



Department of Public Works  
Transportation Services Division

## **Pavement Temperature Cameras Systems – F22-010-006**

Request for Information (RFI)

January 12, 2022

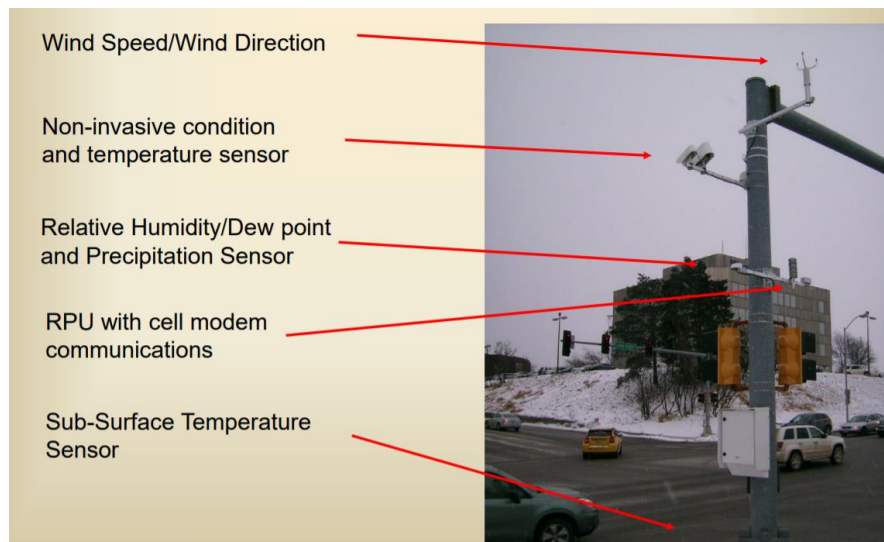
## RFI - Pavement Temperature Camera Systems

### Introduction

The City of Greeley is interested in seeking information from vendors and suppliers regarding capabilities of new state-of-the-art pavement temperature camera systems that meet the functional needs described in this request for information (RFI). This state-of-the-art camera technology would gather data and sends key information in real-time on street conditions during snow and ice storms. The non-intrusive pavement sensor technology enables street crews to prepare roads more effectively to keep commutes safe and efficient. This camera's purpose is to shoot an infrared signal onto the pavement that records and sends information including:

- Street surface temperatures
- Snow accumulation
- Ice measurements

This camera assembly will be installed on the traffic signal infrastructure and communications will be via fiber connections to the Street Maintenance and other facilities. The City may be integrating this system in the future with other RWIS systems as shown below.



### Purpose for the Request for Information (RFI)

The City is requesting information from potential RWIS providers to assess the current state of practice. This will include the operating features, data collection, record storage, installation specifications, software functions/capabilities and other pertinent information that will enhance the management and control of the City's Road Weather Information System (RWIS). This information will be used to develop a Request for Proposal (RFP) for the solicitation of a City's new pavement temperature camera systems that meet the objects as described below. The purpose of the RFI is to meet the following objectives:

1. To obtain knowledge concerning current software that is available to meet the City's needs and requirements.
2. For RWIS providers to see the scope and magnitude of the City's network

3. To assess the expected level of customization to meet the requirements
4. To fine-tune the requirements prior to the Request for Proposal (RFP)
5. To gather additional information to prepare the future RFP

Interested providers shall have existing deployments which significantly or completely satisfy the objectives listed in this RFI. This RFI is not to be confused with an official solicitation process. The RFI presentations provided by providers are solely to improve the final requirements and prepare an RFP. Any notes, comments or evaluation created during the RFI period will not be used in the scoring and evaluation of the RFP. No short-list of providers will be made as a result of the submittals as part of this RFI process.

Any discussion related to costs to complete an ATMS enhancement of this scale shall only be used to establish planning level budgets and will not be used or referenced as a quote from any ATMS provider.

