



Janice T. Booher, MS  
Project Quality Assurance Manager

# EPA Enhanced Air Quality

Saturday  
**DECEMBER**  
**2<sup>ND</sup>**

## COMMUNITY MEETING & TOUR

# 10 AM

**CLIMATE CHANGE  
is REAL!**  
*Let's talk*

**Callahan Neighborhood Center**  
101 North Parramore Ave.  
Orlando, FL 32801

**TOPICS OF DISCUSSION**

- EPA Air Quality Monitoring Planning Session
- Community Scientist Training Workshop
- Justice 40 Equity Projects Update
- Community Tour

**WE'RE  
HIRING**

**Community  
SCIENTIST**

**EPA AIR QUALITY MONITORING GRANT PARTNERS**

Coalition of 100 Black Women of Central Florida

Christ the King EPISCOPAL CHURCH

UCF

CENTRAL FLORIDA BLACK WOMEN'S ASSOCIATION OF ORLANDO, INC.

ROLLINS

Lorraine Williams Center for Women's Empowerment

Ms. Betty RESILIENCE HUB LEARNING CENTER

COMMUNITY EQUITY PROJECT

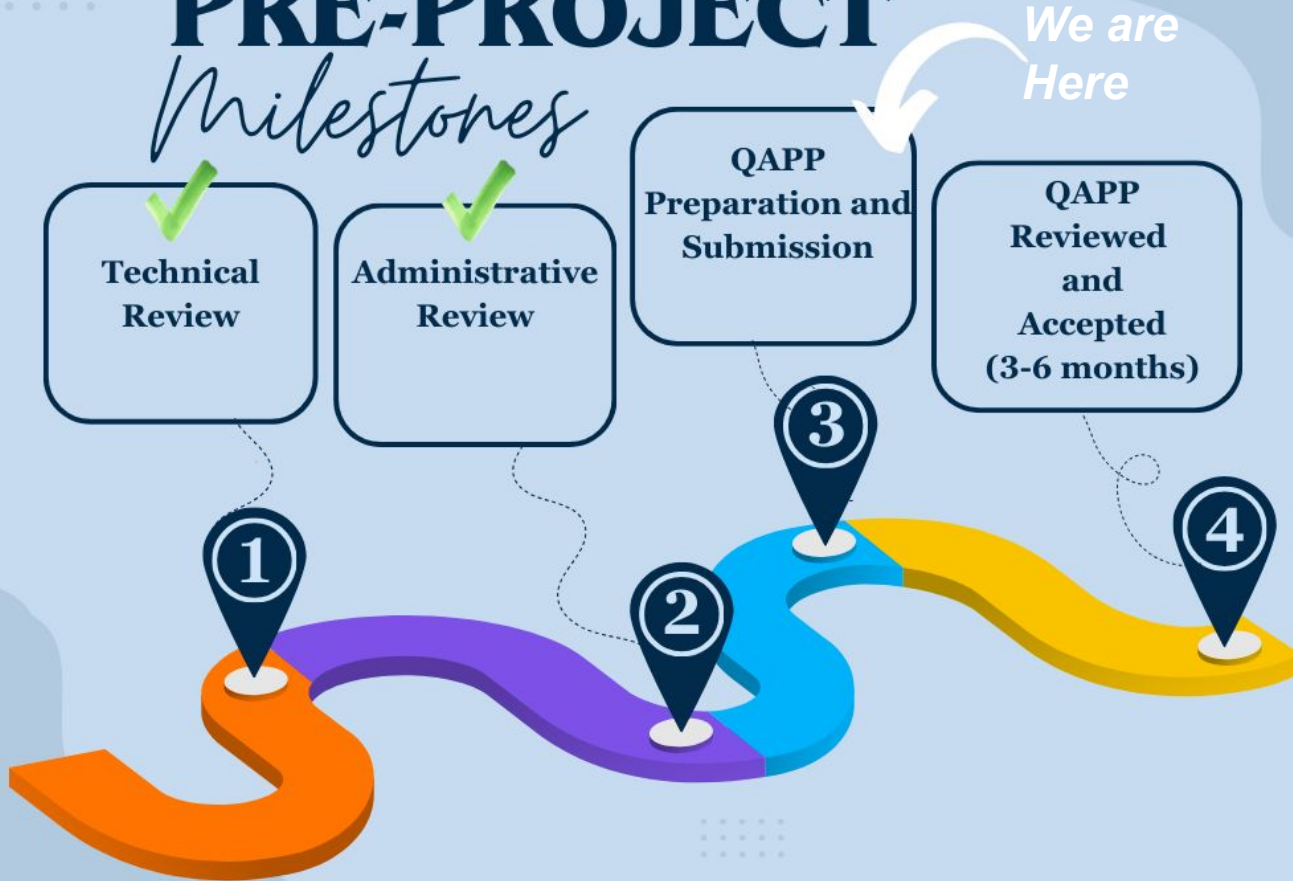
FOR MORE INFORMATION CONTACT LAWANNA GELZER

Phone: (407) 953-5599 — Email: [LawannaGelzer@aol.com](mailto:LawannaGelzer@aol.com)



# PRE-PROJECT

## Milestones



# PROJECT

## *Milestones*

### Trainings

- >Air Quality
- >AQ and Health
- >Monitors
- >Data

### Community AQ Advisory Council

- >Expert Consultation
- >Representation
- >Council Formation

### Reporting

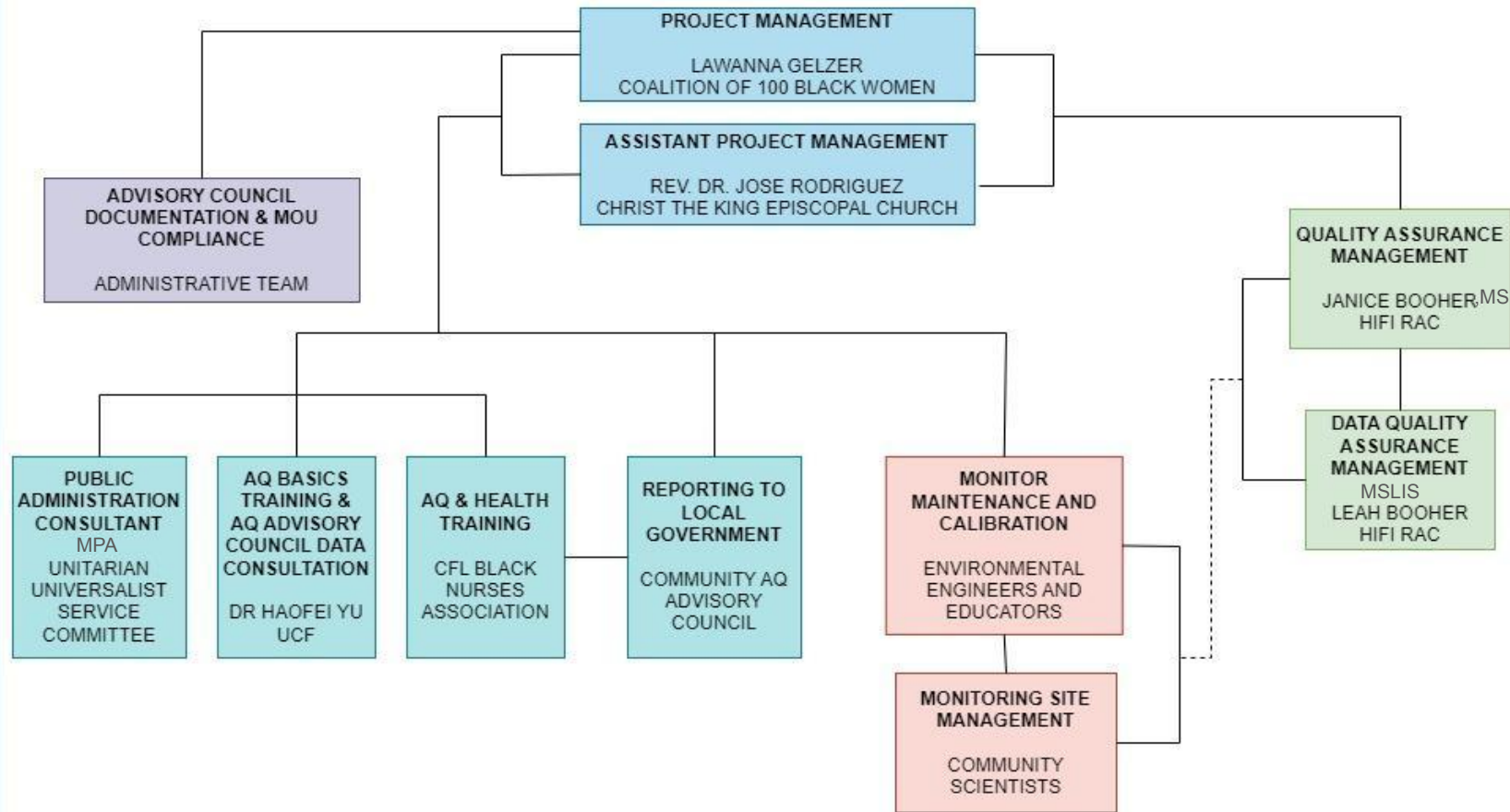
- >From Community  
Science to Council
- > Reports to Local  
Government

