**RFP 3519R06 – ROADWAY WEATHER INFORMATION SERVICE (RWIS)**

**TECHNICAL SUBMITTAL**

**I-1. Statement of the Project.** State in succinct terms your understanding of the project presented or the service required by this RFP.

***Offeror Response***

 **I-2. Qualifications.**

1. **Company Overview**. Provide an introduction of your company, including the primary business location(s) and primary markets served. Products, services and expertise that the Offeror brings to this project should be clearly identified.

***Offeror Response***

1. **Prior Experience.** Include experience in successfully developing and maintaining Roadway Weather Information Service (RWIS) equipment. Experience shown should be work done by individuals who will be assigned to this project as well as that of your company. Studies or projects referred to must be identified and the name of the customer shown, including the name, address, and telephone number of the responsible official of the customer, company, or agency who may be contacted.

***Offeror Response***

1. **Personnel.** Describe in narrative form the number of executive and professional personnel who will be engaged in the work and indicate where these personnel will be physically located during the time they are engaged in the project. For key personnel including project manager, and maintenance and support personnel, include the employee’s name and, through a resume or similar document, the project personnel’s education and experience in maintaining and installing RWIS equipment. Indicate the responsibilities each individual will have in this project and how long each has been with your company. Identify by name any subcontractors you intend to use and the services they will perform.

**All key personnel staffing changes must be approved by the PennDOT Project Manager.**

***Offeror Response***

1. **Subcontractors:** Provide a subcontracting plan for all subcontractors, including small diverse business and small business subcontractors, who will be assigned to the project. The Selected Offeror is prohibited from subcontracting or outsourcing any part of this project without the express written approval from the Commonwealth. Upon award of the contract resulting from this RFP, subcontractors included in the proposal submission are deemed approved. For each position included in your subcontracting plan provide:
2. Name of subcontractor;
3. Primary contact name and email;
4. Address of subcontractor;
5. Description of services to be performed;
6. Number of employees by job category assigned to this project; and
7. Resumes (if appropriate and available).

***Offeror Response***

**I-3. Training.** The Selected Offeror will provide RWIS Knowledge Training Sessions to PennDOT’s internal and external resources. Please see **TASK E, RWIS Knowledge Training Sessions**, below for specific information and deliverables.

***Offeror Response***

**I-4.** **Financial Capability.** Describe your company’s financial stability and economic capability to perform the contract requirements. The Commonwealth reserves the right to request additional information to evaluate an Offeror’s financial capability.

***Offeror Response***

**I-5. TASKS.** Describe in narrative form your technical plan for accomplishing the work using the task descriptions set forth below as your reference point. Modifications of the task descriptions are permitted; however, reasons for changes should be fully explained. Indicate the number of person hours allocated to each task. Include a Program Evaluation and Review Technique (PERT) or similar type display, time related, showing each event. If more than one approach is apparent, comment on why you chose this approach.

All equipment necessary to complete any and all tasks associated with this RFP shall be new and meet or exceed the equipment specifications set forth in the **Equipment Technical Specifications** located in the RFP ***Buyer Attachments*** and the most recent available version of [PennDOT Publication 408 Specifications](https://www.dot.state.pa.us/public/PubsForms/Publications/Pub_408/408_2016/408_2016_IE/408_2016_IE.pdf), as applicable. All equipment submitted for consideration as part of the Offeror’s technical proposal may be selected for implementation but shall not preclude the use of newer technologies as they come to market.

All PennDOT approved materials provided by the Selected Offeror to fulfill the requirements of this contract shall become the property of PennDOT. Materials not accepted by PennDOT as part of the contract shall remain the property of the Selected Offeror and shall not be purchased by PennDOT.

**TASK A: RWIS** **Component Replacement and Site Upgrade**

Within 24 months of the Notice to Proceed, the Selected Offeror shall be responsible to remove any Remote Processing Units (RPU’s) at any of the current 76 RWIS sites and replace them with a data logger compliant with the **Equipment Technical Specifications** located in the RFP ***Buyer Attachments***. Within 24 months of the Notice to Proceed, the Selected Offeror shall also replace and restore any nonfunctioning components and equipment at designated restoration RWIS site, establishing power and upgrading communications to cellular wireless.

