Maryland
Department of
the Environment

Air Quality Partnership Project in Cheverly, Maryland

COMMISSION ON ENVIRONMENTAL JUSTICE AND SUSTAINABLE COMMUNITIES
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Partners and Acknowledgments

- Town of Cheverly and community members
- Cheverly Mayor Kayce Munyeneh and former Mayor Laila Riazi
- Town of Cheverly Green Infrastructure Committee
  - Special thanks to Karen Moe and Sheila Salo
- Center for Community Engagement, Environmental Justice, and Health (CEEJH), Maryland Institute for Applied Environmental Health at the University of Maryland School of Public Health
  - Special Thanks to Dr. Sacoby Wilson, Director and Jan-Michael Archer
- MDE Air Quality Compliance Program, MDE Ambient Air Monitoring Program, MDE Mobile Sources Control Program, MDE Air Quality Permits Program, and MDE Air Quality Planning Program

*MDE Report available here: https://mde.maryland.gov/programs/Air/AirQualityCompliance/Pages/CheverlyTargetedInspectionInitiative.aspx

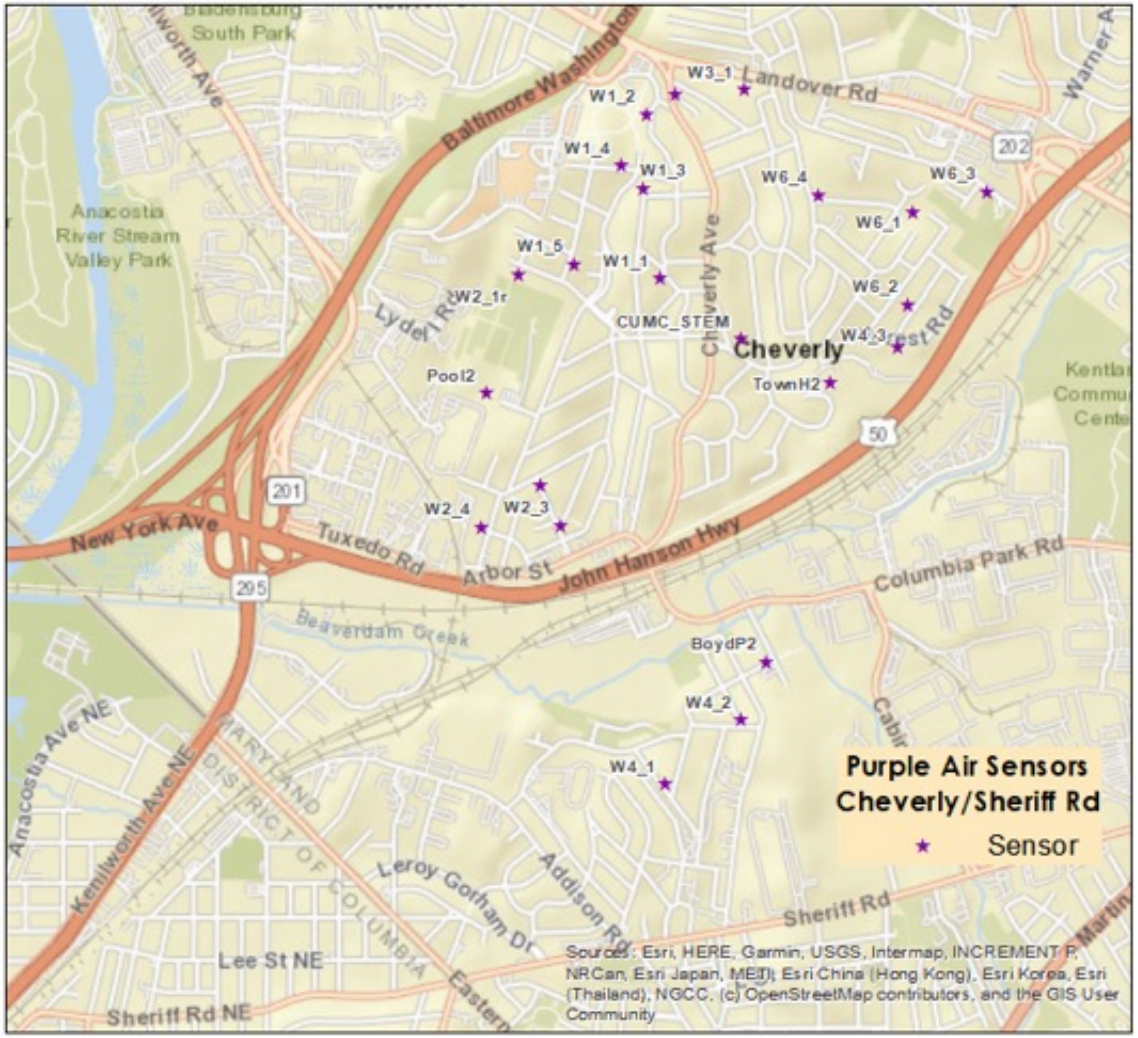
Partnership Project Summary

- **Purpose**- to conduct a project to monitor local air quality and determine whether any emissions sources in the Cheverly/Sheriff Road area are impacting it.