### Improvements

- >Review of Data
- >Recommended  
Improvements
- >Implement  
Improvements



Coalition of 100 Black Women Monitoring Team




# Responsibilities of Environmental Engineers and Educators and of Community Scientists

<p>Hired Community Members And University Students</p>	<p>Environmental Engineers and Educators</p>	<p>Monitor maintenance and “End User Calibrations”</p>	<p>EEEs will have the authority to:</p> <ul style="list-style-type: none"> <li>&gt;perform and document calibrations, Quality Control checks and required maintenance on analyzers and samplers unless factory service is required</li> <li>&gt;provide <a href="#">Level 1 Data Verification. p 43</a></li> <li>&gt;conduct performance and systems audits</li> <li>&gt;conduct monitor siting audits consistent with <a href="#">40 CFR Appendix E to Part 58 - Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring.</a></li> <li>&gt;supervise monitor placement consistent with <a href="#">40 CFR Appendix E to Part 58 - Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring</a></li> <li>&gt;Move a monitor from one site to another upon instruction from the Project Manager or Assistant Project Manager</li> </ul>
<p>Hired Community Members</p>	<p>Community Scientists</p>	<p>Site Management (securing permissions to access the monitor for siting and installing the monitor, being present for installation, all maintenance visits and calibrations, and packing up of the monitor for relocation to another network site)</p> <p>Checking on the measurements reported in the Data Cloud Account and reporting any interruptions, weather threats or need to temporarily shut down for any reason</p>	<p>The Community Scientists will have the authority to:</p> <ul style="list-style-type: none"> <li>&gt;conduct monitor site preparation and site planning consistent with <a href="#">40 CFR Appendix E to Part 58 - Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring</a></li> <li>&gt;Weekly visual monitor checks</li> <li>&gt;<a href="#">Level 1 Data Review. p 43</a></li> <li>&gt;be present and document whenever anyone interacts with the monitor on site</li> </ul>



# Project Dashboard

[Home](#) [About](#) [RAC Centers of Excellence](#) [States AL – ID](#) [States IL-MO](#) [States MT – RI](#) [States SC – WY](#) [Starting a RAC site](#) [RAC Training Videos](#) 




## Enhancing Community AQ Monitoring in Underserved Black & Hispanic Communities in Orange County, FL

An ARP Enhanced Air Quality Monitoring Grant

Goal of the Grant

Recipient: Coalition of 100 Black Women-Central Florida



aerqual®  
AQS1

# Upcoming Trainings & Workshops

## Community Scientists, Environmental Engineers and Educators

2

Dec

Training

Monitor Siting and Installation

[Event Info](#)

TBD

Jan

Training

Air Pollution 1

[Event Info TBD](#)

TBD

Jan

Training

Air Pollution 2

[Event Info TBD](#)

TBD

Feb

Training

Health Impacts of Air Pollution

[Event Info TBD](#)

TBD

Feb

Workshop

Monitor Installation and Set Up

[Event Info TBD](#)

TBD

Mar

Workshop

Monitor Calibration and  
Maintenance

[Event Info TBD](#)

TBD

Mar

Training

Data Stewardship and  
Verification

[Event Info TBD](#)

TBD

Apr

Training

Data Management

[Event Info TBD](#)

TBD

Mar

Workshop

Quality Assurance

[Event Info TBD](#)