 The power at each RWIS site shall be able to sustain the data logger. Power source and/or communications conversions shall not interfere with the existing configuration of a locally controlled ancillary device such as Bridge Spraying/Anti-Icing Application or the use of a Dynamic Message Sign (DMS), or Highway Advisory Radio (HAR) for reporting adverse conditions.

 The Selected Offeror shall be responsible for verifying the requirements for permits, site plans, and any additional requirements necessary to complete this work.

 The existing communications are fiber optic, analog, wireless or a hybrid. RWIS sites that are currently wireless shall have new cellular service.

 ***TASK A Deliverables***

 **A.1.** Within 24 months of the Notice to Proceed, the Selected Offeror shall be responsible to remove any Remote Processing Units (RPU’s) at any of the current 76 RWIS sites and replace them with a data logger.

 **A.2.** Within 24 months of the Notice to Proceed, the Selected Offeror shall also replace and restore any nonfunctioning components and equipment at designated restoration RWIS sites, establishing power and upgrading communications to cellular wireless.

**A.3.** Assess power and communications at each site and provide an assessment report for each RWIS site to the PennDOT Project Manager at least fifteen (15) business days prior to start of site work. The report shall include recommendation for most practical source for power (A/C or solar); and communications (wireless or other). All power currently A/C shall remain. Upon approval by PennDOT’s Project Manager, the recommendation shall become part of contractual obligations.

**A.4.** Obtain all permits and approvals necessary to procure and install the required electrical (A/C) service.

 **A.5.** Provide power through an A/C connection at all replacement and/or new RWIS sites whenever possible. Solar power may be acceptable if a wired utility connection is not cost effective and will be determined by the PennDOT Project Manager based on the power and communications assessment for each site.

**A.6.** Convert or upgrade applicable RWIS sites to a completely cellular wireless communications network. The cellular service shall meet the following requirements:

 **a.** The cellular signal strength shall be tested at each site prior to purchasing the cellular modem.

 **b**. The minimum network strength at the RWIS site shall be 4G LTE with ability to expand to 5G or other subsequent service standard.

 **c.** If cellular signal strength at the RWIS site is insufficient to transmit data, or no signal is present, the Selected Offeror shall provide an alternate wireless communication solution

 at that site.

 **A.7.** The Selected Offeror shall restore the RWIS site to like new conditions. This includes, but is not limited to, pressure washing, tree trimming, weeding, aggregate restoration, fencing maintenance, minor concrete repairs (i.e. grouting cracks), and lock replacement. Limit tree trimming to the extent of meeting requirements within the Federal Highway Administration’s (FHWA’s), Road Weather Information System and Environmental Sensor Station, Siting Guide located on the FHWA website.

 **TASK B: Website Hosted Data Display and Access**

The Selected Offeror shall implement data validation, data storage, interactive and dynamic web interface, and source data feeds to supplemental software applications providing the most use of the RWIS data. Use of proprietary intellectual property will have to be licensed to PennDOT via a non-exclusive, perpetual license agreement. All information regarding intellectual property rights, including those for Software developed under this contract, are stated in the **IT Terms and Conditions** located in the RFP ***Buyer Attachments***. Detailed software design documentation must be provided for all code developed for PennDOT under this contract.

The Selected Offeror shall be responsible for development and maintenance of a website, with secure and public interfaces, as well as development of supplemental system interfaces and data feeds, as noted below, and in the **Equipment Technical Specifications** located in the RFP ***Buyer Attachments***. Following each winter season, the Selected Offeror shall allow PennDOT the opportunity to modify the website (once annually) based on data requirements or internal policy changes that may occur.

The Selected Offeror will provide all equipment, labor, technical expertise, and system interface development necessary to develop, host and maintain the website interface and related data feeds as noted herein.

 ***TASK B Deliverables***

 ***B*.1. Central Processing Unit (CPU):**

 The Central Processing Unit (CPU) shall be the central repository and distribution hub for all reported data from all RWIS sites Statewide (existing and future). The Selected Offeror shall provide software capable to collect, export and display the RWIS data.

 ***B*.2. Web Hosting and Data Services:**

 The Selected Offeror will be responsible to provide web hosting and data services for the entire RWIS system immediately upon acceptance of the first site by the PennDOT Project Manager through duration of the contract. The web site should include the following, but is not limited to:

 **a.** Site grouping, filtering and 24-hour archived timeline slider. This applies to all other functions simultaneously.

