



Environment and Natural Resources Trust Fund

2021 Request for Proposal

General Information

Proposal ID: 2021-199

Proposal Title: Twin Ports Air Quality Monitoring And Education Project

Project Manager Information

Name: Kevin Swanberg

Organization: Twin Ports Action Alliance

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Project Basic Information

Project Summary: To install air monitors in communities across St. Louis County and will educate the public about their use and availability. Data from air monitors will be publicly available in realtime.

Funds Requested: \$30,000

Proposed Project Completion: 2023-07-31

LCCMR Funding Category: Small Projects (H)

Secondary Category: Air Quality, Climate Change, and Renewable Energy (E)

Project Location

What is the best scale for describing where your work will take place?

Region(s): NE

What is the best scale to describe the area impacted by your work?

Region(s): NE

When will the work impact occur?

During the Project and In the Future

Narrative

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

In recent years more attention has been paid to the impact air pollution has on the health and safety of our communities. According to the Minnesota Department of Health, each year more than 4,000 Minnesotans die prematurely due to air pollution. Additionally, increased rates of asthma and respiratory illness are attributed to air pollution from manmade sources. Recently, research has suggested that air pollution increases the impact of COVID-19 by exacerbating symptoms in vulnerable populations. These impacts are most felt by low income communities and communities of color, which often are located near industrial pollution sources like oil refineries and highways. While many believe air pollution exists only in large metro areas like Los Angeles and Beijing, even moderately sized communities can see harmful health impacts from air pollution. For instance, the county with the largest air pollution emissions in Minnesota is St. Louis County according to 2014 data from the MPCA (most recent year county data was available). Despite all this, there is still a lack of awareness about the impacts air pollution has on our community health. There is also little available infrastructure for local communities to monitor their local air quality.

What is your proposed solution to the problem or opportunity discussed above? i.e. What are you seeking funding to do? You will be asked to expand on this in Activities and Milestones.

Because of St. Louis County's high emissions and the numerous permitted industrial polluters across the county, Twin Ports Action Alliance is creating a citizen-led air monitoring and education program. The best way to protect people from air pollution is to equip them with tools to make informed decisions about exposing themselves to air pollution. This program would install air monitors across communities in St. Louis County. Data from these air monitors would be available to the public in real-time, allowing community members to monitor the impacts of pollution. Citizens will know when it is safe to be near polluters, and will be equipped with data to encourage more responsible actions from polluters. This program would also include an informational campaign and lectures, educating the public on the use of our air monitors.

These monitors address a real gap in current air monitoring infrastructure. The MPCA uses these same monitors, but is unable to install enough to effectively monitor air pollution in all communities, since air pollution is known to vary drastically between neighborhoods. Additionally, the air monitors are used by the MPCA to track wildfires, not industrial pollution. Therefore, there is a clear gap in the monitoring of industrial polluters.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state's natural resources?

The EPA has found that industrial air pollution leads to the acidification of lakes and rivers, builds up in soil, and accumulates in plants and animals. These emissions are monitored by polluters themselves, who can falsify records. For instance, Northern Metals in Minneapolis was shut down after admitting to doctoring emission records. Water Gremlin, another Minnesota facility, was found to be falsifying emissions data for years. Often, regular citizens have no way to monitor pollution sources in their community. This program would allow citizens to monitor the emissions of polluters in their communities, protecting the environment and their health.

Activities and Milestones

Activity 1: Installation of Monitors in Northland

Activity Budget: \$5,000

Activity Description:

The objective of this activity is to install air monitors across communities in the Northland. Air quality can change from neighborhood to neighborhood depending on nearby sources of pollution. This activity would involve the installation of sixteen particulate monitors across the Northland and St. Louis County Minnesota allowing for community members across the region to monitor their local air quality. Four monitors would be installed in Duluth, with two monitors each installed in the nearby smaller communities of Two Harbors, Ely, Virginia, Cloquet, Hoyt Lakes, and Grand Marais.

These monitors would be purchased from Purple Air, the manufacturer of an affordable and reliable air monitor which is used by the MPCA and other organizations. These monitors connect to nearby wifi to report data in real time. In a pilot study, Twin Ports Action Alliance has tested and installed eight of these monitors in the communities of Duluth, MN and Superior, WI. Our organization understands installation, maintenance, and use of these monitors.

This task will have the outcome of making air monitoring available to regular citizens at a local level.

The budget in this activity allots for purchase of monitors, installation, and travel for installation.

Activity Milestones:

Description	Completion Date
Installation of Duluth Monitors	2021-09-30
Installation of Six Monitors in Cloquet, Two Harbors, and Grand Marais	2021-11-30
Installation of Six Monitors in Hoyt Lakes, Ely, and Virginia	2022-01-31

Activity 2: Educational Programming and Air Monitor Awareness Campaign

Activity Budget: \$24,500

Activity Description:

The existence of air monitors in communities is valuable, but only if the community is aware of them. Therefore, it is crucial that we engage the public with these monitors. This activity would involve the creation and implementation of educational programming and an awareness campaign to reach the public and encourage them to use the data from these air monitors.

