show updated Airport property lines, existing political jurisdictions, housing and population data, other noise-sensitive land uses, transportation systems, road names, physical constraints, and generalized zoning. L&B will be responsible for the base maps and any display board preparation.

A Geographic Information Systems (GIS) database will be developed for use during the Part 150 Study Update that will include existing land use, residential and other noise-sensitive facilities, and other important physical features. Data will be obtained

from St. Louis County, Carlton County, and other available sources. Land use will be categorized according to land use categories contained in 14 CFR Part 150 land use compatibility guidance. L&B will conduct a field survey of those areas that were within previous noise contours at DLH and update the database to reflect any areas of new development. Where possible, the land use data will be modified to reflect previous noise mitigation efforts conducted by the DAA.

Deliverables: L&B will provide updated and most appropriately scaled base map(s) of the study area to be used throughout the study and for submission to the FAA. Electronic versions of base mapping data for use by DLH staff in ESRI shapefile or AutoCad format.

Subtask 1.6: Land Use Database

Description: The analysis will use all material previously prepared, such as aerial photos with overlays displaying land use and dwelling counts, land use maps, etc. Current land holdings at DLH will have to be reviewed and updated if necessary. This inventory will also include the collection of historic resource data and demographic data from the U.S. Census.

Additional data and surveys may also be required to update and complete the coverage of the study area. Any new existing land use maps, recent locally produced aerial photography, comprehensive plans, and other documentation pertaining to land use in the vicinity of DLH will be obtained and reviewed. This information will be verified by means of field surveys of the environs of DLH. A new land use map for the study area will be prepared showing compatible land uses as well as noise-sensitive uses.

Existing comprehensive plans, land use plans, zoning ordinances, subdivision regulations, building codes, easements, and other documentation pertaining to land use planning and management in the vicinity of DLH will be obtained from local planning agencies and reviewed. County and City planning agencies will be visited and information currently available will be verified and updated as part of the interviews. Meeting Summaries of the meetings will be prepared.

Deliverables: L&B will produce:

- A land use map showing any expanded areas and updated land uses in the defined study area;
- A database of sensitive land uses in the study area; and
- A database of local plans and ordinances pertaining to land use control.

TASK 2: FORECASTS

Subtask 2.1: Convert Master Plan Forecast data for Part 150 Purposes

Description: L&B will review the soon to be completed Master Plan aviation demand forecast for selecting items needed to support the Part 150 process. This will include annual average day derivative flight schedules, detailed fleet mix assignments, and day-night percentages.

Deliverables: Input into future tasks.

Subtask 2.2: Document Forecasts for Part 150 Purposes

Description: L&B will incorporate the relevant portions of the Master Plan forecast into the Part 150 Study document so that it can stand alone for submittal to FAA for Part 150 review. This will include reformatting and highlighting certain elements in the document and appendices.

Deliverables: Final documentation of the forecasts to comply with Part 150 guidelines.

TASK 3: NOISE MONITORING

Subtask 3.1: Program Design

Description: A noise measurement program will be designed in consultation with DLH staff. This program will include short-term (1-2 hours) monitoring of both military and civilian aircraft. This program will focus on single-event noise levels for direct correlation with specific aircraft flight data collected from radar data. This correlation is valuable in verifying the applicability of the Aviation Environmental Design Tool (AEDT) input parameters and, if warranted, to adjust such input parameters regarding actual flight characteristics of aircraft using the airport. It is expected that the radar data will include flight track location data that is sufficient for correlation to the noise monitoring data.

The L&B Team will perform short-term (1-2 hours) noise monitoring at up to sixteen (16) sites located around the airport with portable noise monitoring equipment. General site locations will be determined in consultation with DLH staff; however, specific sites may need to be adjusted in the field based on operating conditions and availability of suitable sites for conducting the noise monitoring. General locations will be defined prior to entering the field. Criteria for identifying sites will include: proximity to residential areas and other noise-sensitive community facilities, proximity to major flight corridors, locations of concentrated noise complaints, and other sites that DLH staff specifically requests. DLH staff will be responsible for obtaining permissions for accessing sites that require it and for alerting local jurisdictions and law enforcement of the presence of the L&B Team staff in the area during the monitoring period.

The measurements will capture both military and civilian aircraft. The analyst in the field will make notes of the type of aircraft through visual efforts. After the monitoring is conducted, radar data will be collected to verify the aircraft types occurring during the monitoring periods. L&B will work with DLH and the ANG to identify typical flight schedules to assist in capturing both civilian and military operations.

Deliverables: Included in this task is the rental, set-up, and calibration of the noise monitors. L&B will receive the monitors in advance of the monitoring period and will test the functionality of each piece of equipment, in addition to setting the input parameters and preparing the monitors for the field.

Subtask 3.2: Short-Term Air/Ground Noise Monitoring

Description: Single event noise levels will be measured for the following situations: daytime flights, nighttime flights, and engine run-ups. L&B will be on site for one work week to conduct short term monitoring during daytime and selected hours in the early morning and late evening at up to sixteen(16) sites for about 1-2 hours at each site.

Operators of the equipment will record relevant information observed during the measurement periods for inclusion in a report and use in correlation with radar data and with known aircraft activity. To the extent practicable, all measurements will be conducted in the vicinity of impacted residential areas or other noise-sensitive land uses. In each case, the ambient noise levels without aircraft activity will also be noted.

The focus of the measurement program will be the collection of SEL and Lmax data for later correlation with specific flight operations on tracks at varying slant range distances as determined from radar data processing. The time that each location will be measured will depend on the scheduling of traffic and the actual activity to which the site is exposed at the time of measurement.

Deliverables: L&B will present results of the short-term monitoring to DLH staff and will include the results in a table in the Part 150 Update Document.

Subtask 3.3: Radar Data Correlation and Evaluation

Description: In order to correlate flight activities with measured noise events and to obtain accurate flight track and performance profile data, radar data will be collected for periods of time during which aircraft noise is measured. The radar data will be obtained from the FAA flight tracking system and is expected to include appropriate information on time, velocities, flight location (latitude/longitude), altitude, runway end used, aircraft type, airline/operator, and other data as recorded by the radar system. This will assist in discerning between military and civilian aircraft operations.

Deliverables: Results of the data correlation will be presented to the DLH staff and will be included in the Part 150 Update Document.

Subtask 3.4: Comparison with AEDT Data Libraries

Description: The noise measurement data and the radar data from previous tasks will be compared with the data libraries of the AEDT to determine the applicability of the input assumptions and any default assumptions of the model. As warranted, based on these findings and material gathered from other tasks, input assumptions will be adjusted to reflect actual flight conditions at DLH. If necessary, FAA approval of any adjustments to the AEDT default input data will be obtained prior to finalizing the Part 150 Update Document. Adjustments will not be made to the algorithms in the models or to the noise curves (noise/distance relationships established by the FAA).

Deliverables: L&B will present initial results of the data correlation during a coordination conference call (under Task 9.1) if necessary and full results will be included in a table in the Part 150 Update Document.

TASK 4: EXISTING NOISE EXPOSURE

Subtask 4.1: Preparation of AEDT Input

Description: This task will process operational data for use in the AEDT. In order to thoroughly assess and prepare noise exposure contours, five categories of operational data must be assessed for the last full calendar year of operations (2018), or for the last 12 months of available data, for input into AEDT: Runway Layout; Annual Operations; Aircraft Fleet Mix; Runway End Utilization; and Flight Track Location and Utilization. Each category of operational information is described below:

- Runway Layout – The latest Airport Layout Plan (ALP) data sheet will be utilized to define the spatial layout of the runway ends in AEDT.
- Annual Operations – A variety of sources will be used for updating the number of annual operations at DLH. These will include the ATCT statistics, airline landing fee reports, and any airport operation databases DAA maintains. If DAA does not maintain any airport operation databases, data will be collected from the FAA through Sector Design Analysis Tool (SDAT). L&B will evaluate all available information and then present an annual operations report to the DAA for comment and approval.
- Aircraft Fleet Mix – Much like the number of annual operations, the aircraft fleet mix will be updated through evaluating a variety of sources, including airline landing fee reports, OAG reports, and any airport operation databases DAA maintains. If DAA does not maintain any airport operation databases, data will be collected from the FAA through SDAT.
- Runway End Utilization – The proportional use of each runway end by daytime versus nighttime and by aircraft category will be updated using the ATCT statistics, wind/weather data, radar data, and any airport operation

databases DAA maintains. If DAA does not maintain any airport operation databases, data will be collected from the FAA through SDAT.

- Flight Track Location/Utilization – Flight tracks for use in the AEDT will be based on discussions with DLH staff and ATCT staff and any airport operation databases DAA maintains. If DAA does not maintain any airport operation databases, data will be collected from the FAA through SDAT. The utilization of each flight track by aircraft category will be determined through analysis of DLH's noise and flight tracking system.

Deliverables: L&B will produce a database of operational information to be used as input to the AEDT. A memo presenting the AEDT input data will be provided to DLH staff for review and concurrence.

Subtask 4.2: Development of Current Conditions Noise Exposure Map Contours

Description: Contours of DNL 60, 65, 70, and 75 will be prepared for existing conditions using the latest version of AEDT (currently Version 2d).

Per FAA guidance, an existing year Noise Exposure Map (NEM) must be labeled the same as the year of submittal. Based on the schedule for this Part 150 Update, it is expected that the NEMs will be submitted to the FAA for acceptance in 2020. Therefore, the existing conditions NEM will be labeled 2020.

Deliverables: L&B will produce AEDT noise contours on base maps of the current conditions. Electronic versions of the NEM to be prepared for use by the DAA will also be provided.

Subtask 4.3: Impact of Existing Aircraft Noise

Description: Population and housing unit impacts will be calculated for the significant ranges of the DNL contours of baseline noise exposure. L&B's in-house models will be utilized to determine population levels within each noise contour. The resulting impact totals, by noise level, will establish a base for existing conditions against which future and alternative airport operating configurations may be compared for noise abatement effectiveness. Impacted homes that are currently eligible for noise mitigation will be identified.

Existing baseline noise exposure contours will also be assessed for land use impacts including impacts to noise-sensitive uses such as churches, schools, hospitals, libraries, nursing homes, and other such uses. Impacted land uses will be tabulated and identified on a map. If necessary, L&B will confirm the exact locations of incompatible land uses by making field observations.

Deliverables: L&B will provide:

- Calculated numbers of population and housing units located within the significant ranges of the DNL contours of current conditions noise exposure summarized by jurisdiction; calculations will be made using the mapping developed in Subtask 1.4;
- Numbers of noise-sensitive land uses impacted by aircraft, by level and by type of use and summarized by jurisdiction;
- DNL values for up to 20 sites near the Airport; and
- A map depicting noise-impacted land uses.

TASK 5: FUTURE NOISE EXPOSURE MAP

Subtask 5.1: Preparation of AEDT Input

Description: AEDT noise exposure input will be prepared based on the aviation forecasts being prepared as part of this Part 150 Update (Task 3). The noise scenario modeled will include the facilities and services as expected to occur in 2025. Contours of equal noise exposure of 60, 65, 70, and 75 DNL will be calculated for this anticipated scenario and will provide the basis of the 5-Year future baseline noise exposure contour for DLH. The 60 DNL will be shown as a dashed line with a caveat stating "60 DNL is for informational purposes only".

Deliverables: L&B will produce aircraft baseline noise exposure contour input for the year 2025.

Subtask 5.2: Development of 2025 Future Noise Exposure Contours

Description: Contours of DNL 60, 65, 70, and 75 will be prepared for the forecast conditions for the operating year 2025.

Deliverables: L&B will produce noise exposure contours for the 2025 operating conditions for DNL 60, 65, 70, and 75.

Subtask 5.3: Future Impacts on Existing Population

Description: Using the same methodology discussed under Subtask 4.3 to determine current noise impacts, the estimated impacts on population and noise-sensitive land uses will be determined for the noise exposure conditions for the future time frame. If necessary, L&B will verify the exact locations of future incompatible land uses by making field observations.

Deliverables: L&B will produce updated tables and maps indicating the quantities and locations of current incompatible land uses and impacted existing population for the future baseline noise contours, calculated in Subtask 5.1 and Subtask 5.2.

TASK 6: NOISE ABATEMENT ALTERNATIVES

Subtask 6.1: Evaluation of Current Procedures

Description: Current noise abatement procedures will be reviewed and evaluated to identify any procedures that are not fully implemented, are insufficient, or have become obsolete. Noise abatement procedures that continue to be warranted will be identified. These determinations will be developed on the basis of extensive consultations with DLH staff, the AC, the FAA, and the general public (through public information workshops described in Subtasks 9.3 and 9.4).

Deliverables: L&B will provide identification of current noise abatement procedures and determination regarding retention or reevaluation.

Subtask 6.2: Identification of Additional Noise Abatement Alternatives

Description: L&B will identify up to five (5) aircraft procedural alternatives that may help to improve the noise environment around DLH. Various turns from each runway will be considered, as well as turn points and Navigational Aid changes. Attention will be given to ground noise restrictions, opportunities offered through NextGen procedures, and facilities improvements as necessary.

Deliverables: L&B will provide specified noise abatement procedures for detailed evaluation and noise modeling.

Subtask 6.3: Modeling and Evaluation of Alternative Procedures

Description: Using the procedures identified in Subtask 6.2, potentially feasible alternatives will be tested for future baseline operating conditions. An alternative is defined as an operating procedure, or group of interdependent operating procedures, that is to be evaluated.

Evaluation criteria include:

- The number of residences;
- The number of residents and noise-sensitive non-residential uses impacted at exposure levels of 65 DNL and higher;
- Effects on margins of flight safety and operational efficiency;
- Cost of implementation;
- Effects on air service and interstate commerce; and
- The ability to be implemented effectively.

Deliverables: L&B will produce up to 5 sets of contours for noise abatement alternatives. Quantitative and qualitative measures of comparison of the assessed alternatives to aid in selection of the preferred alternative will also be provided. L&B will develop an evaluation matrix, which will graphically depict each alternative and its evaluation.

Subtask 6.4: Aviation Alternatives / Alternative Screening

Description: The noise exposure contours and the evaluation of alternatives produced in the above tasks will be presented to the AC for review and comment. Based on that review, and in consultation with DLH staff, a selection will be made of optimal procedures for each of the four runway ends. The optimal procedures will be modeled using AEDT in Subtask 6.5. The AC membership may be supplemented by other technical specialists, as appropriate. Invitations will be distributed by DLH staff, with the assistance of L&B.

Deliverables: A technical conference resulting in optimal alternative noise abatement measures for subsequent detailed evaluation.

Subtask 6.5: Modeling and Evaluation of Optimal Alternatives

Description: An optimal noise abatement scenario will be developed based on discussions held with AC members from Subtask 6.4. This scenario will consist of a combination of operational, procedural, and facilities alternatives, as found feasible under earlier tasks. This effort will focus on the formulation of the optimum achievable modifications. More than one refined scenario may be prepared at this point if there remain major alternatives which are mutually exclusive and which continue to hold promise for implementation. This optimal scenario will provide the basis for development of land use alternatives in Task 7.

Deliverables: L&B will produce refined noise abatement scenarios to serve as the basis for land use alternatives in Task 7.

TASK 7: LAND USE ALTERNATIVES

Subtask 7.1: Evaluation of Current Program

Description: The noise abatement procedures to be evaluated in this Part 150 Update may result in changes to the noise contours on which the land use mitigation should be based.

This Subtask provides for a review of all current programs. Current measures that are no longer considered to be effective, acceptable, or implementable will also be identified in consultation with DLH staff, AC members, and the general public. Coordination with DLH staff, the AC members, and the general public will ensure that the process of consensus building continues through this part of the analysis. This coordination will ensure that L&B has been updated on the current land use mitigation programs.

Deliverables: L&B will identify areas requiring more, less, or different land use mitigation than presently planned.

Subtask 7.2: Evaluation of Alternatives

Description: Alternative land use mitigation techniques will focus on development controls within the noise contours. Options for corrective mitigation will be considered

if the future noise contours are larger, due to growth in the forecasts, or if DLH staff determines that mitigation outside of the 65 DNL will be offered. Such options will be evaluated on a case-by-case basis with respect to such factors as need, cost, effectiveness, impact on adjacent neighborhoods, public acceptability, and ability to be implemented. Members of the public and representatives of local governments will be provided an opportunity to participate in this review through AC committee meetings and public workshops, as outlined in Subtask 7.3 and Task 9.