 **b.** Map display of all sites and the Pennsylvania interstate highway network to include but not limited to:

* + Conditional icons for site locations based on reported data;
	+ Display of non-PennDOT owned RWIS networks;
	+ Weather satellite and radar displays;
	+ Toggle for terrain and satellite imagery base maps;
	+ National Weather Service advisories watches and warnings layer; and,
	+ METAR station layer.

**c.** Summary table of latest reported data for all sites to include a conditional display of critical data fields. Critical Data Fields to include but not limited to:

* Surface Temp;
* Grip or Friction Coefficient;
* Surface State (ice warning);
* Wind Speed; and,
* Precipitation intensity above one inch (1”) per hour.

 **d.** “Station Wall” display of all RWIS sites’ latest images.

 **e.** Single-station view of one site’s latest data and imagery to include but not limited to:

* A snapshot view of critical data and latest image;
* 24-hour history of data and imagery for that site; and,
* A chart-view of all data for past 24 hours.

 **f.** Conditional alerts include but not limited to:

* + Create alerts for self or multiple recipients based on any data for any condition;
	+ Availability for SMS, email or in-app-only alerts;
	+ Page to view all triggered alerts and active/inactive status; and,
	+ Alert management (add/edit/delete)

 **g.** Reports include but not limited to:

* Region (group) Report for a group of sites’ latest current data;
* Station Data Report for single-site’s current data;
* Metrological Monthly Report for viewing data trends for different data types;
* Winter Performance Index (WPI) report which uses data and algorithm to determine surface performance at each site; and,
	+ - Winter Severity Index (WSI) report which uses data and algorithm to determine severity of winter precipitation at each site.

 **h.** Administrative functions to include but not limited to:

* + - Create/manage groups of sites
		- Create/manage alert distribution lists
		- Traffic base map
		- Admin function for add/edit/remove users

 **B.3.** **Operator Alert Feature**

The Selected Offeror shall ensure that authorized users have the ability to configure system alarms, which are activated by configurable thresholds of data being reported by RWIS sites.

 **B.4.** **Reports**

The Selected Offeror shall work with PennDOT to develop RWIS data reports to be generated on a regular basis or upon request. These reports shall include, but not be limited to, Winter Severity Index reporting to score the severity of each event per county with an annual roll up.

 Upon contract expiration or at any other time at the written request of the Commonwealth, the Offeror is capable of returning all Commonwealth data (and all copies of this information) in a format agreed to by the Commonwealth. Offeror shall describe method of export of Commonwealth data during the contract term.

 **TASK C: Maintenance and Operation of RWIS Sites**

It is the responsibility of the Selected Offeror to maintain the RWIS system, as necessary, for meeting the data requirements of PennDOT outlined within this RFP. Maintenance responsibilities shall begin within 30 calendar days of PennDOT’s acceptance of the RWIS site. The PennDOT Project Manager, or designee, shall be notified **immediately** upon discovery of a non-operational site throughout the duration of the contract.

The Selected Offeror shall provide all equipment, materials, labor, and technical expertise for full service maintenance to keep all devices operational. ‘Operational’ means the successful transmission of accurate data between sensors/cameras, remote processing units, central servers, and web interface. This will include onsite diagnostics and troubleshooting.

Troubleshooting will be required to determine and resolve communication issues between roadway, atmospheric, video camera, Remote Processing Units (RPU) or Data logger and the Central Processing Unit (CPU). The Selected Offeror is responsible for obtaining the detailed information from the sensor manufacturer, conducting the appropriate tests, and verifying the integrity of all repaired equipment, and for daily review of operational characteristics and adherence to the guidelines for performance in the ***Service Level Agreement (SLA)*** located in the **RFP Buyer Attachments**.

The Selected Offeror shall have staff on-call 24-hours a day, seven (7) days a week to address equipment failures, application outages or other critical events that may arise. The Selected Offeror must submit a troubleshooting and repair/replacement plan, with proposed action dates, for PennDOT Project Manager approval within five (5) business days of a detected error or sensor/site outage. All repairs and/or replacements shall be completed within ten (10) business days unless otherwise approved by the PennDOT Project Manager. Repair times and general maintenance shall be based on the manufacturer’s recommendations, meeting the requirements of this RFP, and meeting the requirements of the SLA.

