US EPA Region 2  
Citizen Science Equipment Loan Program  

REQUEST FOR PROPOSALS  

PurpleAir Particulate Sensor Loan  
for Academic Institutions in New York / New Jersey  

November 2021  

The United States Environmental Protection Agency (EPA Region 2), through the Regional Sustainability and Environmental Sciences Research Program (RESES) led by our Office of Research and Development (EPA ORD), is inviting proposals for projects using PurpleAir particulate sensors. EPA ORD will loan up to eight (8) PurpleAir PA-II SD instruments to EPA Region 2. EPA Region 2 will be providing the sensors for projects hosted within universities, colleges, and/or senior high schools in New York and/or New Jersey. The deadline to submit proposals under the equipment loan program is **December 17th, 2021 at 5:00 pm**.  

This request for proposals (RFP) includes information on:  

1. Overview  
2. Project Goal  
3. Conditions of Equipment Loan Agreement  
   a. Applicants Eligibility  
   b. Equipment Availability  
   c. Schedule  
   d. Documentation and Deliverables  
   e. Technical Assistance  
   f. Ownership  
4. Proposal Requirements  
5. Submission Process  
6. Notification of Decision  
7. Contacts  

Appendix A. EPA Loan Agreement Form 1780/Terms and Conditions
1. Overview
Over the last decade, technology and information availability have advanced rapidly, and the public has more access to this than ever before. Communities want to understand the pollutant concentrations in the air they breathe and be aware of potential pollution exposures in microenvironments where they live and work. Existing state and local regulatory monitoring networks are not designed to capture these microenvironments, but low-cost air sensor technologies are now available to fill this data gap. Air sensors are relatively low-cost portable monitoring equipment that can provide supplemental air quality information but are not as accurate as regulatory monitoring equipment and their data cannot be used for regulatory purposes. Federal and state researchers have been developing their own low-cost air sensors, as well as testing those that have come to the market in the last few years.

In recent years, EPA Region 2 has focused on non-profit organizations (e.g., universities, citizen science groups, non-government organizations, local governments, etc.) who have been, or are interested in, collecting data to better understand their local environment and address issues of concern. With this equipment loan, EPA Region 2 and ORD will be able to provide access to air quality monitoring sensor technology to continue to support the work of non-profit organizations. EPA Region 2’s established Citizen Science Equipment Loan Program has offered select water quality equipment since its inception in 2014 and the addition of air sensors will aid in developing that resource.

This low-cost air sensor loan program will serve as a pilot and is open to academic institutions (colleges, universities, and/or senior high schools) in New York and/or New Jersey that would like to use the equipment for research and educational purposes only.

2. Project Goal
EPA ORD’s overall goal of this sensor trial is to evaluate the practical and technical aspects of a larger scale sensor loan program in hopes of securing support for a future expanded loan program to address on-going community health and environmental concerns. Such a program provides a direct benefit to the Sustainable and Healthy Communities Research Program (SHC) goals of engaging with and empowering citizens to actively pursue environmental awareness efforts in their community and provides the Agency with research opportunities to quantify and evaluate the effectiveness of such a program.

EPA Region 2’s Citizen Science Program is using this opportunity to work with low-cost air sensors in the hopes of expanding their Equipment Loan Program to include these sensors in the future; as well as to continue collaborating with our network of non-profit organizations, specifically focusing on building the region’s relationship with academic institutions.
Through this project, the EPA plans to engage and collaborate with the state environmental agency where each project takes place in order to collocate at least one of the air sensors at monitoring sites with federal reference or equivalent air monitoring equipment for data comparison and quality assurance.

3. Conditions of Equipment Loan Agreement
   
   a. Applicants Eligibility
   
   Applicants who are eligible to submit proposals in response to this RFP Projects are academic institutions (university, college, and/or senior high school) within New York and/or New Jersey. The applicant chosen for this project should possess the academic and/or professional expertise in the relevant subject areas.

   Other community or non-governmental organizations (NGO) are not eligible for this pilot. However, academic institutions will be given favorable consideration for including an NGO in their project. The academic institution will be responsible for all equipment and completion of tasks including those undertaken by any partners.

   b. Equipment Availability
   
   This loan program is restricted to equipment only and does not include expendable sampling or analysis supplies (e.g. gloves, security accessories, tools, etc.). EPA cannot loan computers or cameras.

   The equipment loaned in 2022 will be limited to the PurpleAir PA-II SD. PurpleAir sensors use laser particle counters to count the number of particles by particle sizes 0.3, 0.5, 1, 2.5, 5, and 10 um, and uses the count data to calculate mass concentrations or PM1.0, PM2.5, and PM10. EPA ORD has made up to eight (8) PA-II SD units available for EPA Region 2’s use. The number of units given to a group will be based on the project needs, as well as the number of groups selected under this RFA.