# Community Air Quality Advisory Council

**TBD**

Jan

Meeting

**Founding Documents**

Event Info TBD

**TBD**

Feb

Meeting

**Representation and Data  
Reporting**

Event Info TBD

**TBD**

Mar

Meeting

**Dialogue with Local Government**

Event Info TBD



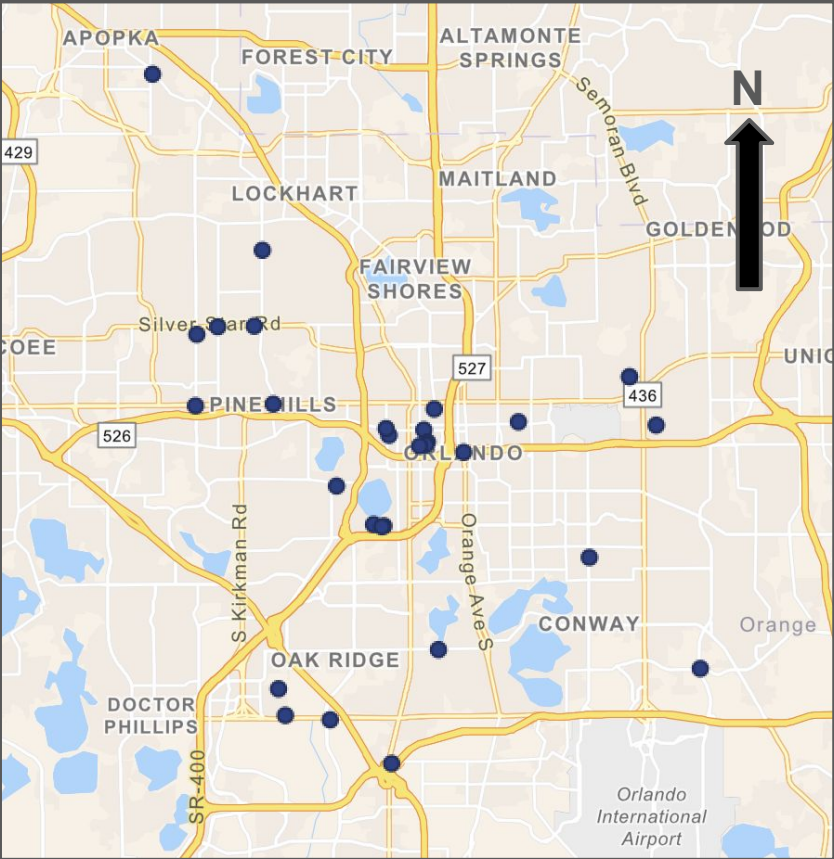


# EPA Enhanced Air Quality Monitoring Mapping Workshop 5.19.2023 and 5.20.2023

*EPA ARP Community Monitoring Grant #5X02D45423*

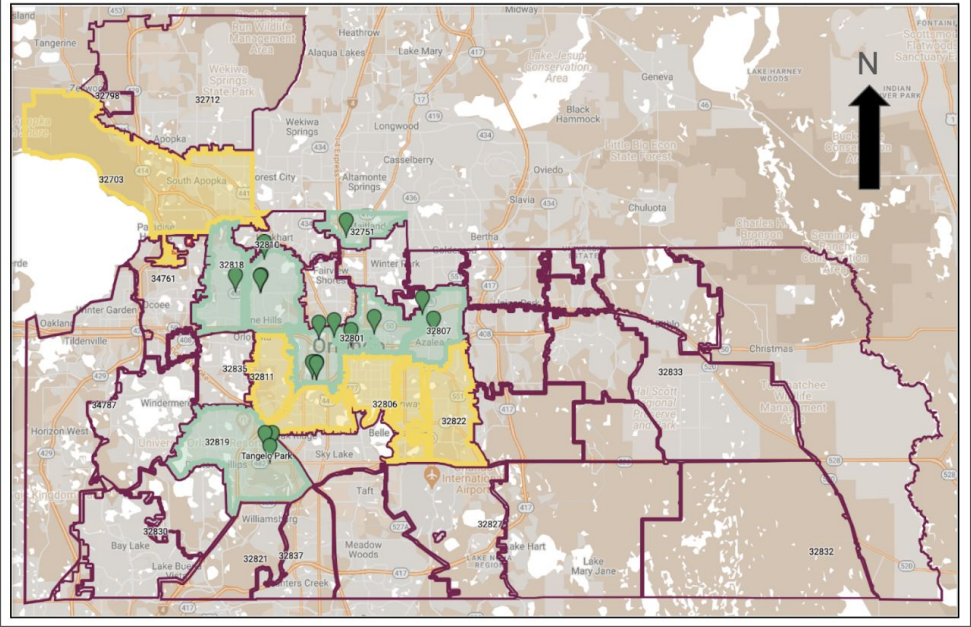


# Map of All 30 Sites Proposed



# Sites for Stationary Monitors Proposed in 8 Zip Codes

**Figure 2. Potential monitoring sites identified in 8 of the 14 zip codes at the May 19, 2023 and May 20, 2023 workshop.**