Issuance of RFI	January 12, 2022
Question Deadline	January 21, 2022 by 4:00pm MST
RFI Submissions Due	January 31, 2022 before 2:00pm MST

**Instructions for electronic submittal.**

- Email your RFI Response to [purchasing@greeleygov.com](mailto:purchasing@greeleygov.com). Submit your RFI response to this email only – please do not email to multiple people. Only email’s sent to [purchasing@greeleygov.com](mailto:purchasing@greeleygov.com) will be considered as responsive to the request for information. Emails sent to other City emails may be considered may not be reviewed.
- Proposals shall be submitted in a single Microsoft Word or PDF file under 20MB.
- The RFI number and Project name **must be noted** in the subject line, otherwise the RFI may be reviewed.
- Electronic submittals will be held, un-opened, until the time and date noted in the RFI documents or posted addenda.

**Pavement Temperature Camera System Objectives**

The objective of this project is to procure a system that will:

- Provide accurate and current real-time pavement temperature, surface status (i.e. dry, wet, frozen), traction.
- Ability to alert users of water pooling or icing hazards.
- Ability to transmit collected sensor data to the RWIS Server when polled. The RWIS Server may poll the RPU at a time interval (configurable from one minute to one hour) that can be changed at a workstation linked to the RWIS Server.
- Ability to auto-report its data to the RWIS Server every time there is a change in its sensor data.
- Ability to automatically initiate a message and transmit alarm conditions to the RWIS Server upon the detection of an abnormal condition.
- Return a status indicating current operating conditions and sensor data collected
- Ability to report alarms with RPU address, sensor data collected, date/time stamps, power fail indication, communications failure/recovery indications
- Provide error detection reports used to guard against incomplete or incorrect information transmissions and message generation as well as hardware failures.
- Provide security and diagnostic features of the RPU including redundant checking, status monitoring for communication, and checking for/reporting logic and/or data errors.

- Ability to store with on-board memory up to 24 hours of sensor data when remote communication is lost and retransmit the time-stamped data when communication is restored.
- Allow sensors to have interoperability between multiple vendor Remote Processing Units (“RPU”) and RPUs shall allow for interoperability between multiple vendor sensors.
- Provide RPU’s firmware that collects, processes, logs, and transmits data from the connected pavement sensors.
- Ability for the RPU to include Ethernet and serial ports, and inputs to fully support and correctly interpret the proposed camera without expansion modules.
- Capability of easily mounting the cameras and brackets on the existing traffic signal poles without impacting the traffic signal infrastructure
- Capability of easily installing the camera system devices (RPU) within an existing traffic signal cabinet.
- Adaptability of RPU to include an Ethernet or serial port for interface to a laptop computer to perform diagnostic testing, configuration of the RPU, calibration of the sensors connected to the RPU, and uploads of specific sensor data from the RPU.
- Capability of remote access to the RPU whereby it can be commanded to reset remotely from the RWIS Server or a laptop
- Conformance to the latest adopted version of NTCIP 1201 – Global Object Definitions and NTCIP 1204 – Environmental Sensor Station Interface.
- Capability of the vendor to install and service the pavement temperature systems
- Provide an intuitive and user-friendly application environment.
- Provide simple and easy to read interactive maps and graphics.

### **RFI Responses**

The City is requesting the following information from Pavement Temperature Camera and RWIS providers to assist in developing the requirements of this state-of-the-art devices to be located at specific locations. As part of your response to this RFI, please feel free to include any additional comments or suggestions that you feel would be helpful to the City. The City, at its option, may use information obtained from this process in preparation of a future Request for Proposal (RFP). Responses to the RFI do not bind either party to the other in any way.

1) Describe the functional features and capabilities of the system with your response:

This section should detail information concerning the typical and unique features of the pavement temperature camera systems. This information should also detail the capabilities of the system as well as information concerning the software program (screen shots).

2) Complete System Questions – Attachment A, and include your answers to each of these questions with your response.

3) Complete Estimated Fees - Attachment B, and include this with your response.