Deliverables: L&B will evaluate land use mitigation alternatives.

Subtask 7.3: Land Use Alternatives / Alternative Screening

Description: Alternative land use mitigation techniques will focus on development controls within the noise contours. Land use alternatives evaluated in Subtask 7.2 will be screened to a list of favored measures at a meeting with members of the AC and other representatives of the communities surrounding DLH. These participants will not only include DLH staff, AC members, the FAA, but also DLH's neighbors, the land use planning agencies, and the business community. Rationales will be provided for eliminating those land use alternatives not worthy of further consideration. General parameters will be established for the use of the surviving alternatives, such as noise problems to be addressed by the alternatives, locations for use of the alternatives, and the probable effectiveness of the alternatives. The DAA will extend invitations, with the assistance of L&B.

Deliverables: L&B will produce an evaluated list of land use mitigation alternatives for consideration in developing the final noise abatement plan in Subtask 8.1.

TASK 8: NOISE COMPATIBILITY PROGRAM

Subtask 8.1: Selection of Noise Abatement Measures

Description: After the initial NEMs are prepared, the Noise Compatibility Program (NCP) will be reviewed to determine if there are land use impacts that are not being addressed through the airport's current mitigation programs. If the analysis identifies such impacts, the procedures necessary to update the current NCP will be developed. This includes, L&B coordinating with DLH staff to determine if it is necessary to modify the current noise abatement and/or land use mitigation measures in the NCP. This process will also include a technical and public review level with stakeholders; including the FAA, airline representatives, local pilots, local government agencies, and the public; to ensure a fully transparent and collaborative process is used to develop the measures to ensure any new measures are feasible and have public acceptance.

This step will include the organization of the measures into final scenarios for immediate, near-term, and long-term implementation, as appropriate.

Noise exposure contours will be included for the mitigated 2025 conditions at 60, 65, 70, and 75 DNL levels. Any contours that will be designated as the new NEM with

program implementation will be so identified. The 60 DNL will be shown as a dashed line with a caveat stating "60 DNL is for informational purposes only".

Deliverables: L&B will produce noise exposure patterns for the mitigated conditions for 2025 that will clearly identify program elements for noise abatement and land use mitigation organized by time frame/operating configuration.

Subtask 8.2: Evaluation of Impacts

Description: Based upon the recommended noise abatement procedures, the effects of the selected noise abatement program will be determined. Residual existing and future off-airport population and land use impacts will be identified and documented. These impacts are those that will remain regardless of all planned efforts to abate noise. Population impacts will be measured for existing population in absolute terms and by the Level Weighted Population (LWP) methodology.

Deliverables: L&B will provide documentation of the noise impact reduction resulting from the selected noise abatement program. Calculation of unresolved residual land use impacts.

Subtask 8.3: Selection of Recommended Land Use Measures

Description: Based upon the aircraft noise exposure contours prepared in Subtask 8.1 and the residual impacts identified in Subtask 8.2, a recommended set of land use management measures will be formulated from the tentative selections made in Subtask 7.3. The recommended land use mitigation measures will be reviewed with the AC, as well as DLH staff and the FAA. The recommendations will identify strategies to control the development of new incompatible land uses within undeveloped areas that may be impacted by the changes in aircraft operations and facility changes discussed in Subtask 6.2. These strategies may be continuations of the current methods, modifications to the program, or entirely new strategies. Recommendations will also be provided to mitigate residual impacts that cannot be eliminated by planning and regulation.

Deliverables: L&B will produce recommended land use mitigation measures.

Subtask 8.4: Selection of Implementation Measures

Description: Implementation measures typically consist of actions taken to facilitate the execution of the program's recommendations, to operate the program on a daily basis, and to periodically review and update the program. These measures will be identified in the final stages of the planning effort, based on the types of noise abatement and land use mitigation measures that are selected. Identification of these measures will be made in consultation with DLH staff, AC members, and the FAA to ensure compliance with the Part 150 NCP Checklist.

Deliverables: L&B will produce recommended implementation measures.

Subtask 8.5: Implementation Actions/Schedule/Costs

Description: Well-developed strategies will be designed that provide step-by-step implementation of those noise abatement and land use management measures recommended by this Part 150 Update. These recommendations will include management policies and strategies, as well as agreements or publicity documents. Each action will be identified in terms of the responsible agency, the nature of that responsibility, and actions that must be taken to initiate implementation. Each must be closely coordinated with the FAA, DLH's users, and local planning agencies to ensure full understanding of the intent of the measure throughout its implementation. A schedule for implementing each action, including both beginning and ending years, will be defined in consultation with DLH staff. Estimated costs for implementing each action will be calculated and potential sources of funds will be identified.

Deliverables: L&B will provide implementation strategies and documents for the NCP.

TASK 9: MEETINGS AND COORDINATION

Subtask 9.1: Establish Advisory Committee

Description: An AC will be established for participation in the Part 150 Update. The AC membership will be composed of roughly 20 - 30 representatives. The committee may be made up of the following types of groups:

- (a) Representatives of local, regional, state, and Federal agencies, as necessary;
- (b) Airport users and tenants;
- (c) Representatives of the local business community;
- (d) FAA and ATCT;
- (e) Local planning agencies; and
- (f) Airport staff.

The AC will be established to advise the DAA and L&B on the conduct and recommendations of the study through meetings and review of interim and draft reports. Members of any previous committees of this type will be considered for appointment, where appropriate. The principal purpose of the AC will be to provide a forum in which consensus or general agreement can be sought on L&B's recommendations to the DAA.

Potential members to serve on the AC will be identified by utilizing staff from pre-existing committees, if available, or DAA will provide L&B suggestions for possible committee members. If directed by the DAA, L&B will contact prospective members to establish their interest in becoming a member of the AC, as well as their availability to participate. Membership for the AC will be determined through a consensus of DLH staff, the FAA, and L&B. It is anticipated that the AC membership for the Part

150 will be the same or similar as that for the Master Plan. Therefore, every effort will be made to consider both studies as the group is formed and meeting dates established.

Deliverables: L&B will develop a list of appropriate AC membership.

Subtask 9.2: Advisory Committee Meetings

Description: The DAA and L&B will work with the AC, which will be established as part of Subtask 9.1, during the course of the NCP portion of the Part 150 Update. The AC will be advisory in nature as they will be a non-voting committee, serving as the principal forum for obtaining review and input from local officials, public interest groups, and aviation interests. The AC will be advisory only. DAA's Project Manager will provide all direction to L&B regarding the final recommendations in the NCP.

AC meetings will be held in conjunction with other meetings (public information meetings, focus groups, etc.) for the study, as well as in coordination with the Master Plan. L&B will send out meeting notices and materials for review, will provide meeting agendas, keep meeting summaries for file documentation purposes, prepare presentation materials, and make technical presentations.

Up to three (3) AC meetings will be conducted. The following are opportunities for such meetings to occur:

- 1) Kick-off meeting;
- 2) Review NEMs and discuss general noise abatement concepts;
- 3) Meeting to disclose preliminary noise abatement alternative findings and recommendations of L&B;

Meeting to disclose preliminary land use alternative findings and recommendations of L&B; and

- 4) Meeting to discuss the recommendations that will be presented for public hearing, if desirable.

The meetings will be a combination of presentation by L&B staff and working group sessions where appropriate. In general, presentations will be used to disseminate information to the AC. Small working groups will be used to gather information from the AC. L&B staff will staff all AC meetings. Opportunities for DLH staff to directly participate will be available, if so desired.

Deliverables: Up to three (3) AC meetings. L&B will provide an accurate roster of members of the AC, agendas, and meeting summaries for distribution among the committee members, DLH staff, and L&B.

Subtask 9.3: Special Presentations/Focus Group Meeting

Description: L&B will conduct one (1) special presentation to public bodies or focus groups affected by, or having oversight responsibilities for, matters covered by the Part 150 Update. "Focus groups" have a special interest in the study, either as users of DLH, as affected neighbors/community advocacy groups, or as a member of the 148th. This presentation will be made by the Project Manager and will be coordinated with other project trips.

The DAA or its Project Manager may authorize L&B to arrange additional presentations and to respond to any comments and requests made during the course of such presentations. This additional effort could be funded through Supplemental Task S1.

Deliverables: One (1) special presentation to public bodies and focus groups.

Subtask 9.4: Public Information Meetings

Description: Technical analyses of the potential aviation noise, land use and other mitigation will be discussed with the public through three (3) open-house informational meetings. The meetings will be held at agreed upon locations in conjunction with the AC meetings. Meeting participants will be asked to respond to the merits of the preliminary evaluations.

L&B will provide publicity for the meetings, as well as the necessary materials for presentations. In addition, L&B will conduct all presentations and prepare a summary of comments for documentation purposes.

DLH staff will direct, collaborate regarding, and have final approval of all material presented at the public information meetings and hearings, including invitations, post-cards, handouts, fact sheets, brochures, and presentation boards.

The first meeting will occur after preparation of the NEM update to review findings on noise impacts and discuss potential mitigation measures. A second meeting will occur during consideration of the alternatives and will present the preliminary recommended alternatives. The third meeting will be conducted in conjunction with the Public Hearings and will present the recommended NCP. The specific format of each meeting will be discussed with DAA staff prior to scheduling the meeting.

Deliverables: L&B will develop a public workshop outreach plan for each meeting, up to three (3) public information meetings, and a summary record of comments shared and obtained at these meetings.

Subtask 9.5: Public Hearing/Comment Collection

Description: One (1) duly advertised, formal Public Hearing will be conducted at the appropriate time in conjunction with the final public workshop upon the availability of the Draft Part 150 report (prepared under Subtask 10.3). Verbatim transcripts of the public hearing will be prepared for inclusion in the Final NCP document. L&B will

review, categorize, and provide responses to all public comments in the form of oral and written testimony.

L&B will provide media materials, a public hearing officer, and a transcriptionist for the Public Hearing. DLH staff may provide meeting facilities at their discretion.

Deliverables: One (1) formal public hearing to be held in conjunction with the last Public Information Meeting (Subtask 9.4). Comments received at the Public Hearing through oral and written testimony, as well as comments received during the comment period will be organized and provided to DAA.

Subtask 9.6: Comment Responses

Description: All comments received during the comment period on the Draft Part 150 will be organized and coded by topic and commenter name. Draft responses to the comments will be prepared by L&B for review by DAA. After all edits are made, the comments and responses will be shared with FAA for review and comment. L&B will make final edits to the comment/response data and provide it in a format ready for submission as part of the Final Part 150 documentation. This task assumes no more than fifty (50) comments will be received during the public comment period.

Deliverables: Draft and final comment/response matrix with comments coded by topic and commenter.

Subtask 9.7: Project Website/Social Media

Description: In an effort to distribute project information to the public and agencies in a timely and efficient manner, a project website will be created to present study information, including graphics and text pertinent to the study, as well as providing notices of upcoming meetings and the study process and draft findings. DAA will host the website. L&B will provide graphics and content that can be pushed through the website and DAA's social media platforms.

Deliverables: L&B will content for website and social media updates.

TASK 10: PUBLICATIONS AND REPORTS

Subtask 10.1: Meeting Graphics

Description: L&B will prepare graphics for use in all public meetings. Presentation media will include display boards and plotted maps, handouts, slides and digital media. Workshops will employ 20-25 display boards and plotted maps to educate attendees on the planning process, describe noise metrics, display inventory information, show noise contours and impacts, demonstrate the potential alternatives, and define the exact recommendations. Some materials may also be prepared as page-size handouts during the course of the study for focus groups and

small meetings. Completed presentation boards and website-ready material will be provided to DLH staff for their use during and after the study.

Deliverables: L&B will produce graphics (boards, handouts, PowerPoints, etc.) for use in public meetings.

Subtask 10.2: Public Information Handouts

Description: An informational handout will be prepared for each public information workshop. This handout, in newsletter format, will contain a brief summary of significant findings and progress of the study to date. Maps, graphs, tables, and other materials will be attached, as necessary. Materials will be distributed at public information workshops. A sufficient number of copies will be provided to DLH staff for handouts or mailings through special requests from people who missed the meeting or to people included on a mailing list. The handout will also be made available in a digital format ready for use in social media/website.

Deliverables: L&B will produce a public information handout in digital format and printed format in sufficient numbers for distribution to meeting attendees and for limited mail out for each of the three meetings (300 copies per meeting).

Subtask 10.3: Draft Report

Description: Task summaries will provide the basis for development of Draft Part 150 Report chapters. This Draft Part 150 Report will include all background information, methodology, noise and land use computability analysis, and a discussion of the validity of, or recommended updated to, the current NCP. The document will also include information describing the stakeholder/public consultation process that was undertaken for this Part 150 Update. A Review Draft (10 copies) will be provided to DLH staff and the FAA for review and comment prior to release of the Draft Part 150 Report. The Draft Part 150 Report will include a draft NEM/NCP checklist. For public hearing review, draft reports will be provided for placement in public repositories. L&B or DLH staff will distribute the Draft Part 150 Report. Adobe Acrobat (PDF) versions of the Draft document will be prepared for use on the website.

Deliverables: L&B will provide up to ten (10) copies of a review draft and thirty (30) copies of the Draft Part 150 Reports.

Subtask 10.4: Final Part 150 Report

Description: On completion of the Public Hearings, all revisions to text and graphics will be made and a Final Part 150 Report will be prepared, which will contain the NEMs and the NCP, as well as the final NEM/NCP checklist. A Final Review Draft will be provided to DLH staff and the FAA for comment prior to release of the Final Report. Descriptions of public involvement and coordination with the appropriate public and private organizations as required under FAR Part 150 will be included. Up to thirty (30) copies will be provided for DLH staff's needs and for FAA review. An Adobe Acrobat (PDF) version of the Final document will be prepared for use on the website.

Thirty (30) CDs of the Final Document (PDF version) will be created for use by the DAA.

Deliverables: L&B will provide up to thirty (30) copies of the Final Document for the DAA and the FAA, and thirty (30) CDs of the Final Document in Adobe Acrobat (PDF) format. Distribution list will be finalized prior to printing documents and CDs for final counts.

Subtask 10.5: Executive Summary

Description: Upon issuance of the Record of Approval (ROA), L&B will prepare an Executive Summary documenting the entire Part 150 Update process, findings, and recommendations, incorporating all comments and conditions that the FAA may place on the recommended measures during the review process. Thirty (30) copies of the Executive Summary (bound separately from the Final Part 150 Report) will be prepared and made available to DLH staff. An Adobe Acrobat (PDF) version of the Executive Summary will be prepared for use by the DAA on social media/websites.

Deliverables: L&B will provide up to thirty (30) copies of an Executive Summary for DLH staff and an Adobe Acrobat (PDF) version of the Executive Summary. Distribution list will be finalized prior to printing documents and CDs for final counts.

TASK 11: PROJECT MANAGEMENT

Description: This task involves the routine coordination and management of the Part 150 Update. Monthly coordination meetings will be held with DLH for the purpose of briefing DLH staff on the progress of the study, listening and responding to staff concerns, discussing the budget, and collecting any needed data or information. Subsequent meetings will continue on a monthly basis for the duration of the study. L&B will provide meeting agendas and meeting summaries of all coordination meetings.

L&B will submit monthly written reports on the progress of our work with concurrent copies to the FAA. The monthly reports shall describe the status of each aspect of the work, any problems encountered, the amount of work accomplished, and a comparison of actual accomplishments to the goals established for the period. In the event that established goals have not been met, the monthly report shall describe the reasons for slippage. The monthly report shall also describe recommendations for modifications to the Scope of Services, changes in methodology or schedules for completion, decisions or conclusions that would alter the course of the study, and dates of upcoming meetings. If required, L&B will prepare a draft Record of Approval to be submitted to the FAA with the Final Part 150 Report.

Deliverables: L&B will provide meeting agendas, handouts, and monthly study update reports.

SUPPLEMENTAL TASKS

The following tasks will be included in the Final Scope of Work and Budget but will be authorized individually by the DAA. If not authorized by the DAA in writing, work will not proceed and the DAA will not be billed for these items.