# Year 1 Community Monitoring Sites

Weeks	Location	Site ID	Monitor #
1 - 4	<a href="#">Winter Park Federal Monitor Site</a> , 466 Harper St, Winter Park, FL 32789 (28.59427, -81.36374)	AQS-ID 12-0952002 Collocation	1,2,3,4
5-56	<b>A) Azalea Park</b> , <a href="#">Familia Resilience Hub - Christ the King Episcopal Church</a> , 26 Willow Dr, Orlando, FL <b>32807</b> (28.54532, -81.30614)	A	1
5-56	<b>B) Parramore</b> , <a href="#">Ms Betty Resilience Hub and Learning Center</a> , 825 W Washington St, Orlando, FL <b>32805</b> (28.54403, -81.39173)	B	2
5-30	<b>C) Eatonville</b> , <a href="#">Eatonville Town Hall</a> , 307 E Kennedy Blvd, Eatonville, FL <b>32751</b> (28.61898, -81.38148)	C	3
5-30	<b>D) Pine Hills</b> , <a href="#">Orange County Fire Station 42</a> , 5420 Silver Star Rd, Orlando, FL <b>32808</b> (28.57712, -81.45462)	D	4
31 - 34	<a href="#">Winter Park Federal Monitor Site</a> , 466 Harper St, Winter Park, FL 32789 (28.59427, -81.36374)	AQS-ID 12-0952002 Collocation	3 and 4
35-60	<b>E) Magnolia Towers</b> , 100 E Anderson St Orlando, FL <b>32801</b> (28.53682, -81.37718)	E	3
35-60	<b>F) Colonialtown South</b> , <a href="#">UU Church of Orlando</a> , 1901 E Robinson St Orlando, FL <b>32803</b> (28.54634, -81.35702)	F	4
61 - 64		Factory calibration	1,2,3,4

# Year 2 Community Monitoring Sites

65- 68	<a href="#">Winter Park Federal Monitor Site</a> , 466 Harper St, Winter Park, FL 32789 (28.59427, -81.36374)	AQS-ID, 12-0952002, Collocation	1,2,3,4
69 - 95	I) in 32703		1
69 -95	J) in 32806		2
69 - 95	K) in 32811		3
69 - 95	L) in 32822		4
96- 99	<a href="#">Winter Park Federal Monitor Site</a> , 466 Harper St, Winter Park, FL 32789 (28.59427, -81.36374)	AQS-ID, 12-0952002. Collocation	1,2,3,4
100 -125	M) in 32839		1
100 -125	N) in 32812		2
100 - 125	O) in 32818		3
100 - 125	P) in 32819		4
125 - 128		Factory calibration	1,2,3,4
129 - 132	<a href="#">Winter Park Federal Monitor Site</a> 466 Harper St, Winter Park, FL 32789 (28.59427, -81.36374)	AQS-ID, 12-0952002, Collocation	1,2,3,4

Monitors will be placed as determined by the Community Air Quality Advisory Council,  
As the Council manages the program moving forward.



# Collocation at the Winter Park Federal Reference Monitoring Site

—  
Particulate  
Matter (2.5)