 ***TASK C Deliverables***

 C**.1.**  Provide daily operation of the RWIS site within 30 calendar days of acceptance by the PennDOT Project Manager;

 **C.2.** Develop and maintain a list of service requests and provide to PennDOT upon request;

 **C.3.** Provide enhancements and fixes to the web interfaces as needed; and,

 C**.4.** Provide knowledge transfer and support to PennDOT resources as the maintenance responsibilities are transitioned to PennDOT staff or its designee.

 **TASK D: Knowledge Training**

 The RWIS Knowledge Transfer Sessions shall provide PennDOT’s internal and external resources with sufficient knowledge to successfully support and maintain the RWIS. Sessions shall include, at a minimum:

* Overview of Roadway Weather Information System (RWIS);
* Data acquisition concepts as they relate to the measurement and display of meteorological data including all diagnostic and testing software required for PennDOT’s RWIS with emphasis on the operation of all atmospheric and pavement sensors;
* Demonstration of the new website access, features, and reporting functions; and,
* Other pertinent information for access and ease of system use.

Sessions shall be presented virtually or in person at PennDOT’s discretion. PennDOT will provide the web access and schedule the sessions.

The Selected Offeror shall submit to PennDOT’s Project Manager, for review and approval, all presentation materials at least one (1) month prior to the first session, and at least two (2) weeks prior for all subsequent sessions.

The Selected Offeror shall include presentation materials for up to fifteen (15) PennDOT staff for each session, including appropriate user manuals and troubleshooting documentation. The duration for each session should be no more than four (4) hours unless additional time is required and approved by the PennDOT Project Manager prior to the presentation. The Selected Offeror shall provide PennDOT with electronic versions of the approved presentation materials for distribution to trainees accessing the session via web.

 ***TASK D Deliverables***

 **D.1.** Selected Offeror will conduct 3 trainings per year, PennDOT will determine whether they are virtual or in person.

**TASK E: Transition of RWIS Services**

 Upon expiration or termination of this awarded contract, the Selected Offeror will transfer any and all RWIS hardware and software to PennDOT. Please provide a transition plan which will be completed within 30 days prior to the end date of the awarded contract. Transfer shall be performed with no interruption to PennDOT services. All RWIS hardware and software shall become the property of PennDOT at the end of the contract.

 ***TASK E Deliverable***

 The following will be provided to the PennDOT Project Manager as part of the turnover plan:

 **1.** Full inventory listing of current RWIS components at each RWIS site;

 **2.** References and operational instructions to each RWIS technology asset;

 **3.** Proof of transfer of all third-party communications bills to the new PennDOT designated contractor; and,

 **4.** Transfer of all licenses, software, and developed works to PennDOT in accordance with the **IT Contract Terms and Conditions** found in theRFP ***Buyer Attachments***.

 **TASK F: Additional Tasks**

PennDOT reserves the right to request retrofit and /or new builds of RWIS sites not previously identified in this RFP. Any work done under **TASK F** will only be completed at the direction of the PennDOT Project Manager via the **Work Order** document located in the RFP ***Buyer Attachments***. The PennDOT Project Manager shall provide the Selected Offeror with location(s) and a listing of RWIS components and equipment required at each identified RWIS site. The specifications and Deliverables listed in **TASK A** and **TASK B**, where applicable, shall apply to **TASK F**. Costs submitted for **TASKS F.1, F.2** and **F.3** are per unit costs. **TASK F.4**. cost will be negotiated at the time the work is requested by PennDOT. **There is no guarantee that work described in TASK F will ever be requested or authorized by PennDOT.**

**Maintenance and Protection of Traffic (MPT), when required, will be incidental to this task and no additional payment will be made.**

 ***TASK F Deliverables***

 **F.1.** The Selected Offeror may be required to complete up to two (2) new RWIS site builds (including integration) per contract year. This quantity is an estimate and not guaranteed. Work associated with **TASK F.1**. will be initiated through Work Orders issued to the Selected Offeror throughout the time period of the contract.