TASK S1: ADDITIONAL PUBLIC OUTREACH

Description: This task involves performing public outreach efforts that are above those described under Task 9. For purposes of preparing the budget, this task is assumed to cover five (5) additional meetings in Duluth to support the study, and/or the response to additional comments beyond what is anticipated in the scope.

Deliverables: The conduct of additional public outreach, above that already described under Task 9.

TASK S2: SUPPLEMENTAL NOISE METRICS

Description: If requested by the DAA, L&B will prepare noise analysis using supplemental noise metrics (e.g., Lmax, Time-Above, Number Above) to assist in describing potential impacts and benefits of mitigation alternatives. This information can be particularly helpful in describing changes in noise levels outside of the 65 DNL. This task will include both the technical work to prepare the supplemental metric data and the enhanced graphics that are needed to show the results.

Deliverables: The preparation of supplemental noise metric data and graphics for use in describing changes in noise levels.

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**WORK ORDER
No. 2019-6
Between**

**The Duluth Airport Authority (DAA) (Owner) and
Short Elliott Hendrickson Inc. (SEH) (Consultant)**

Dated: June 18, 2019

**CONSTRUCTION ADMINISTRATION, OBSERVATION AND CLOSEOUT
MITIGATION MONITORING (2020-2023)
DULUTH SKY HARBOR AIRPORT (DYT)**

This work order includes construction administration, observation, and project closeout of the 2019 Runway Realignment Project, Phase 3. Also included is the mitigation monitoring from 2020-2023 as required by the agency permits received for the project. The contract provisions included in the Master Agreement (dated 1-20-2015) between the DAA and SEH remain in effect for this work order.

Estimated start date is August 1, 2019; estimated end date is September 30, 2023.

Compensation by the Owner to the Consultant shall be a lump sum amount of \$480,300

A description of the services to be provided is included in Attachments A.

A detailed estimate of labor cost and expenses is included in Attachments B-1 and B-2.

Point of Contact: Benita Crow

**APPROVED:
Duluth Airport Authority (DAA)**

Short Elliott Hendrickson Inc.

Title: _____

Title: _____

Date: _____

Date: _____

Title: _____

Date: _____

ATTACHMENT A
Duluth Sky Harbor Airport (DYT)
Duluth Airport Authority (DAA)
2019 Runway Realignment, Phase 3
Scope of Work
(Construction Administration, Observation and Closeout;
Mitigation Monitoring – Four (4) Year Period)

Project Description – Tree penetrations to the Runway 32 approach surface at the Sky Harbor Airport (DYT) were evaluated during an environmental scoping document, an environmental assessment (EA) and more recently through a permitting and mitigation process with regulatory agencies. The resulting project consists of three phases of construction that will ultimately rotate the Runway 32 end into Superior Bay, allowing for the approach surface to be located over water and eliminating any future issues with tree penetrations. The first two phases of the project, including construction of the footprint of the new runway in Superior Bay and placement of the surcharge material, are substantially complete. This scope of work is related to the construction administration and observation services associated with the third phase of construction, which includes removal of the surcharge material and construction of the final runway and parallel taxiway.

Also included within the scope of work is the required mitigation monitoring of the mitigation elements for the second multi-year period, 2020-2023. (The first mitigation monitoring period, 2017-2019, was included in the Phase 1 Construction Administration work scope.) Other work elements include public outreach and messaging regarding the third phase of construction.

Final design and plans and specification development (DAA Work Order #2015-4, June 16, 2015) for Phase 3 are complete. The final scope of work for construction of Phase 3 includes the following:

1. Removal of the surcharge material placed on the footprint of the new runway as part of Phase 2.
2. Phased construction of non-weather dependent runway and taxiway construction elements in fall of 2019 which do not require closure of the existing runway, and final grading and paving of the runway and taxiway in spring of 2020 under runway closure.
3. Installation of mitigation elements as required by the regulatory permits.
4. Other miscellaneous and related work

This scope of engineering services includes construction administration, observation and project closeout services. As noted, construction is anticipated to take place in the fall of 2019 and the spring of 2020. Mitigation elements will be ongoing. The time of substantial completion for construction is 75 calendar days, with additional time allowed for mitigation elements outside of the construction schedule.

This work will be performed under a Federal Aviation Administration (FAA) Airport Improvement Program (AIP) grant in accordance with Advisory Circular (AC) 150/5100-

14, "Architectural, Engineering and Planning Consulting Services for Airport Grant Projects."

Project Deliverables – The project deliverables of this scope include the following:

1. Construction Administration Services
2. Construction Observation
3. Mitigation Monitoring – 2020 Annual Monitoring and Report
4. Mitigation Monitoring – 2021 Annual Monitoring and Report
5. Mitigation Monitoring – 2022 Annual Monitoring and Report
6. Mitigation Monitoring – 2023 Annual Monitoring and Report
7. FAA Reporting and Project Closeout
8. Project Outreach, Public Meetings, and Project Management

This work scope includes:

Work Element 1: Construction Administration Services

Specific tasks included with this work element include:

Task 1.1 – Scope Development – SEH will develop the project scope to ensure that necessary aspects of the project are included. Scope development includes coordination with the Sponsor and FAA for scope review, preparation of the final scope, fee proposal development, and contract negotiations. As part of the scope development, SEH will coordinate and obtain scope and fee estimate for subconsultant work related to quality assurance testing and electrical engineering services.

Task 1.2 – Project Administration Services – Office engineering staff, CAD personnel, and administrative staff will assist the construction project team as necessary during construction in response to requests for information, plan or specification clarifications, work change directives and other issues that may arise. Other administrative tasks include project set up and invoicing, internal meetings (bi-weekly), internal progress reports, subconsultant coordination and contract management.

Task 1.3 – Construction Management Plan (CMP) – SEH will obtain the Contractor's Quality Control Plan (QCP) and complete a thorough review of the document for completeness. Any recommended revisions or updates will be submitted to the Contractor. Following review of the QCP, SEH will develop a CMP by extracting data from the QCP and combining it with Sponsor and Engineer information for project responsibilities. A final CMP will be submitted to the Sponsor and FAA for approval.

Task 1.4 – Preparation of Project Files – SEH will develop construction contracts, review Contractor bonding information, and ensure that Sponsor insurance requirements have been met. SEH will coordinate routing and signature of the construction contracts by the DAA and the Contractor. Plans, contract documents, and technical specifications will be updated to include all addenda items issued during bidding. SEH will ensure that the Contractor is supplied with adequate copies of the construction plans and project manual.

- Task 1.5 – Establish Survey Control** – SEH will establish the necessary horizontal and vertical control for construction staking for the project. (The Contractor is required to provide construction staking.)
- Task 1.6 – Pre-Construction Activities** – A pre-construction meeting will be held prior to construction. The purpose of the pre-construction meeting is to familiarize the Contractor and appropriate employees of safety and security requirements, discuss project requirements, administration procedures, airfield closure procedures, schedules, project responsibilities and communication, Disadvantaged Business Enterprise (DBE) reporting, Contractor submittals, and other related MnDOT and FAA requirements, as necessary.
- SEH will administer the pre-construction meeting, develop the agendas, issue notifications, and record and distribute meeting minutes. Attendees will include the Sponsor, FAA, MnDOT, Contractor, Subcontractors, SEH (Project Manager, Professional Engineer, Biologist and RPR), and subconsultant (material testing firm and electrical engineer).
- Task 1.7 – Permit Coordination** – SEH will coordinate and review all applicable permits related to the project construction. These include review and coordination of applicable US Army Corps of Engineers (USACE) and Minnesota Department of Natural Resources (DNR) permits for the entire project to ensure all regulatory requirements are being met. Additional permit coordination and monitoring includes Stormwater Pollution Prevention Plan (SWPPP) related permits (MPCA General Stormwater Permit for Construction Activity), as well as City of Duluth Haul Route Permit, City of Duluth Erosion and Sediment Control Permit, City of Duluth Fill, Excavation and Grading Permits.
- Task 1.8 – Submittal and Shop Drawing Review** – SEH will review product and material data, shop drawings, material samples, and other items required to be submitted by the Contractor.
- Task 1.9 – Progress Meetings** – Construction Progress Meetings will be held once a week while construction work is being performed on the airfield. The progress meetings will be attended by SEH staff, including the Project Manager, Professional Engineer, Resident Project Representative(s) (RPR) and other staff as needed or required. It is anticipated that 12 total progress meetings will occur during construction activities in fall 2019 and spring of 2020.
- Task 1.10 – Review of Quality Control Testing** – All quality control test results performed by the Contractor will be monitored on a daily basis and summarized by SEH. In the event of a failed test result, the Contractor will be required to take corrective action and a retest will be taken until passing results are achieved. SEH will review all quality control testing performed by the Contractor for compliance with the specifications. This will be conducted prior to submission to the FAA. Should any additional testing need to be accomplished, this will be coordinated with the Contractor who will be responsible for completion.
- Task 1.11 – Review of Quality Assurance Testing** – All quality assurance test results performed by the material testing subconsultant will be monitored on a daily basis and summarized by SEH. In the event of a failed test result, the Contractor will be required to take corrective action and a retest will be taken

until passing results are achieved. SEH will review final quality assurance testing for compliance with the specifications. This will be conducted prior to submission to the FAA. Should any additional testing need to be accomplished, this will be coordinated with the subconsultant who will be responsible for completion.

Task 1.12 – Review of Contractor Payroll Forms – SEH will review weekly payroll reporting by the Contractor to ensure that wage rates comply with the requirements of the federal and state wage rates for the work being performed. The RPR will conduct compliance monitoring of the Contractor's Davis-Bacon Act and DBE contractual obligations, including recording the Contractor/subcontractor employees, type of work being completed, and conducting random interviews.

Task 1.13 – Calculate Construction Quantities – SEH will review quantities with the Contractor on a weekly basis. Any discrepancies or disagreements regarding completed quantities will be resolved in advance of any partial pay application process. Periodic cost estimates will be developed by SEH to ensure compliance with the overall project budget.

Task 1.14 – Pay Applications – SEH will prepare partial pay applications once each month during construction, a final pay application including final agreed upon quantities for all work components, and a pay application releasing retainage to the Contractor once all closeout requirements have been met. Actual completed quantities will be tabulated for use in preparing all pay applications.

Task 1.15 – Daily Reports – SEH will maintain a daily log of the construction activities and maintain construction photos for record keeping purposes.

Task 1.16 – Weekly Reports – SEH will prepare a weekly status report using the FAA's standard form as a template. The report will be developed by the RPR, reviewed by the Project Engineer, Geotechnical Engineer, Biologist and Project Manager, (as needed) and submitted to the Sponsor, FAA, and MnDOT via electronic submittal (PDF).

Task 1.17 – Change Orders / Supplemental Agreements – SEH shall review and provide recommendations to the Sponsor of proposed changes to the contract documents, technical specifications and plans. As necessary, SEH will issue supplemental details, design data, drawings and modifications to Contractor for change order pricing. The Project Manager will prepare change orders/supplemental agreements. All Change Orders and Supplemental Agreements require FAA approval prior to being issued. In the case where new materials may be required in addition to those in the bid documents, new bid items will be added to the project and a Request for Pricing from the Contractor will be proposed.

Task 1.18 – Final Inspection and Punchlist – SEH will conduct a final inspection after completion of the project. SEH will issue notifications and prepare a punchlist of any outstanding items requiring correction. A tracking document will be prepared and progress on the punchlist items will be recorded until all issues are resolved.

Task 1.19 – Record Drawings – SEH will utilize Contractor and engineering drawings during construction to complete record drawings for the project. The record drawings will incorporate any modifications or additions/subtractions that occurred during construction. Three (3) final plan

sets will be plotted and distributed to the Duluth Airport Authority (DAA) for records. Electronic (PDF) copies of the record drawings will be provided to DAA, MnDOT and FAA.

Task 1.20 – Final Quality Control / Quality Assurance Summary – SEH will prepare and submit the final QC/QA summary for the project.

Task 1.21 – Final Engineering Report – SEH will prepare a final engineering report which will include a project narrative, testing summaries, change orders showing any modifications that may have occurred during construction, all project cost information, including administrative expenses, engineering fees, and construction costs, and any other required project data.

**The deliverables associated with Tasks 1.19, 1.20, and 1.21 will be compiled and saved on a CD to be provided to the DAA, MnDOT, and FAA.*

Task 1.22 – Warranty Inspection Site Visit – SEH will complete a warranty inspection site visit prior to the expiration of the warranty period to identify and document any issues to be resolved by the Contractor as party of the warranty guarantee.

Work Element 2: Construction Observation

Construction is expected to occur during normal construction hours of 6:00 AM until 6:00 PM. To accommodate the scope of the type of work and the project schedule, construction observation services include providing one RPR on a full-time basis, supplemented by part-time construction observation services by the project engineer, for 75 working days (estimated at two days/week). Work conducted before and after the project time for completion will include one RPR. Specific tasks included with this work element include:

Task 2.1 – Construction Observation – SEH will provide daily construction observation for the duration of construction. This project is projected to occur for 75 working days during the fall of 2019 and the spring of 2020. The RPR, together with part-time assistance from the project engineer, will be available to assist in ensuring that construction is performed in accordance with contract documents during this time. The RPR will document and record construction progress through a daily journal. A collective weekly progress report will be developed at the end of the week and submitted to the Sponsor, FAA, MnDOT, and other individuals/organizations as needed (See Task 1.16).

Further duties of the on-site engineering staff include monitoring the Contractor's schedule, safety plan implementation, general communication, adherence to technical specifications, and project drawing execution. Periodic site visits from the geotechnical engineer and biologist are also included in this scope of work.

Task 2.2 – Construction Coordination – The Project Manager will make weekly site visits to the project to assist the onsite engineering staff, review construction activities, and coordinate updates with the Sponsor.

Work Element 3: Mitigation Monitoring – 2020 Mitigation Monitoring and Report

Task 3.1 – Monitor Location and Condition of Crib Structures – SEH will survey (GPS) and monitor the location and condition of the crib structures.

Task 3.2 – Monitor Compost Tube Roll and Invasives Treatment – SEH will monitor the establishment of native plants in the compost tube rolls as well as monitor the progress of invasive plant management in establishing vegetation on the airport and in the DAA parcels near the airport.

Task 3.3 – Draft Annual Monitoring Report – SEH will develop a draft annual monitoring report that describes construction, monitoring, and maintenance activities prepared in accordance with the approved Mitigation Monitoring Plan.

Task 3.4 – Final Annual Monitoring Report – SEH will refine the draft monitoring report based on review comments from the owner and regulatory agencies as needed. The deliverable will be a final annual report submitted to the owner and regulatory agencies in printed and electronic (.pdf) formats.

Task 3.5 – DNR Coordination – SEH will coordinate with the DNR on site visits to view mitigation elements, implement any adjustments to mitigation elements or monitoring tactics as recommended, and incorporate additional mitigation elements as directed.

Work Element 4: Mitigation Monitoring – 2021 Annual Monitoring and Report

Task 4.1 – Monitor Aquatic and Emergent Plants – SEH will monitor aquatic and emergent plants near the Runway 14 end and seawall area, and monitor condition of herbivore protection fencing.

Task 4.2 – Monitor Location and Condition of Crib Structures – SEH will survey (GPS) and monitor the location and condition of the crib structures.

Task 4.3 – Monitor Compost Tube Roll and Invasives Treatment – SEH will monitor the establishment of native plants in the compost tube rolls as well as monitor the progress of invasive plant management in establishing vegetation on the airport and in the DAA parcels near the airport.

Task 4.4 – Draft Annual Monitoring Report – SEH will develop a draft annual monitoring report that describes construction, monitoring, and maintenance activities prepared in accordance with the approved Mitigation Monitoring Plan.

Task 4.5 – Final Annual Monitoring Report – SEH will refine the draft monitoring report based on review comments from the owner and regulatory agencies as needed. The deliverable will be a final annual report submitted to the owner and regulatory agencies in printed and electronic (.pdf) formats.

Task 4.6 – DNR Coordination – SEH will coordinate with the DNR on site visits to view mitigation elements, implement any adjustments to mitigation elements or monitoring tactics as recommended, and incorporate additional mitigation elements as directed.

Work Element 5: Mitigation Monitoring – 2022 Annual Monitoring and Report

Task 5.1 – Monitor Aquatic and Emergent Plants – SEH will monitor aquatic and emergent plants near the Runway 14 end and seawall area.