Ozone

Nitrogen  
Dioxide

## Particulate Matter 2.5 - Federal Referenc...

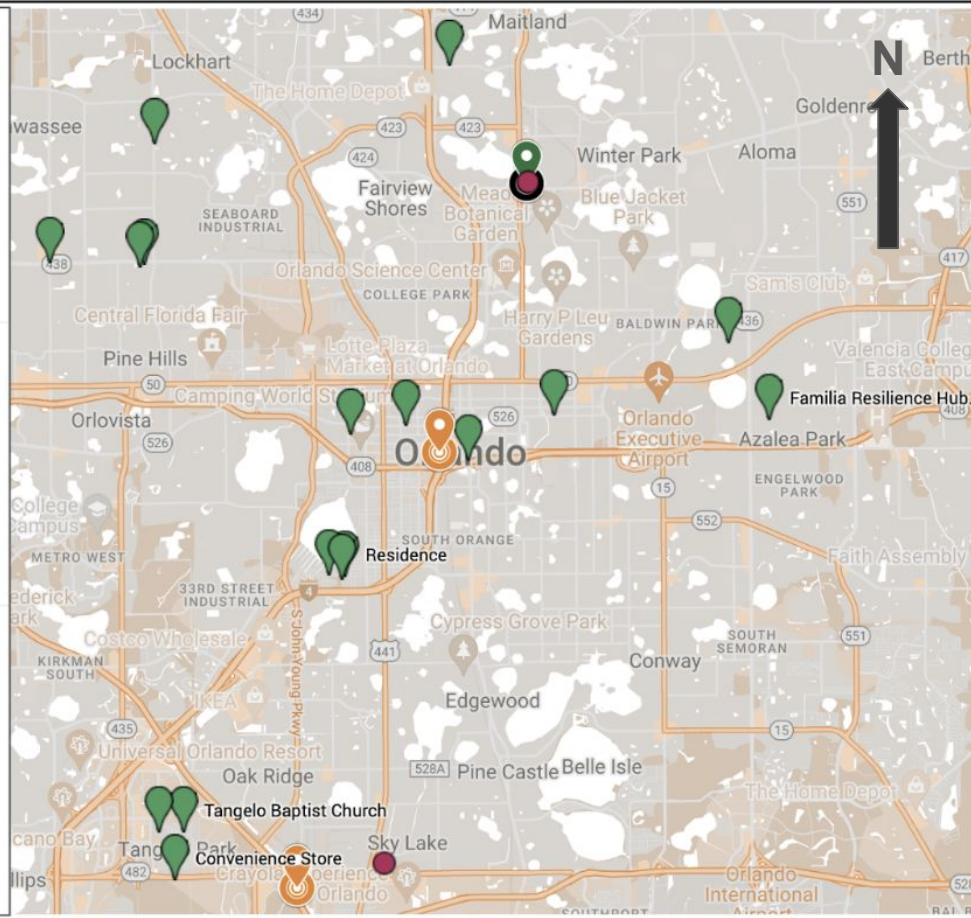
- PM 2.5 - Seminole Community College (Sanf...
- PM 2.5 Winter Park
- PM 2.5 I-4 Near Road Expected 12/2023
- PM 2.5 Presidents Drive-Near Road Expe...

## Nitrogen Dioxide - Federal Reference and...

- Nitrogen Dioxide - Winter Park
- Nitrogen Dioxide - I-4 Near Road
- Nitrogen Dioxide-Presidents Drive-Near Road

## Ozone - Federal Reference and Federal E...

- Ozone - Seminole Community College (Sanf...
- Ozone - Winter Park
- Ozone - Skyview
- 1901 Johns Lake Rd



# Monitor Siting and Installation Action Steps

1. Tour the proposed Year 1 sites to make sure siting requirements can be met
2. Secure permissions from the site owners
3. Coordinate with Orange County on Collocation at the Winter Park Federal Reference Method Monitors
4. Make decisions to include in the QAPP



## Goal of the ARP Enhanced Air Quality Monitoring Grants

To enhance air quality monitoring in communities across the United States with environmental and health outcome disparities stemming from pollution and the COVID-19 pandemic.

## Project Objectives

1. Support the U.S. EPA's Strategic Goals: This project links to goal 4 "Ensure Clean and Healthy Air for All Communities", of EPA's 2022-2026 Strategic Plan to reduce air pollution on local, regional, and national scales to achieve healthy air quality for people and the environment."
2. Form a community science AQ monitoring network providing high quality defensible particulate matter (2.5), ozone and nitrogen dioxide concentration data to a Community AQ Advisory Council that is in dialogue with local government.
3. Determine if near reference quality *Aeroqual AQS-1 Urban Air Quality Monitors* sited consistent with 40 CFR Part 58, Appendix E within underserved communities of the Orlando Metropolitan Area show  $PM_{2.5}$ ,  $O_3$  or  $NO_2$  exceedances of the NAAQS primary standard for these pollutants.
4. Determine how the AQI values calculated using this data compare to those reported from the sites currently used to calculate AQI.

Is there a secure location within your community to locate a monitor with a solar panel for 6 months?

### Logistical Considerations for Finding a Place to Locate Air Sensors



#### GENERAL LOCATION

Considering the purpose of the measurements, where should the site be located?"



#### SECURITY

Ensure that the sensor is secure and protected from vandalism or theft and that site operators can remain safe.



#### ACCESS

Determine the requirements (permissions, keys, etc.) to visit the site to install/service the sensor(s).