**F.2.** The Selected Offeror may be required to complete a retrofit of up to two (2) of the existing RWIS sites (including integration), not already identified in this RFP, per contract year. This quantity is an estimate and not guaranteed. The Offeror shall refer to the applicable sections of **TASK A** of this Technical Submittal.

**F.3.** The Selected Offeror may be required to complete up to two (2) new Weather Stations site builds (including integration) per contract year. This quantity is an estimate and not guaranteed. For installation of new weather collection components and equipment, and establishing communications and power, refer to the **Equipment Technical Specifications** located in the RFP ***Buyer Attachments.***

 **F.3.a** Within ten (10) business days upon the request of the PennDOT Project Manager, the Selected Offeror shall visit the designated site location, weather permitting, for inspection of ground and location for the requested Weather Station installation.

 **F.3.b** Two (2) weeks prior to commencing installation at the designated Weather Station installation site, the Selected Offeror shall provide, in writing, a work schedule to include a timeline of all milestones required for install as well as a site design. The PennDOT Project Manager will respond within five (5) business day with the notice to proceed or other form of authorization. The Selected Offeror shall not proceed with the site work unless authorized by the PennDOT Project Manager or Designee.

 **F.4.** The Selected Offer may be required to proceed with work where cost is negotiated. This work may consist of partial installations, or retrofits, of RWIS sites or Weather Stations. Work will only be completed via Work Order and notification by the PennDOT Project Manager, or designee. In the event PennDOT does require a new RWIS site to be built, the Selected Offeror shall refer to the applicable sections of **TASK A** of this Technical Submittal. Maintenance and Protection of Traffic (MPT), when required, will be incidental to this task and no additional payment will be made.

**I-6. Reports and Project Control.**

The following reports and documents are required for management of the project. PennDOT will provide templates for the documents below to the Selected Offeror when the Notice to Proceed is issued.

**A. Initial Project Plan.** The Selected Offeror shall provide, within ten (10) business days of the Notice to Proceed, an Initial Project Plan to the PennDOT Project Manager outlining the conversion of RPU’s to data loggers. The Initial Project Plan shall consider items such as the conversion project’s impact on customers, end users, etc.

 The Initial Project Plan should include but it not limited to the following:

 **1**. Estimated planned start and end dates or timeline for Data logger installation phase, activity and task, and dates for deliverables and milestones.

 PennDOT shall have a minimum of ten (10) business days to review and approve Selected Offeror’s Initial Project Plan. The Initial Project Plan must be approved by PennDOT prior to commencing work on any deliverables.

 **B. Project Plan.** The Selected Offeror will create and maintain a work plan that details Data logger installation outlined in this statement of work, plus additional tasks necessary for successful completion. The work plan should include details for deliverables and clearly outline the resources assigned and the time allotted for each task.

**C. Weekly Status Report.** During the component replacement, new RWIS installation or Weather station phase of the RWIS project, the Selected Offeror shall provide a **Weekly Status Report**, located in the RFP ***Buyer Attachments***, covering completed activities, activities that are behind schedule, and other issues and recommendations. This report will be reviewed weekly by the PennDOT Project Manager and tied to the Project Plan, as amended or approved by the PennDOT Project Manager. Information provided regarding issues identified which could negatively impact the project shall include, at a minimum:

* ID number;
* Reporting individual;
* Description of problem;
* Date reported;
* Resource(s) assigned;
* Status;
* Priority;
* Area impacted;
* Date resolution is due;
* Resolution completion date;
* Description of resolution process; and
* Notes.

 **D. Monthly Downtime and Performance Metric Report.** Selected Offeror shall submit this report monthly.

**1.** Within thirty (30) days of receiving notice to proceed, the Selected Offeror shallow monitor overall performance of the system in accordance with the **Service Level Agreement (SLA)** located in the RFP ***Buyer Attachments***.

**2.** The Selected Offeror will reconcile and provide any applicable cost reductions as outlined in the **Service Level Agreement (SLA)** located in the RFP ***Buyer Attachments*.** Enforcement of the SLA will commence 30 days after the notice to proceed enforcement of the SLA and to verify payment of the monthly performance-based Maintenance and Operation payment shall take effect during this contracted period.

 **E. Final Report.** Within sixty (60) days of the end of the contract term, the Selected Offeror must prepare and submit a final report that documents the completion of the contract. The contents of the final report must address the following:

**1.** Description of difficulties with or during project completion, if applicable.

 **2.** Recommendations for additions and/or changes to any of the tasks contained in the RFP or executed during the contract term.