Task 5.2 – Monitor Location and Condition of Crib Structures – SEH will survey (GPS) and monitor the location and condition of the crib structures.

Task 5.3 – Monitor Compost Tube Roll and Invasives Treatment – SEH will monitor the establishment of native plants in the compost tube rolls as well as monitor the progress of invasive plant management in establishing vegetation on the airport and in the DAA parcels near the airport.

Task 5.4 – Draft Annual Monitoring Report – SEH will develop a draft annual monitoring report that describes construction, monitoring, and maintenance activities prepared in accordance with the approved Mitigation Monitoring Plan.

Task 5.5 – Final Annual Monitoring Report – SEH will refine the draft monitoring report based on review comments from the owner and regulatory agencies as needed. The deliverable will be a final annual report submitted to the owner and regulatory agencies in printed and electronic (.pdf) formats.

Task 5.6 – DNR Coordination – SEH will coordinate with the DNR on site visits to view mitigation elements, implement any adjustments to mitigation elements or monitoring tactics as recommended, and incorporate additional mitigation elements as directed.

Work Element 6: Mitigation Monitoring – 2023 Annual Monitoring and Report

Task 6.1 – Monitor Aquatic and Emergent Plants – SEH will monitor aquatic and emergent plants near the Runway 14 end and seawall area.

Task 6.2 – Monitor Location and Condition of Crib Structures – SEH will survey (GPS) and monitor the location and condition of the crib structures.

Task 6.3 – Monitor Compost Tube Roll and Invasives Treatment – SEH will monitor the establishment of native plants in the compost tube rolls as well as monitor the progress of invasive plant management in establishing vegetation on the airport and in the DAA parcels near the airport.

Task 6.4 – Draft Annual Monitoring Report – SEH will develop a draft annual monitoring report that describes construction, monitoring, and maintenance activities prepared in accordance with the approved Mitigation Monitoring Plan.

Task 6.5 – Final Annual Monitoring Report – SEH will refine the draft monitoring report based on review comments from the owner and regulatory agencies as needed. The deliverable will be a final annual report submitted to the owner and regulatory agencies in printed and electronic (.pdf) formats.

Task 6.6 – DNR Coordination – SEH will coordinate with the DNR on site visits to view mitigation elements, implement any adjustments to mitigation elements or monitoring tactics as recommended, and incorporate additional mitigation elements as directed.

Work Element 7: FAA Reporting and Project Closeout

Task 7.1 – FAA Quarterly Reports - SEH will complete the required FAA quarterly reports starting with grant acceptance through grant closeout (four years).

Task 7.2 – FAA Closeout Report – SEH will complete the required FAA closeout report following completion of the project to reconcile all project related costs and closeout the FAA grant for the work.

Task 7.3 – Project Closeout – SEH will work with the Contractor to ensure that all necessary closeout documents are submitted by the Contractor. These include, but are not limited to, IC-134 documentation, lien waivers, wage rate compliance, and other documentation as identified in the specifications.

Task 7.4 – Disadvantaged Business Enterprise (DBE) Requirements – SEH will review and submit the required documentation to confirm the Contractor's compliance with the DBE program and goals for this project, or provide evidence of "good faith efforts" to meet DBE requirements.

Work Element 8: Public Outreach, Public Meetings, and Project Management –

This task includes the public outreach and messaging required to notify and educate the area residents, affected businesses and organizations, and governmental and regulatory agencies regarding the project objectives, schedule, and specific construction elements. Additionally, this task includes the overall project management of Work Elements 1 through 7 noted above. Project Management includes administration of the project, sponsor meetings and coordination activities, and related project administration tasks.

Task 8.1 – Public Involvement Plan –This task includes the development of an overall Public Involvement Plan that identifies individual people, groups, organizations, businesses, and governmental and regulatory agencies that will need varying levels of communication and information regarding project activities. The Public Involvement Plan will document methods of outreach, including attendance and presentation at regular recurring meetings, attendance and presentation at a single meeting or a planned kick-off meeting, and messaging in the form of newsletters, flyers, signage and other outreach methods.

Task 8.2 – Regular Recurring Meetings –This task includes attendance and presentation at organizational meetings that occur on a regular basis. Groups and organizations identified in the Public Involvement Plan that require attendance and presentation/updates at regular meetings include the following:

- Park Point Community Club (PPCC)
- Sky Harbor Airport Tenant Meetings
- Duluth Airport Authority
- Northern Aero Alliance (quarterly meetings)

Appropriate SEH staff will attend all regular meetings while construction is ongoing, and then two meetings per year for three years for updates on mitigation elements, monitoring efforts, and reporting.

Task 8.3 – Single Outreach Meetings – This task includes attendance and presentation at a single outreach or kick-off meeting to inform and educate

specific individuals or organizations of the current status of the project, schedule of construction, or other related and pertinent information. Groups or organizations identified in the Public Involvement Plan for attendance at a single or kick-off meeting include the following:

- Urban Forest commission
- Duluth Planning Commission
- Duluth City Council
- Duluth Parks and Recreation Commission
- Harbor Technical Advisory Committee (HTAC)
- Duluth City Administration
- Duluth area political delegation, as appropriate

Task 8.4 – Public Messaging and Outreach / Newsletter – This task includes the development of public messaging and outreach in the form of project newsletters, construction flyers, public signage, and other related communication methods. In addition to the organizations noted above, the following organizations will be included in this type of public messaging:

- Seaway Port Authority
- Metropolitan Interstate Council (MIC)
- Canal Park Association
- Visit Duluth
- Barkers Island
- US Coast Guard
- Duluth Rowing Club
- Duluth Boating Club
- Lakehead Boat Basin
- Tranquility Cove

Task 8.5 – Overall Project Management –This task includes project coordination and administration, including Sponsor and agency communication, internal meetings, subconsultant oversight, progress reports, budget updates and monthly invoices.

ATTACHMENT B
ESTIMATED FEES AND EXPENSES
2019 RUNWAY REALIGNMENT, PHASE 3
CONSTRUCTION ADMINISTRATION, OBSERVATION, AND CLOSEOUT
MITIGATION MONITORING (4-YR PERIOD)
DULUTH SKY HARBOR AIRPORT (DYT)
Duluth Airport Authority (DAA)
Duluth, Minnesota

Task No.	Task Description	Principal	Project Manager	Professional Engineer	Senior Geotechnical Engineer	Resident Project Representative	Senior CAD Technician	Sr. Aviation Planner	Senior Scientist	Senior Scientist	Senior Biologist	Biologist	Admin Technician
Construction Administration Services													
1.1	Scope Development	0	28	6	0	0	0	0	0	0	0	4	0
1.2	Project Administration Services	0	38	82	14	6	38	0	0	0	0	14	16
1.3	Construction Management Plan (CMP)	0	0	8	0	4	0	0	0	0	0	0	2
1.4	Preparation of Project Files	0	0	8	0	0	8	0	0	0	0	0	8
1.5	Establish Survey Control	0	0	10	0	10	4	0	0	0	0	0	0
1.6	Pre-Construction Activities (Preparation and Follow-up)	0	6	16	0	4	0	0	0	0	0	4	4
1.7	Permit Coordination	0	0	16	0	4	0	0	0	0	0	16	4
1.8	Submittal and Shop Drawing Review	0	0	12	0	4	0	0	0	0	0	0	0
1.9	Progress Meetings	0	24	24	0	12	0	0	0	0	0	8	4
1.10	Review of Quality Control Testing	0	0	12	0	0	0	0	0	0	0	0	0
1.11	Review of Quality Assurance Testing	0	0	12	0	0	0	0	0	0	0	0	0
1.12	Review of Contractor Payroll Forms	0	0	12	0	0	0	0	0	0	0	0	0
1.13	Calculate Construction Quantities	0	4	24	0	0	2	0	0	0	0	0	0
1.14	Pay Applications	0	2	14	0	8	0	0	0	0	0	0	6
1.15	Daily Reports	0	2	18	0	0	0	0	0	0	0	0	0
1.16	Weekly Reports	0	4	12	4	0	0	0	0	0	0	4	0
1.17	Change Orders / Supplemental Agreements	0	8	8	0	0	0	0	0	0	0	0	4
1.18	Final Inspection and Punchlist	0	10	24	4	6	0	0	0	0	0	6	2
1.19	Record Drawings	0	0	4	0	8	40	0	0	0	0	0	0
1.20	Final Quality Control/Quality Assurance Summary	0	0	8	0	4	0	0	0	0	0	0	2
1.21	Final Engineering Report	0	2	16	4	4	4	0	0	0	0	4	8
1.22	Warranty Inspection Site Visit	0	8	16	0	4	0	0	0	0	0	0	2
Construction Observation													
2.1	Construction Observation	0	0	240	32	800	0	0	0	0	0	32	0
2.2	Construction Coordination	0	48	0	0	0	0	0	0	0	0	0	0
Mitigation Monitoring - 2020 Mitigation Monitoring and Annual Report													
3.1	Monitor Location and Condition of Crb Structures	0	0	24	0	0	0	0	0	4	0	12	0
3.2	Monitor Compost Tube and Invasives Treatment	0	0	4	0	0	0	0	0	0	2	24	0
3.3	Draft Annual Monitoring Report	0	0	0	0	0	0	0	4	2	2	32	2
3.4	Final Annual Monitoring Report	0	0	0	0	0	0	0	2	2	0	8	2
3.5	DNR Coordination	0	0	4	0	0	0	0	0	0	0	16	0
Mitigation Monitoring - 2021 Mitigation Monitoring and Annual Report													
4.1	Monitor Aquatic and Emergent Plants	0	0	2	0	0	0	0	0	0	4	32	0
4.2	Monitor Location and Condition of Crb Structures	0	0	24	0	0	0	0	0	4	0	12	0
4.3	Monitor Compost Tube and Invasives Treatment	0	0	4	0	0	0	0	0	0	2	24	0
4.4	Draft Annual Monitoring Report	0	0	0	0	0	0	0	4	2	2	36	2
4.5	Final Annual Monitoring Report	0	0	0	0	0	0	0	2	2	0	10	2
4.6	DNR Coordination	0	0	4	0	0	0	0	0	0	0	16	0
Mitigation Monitoring - 2022 Mitigation Monitoring and Annual Report													
5.1	Monitor Aquatic and Emergent Plants	0	0	2	0	0	0	0	0	0	4	32	0
5.2	Monitor Location and Condition of Crb Structures	0	0	24	0	0	0	0	0	4	0	12	0
5.3	Monitor Compost Tube and Invasives Treatment	0	0	4	0	0	0	0	0	0	2	24	0
5.4	Draft Annual Monitoring Report	0	0	0	0	0	0	0	4	2	2	36	2
5.5	Final Annual Monitoring Report	0	0	0	0	0	0	0	2	2	0	10	2
5.6	DNR Coordination	0	0	4	0	0	0	0	0	0	0	16	0
Mitigation Monitoring - 2023 Mitigation Monitoring and Annual Report													
6.1	Monitor Aquatic and Emergent Plants	0	0	2	0	0	0	0	0	0	4	32	0
6.2	Monitor Location and Condition of Crb Structures	0	0	24	0	0	0	0	0	4	0	12	0
6.3	Monitor Compost Tube and Invasives Treatment	0	0	4	0	0	0	0	0	0	2	24	0
6.4	Draft Annual Monitoring Report	0	0	0	0	0	0	0	4	2	2	36	2
6.5	Final Annual Monitoring Report	0	0	0	0	0	0	0	2	2	0	10	2
6.6	DNR Coordination	0	0	4	0	0	0	0	0	0	0	16	0
FAA Reporting and Project Closeout													
7.1	FAA Quarterly Reports	0	0	16	0	0	0	0	0	0	0	0	4
7.2	FAA Closeout Report	0	4	40	0	0	0	0	0	0	0	0	8
7.3	Project Closeout	0	2	16	0	4	4	0	0	0	0	4	4
7.4	DBE Requirements	0	0	16	0	0	0	0	0	0	0	0	4
Public Outreach, Public Meetings, and Project Management													
8.1	Public Involvement Plan	0	8	4	0	0	0	4	0	0	0	2	4
8.2	Regular Recurring Meetings	0	132	26	0	0	0	0	0	0	0	8	0
8.3	Single Outreach Meetings	8	28	0	0	0	0	0	0	0	0	0	8
8.4	Public Messaging and Outreach / Newsletter	0	24	0	0	0	0	8	0	0	0	8	8
8.5	Overall Project Management	0	40	0	0	0	0	0	0	0	0	0	0
Total hours per labor category		8	422	854	58	892	100	12	24	32	28	596	118

ESTIMATE OF LABOR COSTS:

Labor Category	Hours	Rate	Extension
Principal	8	\$76.21	\$609.68
Project Manager	422	\$71.03	\$29,974.66
Professional Engineer	854	\$48.08	\$41,060.32
Senior Geotechnical Engineer	58	\$58.57	\$3,397.06
Resident Project Representative	892	\$32.35	\$28,532.70
Sr. Aviation Planner	12	\$63.38	\$760.56
Senior CAD Technician	100	\$35.26	\$3,526.00
Senior Scientist	24	\$51.62	\$1,238.88
Senior Scientist	32	\$60.88	\$1,948.16
Senior Biologist	28	\$35.98	\$1,007.44
Biologist	596	\$33.68	\$20,073.28
Admin Technician	118	\$26.24	\$3,096.32
Total Direct Labor Costs:	3,134		\$135,225.06
Direct Salary Costs plus Overhead (66.03%)			\$224,514.17
Total Labor Costs			\$359,739.23
Fee (15%) on Total Labor Costs:			\$53,960.88

ESTIMATE OF EXPENSES:

Direct Expenses	Quantity	Rate	Extension
Quality Assurance Testing - Braun Intertec	1	\$20,356.00	\$20,356.00
Electrical Engineer - Barr Engineering Company	1	\$9,000.00	\$9,000.00
Employee Mileage	20120	\$0.58	\$11,669.60
Employee Per Diem	39	\$200.00	\$7,800.00
Employee Auto Allowance	105	\$16.00	\$1,680.00
Survey Equipment (Total Station)	10	\$30.00	\$300.00
Survey Equipment (GPS)	10	\$30.00	\$300.00
Monitoring Equipment for 24-hr/day Barge Construction	1	\$12,000.00	\$12,000.00
Reproductions / Miscellaneous	1	\$3,504.00	\$3,504.00
Total Expenses			\$66,609.60

SUMMARY:

Total Labor Costs + Expenses + Fee	\$480,309.71
Estimated Total	\$480,309.00

May 14, 2019

Mr. Brandon Twedt, PE
SHORT, ELLIOTT, HENDRICKSON, INC.
3535 Vadnais Center Drive
St. Paul, Minnesota 55110

**RE: DULUTH, MN SKY HARBOR AIRPORT – 2019 RUNWAY REALIGNMENT – CONSTRUCTION
PROPOSAL FOR ELECTRICAL ENGINEERING SERVICES**

Dear Brandon:

Thank you for contacting us regarding construction phase services for the Construction Administration stage of the Duluth Sky Harbor 2019 Runway Realignment project. We are providing this letter to outline our understanding of the project, our proposed scope of services, and our proposed fees for the design and bid phase of the project.

PROJECT DESCRIPTION

This project consists of the continuation of services of the recently designed Duluth Sky Harbor 2019 Runway Realignment project –for the construction phase of the project. Below we outline the proposed scope of services, with associated fees.

SCOPE OF SERVICES

In support of your efforts, Barr proposes to provide the following subconsultant services to Short, Elliott, Hendrickson (SEH):

1. Attend pre-construction meeting in-person.
2. Shop drawing review.
3. Up to two (2) interim progress meetings with site observations.
4. Provide final inspection with associated punch list.
5. As-built drawing review.
6. Respond to RFI's by phone or email as they arise.

7. All transportation to and from Duluth is planned to be by automobile.

PROPOSED FEE


Barr Engineering proposes to provide the outlined scope of services to SEH on an hourly basis to a maximum budget of \$9,000.

Services are billed monthly according to the work completed. Reimbursables such as automobile mileage are included in the total above.

Thank you for the opportunity to present this proposal. We look forward to working with you on the construction of this project.

