



**Maryland**  
Department of  
the Environment

# New Transparency, Air Toxics, and Fugitive Dust Requirements

*Initial Actions to Begin to Address  
Environmental Justice Issues*



**Air Quality Control Advisory Council  
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**Tad Aburn and Kelsey Sisko - Air and Radiation Administration**



# Overview of Presentation

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- Environmental Justice and Community Engagement
- Enhanced Efforts on Environmental Justice
- Amendments to Compliance Transparency, Air Toxics and Fugitive Dust Regulations
- Questions/Discussion
- More detail on the air toxics regulations if time allows



<https://mde.maryland.gov/programs/Air/Pages/index.aspx>



# **Environmental Justice and Community Engagement**



# Environmental Justice Initiatives

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- Environmental Justice is a very high priority at the Maryland Department of the Environment (MDE)
  - A robust Commission on Environmental Justice and Sustainable Communities (CEJSC) continues to advise MDE on strategies and opportunities to prioritize communities with environmental justice concerns
  - MDE-wide initiatives on outreach, compliance, permits, and mapping
- Air Program Initiatives
  - Partnership effort with over nine communities to work together to reduce environmental risk
    - So far, two of these efforts have resulted in diesel cleanup projects selected by the community (Turners Station and Curtis Bay)
  - Port Partnership also includes collaboration with over 15 communities and has driven huge investment into diesel cleanup in and around the Port. By 2025, over \$35 million will have been invested to reduce air pollution around the Port
  - Several existing efforts involve community-based, hyper-local air monitoring/sensor networks
  - Targeted inspection initiatives are now being implemented



# The Community Partnership Effort

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- In 2017, community meetings started in Turners Station, North Point, West Baltimore, and Pasadena
- These meetings were done in collaboration with community leadership and had community driven agendas that included an update on local air quality, an overview of partnership opportunities, and public input
- Many community influenced diesel clean-up efforts implemented, such as those around the Port of Baltimore



**Enhanced Efforts on  
Environmental Justice**



# Hyper-Local Air Monitoring Initiatives

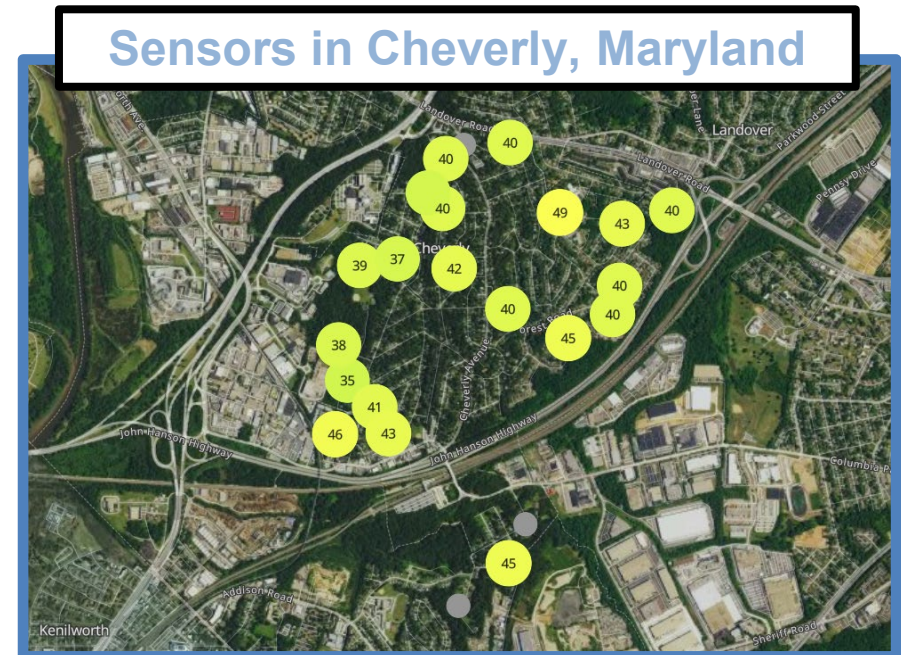
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- These community partnership efforts are also partnerships that focus on citizen science and building air monitoring networks, using low-cost sensors that are spread throughout a community
  - Typically, there are 20 to 30 monitors/sensors in a community
- Over the past few years, the evolution of low-cost air monitoring sensor technology has improved significantly
- Currently, there are hyper-local networks either in place or under development in Cheverly, Baltimore City, Prince George's County, Harford County, St. Mary's County, Curtis Bay, Lothian, and more



