

Tidewater Air Monitoring and Evaluation (TAME) Project Update – 12/22

Project Background and Scope:

The Tidewater Air Monitoring Evaluation (TAME) project is a grant funded study awarded to DEQ by the EPA. The TAME project is intended to characterize the ambient concentrations of air toxics metals and perform corresponding air quality and health risk assessments for two Tidewater communities: the Lamberts Point Community and East End Community located in Norfolk and Newport News, respectively. The results of this characterization and the air quality and health assessments (provided by the Virginia Department of Health) will inform future DEQ Strategic Plan objectives to improve air quality and community engagement in underserved communities.

Lamberts Point and East End were specifically chosen as focal points for community engagement both because of their proximity to coal terminals and because they are Environmental Justice communities. Environmental Justice communities are identified through analyzing the number of people of color that make up a community as well as income levels. According to the Virginia Environmental Justice Act of 2020, communities such as Lamberts Point and East End need to be meaningfully involved in projects like TAME.

The grant will enable DEQ to use the existing PM10 inventory of high volume samplers maintained by DEQ's Office of Air Quality Monitoring and place up to 10 of them in the Lamberts Point and East End communities. These are Wedding and Associates model high volume samplers (Manual Reference Method: RFPS-1087-062). The specifications for these samplers (and others can be found at:



PM 10 Monitor

https://www.epa.gov/sites/production/files/2021-06/documents/designated_reference_and_equivalent_methods_-_07152021.pdf.

In addition to the PM10 samplers, 2 Teledyne T640X instrument will be purchased (Automatic Equivalent Method: EQPM-0516-239). These will serve two purposes: 1) to measure PM2.5 and 2) to measure PM10 collocated with one of the PM10 monitors discussed above. The specifications for this monitor can also be found at the link above.

DEQ is also deploying PurpleAir sensors in addition to the EPA approved air pollution monitors described above. These sensors will be in the communities for two reasons:

1. To provide near real-time data that can be accessed online to allow nearby community members to track particulate pollution (PM10 and PM2.5) data;

2. Expand the area where PM10 and PM2.5 data are gathered. These sensors are not substitutes, but help enhance the project by providing more sources of data. This is helpful since the EPA-approved monitors will run every 6th day and it will take some time for the lab to receive, analyze, and report the data.

The sensors, like the EPA approved monitors, measure particles. The assessing of the coal dust impacts are done after the lab has analyzed the particulates samples for metals. Placement of the sensors and monitors has been determined in concert with community input to ensure the study's goals are accomplished.



Example Monitoring Site/Shelter – Math and Science Center, Richmond, VA

Community Meetings and Outreach Efforts:

To ensure the community involvement throughout the project, DEQ had targeted meetings with members of the community and local government. DEQ also designed and initiated a survey tool to gather community input on how citizens prefer engagement and involvement with this project. The survey's purpose was to allow all voices to be heard without bias and to solicit community input at the earliest stages of the project.

The TAME project held initial community engagement meetings in April 2022 to inform the installation and operation of air monitors and PurpleAir sensors in both communities. The grant proposed update sessions every 6 months within each of the two communities for the length of the project, however, DEQ is committed to going above and beyond the proposed engagement scope of the grant through enhanced opportunities for community involvement. These efforts have included scheduling bi-monthly meetings for community members and stakeholders involved in the project in order to update partners and keep them informed about project progress. Other efforts have included attending community events and celebrations, canvassing neighborhoods with flyers, social media outreach, placing yard signs in the community, scheduling community "office hours" for in-person engagement, tabling outside of local churches, and completing community walking tours with residents.

Additionally, DEQ held workshops in each community in July 2022. These workshops were designed to demonstrate how PurpleAir sensors can be used as a tool for receiving real-time community air quality data. DEQ also received feedback on language for signage that will be placed in the community (see the preferred signage below), general outreach efforts, and PurpleAir sensor siting suggestions.

Meetings were held in October 2022 to educate the community about the Virginia Department of Health's role in the study and what they can expect from a Health Risk Assessment (answer the question: what is a Health Risk Assessment?), provide updates on any data collected, and provide updates about air monitor and sensor siting progress.



Meeting materials and recordings can be found at the TAME DEQ website: <https://www.deq.virginia.gov/get-involved/topics-of-interest/tidewater-air-monitoring-evaluation-project>.