The System Cost document requests an estimated cost of a package containing all elements identified in this scope of work that would potentially be required in a final procurement. Respondents are encouraged to provide an estimated cost for each element if possible. Feel free to add other elements or sub elements as needed to best reflect your total package offering. The City understands that the estimates provided are preliminary. The information and pricing in this survey is not considered binding. The service provider is encouraged to provide documentation describing the standard software assurance and customer support packages provided for the controller and central signal system. Please indicate within the pricing and documentation what is/is not included in the initial year of ownership and pricing options for up through the first five years of ownership.

4) The City requires two (2) printed response copies. No bindings, cover page or table of contents are required. Please mail printed copies to 1100 10<sup>th</sup> St. Greeley, CO 80631. Responses to the RFI shall also be submitted electronically in MS Word or .pdf format to - purchasing@greeleygov.com.

### Questions/Inquiries

Please direct any questions concerning this Request for Information or the City's requirements to the agent listed below. No other City official or employee is empowered to speak for the City with respect to this request. Any information obtained from any other source shall not be binding and may disqualify your response.

Shantelle Griego  
 Contract Specialist II  
 Finance/Purchasing Department  
 Office: 970-350-9333  
 E-Mail: purchasing@greeleygov.com

## Appendix A – System Questions

No.	Desirable Function	Comments
1	Category 1: System Configuration and Integration	Describe how your system comply with the NTCIP protocol standards
3		Is your system locally and/or cloud hosted
4		Describe how your system handles security
5		Describe your experience with integrating your system with other vendor's products.
7		Describe your system's capabilities and functions with respect to monitoring pavement temperatures, snow accumulations, and ice measurements
8		Describe your system's capabilities and functions with respect to other RWIS features that the system can provide
9		Describe your system's alerts
10		Describe your system's reporting capabilities
12		Describe how your system handles changes to programming, whether they be centrally or locally initiated.
13		Describe how your system interfaces with other manufacturer's RWIS devices and RPU's.
15	Category 3: Notification, Reporting and Customization	Describe typical system notification and alarms.
16		Describe typical reporting functions available with your system. Describe any special reporting functions. Are customizable dashboards available
17		Describe the customizability of the layout and/or templates provided with the system. Are there customizable settings? Describe your company's approach to the development of customized layouts or templates if required
18	Category 4: License and Training	Provide details on your typical training and project management approaches and any options that are available to your customers
19		
20	Category 5: References and Experience	Describe your experience of deploying your system which included more than 10 pavement temperature cameras with different RPU's and firmware in the last three (3) years? What was your transition strategy to ensure continuity of operations
21		Please provide three (or more) client references of systems that you have deployed in the last three years. Provide location, the number of cameras managed by the system, cabinet/installation types, and indicate if communications are IP-based. References from agencies in Colorado are preferable.

**Appendix B –Pavement Temperature Camera Systems - Estimated Cost**

<b>Item</b>	<b>Quant.</b>	<b>Unit</b>	<b>Description</b>	<b>Estimate Fee</b>
1	1	LS	Project management.	\$
2	1	LS	Furnish and install central system software and server hardware, including database, middleware, and other 3rd party software. Include all costs for hardware required in the RFI.	\$
3	1	EA	Software licensing fee (5 camera locations) for system.	\$
4	5	EA	Software licensing fee for each pavement temperature camera	\$
5	1	LS	System configuration and integration for 5 intersections including generate databases, maps, intersection graphics, configuration files, and integration.	\$
6	1	YR	Central system software warranty each year for 5 year period	\$
7	1	LS	Data Collection and Management system modules.	\$
8	1	\$/YR	Central system software maintenance agreement (per additional year for 5-year period) Submit warranty details	\$
9	5	EA	Furnish NTCIP compliant Pavement Temperature Cameras w/RPU	\$
10	5	EA	Install NTCIP compliant Pavement Temperature Cameras w/RPU	\$
11	5	EA	Pavement Temperature Camera Accessories (racks, cabling, brackets, mounting hardware, etc)	\$