   The Environmental Protection Agency’s purchase and loan of the PurpleAir PA-II SD particulate sensors are not an endorsement or validation of the sensors or data produced during the loan program. Raw Purple Air data are not appropriate for comparisons with FRM, FEM data or with air quality standards. Adjusting data to correlate with local monitoring agency results is recommended. For specific information on this unit, please visit the manufacturer’s website here: https://www2.purpleair.com/products/purpleair-pa-ii-sd.
c. Schedule
The schedule* for this RFP and resulting loan is as follows:

<table>
<thead>
<tr>
<th>Event</th>
<th>Date/Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposals Due to EPA Region 2</td>
<td>December 17th, 2021 at 5:00pm EST</td>
</tr>
<tr>
<td>Applicants Notified of Decision</td>
<td>January 18th, 2022 (estimated)</td>
</tr>
<tr>
<td>Equipment Delivered</td>
<td>Winter 2022</td>
</tr>
<tr>
<td>Projects Commence</td>
<td>Winter/Spring 2022</td>
</tr>
<tr>
<td>Latest Date for Projects Completed, Equipment Returned</td>
<td>September 30, 2022</td>
</tr>
<tr>
<td>Final Reports Due to EPA Region 2</td>
<td>December 23, 2022</td>
</tr>
</tbody>
</table>

* Schedule is subject to change.

d. Documentation and Deliverables
The required documentation and deliverables for this project will be the following:

1. **Loan Agreement** signed by the organizational point of contact responsible for the equipment. (Appendix B).
2. **Quality Assurance Project Plan** (QAPP). EPA Region 2 staff will be available as a resource and partner for this process. It is appropriate for an applicant to utilize or build upon an existing, relevant QAPP if one exists. For more information about QAPPs, see [https://www.epa.gov/quality/epa-quality-management-tools-projects](https://www.epa.gov/quality/epa-quality-management-tools-projects). For the EPA Citizen Science QAPP Handbook, see [https://www.epa.gov/citizen-science/handbook-quality-assurance](https://www.epa.gov/citizen-science/handbook-quality-assurance)
3. **Monthly reports** delivered to the EPA Region 2 Citizen Science Coordinator via Google Forms for the duration of the project.
4. **Final project report** detailing the objectives, results and impacts of their study. The format may be decided between project partners.

The QAPP and final report will be submitted in draft form for review by project partners, including EPA Region 2 and EPA ORD, before final versions are submitted.

e. Technical Assistance
EPA Region 2 is prepared to be a full partner in this project. Staff will be available for help with the QAPP, technical assistance, facilitating collaborations with other organization and government agencies, as well as other needs that may arise.

EPA ORD will be available remotely for technical assistance regarding the equipment, which may include, but is not limited to, training, pre-shipment collocation of the units at Research Triangle Park, North Carolina and unit deployment troubleshooting.

The state agency will provide additional technical support as needed and appropriate. For instance, if the applicant wishes to compare project results to data collected within the
State Air Quality Monitoring Network or to applicable air quality standards, the applicant should utilize a data algorithm that has been reviewed and approved by the monitoring agency.

If a community, NGO or student organization becomes a partner in the project, the academic institution will be the lead contact for that organization and provide any technical assistance the partner organization requires. This includes, but is not limited to co-location of equipment, document preparation, and evaluation, verification and summarization of the data results.

**f. Ownership**

All materials, software, maps, studies, reports, and other products or data, regardless of physical form or characteristics, produced as a result of this solicitation, in whole or in part, under an agreement with EPA shall be made available to EPA in the formats in which it is stored or maintained. EPA shall have an unrestricted right to use any products or data specified to be delivered.

All studies, presentations, and reports created by the academic institution using data from this project must be reviewed by EPA Region 2 and EPA ORD partners prior to submission for public publication or presentation. EPA cannot provide funds toward the cost of publishing in a journal. If an EPA partner is listed as an author on a publication, it must undergo internal agency review and ORD may discuss potential partial sponsorship of the publication cost.

All equipment provided to the applicants belongs to EPA Office of Research and Development (ORD) and will remain EPA equipment for the duration of the loan. Applicant agrees to maintain equipment in good working condition and return within the approved timeframe. Applicant agrees to notify EPA of loss or damage to the equipment. Damaged equipment may be repaired by EPA or may need to be returned to EPA without replacement, depending on circumstances.

