ORDINANCE/RESOLUTION REQUEST

Date of Request: March 28, 2024

Please mark one: ☐ **Bill Request** **or** ☒ **Resolution Request**

1. Type of Request:

☒ **Contract/Grant Agreement** ☐ **Intergovernmental Agreement (IGA)** ☐ **Rezoning/Text Amendment**

☐ **Dedication/Vacation** ☐ **Appropriation/Supplemental** ☐ **DRMC Change**

☐ **Other:**

2. Title: Approves a contract with University Corporation for Atmospheric Research (UCAR) for $810,833 and for 3 years with two 1-year options to extend for weather consulting services at Denver International Airport in Council District 11 (PLANE-202472583).

3. Requesting Agency: Department of Aviation

4. Contact Person:

Contact person with knowledge of proposed ordinance/resolution (e.g., subject matter expert)	Contact person for council members or mayor-council
Name: Sarah Marquez, SVP Airport Operations	Name: Kevin Forgett, Manager of Legislative Affairs
Email: Sarah.Marquez@flydenver.com	Email: Kevin.Forgett@flydenver.com

5.   General description or background of proposed request. Attach executive summary if more space needed:

The University Corporation for Atmospheric Research's (UCAR) Maintenance Decision Support System (MDSS) utilizes weather observations and numerical model predictions from multiple sources to produce route-specific or runway-specific analyses and forecasts of environmental conditions. Output from this process is used to drive an energy balance model to generate predictions of pavement conditions along each route of interest. Together, environmental and airfield condition information is used to construct recommended treatments, which are based on standard rules of practice for effective deicing and anti-icing operations. An interactive mobile compatible display is used to visualize graphic and text-based treatment recommendations. The display is a web-based application that can be used on a phone, tablet or desktop. The National Center for Atmospheric Research (NCAR) will also continue to provide daily Weathernet forecasting to DEN. Providing the Weathernet forecast is a material part of this Contract. Weathernet provides a text forecast four times per day during the winter months and will be available 24 hours for additional support. During the non-winter months, Weathernet will provide forecast updates twice per day but will still be available 24 hours a day to provide support over the phone or via email. NCAR will also be performing certain tasks for DEN. Those tasks/deliverables include but not limited to adding radar, forecast and observation history, and total liquid precipitation to the MDSS display. NCAR will also be adding airport camera images to the MDSS display and will apply existing machine learning techniques to the camera images to identify current weather and pavement conditions.

6.   City Attorney assigned to this request (if applicable): John Redmond

7.   City Council District: District 11

8.   **<u>For all contracts,</u> fill out and submit accompanying Key Contract Terms worksheet**

To be completed by Mayor's Legislative Team:

Resolution/Bill Number: _____   Date Entered: _____

Revised 8-6-2023

Type of Contract: Professional Services > $500K

Vendor/Contractor Name (including any dba's): University Corporation for Atmospheric Research (UCAR)

Contract control number: PLANE-202472583

Location: Denver International Airport

Is this a new contract? ☒ **Yes** ☐ **No** **Is this an Amendment?** ☐ **Yes** ☒ **No** **If yes, how many?** _____

Contract Term/Duration (for amended contracts, include <u>existing</u> term dates and <u>amended</u> dates): January 1, 2025 – December 31, 2029 (3-year contract with two 1-year options to extend)

Contract Amount (indicate existing amount, amended amount and new contract total):

Current Contract Amount (A)	Additional Funds (B)	Total Contract Amount (A+B)
$810,833.00	N/A	$810,833.00

Current Contract Term	Added Time	New Ending Date
3 years with two 1-year options to extend	N/A	3 years with two 1-year options to extend; December 31, 2029

Scope of work:
The following is a general description and Scope of Work for proposed contract between DEN and UCAR:
Purpose:
DEN is pursuing a new contract with UCAR for services currently being provided by UCAR. UCAR provides consulting services to DEN which include weather forecasting and pavement condition treatment recommendations for runways, taxiways, ramp areas and roadways at DEN and the use of the Maintenance Decision Support System (MDSS). NCAR will perform pre-agreed upon Weather Forecasting Research and Development (R&D) specifically for DEN.
Scope of Work for Year 2025-2027:
Task 1: Maintain ongoing real-time demonstration of the MDSS for DEN
NCAR will continue to run and maintain the operational prototype MDSS system for Denver International Airport. MDSS output will continue to be delivered through the mobile phone application display (desktop compatible as well).
Task 2: Add Radar to the MDSS Display
NCAR will add weather radar imagery to the MDSS display (phone application / desktop). The radar data will help DEN with situational awareness when a storm is approaching or ongoing.
Task 3: RWIS Camera machine learning to identify weather and pavement conditions
NCAR will add DEN airport camera images to the observation tab in the display (phone app / desktop) and will apply some existing machine learning techniques to the camera images in order to identify current weather and pavement conditions.
Task 4: Add Forecast vs Observation history to MDSS display
NCAR will provide access to forecast vs observation plots via the display (phone app / desktop). The forecast vs observation plots will help DEN personnel get a better understanding on how the MDSS forecast evolved leading up to an event.
Task 5: Add system playback to the MDSS display
NCAR will add a system playback capability to the MDSS display (phone app / desktop). The user will be able to select a previous forecast date and time and the display will snap back to that exact forecast generation

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time. This will allow DEN personnel to review a past MDSS forecast exactly how it showed up during real-time.

Task 6: Add total liquid precipitation to the MDSS display

NCAR will add a new forecast plot under the Weather Forecast tab and the Event Summary tab in the MDSS display (phone app / desktop). This will give DEN personnel better situational awareness during rain events or rain/snow events (where the precipitation falls more as rain versus snow).

Task 7: System Maintenance and Modernization of MDSS components

This task is related to maintaining the MDSS system during the period of performance and making improvements to the system infrastructure.

Task 8: Weathernet Forecast and Additional Research and Development Enhancing the MDSS

NCAR will continue to provide the daily Weathernet forecast to DEN as well as ongoing Research & Development to enhance the capabilities of the MDSS display.

Was this contractor selected by competitive process? No. If not, why not?

UCAR is the only provider of the MDSS product which DEN has been using now for many years. DEN is very pleased with the performance of MDSS which helps DEN make sound tactical decisions during snow events.

Has this contractor provided these services to the City before? ☒ **Yes** ☐ **No**

Source of funds: Operations and Maintenance (O&M)

Is this contract subject to: ☐ **W/MBE** ☐ **DBE** ☐ **SBE** ☐ **XO101** ☐ **ACDBE** ☒ N/A

As this project has been identified as a sole source, it is determined that it is excluded under D.R.M.C. Chapter 28 Article V of the Goods and Services Ordinance, therefore, no DSBO program will apply.

WBE/MBE/DBE commitments (construction, design, Airport concession contracts): N/A

Who are the subcontractors to this contract? N/A

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