#### PLACEMENT

In general, place the sensor at least 6 feet above ground level, rooftop, or other objects and away from obstructions, vegetation, or emission sources that would interfere with the measurement.



#### POWER

Determine requirements and establish power early.



#### PHOTOS

Take photos of the sensor installation and area around the site.



#### COMMUNICATIONS

Ensure reliable communications (cellular, Wi-Fi, etc.) before installation.




#### DOCUMENTATION

Record information about the site, including latitude, longitude, elevation, nearby obstacles, date of installation, etc.


Learn more at: <https://www.epa.gov/air-sensor-toolbox>


# 40 CFR Appendix E to Part 58 - Probe and Monitoring Path Siting Criteria for Ambient Air Quality Monitoring


1. Introduction.

 2. Horizontal and Vertical Placement.

 3. Spacing from Minor Sources.

 4. Spacing From Obstructions.

 5. Spacing From Trees.

 6. Spacing From Roadways.

7. Cumulative Interferences on a Monitoring Path.

8. Maximum Monitoring Path Length.

9. Probe Material and Pollutant Sample Residence Time.

10. Waiver Provisions.

11. Summary.

12. References.

# Summary

Pollutants	Scale (maximum monitoring path length, meters)	Height from Ground to Probe inlet or 80% of monitoring path <sup>1</sup> (meters)	Horizontal and Vertical Distance from supporting structures <sup>2</sup> to probe, inlet or 90% of monitoring path <sup>1</sup> (meters)*	Spacing from Minor Sources	Distance from Trees to to probe, inlet or 90% of monitoring path <sup>1</sup> (meters)	Distance from Roadways to probe, inlet or monitoring path <sup>1</sup> (meters)
<p>Particulate Matter 2.5 microns and smaller (PM<sub>2.5</sub>)</p> <p>Nitrogen dioxide (NO<sub>2</sub>)</p> <p>Ozone (O<sub>3</sub>)</p>	<p>Middle scale</p> <p>From 328 ft to a third of a mile</p> <p><b>(328 ft - 0.31 mi)</b></p>	<p>From <b>6ft to 23 ft</b></p>	<p>At least <b>6 feet</b> horizontal distance from walls, parapets, and structures is required for rooftop site placement.</p> <p>A probe, inlet, or monitoring path must have unrestricted airflow in an arc of at least 180 degrees.</p> <p>This arc must include the predominant wind direction for the season of greatest pollutant concentration potential.</p>	<p>Avoid placing a monitor probe, path, or inlet near local, minor sources.</p> <p>At least 90 percent of the monitoring path must be away from furnace or incineration flues or other minor sources of SO<sub>2</sub> or NO.</p> <p>The separation distance should take into account the heights of the flues, type of waste or fuel burned, and the sulfur content of the fuel.</p>	<p><b>33 ft</b> or further from the drip line of trees.</p>	<p><b>33 ft</b> or more from roadways</p>

\*If the probe or a significant portion of the monitoring path is located near the side of a building or wall, then it should be located on the windward side of the building relative to the prevailing wind direction during the season of highest concentration potential for the pollutant being measured.



# Site Survey

Fill Out a Survey for  
Each Site Visited

[Link to the survey](#)



## Monitor Site Selection and Placement Observations

This form was developed for EPA ARP Community Monitoring Grant #5X02D45423.  
Please direct questions to [janbooherbbe@gmail.com](mailto:janbooherbbe@gmail.com)

[janbooherbbe@gmail.com](mailto:janbooherbbe@gmail.com) [Switch account](#)



Not shared

MM DD YYYY

\_\_ / \_\_ / \_\_\_\_

First Name:

Your answer \_\_\_\_\_

Last Name:

Your answer \_\_\_\_\_

Email

Short answer text

Phone number

Short answer text

What site is being evaluated on this form?

- A) Azalea Park, Familia Resilience Hub - Christ the King Episcopal Church, 26 Willow Dr, Orlando, FL 32807 (2...
- B) Parramore, Ms Betty Resilience Hub and Learning Center, 825 W Washington St, Orlando, FL 32805 (28.54...
- C) Eatonville, Eatonville Town Hall, 307 E Kennedy Blvd, Eatonville, FL 32751 (28.61898, -81.38148)
- D) Pine Hills, Orange County Fire Station 42, 5420 Silver Star Rd, Orlando, FL 32808 (28.57712, -81.45462)
- E) Magnolia Towers, 100 E Anderson St Orlando, FL 32801 (28.53682, -81.37718)
- F) Colonialtown South, UU Church of Orlando, 1901 E Robinson St Orlando, FL 32803 (28.54634, -81.35702)
- G) Winter Park Federal Monitor Site, 466 Harper St, Winter Park, FL 32789 (28.59427, -81.36374)
- Other...

