



## PROCUREMENT JUSTIFICATION FORM (PJF)

This form must accompany all contract requests and sole source requisitions (RQS) over \$5,000 submitted to the Office of State Procurement Services.

*INSTRUCTIONS: Please provide the requested information in the white spaces below. All responses (except signatures) must be typed; no hand-written forms will be accepted. See the guidance document posted with this form on the Procurement Services intranet site (Forms page) for additional instructions.*

PART I: OVERVIEW			
Department Office/Division/Program:	Environmental Protection/Air Quality Assessment		
Department Contract Administrator or Grant Coordinator:	David Lemery		
(If applicable) Department Reference #:	[USE IRA 60105 Part <span style="background-color: #00b0f0; color: white; padding: 2px;">C</span> Funds] 013-06A-1294-13 7200		
Amount: (Contract/Amendment/Grant)	\$ 21,505.00	Advantage CT / RQS #:	06A 20241029*0628
CONTRACT	Proposed Start Date:		Proposed End Date:
AMENDMENT	Original Start Date:		Effective Date:
	Previous End Date:		New End Date:
GRANT	Project Start Date:		Grant Start Date:
	Project End Date:		Grant End Date:
Vendor/Provider/Grantee Name, City, State:	QuantAQ, Inc. Somerville, MA		
Brief Description of Goods/Services/Grant:	Purchase of three (3) QuantAQ Modulair sensors, one (1) solar power system, and one (1) Sonic anemometer.		

PART II: JUSTIFICATION FOR VENDOR SELECTION			
Check the box below for the justification(s) that applies to this request. (Check all that apply.)			
<input type="checkbox"/>	A. Competitive Process	<input type="checkbox"/>	G. Grant
<input type="checkbox"/>	B. Amendment	<input type="checkbox"/>	H. State Statute/Agency Directed
<input checked="" type="checkbox"/>	C. Single Source/Unique Vendor	<input type="checkbox"/>	I. Federal Agency Directed
<input type="checkbox"/>	D. Proprietary/Copyright/Patents	<input type="checkbox"/>	J. Willing and Qualified
<input type="checkbox"/>	E. Emergency	<input type="checkbox"/>	K. Client Choice
<input type="checkbox"/>	F. University Cooperative Project	<input type="checkbox"/>	L. Other Authorization

Please respond to ALL of the questions in the following sections.

### PART III: SUPPLEMENTAL INFORMATION

1. Provide a more detailed description and explain the need for the goods, services or grant to supplement the response in Part I.

Maine DEP is committed to providing ambient air quality information to the public, with the introduction of new technology in recent years, the DEP has been requested to conduct smaller community-based air quality studies, which can be achieved with the use of single or multi-pollutant, 'low-cost sensors'. These sensors can be deployed off-grid using a solar panel and internet cell-based internet modem to provide an air quality assessment of communities, without the need for utility installations, including power and internet.

A large portion of local air monitoring requests are for particulate and/or combustion-based emissions; a sensor capable of measuring PM2.5 **and** PM10 (particulates that have a diameter of 2.5 and 10 micrometers and smaller), CO (carbon monoxide), and NO<sub>2</sub> (nitrogen dioxide) would give the department the ability to monitor these types of sources.

2. Provide a brief justification for the selected vendor to supplement the response in Part II. Reference the RFP number, if applicable.

There are many vendors producing low-cost sensors that are available on the market that are capable of producing PM2.5 and PM10 measurements, however the majority of these vendors use particle sensing components produced by Plantower and Sensirion, which rely on the use of "nephelometry" technology. This technology is generally biased-high, with additional high biases for highly reflective particles (i.e., smoke) and for durations of high humidity, and are not capable of measuring dark, light-absorbing particulates. Alternatively, a few vendors use components produced by alphasense that rely on "optical particle counter" technology, which is biased-low for ultra-fine particulates (PM1), and PM10 values can be biased-high in dense fog.

QuantAQ is the only vendor using both technologies. Additionally, they have a heated inlet to reduce the effect of high humidity and dense fog.

Many vendors that produce gas-sensing sensors, such as those used to measure CO and NO<sub>2</sub>, use "electrochemical" technology, such as what is produced by alphasense and used by QuantAQ, with the alternative being "metal oxide." Electrochemical based sensors have better lower-level detections, but can be more sensitive to cross-sensitivity, becoming biased-high in polluted environments. This cross-sensitivity will have minimal impact for community-based monitoring.

Additional features for justification:

- Online dashboard that is easy to use
- Ability to create custom URLs that can be shared with the public, that show recent data and general sensor locations.
- Off-grid option allows for rapid deployments in response to events with elevated public health-risk.
- reduced staff-time requirements.
- API for automated data processing abilities.

3. Explain how the negotiated costs or rates are fair and reasonable; or how the funding was allocated to grantee.

Costs are similar to other multi-pollutant sensors that have built in cell-based modems. One-time purchase prices can range from \$5,500 to \$8,000, with annual subscription services ranging from \$500 to \$1,000. Additionally, there are lease-only options that range from \$2,000 to \$3,000 annually.

**PART III: SUPPLEMENTAL INFORMATION**

Funding was sourced through the EPA, IRA section 60105 Part C grant, which provided funding for “grants and other activities authorized under subsections (a) through (c) of section 103 and section 105 of the Clean Air Act to deploy, integrate, and operate air quality sensors in low-income and disadvantaged communities.”

4. Describe the plan for future competition for the goods or services.

We continue to review commercial product literature, attend trade shows, and routinely exchange technical information with peers from EPA and other state monitoring agencies. Through such efforts, we are educated and remain aware of the state of commercial air monitoring technology. We strive to operate the Maines air-monitoring network within our allocated capital, operating budgets, and availability of staff time.

**PART IV: AMERICAN RESCUE PLAN ACT (ARPA) / MAINE JOBS & RECOVERY PLAN (MJRP)**

Does this request utilize ARPA/MJRP funds?

Yes, MJRP funds (023) – If Yes, please attach the approved Business Case(s).

Yes, ARPA funds (025) – If Yes, please be aware of the requirements from awarding federal agencies.

No – If No, proceed to Part V.

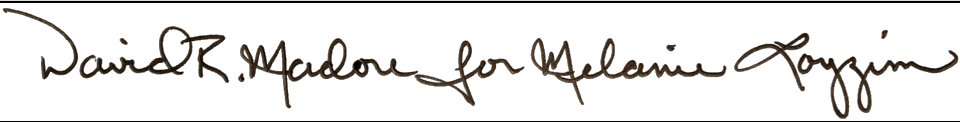
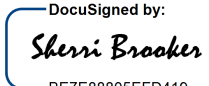
**PART V: CONFLICTS OF INTEREST (COI); CONTRACT WITH THE STATE**

Maine law contains Conflict of Interest statutes directed to State Departments, State Officers, and Employees Generally under MRS [Title 5, §18](#) and [§18-A](#), in harmony with MRS [Title 17, §3104](#).

The requesting department signatory understands and acknowledges Maine’s Conflict of Interest statutes.

**PART VI: APPROVALS**

The signatures below indicate approval of this procurement request.

Signature of requesting Department’s Commissioner (or designee):			
Typed Name:	Melanie Loyzim, Commissioner	Date:	Oct 30, 2024
Signature of DAFS Procurement Official:			
Typed Name:	Sherri Brooker	Date:	11/6/2024