**4. Proposal Requirements**

The application process of this loan program is a simplified proposal process. Applicants must submit a proposal, which will be ranked in a competitive process by a Review Committee, that will be composed of regional EPA staff.
Using the Selection Criteria below, the Review Committee will assign a score to each proposal, and based on these scores, assign a rank order to each. The goal of the Review Committee will be to equally distribute the 8 PurpleAir PA-II SD units as best it can based upon ranked proposals.

a. **Application Process**
   - All proposals must be received by **December 17, 2021 at 5:00pm EST.**
   - Applicants **must** submit proposals **electronically** to the EPA Region 2 Citizen Science Coordinator (contact information below)

b. **Proposals must include:**
   i. **Project Proposal** not to exceed 3 pages and must include the following information:
      - **Project Description**: Briefly describe the project and your goals. This section can also include brief background information.
      - **Objectives**: Outline how the project will achieve your goals.
      - **Methodology**: Outline the project’s design and describe how deployment of the PurpleAir PA-II SD will meet the project’s goals and tasks. Provide the number of sites and their locations. Identify to the best of your ability who will be performing each task and whether the work will be done by the applicant organization or an external group. Briefly discuss the process to be used to evaluate the effectiveness and success of the project.
      - **Roles and Responsibilities**: Define the roles and responsibilities of all project participants.
      - **Timeline**: Include a timeline for meeting identified tasks and completing deliverables
      - **COVID Contingency**: Please provide your contingency plan in the event that COVID prevents or delays certain aspects of the plan from being implemented
      - **Citations**: Include references as appropriate within the proposal narrative.
      - **Other**: For site-specific projects, a map must be attached, and if the property owner is not the applicant, then a letter from the property owner must be included indicating they agree to the proposed activities.

c. **Selection Criteria** will be used to review all project proposals:
   - **Scientific merit**: Is the proposed project scientifically sound? How effectively will the Purple Air data be used? Will the data be used comparatively within the study area or will it be used in comparison to other networks or standards? Does the
proposal explain how Purple Air data will be adjusted if a specific level of accuracy is needed to meet the study objectives?

- **Feasibility**: How likely is it to work? If the proposed project is part of an existing project, how will the PurpleAir PA-II SD enhance the existing effort? If the proposed project is new, can it be implemented in a timely manner?
- **Relevance**: How responsive is the project to an environmental concern?
- **Impact**: What is the degree to which results of the project may have broad application or affect an area of research? Is there potential for an impact on a community?

5. **Submission Process**

Proposals must be submitted no later than **5:00 pm EST on Friday, December 17, 2021**. No late submissions will be considered. Applicants must submit their proposals electronically to the EPA Region 2 Citizen Science Coordinator via email. Unless prior approval is given, proposals received through postal delivery, or any other method will not be accepted.

To submit your proposal, please email all files to the EPA Region 2 Citizen Science Coordinator, Rachael Leta-Graham, at letagraham.rachael@epa.gov. You will receive an email within 48 business hours confirming receipt of submission.

6. **Notification of Decision**

Decision notification to applicants is expected by January 18, 2022. Loan recipients will be briefed by EPA Region 2 and begin the process of writing their Quality Assurance Project Plans (QAPPs) at this time. Projects cannot start until the QAPP has been reviewed by all parties. The equipment may be made available at EPA’s discretion prior to the project start in order to begin training appropriate staff and putting quality control procedures in place.

7. **Contacts**

For any inquiries and for proposal submission, contact the EPA Region 2 Citizen Science Coordinator:

Rachael Leta-Graham  
U.S. Environmental Protection Agency Region 2  
2890 Woodbridge Avenue  
Edison, NJ 08837  
(732) 321-4438  
letagraham.rachael@epa.gov
APPENDIX A

EPA Loan Agreement
Form 1780/Terms and Conditions
Example Document
### Terms and Conditions of Loan

1. The Recipient shall:

   A. return the loaned property in like condition as when received from EPA, normal wear and tear excepted, and free of contamination, on or before the expiration date (as set forth in Section 2 of the first page of this Loan Agreement), unless the loan period is formally extended or terminated before the expiration date;

   B. in case of loss or damage of the loaned property, reimburse EPA at the current rate of the replacement or repair;

   C. assume all cost involved in preparing, handling, loading, disconnecting, and reassembling the loaned property from and to EPA;

   D. indemnify and hold harmless the United States against any and all liability, loss, damage, claims, or costs incidental thereto as a result of Recipient’s misappropriation of the loaned property; and

   E. use the loaned property only for the purpose specified in the loan agreement.

2. The loaned property shall not be modified, destroyed, or transferred to a third party without the prior written permission of EPA.

3. The Recipient shall account for, or permit physical inspection of, the loaned property by EPA after notification from EPA.

4. Title to the loaned property is vested in and will remain with the United States and the loaned property shall be used only for official purposes (as described in Section 4 of the first page of this Loan Agreement).

I have read and understand the terms and conditions of this loan agreement.

Signature

---

**Environmental Protection Agency**

Name/Title: [Name]
Signature: [Signature]

---

**Recipient**

Name/Title: [Name]
Signature: [Signature]