# The MDE Partnership in the Cheverly MD/Sheriff Road Area

- In 2019, UMD's Center for Community Engagement, Environmental Justice, and Health initiated a partnership with the Town of Cheverly to build a hyper-local air monitoring network in and around the area
- MDE joined this partnership in 2020
  - Assisted with educational efforts
  - Assisted with the hyper-local air monitoring network
  - Implemented a targeted inspection program in 2021
  - The 2021 effort led to three new enhanced enforcement programs that are now being implemented
- The Town of Cheverly resides outside of Washington, D.C. within Prince George's County and is an area of concern for EJ
  - Numerous stationary sources and major highways around the Sheriff Road area; generally upwind of populated areas
- Community wide air monitoring/sensor network made up primarily of Purple Air fine particle units now in place
  - Kudos to UMD's team for driving this effort







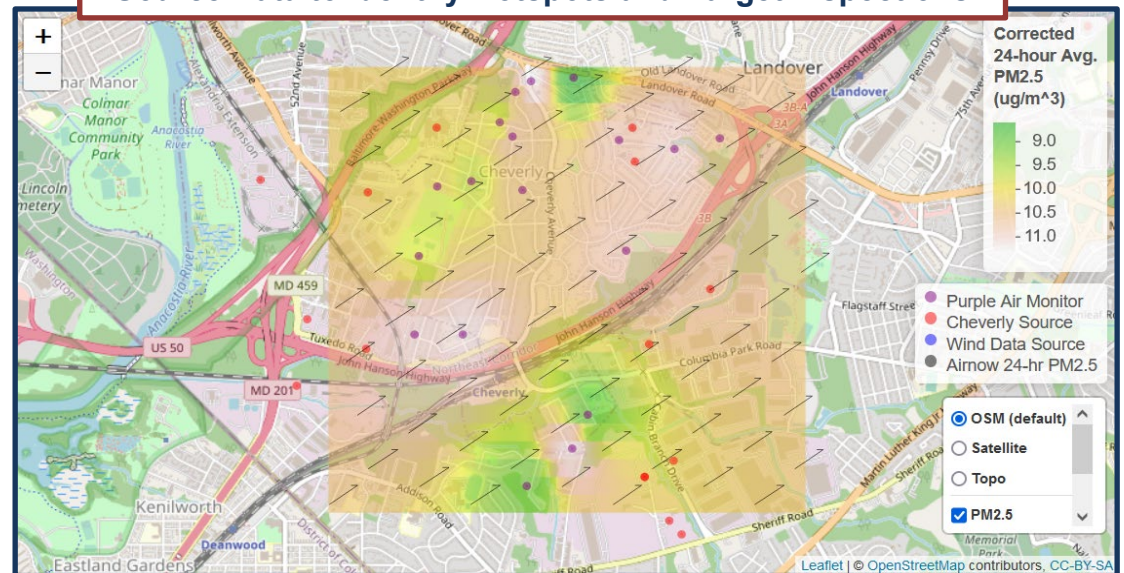
# The MDE Targeted Inspection Initiative in Cheverly

- Intensive inspection effort in June and July 2021
  - Several meetings with community
  - Uses sensor, wind and source data, citizen input, and other information to target inspections
  - Area-wide surveillance and source specific inspections three or more days each week
  - Stationary and mobile sources
  - 28 days of inspections with many site visits; there were three Notices of Violation (NOVs)
  - Webpage summarizes daily activity and inspection reports

- Follow-up activities already being implemented:
  - Targeted inspections
  - Idle reduction
  - Fugitive dust
- Positive input from mayor and residents