In this activity, a series of educational classes in the communities of Duluth, Cloquet, Ely, Virginia, Two Harbors, and Grand Marais would be held to make the public aware of these monitors and educate the public on their use, as well as the broader impacts of air pollution. These classes would be open to the public and would be designed with the intention to create long-term engaged interest on the topic of air pollution.

This activity would also involve the creation of online educational materials to better reach the public, including informational videos and guides about the monitors

The budget for this activity would be used to pay TPAA staff to prepare and conduct classes, travel for classes, create materials and curriculum for classes.

The outcome from this activity would be an engaged and informed public on air pollution.

Activity Milestones:

Description	Completion Date
Two classes held in Duluth	2022-03-31
Classes held in Cloquet, Two Harbors, and Virginia	2022-06-30
Classes held in Grand Marais, Ely	2022-10-31
Informational Video and Online Programming for Air Monitors Created	2023-01-31
Online Advertising and Educational Programming for Air Monitors Ends	2023-06-30

Activity 3: Maintenance of Air Monitors

Activity Budget: \$500

Activity Description:

In our 8 month (and ongoing) pilot study on the use of Purple Air monitors we have found them to be very reliable with little need for maintenance, even through the harsh Minnesota winters. However, occasionally they do need minor maintenance, including the replacement of brackets and power cables. This activity budgets for wear and tear on the monitors over the life of the project allowing us to ensure their continued operation until at least July 2023.

Activity Milestones:

Description	Completion Date
Successful maintenance of air monitors	2023-06-30

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this be funded?

Results will be implemented through public reporting of emissions data by Twin Ports Action Alliance, as well as reporting on the engagement of community members at educational events. The findings of these air monitors, which will continue providing data in perpetuity, will be used to help citizens understand the air quality in their own neighborhoods and the impact of local pollution sources. While there is not any expected need for large funding sources to continue the operation of monitors, the maintenance of any monitors after the project will be funded by in-kind donations.

Project Manager and Organization Qualifications

Project Manager Name: Kevin Swanberg

Job Title: Board Member

Provide description of the project manager's qualifications to manage the proposed project.

Kevin Swanberg has directly managed and assisted in managing several projects at Twin Ports Action Alliance. Additionally, Kevin has privately managed several grant projects in his capacity as a researcher and adjunct faculty member at the University of Minnesota Duluth. Kevin has a background in research and linguistics, and in his current work at UMD has organized conferences, led information campaigns, and worked with others to effectively manage grant-funded projects.

Organization: Twin Ports Action Alliance

Organization Description:

Twin Ports Action Alliance is a grassroots non-profit based in Duluth, Minnesota. After forming in 2018 after a refinery explosion in the neighboring city of Superior, Wisconsin, Twin Ports Action Alliance worked to increase safety and accountability at the refinery. Recently, funded by a grant from the Center for Health, Environment, and Justice, Twin Ports Action Alliance has begun educating the Twin Ports Community about the causes and impacts of local air pollution sources. Twin Ports Action Alliance has established a network of citizen-run air monitors and uses these monitors to notify the public regarding local air quality.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Air Quality Organizer		Responsible for organizing air quality awareness campaign and implementing programming regarding air quality			0%	60		\$24,000
							Sub Total	\$24,000
Contracts and Services								
							Sub Total	-
Equipment, Tools, and Supplies								
	Equipment	Air Monitors (16)	These air monitors will be the monitors used in Activity 1. These will be purchased directly from Purple Air at a price of \$259.00 each plus shipping					\$4,144
							Sub Total	\$4,144
Capital Expenditures								
							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Travel to surrounding communities for installation of air monitors. Includes mileage payment and meals for these trips (no lodging).	This travel will be done to install monitors in Cloquet, Two Harbors, Ely, Grand Marais, Hoyt Lakes, and Virginia					\$290
	Miles/ Meals/ Lodging	This travel expense will be to conduct educational classes in the communities in Northern Minnesota where air monitors are installed. This includes lodging						\$766

		in Virginia, Ely, Grand Marais, and Hoyt Lakes (not Cloquet or Two Harbors) and includes mileage and meals for these trips, as well as mileage and meals for trips to Cloquet and Two Harbors for these classes.						
							Sub Total	\$1,056
Travel Outside Minnesota								
							Sub Total	-
Printing and Publication								
	Printing	Printing of educational brochures for educational classes regarding air quality and the use of our network of air monitors. This is the cost for printing 500 brochures, to be distributed at eight classes.	The purpose of these items will be to aid in educating the public regarding air quality and the use of air monitors in their community					\$300
							Sub Total	\$300
Other Expenses								
		Maintenance of Air Monitors	Used to purchase replacement brackets, power cables, and sensors for air monitors throughout the 2 year project.					\$500
							Sub Total	\$500
							Grand Total	\$30,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
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Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
			State Sub Total	-
Non-State				
			Non State Sub Total	-
			Funds Total	-

Attachments

Required Attachments

Visual Component

File: [92adaaf2-73e.pdf](#)

Alternate Text for Visual Component

A picture of a Purple Air Monitor

Financial Capacity

File: [b24389da-74d.pdf](#)

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Does your project have patent, royalties, or revenue potential?

No

Does your project include research?

Yes

Does the organization have a fiscal agent for this project?

No