Sincerely,

BARR ENGINEERING CO.



Mark E. Ziemer, P.E.

Senior Electrical Engineer

Project Proposal

QTB100953

Runway Realignment - Ph.3 - Sky Harbor

Client:

Short-Elliott-Hendrickson, Incorporated
Benita L. Crow
3535 Vadnais Center Dr
Saint Paul, MN 55110

Work Site Address:

Sky Harbor Regional Airport
5000 Minnesota Ave.
Duluth, MN 55802

Service Description:

Construction Materials Testing
Sky Harbor Airport
Duluth, MN
AIP 3-27-0025-14-19

	Description	Quantity	Units	Unit Price	Extension
Phase 1	Acceptance Testing				
Activity 1.1	Soils				\$5,345.00
207	Compaction Testing - Nuclear	45.00	Hour	79.00	\$3,555.00
	<i>Work Activity Detail</i>	<i>Qty</i>	<i>Units</i>	<i>Hrs/Unit</i>	<i>Extension</i>
	P-152 Embankment	7.00	Trips	3.00	21.00
	P-219 Recycled Base Course	6.00	Trips	4.00	24.00
1308	Nuclear moisture-density meter charge, per hour	45.00	Each	10.00	\$450.00
209	Sample pick-up	6.00	Hour	75.00	\$450.00
1318	Standard Proctor Test(ASTM D 698)	4.00	Each	170.00	\$680.00
1861	CMT Trip Charge	14.00	Each	15.00	\$210.00
Activity 1.2	Pavement				\$11,160.00
222	Bituminous Acceptance Testing	92.00	Hour	105.00	\$9,660.00
	<i>Work Activity Detail</i>	<i>Qty</i>	<i>Units</i>	<i>Hrs/Unit</i>	<i>Extension</i>
	P401 HMA	8.00	Trips	11.50	92.00
1863	Per diem (as needed)	8.00	Each	150.00	\$1,200.00
1862	PAVE Trip Charge	2.00	Each	150.00	\$300.00
Activity 1.3	Concrete				\$894.00
261	Concrete Testing	6.00	Hour	79.00	\$474.00
	<i>Work Activity Detail</i>	<i>Qty</i>	<i>Units</i>	<i>Hrs/Unit</i>	<i>Extension</i>
	Foundations (PAPI & Guidance Sign)	2.00	Trips	3.00	6.00
1364	Compressive strength of concrete cylinders (ASTM C 39), per specimen	8.00	Each	30.00	\$240.00
	<i>Work Activity Detail</i>	<i>Qty</i>	<i>Units</i>	<i>Hrs/Unit</i>	<i>Extension</i>
	Foundations (PAPI & Guidance Sign)	2.00	Set	4.00	8.00
278	Concrete Cylinder Pick up	2.00	Hour	75.00	\$150.00
	<i>Work Activity Detail</i>	<i>Qty</i>	<i>Units</i>	<i>Hrs/Unit</i>	<i>Extension</i>
	Cylinder Pickup	2.00	Trips	1.00	2.00
1861	CMT Trip Charge	2.00	Each	15.00	\$30.00
Activity 1.4	Project Oversight				\$2,957.00
238	Project Assistant	3.00	Hour	75.00	\$225.00
226	Project Manager	7.00	Hour	160.00	\$1,120.00
228	Senior Project Manager	5.00	Hour	170.00	\$850.00
1230	Final Summary Report	1.00	Each	400.00	\$400.00
1863	Per diem	1.00	Each	150.00	\$150.00
1862	PM Trip Charge	1.00	Each	212.00	\$212.00
Phase 1 Total:					\$20,356.00

Proposal Total: \$20,356.00

~~III~~ G

WORK ORDER
No. 2019-7
Between

**The Duluth Airport Authority (DAA) (Owner) and
Short Elliott Hendrickson Inc. (SEH) (Consultant)**

Dated: June 18, 2019

**AS-BUILT AIRPORT LAYOUT PLAN (ALP) AND EXHIBIT A PROPERTY MAP
DULUTH SKY HARBOR AIRPORT (DYT)**

This work order includes the completion of an As-Built ALP and Exhibit A property map as a result of the Runway Realignment Project and the changes to property ownership. The contract provisions included in the Master Agreement (dated 1-20-2015) between the DAA and SEH remain in effect for this work order.

Estimated start date is August 1, 2019; estimated end date is September 30, 2021.

Compensation by the Owner to the Consultant shall be a lump sum amount of \$85,500

A description of the services to be provided is included in Attachments A.

A detailed estimate of labor cost and expenses is included in Attachments B-1 and B-2.

Point of Contact: Kaci Nowicki

APPROVED:

Duluth Airport Authority (DAA)

Short Elliott Hendrickson Inc.

Title: _____

Title: _____

Date: _____

Date: _____

Title: _____

Date: _____

Attachment A
Duluth Sky Harbor Airport (DYT)
Duluth Airport Authority (DAA)
Exhibit 'A' Property Map and As-Built ALP Update
Scope of Work

The Duluth Airport Authority (DAA) desires to complete an Exhibit 'A' Property Map for the Duluth Sky Harbor Airport (DYT). The Airport is completing phase 3 of the runway relocation project which includes creation of new land and property in Superior Bay. This new property triggers the need for an Exhibit A Map. This Exhibit 'A' Property Map will be the airport's first completed in compliance with FAA Airports Standard Operating Procedure (SOP) 3.0, Standard Operating Procedures for FAA Review of Exhibit "A" Airport Property Inventory Maps.

With the completion of Phase 3 of the runway relocation project, the airport must complete an As-Built ALP. Their existing ALP will be updated to SOP standards and the current runway and taxiway conditions (relocated runway) will be depicted.

Project Deliverables – The project deliverables of this scope include the following:

1. Exhibit 'A' Property Map and Report
2. As-Built ALP Update

Study Element 1: Project Initiation, Coordination and Administration

Task 1.1 – Project Scoping and Contract Development – Short Elliott Hendrickson (SEH and/or Consultant) will coordinate with the DAA to develop the appropriate work scope, define tasks, lines of communication and establish project goals, objectives or areas of interest. Project fees will be prepared using the final Scope of Work. This task includes project scoping meetings with DAA, FAA, and MnDOT Aeronautics. An agreement will be developed from the final Scope of Work and approved fees. The agreement will be provided to the FAA and MnDOT for review and approval prior to a contract being executed. This task also includes time to coordinate scopes of services with subconsultants and development of subconsultant contracts.

Task 1.2 – Project Administration and Management – SEH will provide project administration and management services as required to complete the project within the conditions of this agreement. Administration and management duties include project setup, monthly invoicing and preparation of a budget and schedule. Subconsultant coordination is included in this task.

Task 1.3 – Quality Assurance and Control – SEH will implement and carry-out internal quality control for the project. Peer review will be conducted at each phase of the project to check content and product quality. Throughout the project, SEH will be responsible for draft and final proof-reading, final word processing, editing, graphics, reports and other products included in this Scope of Work.

Task 1.4 – Client Meetings – Up to two (2) meetings with DAA staff are included throughout the preparation of the Exhibit A and As-Built ALP.

Task 1.5 – FAA and MnDOT Meetings and Coordination (approximately 2 meetings) - SEH will maintain contact with the FAA and MnDOT through e-mail, regular mail, phone, review documents and deliverables. The FAA and MnDOT will have the opportunity to review and comment on the project deliverables.

This task includes time to coordinate, meet, and build consensus with these groups and also time to make revisions per their recommendations. It is anticipated that up to two (2) meetings will take place with the FAA Airports District Office (ADO) and/or MnDOT at either of their offices or at DYT (assume 1 at ADO and 1 at DLH). These meetings may be combined with other project meetings taking place at DLH or at the ADO.

For all meetings, meeting minutes and summaries will be prepared with action items documented. The topics and schedule of the coordination meetings will be determined and scheduled as needed throughout the project with input from the DAA, FAA and MnDOT.

Deliverable: Project scope, agreement, budget, schedule, and meetings.

Study Element 2: Exhibit A Property Map

This task includes preparation of an Exhibit 'A' Property Map in compliance with FAA Airports Standard Operating Procedure (SOP) 3.0, Standard Operating Procedures for FAA Review of Exhibit 'A' Airport Property Inventory Maps.

The airport property map will conform to the standards described with FAA Airports SOP 3.00, and will include existing and proposed land acquisition in both fee and easement. The tables will be updated to include information related to parcels purchased since the last Airport Layout Plan (ALP) update. Historical property records will be researched to verify existing parcel information and how each parcel was purchased. Existing and future property will be identified by parcel number, acres, current owner, type of purchase, and date of purchase. SEH will identify which parcels should be purchased for future development or to protect the existing airport environment. The Authority will provide known State or FAA project numbers related to state or federally funded existing airport property. Any state or federal obligations relative to each parcel will also be documented. ***An airport boundary survey is not included in this effort.*** Obtaining owners and encumbrances reports for the existing airport parcels is included in this work scope, and encumbrances (recorded and unrecorded) and all other pertinent information obtained from the reports will be noted. Releases of property interests will also be noted. ***Field work is not included.***

Professional Title Services will be provided by Pro Source Technologies (see attached detailed scope).

Task 2.1 – Base Section Mapping – This task includes initial set up of the base section mapping for the Exhibit A.

Task 2.2 – Organization of title work files – This task includes organization of the title work information and files provided by ProSource Technologies (see attached detailed ProSource Scope)

Task 2.3 – Property/Parcel Funding Research – SEH will research past FAA, MnDOT, and other funding sources for each parcel. Each parcel will be evaluated to determine if federal funds were used to purchase the parcel. Other obligations that may exist on parcels will also be documented. SEH will collaborate on this task with the City of Duluth to gather information on non-FAA and MnDOT obligations that may exist on parcels.

Task 2.4 – Compute Airport Parcels (approx. 24 parcels) – This task includes computing and drawing each parcel based on the legal description. Boundaries of recorded and unrecorded (approximate) encumbrances are also included.

Task 2.5 – Legal Description – A new parcel of land is being created in Superior Bay as part of the Runway 14/32 relocation project. SEH will develop a legal description of the new parcel in cooperation with the City Attorney. SEH will assist in providing information needed for the City of Duluth to record the new parcel with St. Louis County. This new parcel will be documented on the Exhibit A Property Map.

Task 2.6 – Sheet Layout – This task includes setting up the overall sheet layout for the Exhibit 'A' Property map. Approximately 2 sheets are expected.

Task 2.7 – Table Preparation – Detailed tables will be prepared for inclusion in the Exhibit 'A' Property Map. Tables will include the information required in SOP 3.0.

Task 2.8 – Draft Exhibit 'A' Property Map (Est. 2 sheets) – The Exhibit A property map sheets will be developed in accordance with SOP 3.0. Approximately 2 sheets are expected.

Task 2.9 – Narrative Description of Encroachments/Encumbrances/Overlaps/Gaps – SEH will prepare a narrative description of any gaps, overlaps or encroachments that are identified through the preparation of Task 2.4 and 2.7. This narrative will be provided to ProSource for inclusion in their documentation for each parcel, as needed.

Task 2.10 – Client and Agency Review – This task includes time to address client and agency comments on review drafts of the Exhibit A.

Study Element 3: Exhibit A Report

Task 3.1 – Exhibit A Report - A summary report of the Exhibit A map will be prepared and will serve as a narrative description of the information on the Exhibit A map as well as any required next steps for the Airport Sponsor based on the results of the Exhibit A map research. This report will be provided to the DAA, FAA, and MnDOT. This task will also evaluate any additional property needed to accommodate planned airport development. The status of compliance with grant assurances and FAA approval of each parcel will also be included. Copies of all property research will also be provided to the DAA, MnDOT, and FAA (electronic).

Study Element 4: As-Built Airport Layout Plan

The following sheets will be prepared as part of the As-built ALP Update. The Exhibit A Property Map being completed in Study Element 2 will be included in the final ALP set. A Narrative Report is not included in this scope of work.

Elements of the final deliverables will be prepared in accordance with FAA AC 150/5300-13A, "Airport Design" and other applicable AC's, Orders, Regulations and Policy Memorandums. The FAA Standard Operating Procedure (SOP) for FAA Review and Approval of ALPs (ARP SOP 2.00, effective October 1, 2013) and SOP for FAA review of Exhibit 'A' Airport Property Inventory Maps (ARP SOP 3.00, effective October 1, 2013), and MnDOT ALP preparation submittal guidelines (dated 1/18/05) will be utilized in the preparation of the ALP Update.

The ALP set will be developed in color with a color aerial on 22" x 34" sheet size. Coordinates will be shown in NAD 83 datum and elevations in NAVD 88 datum. The ALP set will include the sheets described below. The deliverable for this element is stated at the end of this section:

Task 4.1 – Title Sheet - The title sheet will include an airport location and vicinity map, wind roses and wind coverage for the existing runways, airport data table and an index to the ALP set. The airport diagram and data tables will be updated as needed to reflect the as-built conditions. The most recent and readily available wind data collected at the nearest wind data collection site will be used to determine updated wind coverage. The magnetic declination for the airport will be updated.

Task 4.2 – ALP Sheet - The Airport Layout Plan drawing will be a graphic representation of the airport and its "as-built" facilities and will include as a minimum all existing: runway, taxiways, apron, hangars and buildings, auto parking, fueling systems, ground contours, surrounding roads and homes, access roads, property boundaries, navigational aids, runway data, design detail and spacing requirements. A color aerial image will be used as a background. The plan view and data tables will be updated to reflect

the relocated of Runway 14/32 and the parallel taxiway. Information and tables required per SOP 2.00 will be included and/or updated.

Task 4.3 – Part 77 Airspace Sheet - This drawing will show obstructions and penetrations to 14 CFR, Part 77 Imaginary Surfaces that are not shown on the Inner Portion of the Approach Surface Drawings. Airspace surfaces will be depicted for the ultimate runway configurations and lengths with a color USGS map as a background. The Part 77 Imaginary Surfaces will be updated to reflect the construction of Runway 14/32. The obstruction data table noting obstructions and penetrations to the Part 77 surfaces will also be updated to reflect the construction of Runway 14/32, as well as from the AGIS survey (completed separately as part of the Runway Design Project), FAA 5010 inspections, visual observation and information gathered from United States Geological Survey (USGS) mapping, Sectional Charts, Approach plates, FAA tower data, and NOAA surveyed obstruction mapping, if available. The plan will be overlain on the USGS map for the area at the scale of 1"=2,000'. The plan will include 50-foot elevation contours on the Part 77 surfaces. The sheet will also include small scale profile views of the ultimate approaches.

Task 4.4 – Inner Portion of the Approach Surface Drawing – Runway 14 - The sheet will show plan and profile view and an obstruction data table of each obstruction penetration to the 14 CFR Part 77 surfaces, and obstacle clearance surfaces defined in Table 3-2 of A/C 5300/150-13A, Airport Design, utilizing the data gathered in the recently completed AGIS survey. An aerial photograph will be included as a background to this sheet per FAA SOP 2.00. Information and tables required per SOP 2.00 will be included and/or updated.

Task 4.5 – Inner Portion of the Approach Surface Drawing – Runway 32 - The sheet will show plan and profile view and an obstruction data table of each obstruction penetration to the 14 CFR Part 77 surfaces, and obstacle clearance surfaces defined in Table 3-2 of A/C 5300/150-13A, Airport Design, utilizing the data gathered in the recently completed AGIS survey. An aerial photograph will be included as a background to this sheet per FAA SOP 2.00. Information and tables required per SOP 2.00 will be included and/or updated.

Task 4.6 – Building Area Plan - This sheet will show existing and future buildings, taxilanes, tie-downs, aprons, and other facilities located in the terminal area. Buildings will be identified by number, ownership, use, and top elevation in a table. This sheet will be updated to reflect the construction of Runway 14/32 as needed. Information and tables required per SOP 2.00 will be included and/or updated.

Task 4.7 – Land Use and Zoning Map - The land use drawing will include existing on and off-airport land uses such as agriculture, industrial, residential, undeveloped, etc. Properties within the ultimate airport boundary and in surrounding areas will be identified. Boundaries of local government and public facilities will also be depicted on this sheet. This sheet will be updated to reflect the construction of Runway 14/32.