- This partnership started when the town of Cheverly worked with the CEEJH to create a hyper-local air sensor network to analyze local air quality.

- The network includes 22 PurpleAir, Inc. (PA) sensors estimating fine particulate matter ($PM_{2.5}$) concentrations, a high priority air pollutant.

Partnership Project Map



Partnership Project Summary- MDE's Involvement

- MDE implemented an intensive targeted inspection initiative in and around the Cheverly area, from June 1, 2021 through July 30, 2021.
  - MDE conducted inspections and observations at permitted emission sources and conducted area-wide scans and observations at non-permitted sources such as locations where diesel trucks or buses idle for long periods.

- MDE also evaluated the potential correlation between higher levels of measured $PM_{2.5}$ and traffic conditions.
  - In order to determine how traffic may have been impacting air sensor measurements in the Cheverly area, MDE examined how traffic volume correlated with $PM_{2.5}$ readings and vice-versa.

- MDE staff developed an analysis tool that identifies locations within the Cheverly area that are measuring higher levels of $PM_{2.5}$.
  - A daily "hot spot" map and other informational graphs were prepared using the PA $PM_{2.5}$ data, wind data and source locations.* This information allowed MDE staff to investigate the relationship between upwind sources and traffic, and the PA $PM_{2.5}$ data.

* It is important to recognize that the "hot spots" identified are not high risk hot spots as $PM_{2.5}$ levels were well below the daily $PM_{2.5}$ standard set by EPA.

Partnership Project Findings- Targeted Inspections

- Data from the hyper-local air monitoring network and citizen input was very valuable and was used successfully to conduct numerous inspections and area wide analyses during the June/July intensive effort (June 1- July 30, 2021)

  – MDE Team of about 6 inspectors
  – 19 days of inspections and area wide scans
  – 6 to 10 inspections and area wide scans each day
  – Daily inspection and scan logs and more detailed inspection reports available on the MDE website

Partnership Project Findings- Targeted Inspections cont.

- Facilities inspected/observed included the following:

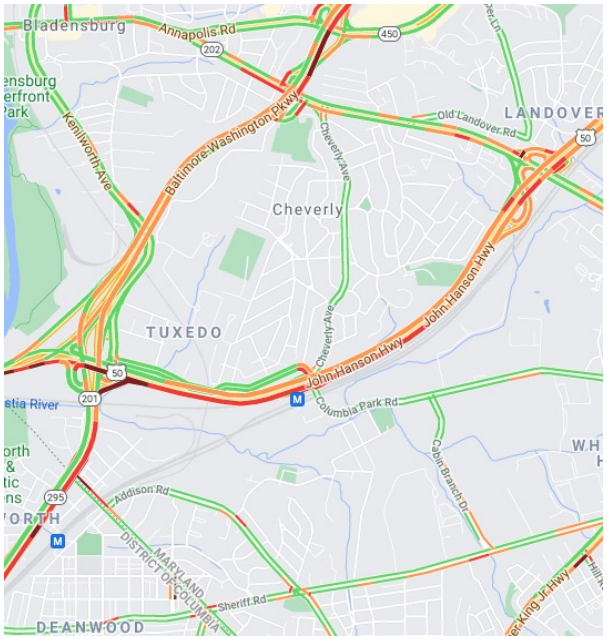
  Aggregate Industries, Chambers Crematory, Joseph Smith and Sons, Anchor Construction, Greyhound Bus, Pepsi Bottling Plant, K. Neil Trucks, Washington Woodworking, Whole Foods Distribution Center, Claybrick Road Construction Sites, Tuxedo Road Construction Site, Aggregate and Dirt Solutions, Brandywine Sand and Gravel, E. P. Henry, Prince George's County Hospital Center, Washington Metropolitan Area Transit Authority (WMATA) Bus Facility, Warehouses on Claybrick Road, warehouse construction on Cabin Branch Drive and Columbia Pike, and a Giant Food Distribution Center

- With the exception of three violations related to uncontrolled dust, the targeted inspection initiative conducted by MDE showed compliance with air quality laws and regulations in the Cheverly area.