***Offeror Response***

**I-7. Requirements.**

**A. Service Level Agreement.** The Selected Offeror shall adhere to the **Service Level Agreement (SLA)** contained in the RFP ***Buyer Attachments***. As part of the proposal, the Offeror may propose an alternative SLA; however, it must be submitted as per the information included in SLA, and the proposal must be submitted on the basis that the SLA will apply to this procurement.

**B.** **Confirmation of Services and Invoicing.** The Selected Offeror will submit **TaskDeliverables**, as listed above and agreed to by PennDOT throughout the project period. A completed **OS-501 Confirmation of Service Form,** contained inthe RFP ***Buyer* *Attachments***, must be submitted by the Selected Offeror to the Project Manager for review and verification at each payment milestone; the approved form should then accompany each invoice submitted for payment. The Selected Offeror will list **TASK C**, “Maintenance and Operation” on the monthly OS-501 at the monthly rate indicated in the **Cost Submittal**. In addition, the Selected Offeror will show any reductions to the monthly Maintenance and Operation task as described in the SLA on the monthly OS-501. Reduction calculations must be shown on the OS-501 and must reconcile with the monthly “Downtime and Performance Metric Report” provided in **I-6. Reports and Project Control section of this Technical Submittal.**

 All invoices should be submitted as per section **V.20 – Billing Requirements** of the **Terms and Conditions** contained in ***Buyer Attachments.*** Additional information regarding invoice submission may also be found on the [Pennsylvania Office of Comptroller Operations](https://www.budget.pa.gov/Services/ForVendors/Pages/How-to-Submit-Invoices.aspx) website.

 **C. Emergency Preparedness.** To support continuity of operations during an emergency, including a pandemic, the Commonwealth needs a strategy for maintaining operations for an extended period of time. One part of this strategy is to ensure that essential contracts that provide critical business services to the Commonwealth have planned for such an emergency and put contingencies in place to provide needed goods and services.

* + 1. Describe how you anticipate such a crisis will impact your operations.
		2. Describe your emergency response continuity of operations plan. Please attach a copy of your plan, or at a minimum, summarize how your plan addresses the following aspects of pandemic preparedness:
1. Employee training (describe your organization’s training plan, and how frequently your plan will be shared with employees);
2. Identified essential business functions and key employees (within your organization) necessary to carry them out;
3. Contingency plans for:
	1. How your organization will handle staffing issues when a portion of key employees are incapacitated due to illness; and.
	2. How employees in your organization will carry out the essential functions if contagion control measures prevent them from coming to the primary workplace.
4. How your organization will communicate with staff and suppliers when primary communications systems are overloaded or otherwise fail, including key contacts, chain of communications (including suppliers), etc. and;
5. How and when your emergency plan will be tested, and if the plan will be tested by a third-party.

***Offeror Response***

**I-8. Objections and Additions to Standard Contract Terms and Conditions.** The Offeror will identify which, if any, of the terms and conditions contained in the **Buyer Attachments** section that it would like to negotiate and what additional terms and conditions the Offeror would like to add to the standard contract terms and conditions. The Offeror’s failure to make a submission under this paragraph will result in its waiving its right to do so later, but the Issuing Office may consider late objections and requests for additions if to do so, in the Issuing Office’s sole discretion, would be in the best interest of the Commonwealth. The Issuing Office may, in its sole discretion, accept or reject any requested changes to the standard contract terms and conditions. The Offeror shall not request changes to the other provisions of the RFP, nor shall the Offeror request to completely substitute its own terms and conditions for this RFP. All terms and conditions must appear in one integrated contract. The Issuing Office will not accept references to the Offeror’s, or any other, online guides or online terms and conditions contained in any proposal.

Regardless of any objections set out in its proposal, the Offeror must submit its proposal, including the cost proposal, on the basis of the terms and conditions set out in the **Terms and Conditions** contained in the **Buyer Attachment** section. The Issuing Office will reject any proposal that is conditioned on the negotiation of the terms and conditions set out in the **Terms and Conditions** contained in the **Buyer Attachment** sectionor to other provisions of the RFP.

***Offeror Response***