Study Element 5: Runway Safety Area (RSA) Inventory

Task 5.1 – RSA Inventory - A topographical survey will be completed over the length of Runway 14/32, including the RSA off of each runway end. The survey will cross section the runway at 100-ft intervals and out to the limits of the RSA on each side. The collected data will be used to confirm RSA compliance post-construction.

Project Deliverables: Airport Layout Plan Set and Exhibit A Map including report. The final Exhibit A and As-Built ALP Update will be delivered to the FAA, MnDOT and the DAA. Electronic plans will be prepared using AutoCAD. Draft and review copies will be submitted in paper and electronic PDF format. One (1) draft copy will be submitted to the DAA. Up to two (2) copies of the draft ALP and Exhibit A will be submitted to MnDOT and one (1) copy will be submitted to FAA for review.

Two (2) printed copies of the final ALP and Exhibit A will be submitted to the DAA. One (1) printed copy of the final ALP and Exhibit A will be provided to the FAA for their records. One (1) printed copy of the final ALP and Exhibit A will be submitted to the MnDOT. Electronic copies (via CDs or FTP site) of the final ALP

and Exhibit A will be submitted to the City, MnDOT and DAA.

ATTACHMENT B
EXHIBIT A PROPERTY MAP AND AS-BUILT ALP
DULUTH SKY HARBOR AIRPORT (DYT)
Duluth Airport Authority (DAA)
Duluth, Minnesota

Task No.	Task Description	Principal	Project Manager/Sr. Planner	Planner	Graduate Planner	Senior CAD Technician	Surveyor
Project Initiation, Coordination and Administration							
1.1	Scope Development	1	2	2			1
1.2	Project Administration and Management Services	1	8				4
1.3	Quality Assurance and Control	4	8	4			4
1.4	Client meetings (2 meetings)		6		6		
1.5	FAA and MnDOT Meetings and Coordination (2 meetings)		8		8		4
Exhibit A' Property Map							
2.1	Base section mapping						8
2.2	Organization of title work files			4			12
2.3	Property funding research		4	8			
2.4	Compute airport parcels (24 est. parcels)						16
2.5	Legal Description (1 parcel)		1				24
2.6	Sheet layout		1	2	8		20
2.7	Table preparation		1	2	8		16
2.8	Draft Exhibit A Map (est. 2 sheets)		1	6	12	8	40
2.9	Narrative for encroachments/possible gaps/overlaps for ProSource						16
2.10	Revisions based on FAA/MnDOT reviews						24
Exhibit A Report							
3.1	Exhibit A Report		6	20	20	8	12
ALP Sheet Update							
4.1	Title Sheet		0.5	0.5	4		
4.2	ALP Sheet		0.5	4	24		
4.3	Part 77 Airspace Sheet		0.5	1	8		
4.4	Approach Plan and Profile Sheet Runway 14		0.5	4	16		
4.5	Approach Plan and Profile Sheet Runway 32		0.5	4	16		
4.6	Building Area Plan		0.5	6	10		
4.7	Land Use and Zoning Map		0.5	2	8		
RSA Inventory							
5.1	RSA Inventory		2	4		8	24
Total hours per labor category		6	51.5	73.5	148	24	225

ESTIMATE OF LABOR COSTS:

Labor Category	Hours	Rate	Extension
Principal	6	\$71.03	\$426.18
Project Manager/Sr. Planner	51.5	\$63.38	\$3,264.07
Planner	73.5	\$41.10	\$3,020.85
Graduate Planner	148	\$31.38	\$4,644.24
Senior CAD Technician	24	\$35.26	\$846.24
Surveyor	225	\$32.68	\$7,353.00
FAA Doc. Specialist	4	\$50.62	\$202.48
Admin Technician	3	\$26.24	\$78.72

Total Direct Labor Costs:	535		\$19,835.78
Direct Salary Costs plus Overhead (66.03%)			\$32,933.35
Total Labor Costs			\$52,769.13

Fee (15%) on Total Labor Costs: **\$7,915.37**

ESTIMATE OF EXPENSES:

Direct Expenses	Quantity	Rate	Extension
Property Research (ProSource Technologies)	1	\$20,980.00	\$20,980.00
Equipment usage	535	\$3.00	\$1,605.00
Survey Equipment	24	\$25.00	\$600.00
Mileage to Duluth (1 trip to Duluth)	300	\$0.58	\$174.00
Mileage (2 trips to ADO)	60	\$0.58	\$34.80
Printing ALP and Exhibit A (9 est. sheets)			
Airport copies	4	\$100.00	\$400.00
MnDOT copies	8	\$100.00	\$800.00
FAA copies	2	\$100.00	\$200.00

Total Expenses **\$24,793.80**

SUMMARY:

Total Labor Costs + Expenses + Fee	\$85,478.30
Estimated Total	\$85,500.00

June 10, 2019

ProSource Technologies, LLC
9219 East River Road NW
Minneapolis, MN 55433
Phone 763-786-1445
Fax 763-786-1030

Ms. Kaci Nowicki
Associate, Project Manager
Short Elliott Hendrickson, Inc.
3535 Vadnais Center Drive
St. Paul, MN 55110-5196

**Re: Professional Title Services
Duluth Sky Harbor Airport (DYT)**

Dear Ms. Nowicki:

ProSource Technologies, LLC (ProSource) is pleased to present this proposal and cost estimate for professional services to Short Elliott Hendrickson, Inc. (SEH) for the above-referenced project. The scope of work and cost estimate to conduct this work is provided in the following sections.

SCOPE OF WORK

For the parcel owned by the airport, title research will be composed of two separate efforts to update the title evidence for the airport. For the properties that have complete title evidence from the patent forward, ProSource will review the existing title evidence (likely the property abstract) and update the title to the current effective date at the County Recorder's office. For the properties that do not have a complete chain of title evidence, we will comply with the modified requirements of the Minnesota Marketable Title Act (MMTA) with the addition of research to include a time period of 20 years previous to the acquisition of the land by the City of Duluth to identify potential use restrictions and title covenants impacting the airport properties. Deliverables in connection with these assignments include title reports and an executive summary narrative. The narrative report will identify the properties and described the title defect, if any, and a cost-effective solution to correct the title defect for compliance with the FAA Exhibit A requirements. For the purposes of the budget, we have assumed that half of the properties will have a complete chain of title evidence current to the last date of updated title work. The other half of the properties are assumed to have no existing title evidence readily available, and the modified 40-year search will then be applicable.

Parcels Owned by the Airport			
Task	No. of Parcels	Rate/ Parcel	Total
Updated Title Reports	2	\$500	\$1,000
Document Copy Fees	2	\$25	\$50
Modified MMTA Search Reports	15	\$800	\$12,000
Document Copy Fees	15	\$40	\$600
Expenses			\$8,844
Subtotal			\$14,650

Minneapolis, MN
Cedar Rapids, IA
Grand Rapids, MN
Thief River Falls, MN

For the parcels outside of the airport property, title research will identify the owner, any easements held in the airport, and other encumbrances on the properties that may impact the airport's utilization of its rights on these properties. Deliverables in connection with this assignment include title reports and an executive summary narrative.

Adjacent Airport Parcels			
Task	No. of Parcels	Rate/ Parcel	Total
Modified MMTA Search Reports	7	\$800	\$5,600
Document Copy Fees	7	\$40	\$280
Expenses	-	-	\$450
Subtotal			\$6,330

GENERAL ASSUMPTIONS AND CONDITIONS

1. Preliminary work was completed by ProSource to determine the estimated parcels. The number of parcels was provided for budget purposes only and is subject to change based on the results of further investigation. ProSource will keep SEH informed of any potential deviations from the cost estimates provided for abstracting services. Additional expenses will be cleared through SEH before ProSource continues.
2. There are no changes in the acquisition/relocation plans or design after work on the applicable parcels commences.
3. In the event additional parcels are found during the course of abstracting investigations, the previously mentioned rates per parcel will be charged.
4. The project does not require the attendance of ProSource personnel at any public meetings/hearings.
5. Other work (e.g., outside vendors for private tract indexing, additional planning services and general project documentation) is available to be performed at our 2019 standard hourly rates (below) and/or via cost, as appropriate.

Labor Classifications	2019 Rate/Hour
Principal/Project Attorney	\$254
Title Agent	\$84
Database/Document Specialist	\$78
Staff Administrative	\$58
GSA Per Diem, Mileage	Prevailing CONUS Rate
Shipping, Communications, Courier, Equipment Rental and Misc. Expenses	Cost

7. If a notice to proceed occurs by July 1, 2019, all work is to be complete by August 30, 2019.
8. All work will be billed monthly and is due and payable upon receipt. All invoices outstanding 30 days or more from the invoice date will be assessed a finance charge at the rate 10% per month. This proposal is based upon our 2019 hourly rates. Any work on this project in 2020 or later will be subject to an increase of 5% per year.

We appreciate the opportunity to submit this proposal and cost estimate. If you have any questions or comments, please feel free to call me at (763) 232-3093. We look forward to working with you on this project.

Sincerely,
ProSource Technologies, LLC



Jason D. Alt
Vice President

Accepted by:

Signature / Title

~~VII~~ H

Duluth Airport Authority
Federal Aviation Administration
Memorandum of Agreement
Remote Transmitter Receiver (RTR) Facility at Sky Harbor
697DCM-19-L-00054

The FAA is moving a navigational aid, an RTR, from a hospital roof in Duluth to Sky Harbor Airport. This MOA is similar to the MOA we have already signed for DLH navigational aids. The FAA has conducted a site study as well as coordinated with MNDOT, SEH and the Park Point Community Club on this project. The FAA is paying for the cost to install the RTR and will be maintaining it as well.

MEMORANDUM OF AGREEMENT (MOA)

Between

**UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

And

DULUTH AIRPORT AUTHORITY

**MOA No. 697DCM-19-L-00054
(DYT) Sky Harbor Airport
Duluth, Minnesota**

SECTION 1 - OPENING

6.1.1-1 Preamble (JAN 2017)

This Agreement is made and entered into by the Duluth Airport Authority, hereinafter referred to as "Airport", for itself, its successors and assigns, and the Federal Aviation Administration, hereinafter referred to as the "FAA".

6.1.3-1 Witnesseth (JAN 2017)

Whereas, the parties listed above have entered into an Airport Improvement Grant Agreement; and

Whereas, the parties listed above have entered into an agreement providing for the construction, operation, and maintenance of FAA owned navigation, communication and weather aids for the support of Air Traffic Operations; and

Whereas, the parties consider it desirable to work in cooperation with each other in the technical installation and operation of air navigational aids; and

Whereas, both parties agree the establishment, operation, and maintenance of systems for air traffic control, navigation, communication, and weather reporting is in the primary interest of safety and direct support of the ongoing operation of the Sky Harbor Airport.

Now, therefore, the parties mutually agree as follows:

SECTION 2 - TERMS

6.2.1-1 Purpose (APR 2005)

It is understood and agreed that the use of the herein described premises, known as Sky Harbor Airport, shall be related to the FAA's activities in support of Air Traffic Operations.

6.2.5-2 Terms and Conditions – Alternate I (JAN 2012)

It is mutually understood and agreed that the Airport requires FAA navigation aid facilities in order to operate their business and that the FAA requires navigation, communication and weather aid facilities at the Airport in order to support Air Traffic Operations. Thus, in the interest of both parties it is hereby agreed that the Airport will allow the FAA to construct, operate, and maintain FAA owned navigation, communication and weather aid facilities in areas on the Airport that have been mutually determined and agreed upon for the term commencing on February 1, 2019 and continuing through September 30, 2039. The FAA can terminate this agreement, in whole or part at any time by giving at least (60) days' notice in writing. Said notice shall be sent by certified or registered mail.

A. Together with a right-of-way for ingress to and egress from the premises; a right-of-way for establishing and maintaining pole lines or underground lines for extending electrical power and/or telecommunications lines to the premises; including a right-of-way for subsurface power, communication and/or water lines to the premises; all rights-of-way to be over the area referred to as Sky Harbor Airport, to be routed reasonably determined to be the most convenient to the FAA and as not to interfere with Airport operations. The Airport shall have the right to review and comment on plans covering access and utility rights-of-way under this paragraph.

B. And the right to grading, conditioning, and installing drainage facilities, seeding the soil of the premises, and removing all obstructions from the premises which may constitute a hindrance to the establishment and maintenance of navigational aid systems. The Airport shall have the right to review and comment on plans covering work permitted under this paragraph.

C. And the rights to make alterations, attach fixtures, and erect additions, structures or signs, in direct support of the Airport. The Airport shall have the right to review and comment on plans covering work permitted under this paragraph.

D. And the right to park, without cost, all official and privately owned vehicles used for the maintenance and operation of the air navigational facilities. Parking shall be provided adjacent to the navigational aid facility or as near as possible without interfering with the operation of the Airport.

6.2.6-2 Consideration - No Cost (AUG 2002)

The Government shall pay the Airport no monetary consideration in the form of rental. It is mutually agreed that the rights extended to the Government herein are in consideration of the obligations assumed by the Government in its establishment, operation and maintenance of facilities upon the premises hereby leased.

6.2.9 FAA Facilities (APR 2005)

The FAA facilities covered by this agreement are identified on the most current approved Airport Layout Plan (ALP) and/or other pertinent drawings that are made part of this Agreement by reference and shown on the attached FAA "List of Facilities".

SECTION 3 - GENERAL CLAUSES

3.2.5-1 RE Officials Not to Benefit (OCT 1996)

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this agreement, or to any benefit arising from it. However, this clause does not apply to this agreement to the extent that this agreement is made with a corporation for the corporation's general benefit.

6.3.5 Title to Improvements (APR 2005)

Title to the improvements constructed for use by the FAA during the life of this Agreement shall be in the name of the FAA.

6.3.6 Funding Responsibility for FAA Facilities (JAN 2017)

The Airport agrees that any and all Airport requested relocation(s), replacement(s), or modification(s) of any existing or future FAA navigational aid or communication system(s) necessitated by Airport improvements or changes will be at the expense of the Airport. In the event that the Airport requested changes or improvements interferes with the technical and/or operational characteristics of the FAA's facility, the Airport will immediately correct the interference issues at the Airport's expense. Any FAA requested relocation, replacement, or modifications shall be at the FAA's expense. In the event such relocations, replacements, or modifications are necessary due to causes not attributable to either the Airport or the FAA, funding responsibility shall be determined by mutual agreement between the parties, and memorialized in a Supplemental Agreement.

6.3.18 Non-Restoration (JUL 2017)

It is hereby agreed between the parties that, upon termination of its occupancy (due to termination or expiration of the Agreement), the FAA shall have no obligation to restore and/or rehabilitate, either wholly or partially, the property that is the subject of this Agreement, including any holdover period. It is further agreed that the FAA may abandon in place any or all of the structures and equipment installed in or located upon said property by the FAA during its tenure. Such abandoned equipment shall become the property of the Airport.

6.3.25 Quiet Enjoyment (OCT 1996)

The Airport warrants that they have good and valid title to the premises, and rights of ingress and egress, and warrants and covenants to defend the Government's use and enjoyment of said premises against third party claims.

6.3.28-2 Interference with FAA Operations (JAN 2017)

The Airport agrees not to erect or allow to be erected any structure or obstruction of any kind or nature within the Airport's boundaries that the FAA determines may interfere with the proper operation of the facilities installed by the FAA. The FAA and the Airport agree that such action(s) would not be in the best interest of the Airport or the FAA.

6.3.33 Covenant Against Contingent Fees (AUG 2002)

The Airport warrants that no person or agency has been employed or retained to solicit or obtain this contract upon an agreement or understanding for a contingent fee, except a bona fide employee or agency. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or, in its discretion, to deduct from the contract price or consideration, or otherwise recover the full amount of the contingent fee.

6.3.34 Anti-Kickback (JAN 2017)

The Anti-Kickback Act of 1986 (41 U.S.C. 51-58) (the Act), prohibits any person from (1) Providing or attempting to provide or offering to provide any kickback; (2) Soliciting, accepting, or attempting to accept any kickback; or (3) Including, directly or indirectly, the amount of any kickback in the contract price charged by a prime Contractor to the United States or in the contract price charged by a subcontractor to a prime Contractor or higher tier subcontractor.

