**Section 3 Requirements**

**3.1 Purpose**

The Iowa DOT is seeking qualified Vendors that demonstrate the capabilities, experience and resources required to maintain and support the polling and display of information collected from our Roadside Weather Information System (RWIS).

**3.2 Project Overview**

The Iowa DOT seeks to replace the polling system currently hosted by the DOT. This system is reaching its end of life and a new system is necessary. It is in the Iowa DOT’s best interest to transition from a DOT-hosted system to one that is hosted and managed by a qualified and responsible contracted provider.

**3.3 Current Environment**

Currently, the Iowa DOT hosts the Vaisala Scan Web platform on a number of servers at the DOT, which polls the DOT’s 73 RWIS sites, displays the data on an internal website, and houses archived data for later use.

**3.4 Mandatory Requirements**

**3.4.1 RWIS Polling System Transition Support**

* As part of this project, the successful Responder must appoint a Project Manager (PM) that must act as a single point of contact between the Iowa DOT and the successful Responder. Project management must be a key responsibility of the successful Responder, and a continuous function. The PM must be an employee of the successful Responder and authorized to represent the successful Responder in all matters related to the project. The successful Responder’s Project Manager assigned to the Iowa DOT project must have the authority to make commitments and decisions that are binding on the successful Responder and any subcontractors.
* The Responder must submit a detailed Baseline Schedule. At a minimum, the initial Baseline Schedule must include the activities and milestones needed to transition RWIS station polling to the new system, test and verify station polling quality, user training, and decommissioning of the old polling system, and must include a high-level timeline projection of all other subsequent activities.

**3.4.2 RWIS Polling System User Interface**

The system must:

* Support access for 300+ concurrent users.
* Have an interactive GIS map with individual layers that can be turned on or off. Layers must include current winds, air temperature, pavement temperature, bridge temperature, dew point, and precipitation.
* Have current station views which show all the current data from a selected station
* Display historical graphs and tables showing data from a selected date/time period and station. A user must be able to retrieve all data collected from any non-image data type
* Have an export tool for downloading historical data from a selected date/time period and station into a text file, comma separated values, and/or Microsoft Excel spreadsheet.
* Provide a visual alert when there is missing and/or errant data
* Provide complete station configurations, including all sensor configurations for use by the Iowa DOT’s Project Manager, their designee, and/or their RWIS maintenance service provider.
* Provide user interface through a hosted, web-based, device-agnostic interface.
* Be accessible via a mobile application interface, such as tablets and/or smartphones.

**3.4.3 RWIS Polling System Data**

* The System must collect imagery and sensor data on a regular schedule from all Iowa DOT RWIS weather stations a minimum of every 10 minutes.
* The System must collect and store the following data types from each station, including but not limited to:
  + - Air Temperature
    - Surface Temperature – up to 4 locations per station
    - Subsurface Temperature
    - Deep Probe Temperature – 15 locations per station
    - Precipitation type
    - Precipitation rate
    - Precipitation intensity
    - Wind average speed
    - Wind gust speed
    - Wind direction
    - Visibility
    - Dew point temperature
    - Relative humidity
    - Surface condition
    - Surface friction
    - Traffic speed (2 classes)
    - Traffic volume (2 classes)
    - Still camera images (up to 8 positions)
  + The System data must be displayed in English units
  + The System must communicate with all NTCIP 1204 compliant Environmental Sensor Stations
  + The System must be able to communicate through a variety of communication methods, including cellular via VPN, cellular based connections, DSL, leased lines, and/or DOT fiber optic networks

**3.4.4 RWIS Polling System Reports, Exports, and Data Access**

* The System must produce data feeds that are JSON, GEOJSON, formatted XML, and/or GIS REST for both real-time and historical data.
* The data feed must contain a latitude and longitude (WGS 84) for the RWIS station and an Iowa DOT route identifier (two fields), as supplied by the Iowa DOT Project Manager or their designee.
* The System’s imagery data must be hosted and retrievable by station, image position, image URL, and time stamp.
* All data and image services must be https enabled.
* Standardized image time stamp and location header/overlay must be configurable to turn on or off
* All data collected under the terms of this contract must be the sole property of the Iowa Department of Transportation.
* All station data must be stored for the duration of the contract plus three months after and must be available for download/export during this time frame
* Responders must describe their data access authentication method
* The System must have the ability to exchange collected weather data with NOAA’s MADIS.  See [http://madis.noaa.gov/](https://na01.safelinks.protection.outlook.com/?url=http%3A%2F%2Fmadis.noaa.gov%2F&data=02%7C01%7CTina.Greenfield%40iowadot.us%7C5c2eaf1ff0ad40616e4808d5f94a49d2%7Ca1e65fcc32fa4fdd86920cc2eb06676e%7C0%7C0%7C636689019823841478&sdata=DrRyWa3P6V6NVGeFUKe3Xzigw5UTJGqQDgWSVdzsiyA%3D&reserved=0) for additional details.