If you checked "Other," please write the address here. (Community Name, Street Address, City, State, Zip Code)

Short answer text

Are you part of the decision making team at this site? (eg. own or rent the site, belong to an organization that controls the site, etc.)

Yes

No

Maybe

Other: \_\_\_\_\_

Please explain why this site is important in achieving the goal of enhancing "air quality monitoring in communities across the United States with environmental and health outcome disparities stemming from pollution and the COVID-19 pandemic.

## GENERAL LOCATION



Considering the purpose of the measurements, where should the site be located?"

Your answer



If you know the requirements to visit the site, please list them here:

## ACCESS



Determine the requirements (permissions, keys, etc.) to visit the site to install/service the sensor(s).

Your answer

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Power for the monitors is likely to be solar. Do you see any obstacles that would obstruct a solar panel associated with the monitor at this site? If so, is there a different power source at the site?(Please explain.)

## POWER



Determine requirements and establish power early.

Your answer

---

Is there adequate cell or Wifi service at the site? (If you have a phone, please state the brand of your phone, your carrier and how strong your signal is at the site.)  
[Example: iPhone, Verizon, 3 bars]

## COMMUNICATIONS



Ensure reliable communications (cellular, Wi-Fi, etc.) before installation.

Your answer

---

Please share your observations and concerns regarding the security available at the site.

## SECURITY




Ensure that the sensor is secure and protected from vandalism or theft and that site operators can remain safe.

Your answer

---

Is there adequate cell or Wifi service at the site? (If you have a phone, please state the brand of your phone, your carrier and how strong your signal is at the site.)  
[Example: iPhone, Verizon, 3 bars]



## COMMUNICATIONS

Ensure reliable communications (cellular, Wi-Fi, etc.) before installation.

Your answer

Please share your observations and concerns regarding the security available at the site.



## SECURITY

Ensure that the sensor is secure and protected from vandalism or theft and that site operators can remain safe.

Your answer

Can the following placement criteria be satisfied at this site?

	No	Yes
Height from ground to probe inlet 6ft - 23ft	<input type="checkbox"/>	<input type="checkbox"/>
6 ft horizontal distance from walls and other structures	<input type="checkbox"/>	<input type="checkbox"/>
33 ft from drip line of trees	<input type="checkbox"/>	<input type="checkbox"/>
33 ft from roadways	<input type="checkbox"/>	<input type="checkbox"/>
Avoid placing a monitor probe, path or inlet near local, minor sources.	<input type="checkbox"/>	<input type="checkbox"/>

Additional Comments:



Your answer

Submit

Clear form

Can the following placement criteria be satisfied at this site?

	No	Yes
Height from ground to probe inlet 6ft - 23ft	<input type="checkbox"/>	<input type="checkbox"/>
6 ft horizontal distance from walls and other structures	<input type="checkbox"/>	<input type="checkbox"/>
33 ft from drip line of trees	<input type="checkbox"/>	<input type="checkbox"/>
33 ft from roadways	<input type="checkbox"/>	<input type="checkbox"/>
Avoid placing a monitor probe, path or inlet near local, minor sources.	<input type="checkbox"/>	<input type="checkbox"/>



Additional Comments:



# Site Tours

1. Familia Resilience Hub

2. Winter Park Federal Reference Method Monitor

3. Eatonville

4. Orange County Firehouse 52

5. Downtown - Magnolia Towers

6. First Unitarian Church of Orlando

7. Ms Betty Resilience Hub

## Particulate Matter 2.5 - Federal Referenc...

- PM 2.5 - Seminole Community College (Sanf...
- PM 2.5 Winter Park
- PM 2.5 I-4 Near Road Expected 12/2023
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## Ozone - Federal Reference and Federal E...

- Ozone - Seminole Community College (Sanf...
- Ozone - Winter Park
- Ozone - Skyview
- 1901 Johns Lake Rd



# December 2, 2023

Please direct questions about this presentation  
to  
*Janice T. Booher, MS at [janbooherb@gmail.com](mailto:janbooherb@gmail.com)*



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