6.3.36 Subordination, Nondisturbance and Attornment (JAN 2017)

A. The Government agrees, in consideration of the warranties and conditions set forth in this clause, that this Agreement is subject and subordinate to any and all recorded mortgages, deeds of trust and other liens now or hereafter existing or imposed upon the premises, and to any renewal, modification or extension thereof. It is the intention of the parties that this provision shall be self-operative and that no further instrument shall be required to effect the present or subsequent subordination of this Agreement. Based on a written demand received by the RECO, the Government will review and, if acceptable, execute such instruments as Airport may reasonably request to evidence further the subordination of this Agreement to any existing or future mortgage, deed of trust or other security interest pertaining to the premises, and to any water, sewer or access easement necessary or desirable to serve the premises or adjoining property owned in whole or in part by Airport if such easement does not interfere with the full enjoyment of any right granted the Government under this Agreement.

B. No such subordination, to either existing or future mortgages, deeds of trust or other lien or security instrument shall operate to affect adversely any right of the Government under this Agreement so long as the Government is not in default under this Agreement. Airport will include in any future mortgage, deed of trust or other security instrument to which this Agreement becomes subordinate, or in a separate non-disturbance agreement, a provision to the foregoing effect. Airport warrants that the holders of all notes or other obligations secured by existing mortgages, deeds of trust or other security instruments have consented to the provisions of this clause, and agrees to provide true copies of all such consents to the RECO promptly upon demand.

C. In the event of any sale of the premises or any portion thereof by foreclosure of the lien of any such mortgage, deed of trust or other security instrument, or the giving of a deed in lieu of foreclosure, the Government will be deemed to have attorned to any purchaser, purchasers, transferee or transferees of the premises or any portion thereof and its or their successors and assigns, and any such purchasers and transferees will be deemed to have assumed all obligations of the Airport under this Agreement, so as to establish direct privity of estate and contract between Government and such purchasers or transferees, with the same force, effect and relative priority in time and right as if the Agreement had initially been entered into between such purchasers or transferees and the Government; provided, further, that the RECO and such purchasers or transferees shall, with reasonable promptness following any such sale or deed delivery in lieu of foreclosure, execute all such revisions to this Agreement, or other writings, as shall be necessary to document the foregoing relationship.

D. None of the foregoing provisions may be deemed or construed to imply a waiver of the Government's rights as a sovereign.

6.3.37 Notification of Change in Ownership or Control of Land (JUL 2017)

If the Owner sells, dies or becomes incapacitated, or otherwise conveys to another party or parties any interest in the aforesaid land, rights of way thereto, and any areas affecting the premises, the Government shall be notified in writing, of any such transfer or conveyance within 30 calendar days after completion of the change in property rights. Concurrent with the written notification, the Owner or Owner's heirs, representatives, assignees, or trustees shall provide the Government copies of the associated legal document(s) (acceptable to local authorities) for transferring and/or conveying the property rights.

SECTION 8 - ENVIRONMENTAL OCCUPATIONAL SAFETY AND HEALTH CLAUSES

6.8.1 Hazardous Substance Contamination (JUL 2017)

The FAA agrees to remediate, at its sole cost, all hazardous substance contamination on the FAA facility premises that is found to have occurred as a direct result of the installation, operation, relocation and/or maintenance of the FAA's "facilities" covered by this Agreement. The Airport agrees to remediate or have remediated at its sole cost, any and all other hazardous substance

contamination found on the FAA facility premises. The Airport also agrees to save and hold the U.S. Government harmless for any and all costs, liabilities and/or claims by third parties that arise out of hazardous contamination found on the FAA facility premises that are not directly attributable to the installation, operation and/or maintenance of the facilities on the attached FAA "List of Facilities."

SECTION 10 - CLOSING

6.10.1-4 Notices (JUL 2017)

All notices/correspondence shall be in writing, reference the MOA No. 697DCM-19-L-00054, and be addressed as follows:

TO THE AIRPORT OWNER:

Duluth Airport Authority
4701 Grinden Drive
Duluth, MN 55811

TO THE GOVERNMENT:

Federal Aviation Administration
Real Estate Branch, AAQ-920
10101 Hillwood Parkway
Fort Worth, Texas 76177

6.10.3-4 MOA Signature Block (JUL 2017)

The Airport and the FAA hereby agree to the provisions outlined in this agreement as indicated by the signatures herein below of their duly authorized representative(s). This agreement is effective upon the date of signature by the last party thereof.

DULUTH AIRPORT AUTHORITY

UNITED STATES OF AMERICA
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

By: _____

By: _____

Print Name: _____

Print Name: _____

Title: _____

Title: Real Estate Contacting Officer

Date: _____

Date: _____

[illegible]

IIII

Duluth Airport Authority DAA Board Packet Budget vs. Actual From Jan 2019 to Apr 2019

Unaudited

Financial Row	Prior Year Actual (Jan 2018 - Apr 2018)	Current Year Actual (Jan 2019 - Apr 2019)	Budget Amount (Jan 2019 - Apr 2019)	Variance from Prior Year	Variance From Budget	Total Budget (Jan 2019 - Adjust 2019)
Ordinary Income/Expense						
Income						
Non-Aeronautical Revenue	833,246	959,943	831,082	126,697	128,861	2,651,808
Non-Passenger Aeronautical Revenue	509,402	477,071	468,875	(32,331)	8,196	1,510,738
Passenger Airline Aeronautical Revenue	400,033	466,319	469,262	66,286	(2,943)	1,407,786
Total - Income	1,742,681	1,903,333	1,769,218	160,652	134,114	5,570,332
Gross Profit	1,742,681	1,903,333	1,769,218	160,652	134,114	5,570,332
Expense						
Miscellaneous Expenses	9,900	8,886	9,588	(1,014)	(702)	29,625
Personnel Compensation & Benefits	599,137	662,725	692,533	63,588	(29,808)	2,210,849
Services and Charges	583,867	553,213	589,408	(30,654)	(36,194)	1,614,373
Supplies	144,978	214,060	162,628	69,082	51,431	461,435
Total - Expense	1,337,882	1,438,884	1,454,157	101,002	(15,272)	4,316,282
Net Ordinary Income	404,799	464,449	315,062	59,650	149,387	1,254,050
Other Income and Expenses						
Other Income						
Non-Operating Revenue	192,816	216,416	178,500	23,600	37,916	524,000
Total - Other Income	192,816	216,416	178,500	23,600	37,916	524,000
Other Expense						
Non-Operating Expense	112,365	100,474	127,141	(11,890)	(26,667)	379,834
Total - Other Expense	112,365	100,474	127,141	(11,890)	(26,667)	379,834
Net Other Income	80,451	115,942	51,359	35,490	64,583	144,166
Net Income Exclusive of Project Expenses, Depreciation & Amortization	485,250	580,390	366,421	95,140	213,969	1,398,216
Projects/Grants	(699,343)	(3,298,064)	6,081,302	(2,598,721)	(9,379,366)	18,243,905
Depreciation & Amortization	(3,422,736)	(12,131)	(3,201,325)	3,410,605	3,189,193	(9,588,809)
Net Income	(3,636,829)	(2,729,805)	3,246,398	907,024	(5,976,203)	10,053,312

* This report is based on an allocated budget, which is seasonally adjusted. At this time the DAA is at a positive variance of nearly 214k.

* The results of this report are expected to change slightly with adjustments as delays in receipt of invoices occurs from time to time.

* The largest variance from budget in revenues comes from concession revenue specifically parking and car rental concessions. Revenue is over 134k over budget.

* The largest variance from budget in expenses comes from increased fuel and sand costs of over 50k due to the harsh winter conditions and increased per gallon price of fuel. Fortunately personnel compensation and benefits is nearly 30k under budget and services and charges is over 36k under budget, which leave us with an expense total of just over \$15k over budget.

* Non-operating income is up due to increased PFC collections while expenses are down 26k in budgeted interest expenses on the line of credit since it has not yet been used this year.

Duluth Airport Authority
Income Statement
From Jan 2019 to Apr 2019

Financial Row	Amount
Ordinary Income/Expense	
Income	
Non-Aeronautical Revenue	
Advertising Income	\$2,900.00
Concession Revenue	
ATM	\$215.50
Car Rental Concession	\$148,618.42
Food & Beverage Concession	\$21,978.62
Parking	\$370,644.52
Services/Other	\$200.00
TNC Per Trip Fee	\$3,480.50
Vending	\$2,136.71
Total - Concession Revenue	\$547,274.27
Customer Facility Charges	\$75,984.00
Miscellaneous Revenues	33,015.56
Parking	\$101,104.82
Permits	10,518.97
Plowing Services	\$9,296.00
Reimbursed Expenses	28,114.79
Rent	\$52,805.42
Sponsorship Income	\$65,000.00
State Aid	\$33,985.23
Total - Non-Aeronautical Revenue	959,999.06
Non-Passenger Aeronautical Revenue	
Aviation Gas	\$2,426.00
Concession Revenue	
Flight Training/Tour Operations	\$2,298.22
Fuel Flowage Fees	\$25,332.41
Hangar Rent	\$1,992.17
Landing Fees	\$6,795.83
Mechanic	\$97.61
Misc Sales/Other	\$1,561.78
Per Turn Fees	\$2,673.00
Total - Concession Revenue	\$40,751.02
Event Income	\$5,000.00
Landing Fees	\$15,242.84
Ramp Fees	\$6,198.72
Rent	377,267.16
Security Reimbursement	\$30,001.07
Tie Downs	\$780.00
Total - Non-Passenger Aeronautical Revenue	477,666.81
Passenger Airline Aeronautical Revenue	
Landing Fees	\$101,156.71
Terminal Office/Space Rental	\$365,162.56
Total - Passenger Airline Aeronautical Revenue	\$466,319.27
Total - Income	1,903,985.14
Gross Profit	1,903,985.14
Expense	
Amortization Expense	
Holmgren Lease	\$12,131.20
Total - Amortization Expense	\$12,131.20
Miscellaneous Expenses	
Miscellaneous Expenses	\$3.00
Licenses & Taxes	\$2,455.00
Memberships, Dues & Subscriptions	\$2,168.58
Transaction Fees	\$4,259.33

Financial Row	Amount
Total - Miscellaneous Expenses	8,885.91
Personnel Compensation & Benefits	
Benefit Administration Fees	385.80
Employer Contributions for Retirement	\$56,250.33
Employer Paid Insurance	\$119,126.41
Retiree Benefits	\$20,279.46
Unemployment Compensation	\$73.65
Wages & Salaries	\$449,250.45
Worker's Compensation	\$17,359.16
Total - Personnel Compensation & Benefits	662,725.26
Services and Charges	
Badging	\$4,200.00
Central Services Fee	\$15,066.64
Communications & Technology	\$45,323.14
Employee Development Services	\$20,097.75
Employee Physicals	\$425.00
Insurance	\$21,282.48
Marketing	\$55,729.40
Professional Services	\$79,018.06
Rentals	\$3,896.87
Repairs and Maintenance - Contractual/Services	143,706.60
Sponsorship Expenses	\$1,968.00
Transportation	\$664.40
Utility Services	\$162,353.08
Total - Services and Charges	553,731.42
Supplies	
Merchandise for Resale	\$3,123.50
Office Supplies	\$4,570.92
Operating Supplies	\$80,527.52
Repairs & Maintenance Supplies	
Airfield	57,941.72
Building	12,662.91
Fencing & Gates	\$922.50
Fuel System	\$241.76
Heavy Equipment	\$24,404.76
Heavy Equipment Accessories	\$4,629.84
Light Equipment	\$18,673.48
Sand/Deicer	\$563.01
Sea Base	\$43.54
Shop Supplies	\$3,952.74
Small Tools	\$1,801.59
Total - Repairs & Maintenance Supplies	125,837.85
Total - Supplies	214,059.79
Total - Expense	1,451,533.58
Net Ordinary Income	452,451.56
Other Income and Expenses	
Other Income	
Capital Contributions	
Contributed Capital	\$37,578.25
Grants	(\$3,335,642.11)
Total - Capital Contributions	(\$3,298,063.86)
Non-Operating Revenue	
Interest Income	\$11,006.00
Passenger Facility Charges	\$205,409.91
Total - Non-Operating Revenue	\$216,415.91
Total - Other Income	(\$3,081,647.95)
Other Expense	
Non-Operating Expense	
Interest Expense	\$100,474.40
Total - Non-Operating Expense	\$100,474.40
Total - Other Expense	\$100,474.40
Net Other Income	(\$3,182,122.35)
Net Income	(2,729,670.79)

Duluth Airport Authority

Balance Sheet
End of Apr 2019

Financial Row	Amount
ASSETS	
Current Assets	
Bank	
Petty Cash	\$54.29
Pooled Cash - City Balance	
CFC Fund	\$625,155.18
City Bond Proceeds - Restricted	\$144,000.00
Debt Service Fund - Local Share	\$523,953.34
Garage Fund	\$17,083.44
Landside Fund	\$58,226.73
PFC - Debt Service Fund	\$1,251,810.52
Parking Capital Investment Fund	\$45,300.00
Pooled Cash - Wells Fargo	(\$668,139.39)
Total - Pooled Cash - City Balance	\$1,997,389.82
Total Bank	\$1,997,444.11
Accounts Receivable	
Accounts Receivable - Restricted PFC	\$55,868.93
Accounts Receivable Billed	\$477,541.96
Total Accounts Receivable	\$533,410.89
Other Current Asset	
Inventory Assets	
Aviation Gas	\$6,650.52
Fuel & Supplies	\$10,123.65
Total - Inventory Assets	\$16,774.17
Prepaid Items	
Loan Payment	\$10,308.44
Prepaid Expense	\$30,133.36
Prepaid Insurance	\$52,079.42
Total - Prepaid Items	\$92,521.22
Undeposited Funds	\$216,456.73
Total Other Current Asset	\$325,752.12
Total Current Assets	\$2,856,607.12
Fixed Assets	
Accumulated Depreciation	(\$110,577,887.91)
Capital Assets	\$230,029,414.96
Work in Progress	\$500,047.69
Total Fixed Assets	\$119,951,574.74
Other Assets	
Accumulated Amortization	(\$1,532,599.70)
Airport Planning Projects - Contributed	\$2,238,672.50
Airport Planning Projects - Invested	\$400,003.05
Deferred Outflows	\$220,954.00
Lease Buyout Costs	\$9,097.75
Total Other Assets	\$1,336,127.60
Total ASSETS	\$124,144,309.46
LIABILITIES & EQUITY	
Current Liabilities	
Accounts Payable	
Accounts Payable	\$133,097.35
Contracts Payable	\$145,772.09
Total Accounts Payable	\$278,869.44
Credit Card	
Wells Fargo Credit Card - Joelle	\$2,422.36
Wells Fargo Credit Card - Tom	\$2,032.04
Total Credit Card	\$4,454.40
Other Current Liability	

Financial Row	Amount
Accrued Interest	100,474.40
Accrued Sales Taxes Payable - All	(\$39.96)
Accrued Vacation	\$120,904.79
Deferred Inflows	\$344,808.00
Loans Payable - DEDA MIF	\$26,666.64
Loans Payable to City of Duluth	
Hangar 103 Renovations	\$170,000.00
Parking Structure	\$240,000.00
Terminal Loan	\$500,000.00
Total - Loans Payable to City of Duluth	\$910,000.00
Revenue Note Payable - FBO Acquisition	\$35,910.92
Unearned Revenue - Non Current	\$388,478.84
Total Other Current Liability	1,927,203.63
Total Current Liabilities	2,210,527.47
Long Term Liabilities	
LT Loans Payable - DEDA MIF	\$20,000.38
LT Loans Payable to City of Duluth	
LT Hangar 103 Renovations	\$2,230,000.00
LT Parking Structure	\$2,260,000.00
LT Terminal Loan	\$3,905,000.00
Total - LT Loans Payable to City of Duluth	\$8,395,000.00
Net Pension Liability	\$1,037,399.00
Total Other Post Employment Benefit Liability	\$2,865,608.64
Total Long Term Liabilities	\$12,318,008.02
Equity	
Contributed Equity	\$16,621,668.70
Retained Earnings	\$95,723,776.06
Net Income	(2,729,670.79)
Total Equity	109,615,773.97
Total LIABILITIES & EQUITY	124,144,309.46



Duluth Airport Authority

Duluth A/R Aging Report

As of June 11, 2019

Filters: Transaction Type (equal to Invoice, Payment, Credit Memo)