- Observed significant amount of diesel truck traffic and idling

Partnership Project Findings- Traffic Analysis

- During the two-month period when the targeted inspection program was implemented, MDE conducted analysis to try and see if heavy traffic at certain times of the day created high PM fine levels
  - Our hypothesis was that we would see increased PM fine levels downwind of time-specific, heavy traffic and congestion
  - To date we did not see that- this analysis will continue



Partnership Project Findings- Traffic Analysis, cont.

- An overall finding based on traffic data analysis and evaluation of sensor data, was that wind direction in combination with emission sources seemed to have a greater impact on the PA sensors' $PM_{2.5}$ levels than local Cheverly area traffic.

- A slightly higher $PM_{2.5}$ trend appeared in the Cheverly PA data during periods with winds from the west-southwest direction.

Wind: Southwesterly, 255 degrees
Cheverly Traffic Map – 7/16/2021 5:15 pm

Partnership Project Findings- $PM_{2.5}$ Levels in the Cheverly Area

- When data from the network of sensors is coupled with traffic data and information obtained from MDE's field inspections of mobile and stationary sources of air pollution, it can allow reasonable conclusions to be drawn regarding local air quality and what may be influencing it.

- The Cheverly hyper-local air monitoring network of PurpleAir $PM_{2.5}$ sensors works well and is an effective tool for looking at air quality levels across the community.

- $PM_{2.5}$ levels were consistently below the daily and long-term (annual) National Ambient Air Quality Standards ... which are designed to protect public health with an ample margin of safety.

Partnership Project Findings- $PM_{2.5}$ Levels in the Cheverly Area, cont.

- EPA is currently in the process of considering revisions to the $PM_{2.5}$ standard, where the issue of short-term spikes will be considered.

- There were areas in Cheverly where exposures were higher than average. This was particularly noticeable when the winds were out of the Southwest. The area was in the southwest corner of Cheverly area, downwind of major roadways and industrial sources.

- Highest likely contributors to $PM_{2.5}$ levels in the Cheverly area (in order of importance) are:
  - The regional load of PM fine originating primarily from power plants across the Mid- Atlantic States and Ohio River Valley
  - The air pollution plume from the Metropolitan Washington, D.C. area (MD, VA and DC)
  - The local roadways and industrial sources

Partnership Project Findings- Additional Research and Analyses

- The PM fine levels measured in the Cheverly area are not much different than the PM fine levels measured across the State and the Mid-Atlantic states (all of Maryland is in compliance with the standard)
  - This is not unexpected, as the PM fine issue is primarily a regional issue driven by power plants across the Mid-Atlantic
  - Ground-level ozone (or smog) is also primarily a regional issue

- Additional research and analyses are needed to do a better job looking at possible inequitable exposure to air pollutants.

- The development of new techniques/tools and research will help to provide a broader picture of exposures and other pollutants, such as diesel particulate.

- MDE is continuing to work with our partners to further examine these issues.

Follow-Up Actions Recommended by MDE

- MDE presented the following suggestions in the Report and met with our partners last week to discuss them. Implementation will be an ongoing process.

- MDE has identified ten areas of follow-up:
  - Continued use of the Community-Based Air Monitoring/Sensor Network and Further Community Input to Target Inspection Efforts and Other Analyses in the Cheverly Area
  - Implementation of a 2021 and 2022 fugitive dust compliance campaign
  - Increased efforts on reducing unnecessary Idling
  - Assistance to the Mayor and the Cheverly Green Infrastructure Committee to ensure that air pollution and equity Issues are considered during the approval process for the proposed District of Columbia “DC Circulator” bus repair and maintenance operation on Claybrick Road (this project has been put on hold)

Follow-Up Actions Recommended by MDE, cont.

- MDE will continue to collaborate with the Metropolitan Washington Air Quality Committee (MWAQC) to implement emission reduction programs to reduce the DC plume that impacts Cheverly
- Increased Efforts with CEEJH, other researchers, interested parties and EPA to improve techniques and tools for evaluating potentially inequitable exposures to air pollution
- Consider working with Cheverly to reduce local diesel emissions similar to MDE effort around the Port of Baltimore
- Consider working with Cheverly to implement the “Idle-Free Maryland” program at local schools
- Consider working with Cheverly to set up discussions with community leaders and local businesses
- Consider working with Cheverly, MDOT and Prince Georges’ County to ensure that local input on transportation infrastructure planning is considered as transportation plans are adopted

Questions

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