**3.4.5 RWIS Polling System Site Administration**

* The responder must describe in their proposal all administrative features that are to be included as part of the System and would be available to the Iowa DOT and/or their designee.
* As part of the System’s hosting package, the successful Responder must provide a structured process for modifying station polling settings, adding or removing stations from the system, and/or modifying station settings.  The Responder must detail in its proposal the process and timeline for submitting requests to the successful Responder to modify station polling settings, add or remove stations from the system, and/or modify station settings.  In all cases, System modification requests submitted to the successful Responder by the Iowa DOT and/or their designee must be acknowledged no later than the next business day and resolved within two business days of receipt.
* Responders must thoroughly describe how the system’s site administration will be managed, and if it is proposed as a contract service, the method and timelines for adding or removing stations, adding or removing sensors, and/or conducting any requested station modifications.
* Access to station administration settings must be protected and limited to authorized users only.
* The System must log all actions made by all system users, such that it can review all actions taken by the users for the data entered into the system.

**3.4.6 RWIS Polling System Support**

* The Responder must provide as part of their proposal their average monthly uptime percentage.
* The Responder must provide 24/7/365 support for resolution of software and system operations issues. After-hours support can be by telephone, email, chat functions and remote access. Acknowledgement of an issue must be within 30 minutes of the initiation of the contact.
* The successful Responder must resolve critical system issues within 2 hours of notification or less. Critical system issues consist of the loss of functionality of one or more primary system components. The successful Responder must provide frequent and regular updates on resolution status. Example critical system failures include general system failure, the inability to poll any RWIS data, the system functioning too slowly for effective use, website is not updating or is inaccessible, or outbound data feed is stopped.
* The successful Responder must resolve major system issues within 48 hours of notification or less. Major system issues consist of any fault or issue that inhibits effective or correct operation. The successful Responder must provide frequent and regular updates on resolution status. If a workaround is proposed, it must be reasonable and acceptable by Iowa DOT. Examples of major system failures include the inability to update data from a functioning RWIS station, an automatic data service that fails and requires a restart, or incorrect, incomplete or slow data updates from a functioning RWIS station.
* The successful Responder must resolve minor system issues within 30 calendar days. Minor system issues do not inhibit effective system functionality. Example of minor system issues include cosmetic defects in user interfaces, incorrect display of station or sensor names, or incorrect station map locations.
* The successful Responder must provide issue tracking that allows the successful Responder and Iowa DOT staff to report system problems and track their progress to resolution. Summary reports of issue status and resolution must be provided regularly, and the successful Responder’s contract performance will be assessed based on adherence to all support requirements.
* The successful Responder must provide monthly system summaries, including system uptime reports, the number of service tickets received, response times, resolution times, etc.
* If downtime for maintenance is unavoidable, the successful Responder must schedule with Iowa DOT a minimum of one week in advance and perform maintenance between 8pm and 5am Central Time. Iowa DOT must have the option to postpone scheduled maintenance at any time based on priority operational conditions such as weather or other events.

**3.4.7 Training**

The responder must provide a training plan including a minimum of three web-based operator training classes (or similar), prior to system activation.

**3.4.8 RWIS Polling System Security**

* Successful Responder will comply with and adhere to all Department and State information technology standards, including, without limitation, all technical and security standards, procedures and protocols, and provide training to Contractor’s employees and subcontractors concerning such standards, procedures and protocols. Current standards are accessible online at [**https://ocio.iowa.gov/standards**](https://ocio.iowa.gov/standards)**.**
* The responder must provide a System Security Plan as part of their proposal, that describes the strategy to ensure the system's compliance with security policies. The responder must detail in its proposal how it will provide data protection services, that include a Standard Data Protection Plan and Offsite media storage to allow for a speedy system restoration should the software or system fail.
* The System must automatically detect and prevent malicious attacks, e.g. distributed denial of service attacks
* The System must automatically detect and notify authorized users when the system is experiencing a potential malicious attack, e.g. a distributed denial of service attack.
* The responder must provide a Disaster Recovery and Incident Response Plan as part of their proposal.
* All facilities provided by the responder for hosting systemcomponents must be located in the United States andFederal Risk and Authorization Management Program(FedRAMP) certified ([www.fedramp.gov](http://www.fedramp.gov)).
* The web hosted solution must be compliant with Section 508 Accessibility/Usability Standards. The proposed solution will be compliant with Web Content Accessibility Guidelines (WCAG) 2.0 levels A and AA to remove barriers for persons with disabilities. In cases where the Iowa DOT has funding agreements in place with the Federal Government requiring websites be Section 508 compliant, the solution will be compliant with Section 508 of the U.S. Rehabilitation Act of 1973, as amended (29 U.S.C. 794d) in addition to the WCAG 2.0. The Iowa DOT will identify if Section 508 compliance is needed. (See World Wide Web Consortium (W3C) website for definition of terms: <http://www.w3.org>).

**3.5 Desired System Functionality**

* Data Export Service is public.
* Metric and English export formats in two separate feeds or separate fields combined into one data feed.
* The System can generate automated email alerts when there is missing data and/or data outside of established thresholds.
* As part of the System interface, end user administrative privileges that allow the Iowa DOT Project Manager or their designee to manage station polling settings, add or remove stations from the system, and/or modify station settings as needed.