PurpleAir Sensor Network:

DEQ is currently working to install a network of (8) PurpleAir sensors in each of the local communities. At this time, there are 4 PurpleAir sensors that are live and collecting data in Lamberts Point. You can see the real time data by following the link below:

<https://map.purpleair.com/1/MAQI/a10/p604800/cC0#12.77/36.87584/-76.31654>

Additionally, there is 2 PurpleAir sensor live and collecting data in East End. You can see the real time data by following the link below:

<https://map.purpleair.com/1/MAQI/a10/p604800/cC0#12.77/36.99615/-76.40448>

Thus far, all of the sensors have been sited at private residences, faith centers and cultural centers. However, DEQ is working to further engage faith centers, schools, universities, local businesses and other community stakeholders as possible sensors hosts. DEQ will continue to complete outreach surrounding this opportunity in order to install a full network in each community as soon as possible.



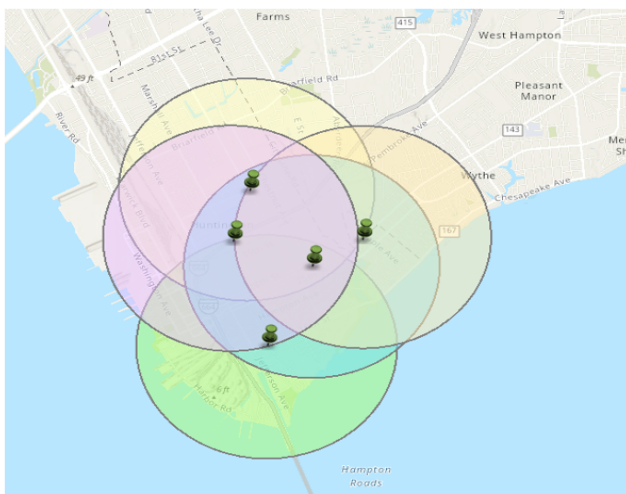
Siting for the EPA Approved Air Monitors:

DEQ proposes to site up to 5 separate PM10 samplers in each community. In addition at one site in each community there will be a collocated PM2.5/10 continuous instrument. DEQ has evaluated the communities and has presented to the public the following recommended monitor locations shown on the maps below. These siting maps were shown to the public in the July community outreach meetings – July 14 in Lamberts Point and July 28 in the East End community.

The sites shown are to provide a general location of the monitors. When actually placing the monitoring sites there may be site-specific issues that will require that the monitors be located away from the actual sites indicated below. This may be due to buried utilities, easements and projected construction in the area. A final map with the specific sites will be presented to the East End and Lamberts Point Communities.

Air Monitor Placement

Address	Representative Area
27 th Street and Chestnut Avenue	4 kilometer diameter
16 th Street and Ivy Avenue	4 kilometer diameter
27 th Street and Poplar Avenue	4 kilometer diameter
48 th Street and Roanoke Avenue	4 kilometer diameter
39 th Street and Marshall Avenue	4 kilometer diameter



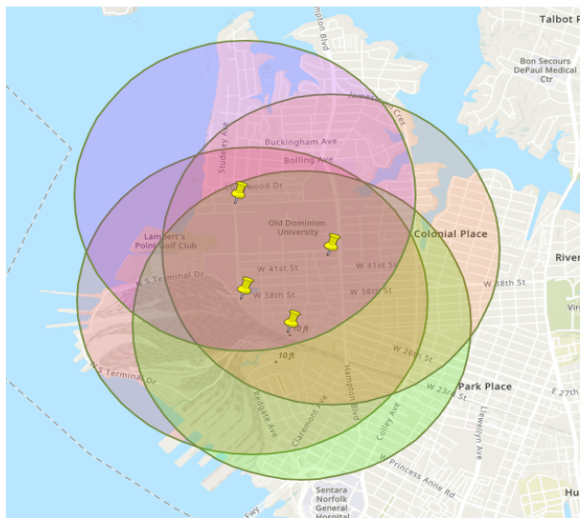
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Recommended Monitoring Sites for the East End Community

Air Monitor Placement

Identification	Address	Representative Area
W. 26th street and Elkhorn Ave.	1333 West 25th Street	1.5 kilometer diameter
43rd St. and Hampton Blvd - fire station	1224 West 42nd Street	1.5 kilometer diameter
W 38th St. and Powhatan Ave.	1551 West 38th street	1.5 kilometer diameter
W. 49th St. and Powhatan Ave.	N/A	1.5 kilometer diameter



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Recommended Monitoring Sites for the Lamberts Point Community.