CUSTOMER	TRANSACTION TYPE	TRANSACTION DATE	TRANSACTION NUMBER	DUE DATE	AGE	CURRENT		5/12/2019 - 6/10/2019 (30)		4/12/2019 - 5/11/2019 (60)		3/13/2019 - 4/11/2019 (90)		BEFORE 3/13/2019 (>90)		TOTAL
						Open	Balance	Open	Balance	Open	Balance	Open	Balance	Open	Balance	
AAR Aircraft Service	Invoice	4/11/2019	4957	5/11/2019	61	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$505.00	\$0.00	\$0.00	\$0.00	\$505.00
American Airlines	Invoice	5/1/2019	4826	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$2,114.61	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,114.61
Avis Rent A Car	Invoice	6/3/2019	5152	7/3/2019	8	\$0.00	\$0.00	\$2,175.81	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2,175.81
BKR Investments DBA Duluth Pack	Invoice	6/3/2019	5155	7/3/2019	8	\$0.00	\$0.00	\$250.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$250.00
Brown, James	Invoice	6/3/2019	5182	7/3/2019	8	\$0.00	\$0.00	\$239.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$239.75
Budget Rent A Car	Invoice	6/3/2019	5153	7/3/2019	8	\$0.00	\$0.00	\$1,460.27	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,460.27
Case, Ronald Jr.	Invoice	5/1/2019	5106	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$0.00	\$51.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.00
Chad's Pad, LLC	Invoice	5/1/2019	5072	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$1,800.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,800.00
Churchill, Sean	Invoice	6/3/2019	5200	7/3/2019	8	\$0.00	\$0.00	\$185.21	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$185.21
Cirrus Design Corporation																
Invoice		6/3/2019	5174	6/3/2019	8	\$0.00	\$0.00	\$19,188.46	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$19,188.46
Invoice		6/3/2019	5154	6/3/2019	8	\$0.00	\$0.00	\$3,157.33	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,157.33
Total - Cirrus Design Corporation						\$0.00	\$22,345.79	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$22,345.79
City of Duluth																
Invoice		6/3/2019	5175	7/3/2019	8	\$0.00	\$0.00	\$1,581.14	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,581.14
Invoice		5/1/2019	5073	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$0.00	\$1.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1.00
Compudyne																
Invoice		2/1/2019	4644	3/3/2019	130	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.30	\$0.00	\$28.30
Invoice		6/3/2019	5176	7/3/2019	8	\$0.00	\$0.00	\$28.87	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.87
Total - Compudyne						\$0.00	\$28.87	\$28.87	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$28.30	\$0.00	\$57.17
Dallmann, Nathan	Invoice	5/1/2019	5108	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$0.00	\$51.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$51.00
Delta Airlines																
Payment		4/29/2019	4475	4/29/2019	43	\$0.00	\$0.00	\$0.00	\$0.00	(\$1,018.19)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	(\$1,018.19)
Payment		6/3/2019	4634	6/3/2019	8	\$0.00	\$0.00	(\$5,375.34)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	(\$5,375.34)
Invoice		6/6/2019	5212	6/30/2019	5	\$0.00	\$0.00	\$50,717.12	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$50,717.12
Invoice		6/6/2019	5213	6/30/2019	5	\$0.00	\$0.00	\$16,166.85	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$16,166.85
Total - Delta Airlines						\$0.00	\$61,508.63	(\$1,018.19)	(\$1,018.19)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$60,490.44
Divine Carriers																
Invoice		5/1/2019	5038	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$0.00	\$229.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$229.31
Invoice		6/3/2019	5168	7/3/2019	8	\$0.00	\$0.00	\$229.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$229.31
Total - Divine Carriers						\$0.00	\$229.31	\$229.31	\$229.31	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$458.62
Duluth Hangar, LLC	Invoice	6/3/2019	5178	7/3/2019	8	\$0.00	\$0.00	\$720.10	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$720.10
Engstad, David	Invoice	6/3/2019	5196	7/3/2019	8	\$0.00	\$0.00	\$181.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$181.75
Enterprise Leasing Company	Invoice	3/1/2019	4742	3/31/2019	102	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,102.30	\$0.00	\$1,102.30

CUSTOMER	TRANSACTION TYPE	TRANSACTION DATE	TRANSACTION NUMBER	DUE DATE	AGE	CURRENT		5/12/2019 - 6/10/2019 (30)		4/12/2019 - 5/11/2019 (60)		3/13/2019 - 4/11/2019 (90)		BEFORE 3/13/2019 (>90)		TOTAL		
						Open	Balance	Open	Balance	Open	Balance	Open	Balance	Open	Balance	Open Balance		
Federal Express Corporation	Invoice	7/20/2018	3731	8/19/2018	326	\$0.00		\$0.00		\$0.00		\$0.00		\$5.00		\$5.00		
	Invoice	8/23/2018	3890	9/22/2018	292	\$0.00		\$0.00		\$0.00		\$0.00		\$345.00		\$345.00		
	Invoice	10/12/2018	4135	11/11/2018	242	\$0.00		\$0.00		\$0.00		\$0.00		\$1,360.00		\$1,360.00		
	Invoice	1/14/2019	4519	2/13/2019	148	\$0.00		\$0.00		\$0.00		\$0.00		\$1,900.00		\$1,900.00		
	Invoice	4/11/2019	4966	5/11/2019	61	\$0.00		\$0.00		\$0.00		\$1,875.00		\$0.00		\$1,875.00		
	Total - Federal Express Corporation						\$0.00		\$0.00		\$0.00		\$1,875.00		\$3,610.00		\$5,485.00	
	Goritchan Boris																	
	Invoice	11/30/2015	47	11/11/2015	1,289	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$69.00		\$69.00
	Invoice	1/26/2016	202	2/25/2016	1,232	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$60.00		\$60.00
	Invoice	10/15/2018	4123	11/14/2018	239	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$180.00		\$180.00
Total - Goritchan Boris	Invoice	1/16/2019	4538	2/15/2019	146	\$0.00		\$0.00		\$0.00		\$0.00		\$60.00		\$60.00		
	Total - Goritchan Boris						\$0.00		\$0.00		\$0.00		\$0.00		\$369.00		\$369.00	
	Invoice	4/22/2019	5017	5/22/2019	50	\$0.00		\$0.00		\$306.00		\$0.00		\$0.00		\$306.00		\$306.00
	Invoice	3/11/2019	4831	4/10/2019	92	\$0.00		\$0.00		\$0.00		\$0.00		\$384.00		\$384.00		
	Invoice	6/3/2019	5194	7/3/2019	8	\$0.00		\$181.75		\$0.00		\$0.00		\$0.00		\$0.00		\$181.75
	Invoice	6/3/2019	5157	7/3/2019	8	\$0.00		\$5.81		\$0.00		\$0.00		\$0.00		\$0.00		\$5.81
	Invoice	6/3/2019	5190	7/3/2019	8	\$0.00		\$181.75		\$0.00		\$0.00		\$0.00		\$0.00		\$181.75
	Hermantown Hydraulics																	
	Invoice	11/6/2018	4212	12/6/2018	217	\$0.00		\$0.00		\$0.00		\$0.00		\$100.20		\$100.20		\$100.20
	Invoice	12/3/2018	4319	1/2/2019	190	\$0.00		\$0.00		\$0.00		\$0.00		\$610.56		\$610.56		\$610.56
Total - Hermantown Hydraulics	Invoice	1/2/2019	4465	2/1/2019	160	\$0.00		\$0.00		\$0.00		\$0.00		\$610.56		\$610.56		
	Invoice	2/1/2019	4645	3/3/2019	130	\$0.00		\$0.00		\$0.00		\$0.00		\$610.56		\$610.56		
	Invoice	3/1/2019	4769	3/31/2019	102	\$0.00		\$0.00		\$0.00		\$0.00		\$610.56		\$610.56		
	Invoice	4/1/2019	4902	5/1/2019	71	\$0.00		\$0.00		\$0.00		\$610.56		\$0.00		\$610.56		
	Invoice	5/1/2019	5047	5/31/2019	41	\$0.00		\$0.00		\$628.27		\$0.00		\$0.00		\$628.27		
	Invoice	6/3/2019	5177	7/3/2019	8	\$0.00		\$628.27		\$0.00		\$0.00		\$0.00		\$628.27		
	Total - Hermantown Hydraulics						\$0.00		\$628.27		\$628.27		\$610.56		\$2,542.44		\$4,409.54	
	Hertz-Overland West																	
	Invoice	5/3/2019	5120	6/2/2019	39	\$0.00		\$0.00		\$0.00		\$510.13		\$0.00		\$0.00		\$510.13
	Invoice	6/3/2019	5158	7/3/2019	8	\$0.00		\$0.00		\$1,442.07		\$0.00		\$0.00		\$0.00		\$1,442.07
Total - Hertz-Overland West	Total - Hertz-Overland West						\$0.00		\$1,442.07		\$510.13		\$0.00		\$0.00		\$1,952.20	
	Invoice	4/15/2019	4987	5/15/2019	57	\$0.00		\$0.00		\$30.00		\$0.00		\$0.00		\$30.00		\$30.00
	Invoice	5/15/2019	5137	6/14/2019	27	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$240.00
	Hydro Solutions, Inc.																	
Invoice	11/30/2015	57	12/31/2015	1,289	\$0.00		\$0.00		\$0.00		\$0.00		\$0.00		\$31,465.09		\$31,465.09	
Invoice	6/3/2019	5159	7/3/2019	8	\$0.00		\$0.00		\$3,466.75		\$0.00		\$0.00		\$0.00		\$3,466.75	

CUSTOMER	TRANSACTION TYPE	TRANSACTION DATE	TRANSACTION NUMBER	DUE DATE	AGE	CURRENT		5/12/2019 - 6/10/2019 (30)		4/12/2019 - 5/11/2019 (60)		3/13/2019 - 4/11/2019 (90)		BEFORE 3/13/2019 (>90)	
						Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	Open Balance		
Total - Hydro Solutions, Inc.															
Jeff Foster Trucking Johnston, Paul Lake Country Flightseeing Lake Superior College Lake Superior Helicopters	Invoice	6/3/2019	5187	7/3/2019	8	\$0.00	\$3,466.75	\$0.00	\$0.00	\$0.00	\$0.00	\$31,465.09	\$34,931.84	\$0.00	\$239.75
	Invoice	6/3/2019	5199	7/3/2019	8	\$0.00	\$181.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$181.75
	Invoice	5/15/2019	5139	6/14/2019	27	\$0.00	\$503.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$503.50
	Invoice	6/3/2019	5172	7/3/2019	8	\$0.00	\$33,775.67	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$33,775.67	\$0.00
Total - Lake Superior Helicopters Love Creamery Lyft, Inc.	Invoice	6/3/2019	5189	7/3/2019	8	\$0.00	\$363.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$363.50
	Invoice	6/3/2019	5160	7/3/2019	8	\$0.00	\$632.22	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$632.22
	Invoice	5/15/2019	5140	6/14/2019	27	\$0.00	\$30.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$30.00
	Invoice	3/13/2019	4845	4/12/2019	90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$562.50	\$0.00	\$0.00	\$562.50	\$0.00
Total - Lyft, Inc. Mark Marino Duluth Aviation Institute	Invoice	3/13/2019	4846	4/12/2019	90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,500.00	\$0.00	\$1,500.00	\$0.00	\$1,500.00
	Payment	6/11/2019	4627	6/11/2019	0	(\$565.50)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	(\$565.50)	\$0.00	\$0.00
	Invoice	5/15/2019	5138	6/14/2019	27	(\$565.50)	\$0.00	\$0.00	\$0.00	\$2,062.50	\$0.00	\$0.00	\$1,497.00	\$0.00	\$0.00
	Invoice	5/15/2019	5138	6/14/2019	27	\$0.00	\$220.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$220.00	\$0.00	\$220.00
Total - Mark Marino Minnesota Air National Guard	Invoice	1/29/2019	4672	2/28/2019	133	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$13,633.57	\$13,633.57	\$0.00	\$3,691.00
	Invoice	5/21/2019	5146	6/20/2019	21	\$0.00	\$3,691.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,691.00
	Invoice	5/21/2019	5145	6/20/2019	21	\$0.00	\$3,691.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,691.00
	Invoice	5/1/2019	5020	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$10,000.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$10,000.00
Total - Minnesota Air National Guard Minnesota Power	Invoice	6/3/2019	5162	7/3/2019	8	\$0.00	\$425.90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$425.90
	Invoice	5/1/2019	5020	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Invoice	6/3/2019	5162	7/3/2019	8	\$0.00	\$425.90	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$425.90
	Invoice	6/3/2019	5164	7/3/2019	8	\$0.00	\$1,908.01	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,908.01
Total - Minnesota Power Monaco Air Duluth	Invoice	6/3/2019	5163	7/3/2019	8	\$0.00	\$3,716.52	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$3,716.52
	Invoice	5/1/2019	5035	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Invoice	6/3/2019	5163	7/3/2019	8	\$0.00	\$5,624.53	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$5,624.53
	Invoice	5/1/2019	5035	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$1,549.68	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,549.68
Total - Monaco Air Duluth Mountain Air Cargo	Invoice	6/3/2019	5165	7/3/2019	8	\$0.00	\$1,549.68	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,549.68
	Invoice	5/1/2019	5035	5/31/2019	41	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
	Invoice	6/3/2019	5165	7/3/2019	8	\$0.00	\$1,549.68	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,549.68
	Invoice	6/3/2019	5166	7/3/2019	8	\$0.00	\$1,549.68	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$1,549.68
Total - Mountain Air Cargo Northland Constructors, Inc. Oberfoell Auctioneers/Do- Bid.com	Invoice	6/3/2019	5166	7/3/2019	8	\$0.00	\$181.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$181.50
	Payment	4/1/2019	4383	4/1/2019	71	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	(\$44.21)	\$0.00	(\$44.21)	\$0.00	(\$44.21)
	Invoice	6/3/2019	5166	7/3/2019	8	\$0.00	\$181.50	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$181.50
	Payment	4/1/2019	4383	4/1/2019	71	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00

CUSTOMER	TRANSACTION TYPE	TRANSACTION DATE	TRANSACTION NUMBER	DUE DATE	AGE	CURRENT		5/12/2019 - 6/10/2019 (30)		4/12/2019 - 5/11/2019 (60)		3/13/2019 - 4/11/2019 (90)		BEFORE 3/13/2019 (>90)		TOTAL
						Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	Open Balance	
Total - Transportation Security Administration United Airlines	Invoice	5/6/2019	5122	6/5/2019	36	\$0.00	\$0.00	\$0.00	\$0.00	\$7,432.14	\$7,432.14	\$0.00	\$0.00	\$0.00	\$0.00	\$7,432.14
						\$0.00	\$0.00	\$0.00	\$0.00	\$7,432.14	\$7,432.14	\$0.00	\$0.00	\$120.00	\$0.00	\$7,552.14
	Invoice	10/24/2018	4176	11/23/2018	230	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$115.00	\$0.00	\$115.00
	Invoice	5/29/2019	5149	6/28/2019	13	\$0.00	\$0.00	\$4,217.40	\$4,217.40	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$4,217.40
	Invoice	6/6/2019	5214	7/6/2019	5	\$0.00	\$0.00	\$9,542.61	\$9,542.61	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$9,542.61
	Invoice	6/6/2019	5216	7/6/2019	5	\$0.00	\$0.00	\$16,876.16	\$16,876.16	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$16,876.16
Total - United Airlines United Parcel Service Williams, Ron	Invoice	6/6/2019	5215	7/6/2019	5	\$0.00	\$0.00	\$585.87	\$585.87	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$585.87
						\$0.00	\$0.00	\$31,222.04	\$31,222.04	\$0.00	\$0.00	\$0.00	\$0.00	\$115.00	\$0.00	\$31,337.04
	Invoice	4/11/2019	4974	5/11/2019	61	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$65.00	\$0.00	\$0.00	\$0.00	\$65.00
	Invoice	6/3/2019	5191	7/3/2019	8	\$0.00	\$0.00	\$181.75	\$181.75	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$181.75
Total						(\$565.50)	\$199,066.87	\$27,138.09	\$5,073.87	\$53,369.70	\$284,083.03					