[mde.maryland.gov/programs/Air/AirQualityCompliance/Pages/CheverlyTargetedInspectionInitiative.aspx](https://mde.maryland.gov/programs/Air/AirQualityCompliance/Pages/CheverlyTargetedInspectionInitiative.aspx)

**Daily Hotspot Map - Using Sensor, Wind and Emission Source Data to Identify Hotspots and Target Inspections**





# Current MDE Activities in the Cheverly Sheriff Road Area

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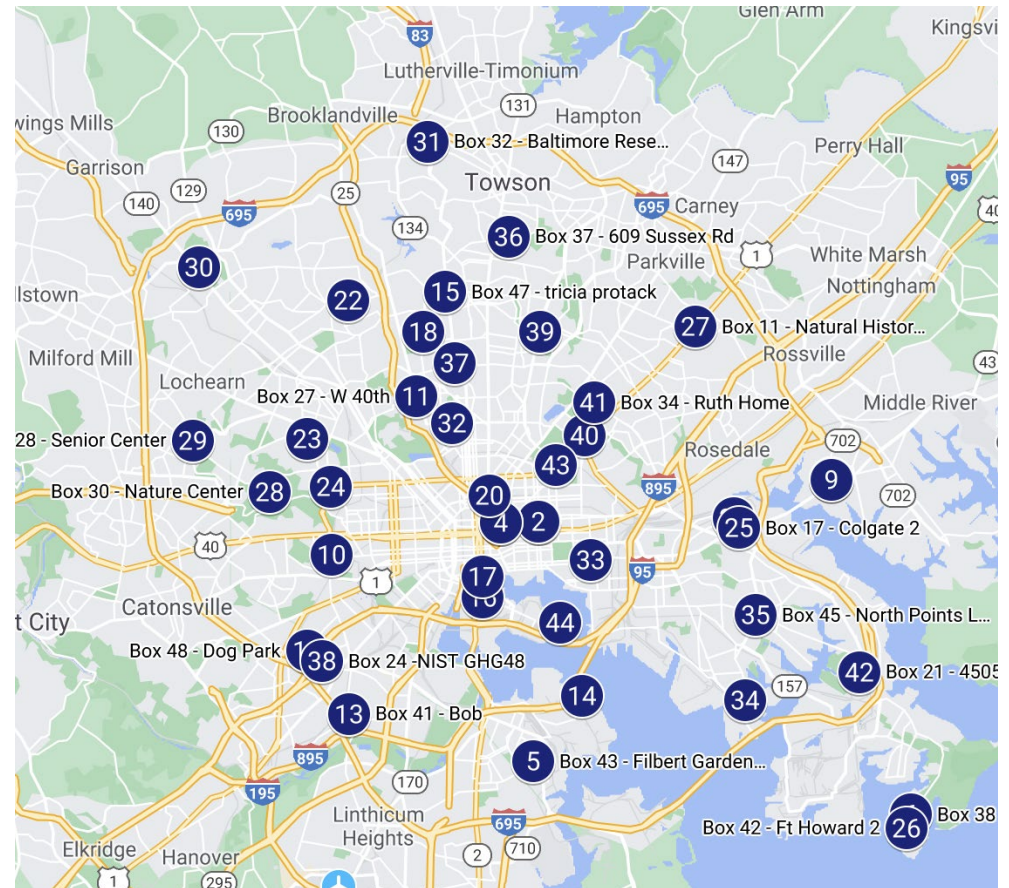
- MDE, working in partnership with the community and UMD, is implementing several of the recommended follow up activities:
  - Diesel cleanup
  - Eliminating or reducing illegal idling and tampering
  - Reducing fugitive dust
  - Continuing the targeted inspection and enforcement effort started in 2021



# Another Example of a Hyper-Local Monitoring Project

## *The Johns Hopkins/Yale “SEARCH” Project*

- Lead by Johns Hopkins and Yale with MDE collaboration
- A project using a large network of low-cost air quality sensors to look at air pollution variability across the Baltimore area
- Data on fine particulate, nitrogen dioxide, greenhouse gases, and more being collected
- Similar projects in Cheverly, St. Mary’s County, Prince George’s County, Harford County, and the DC area





# New Curtis Bay Partnership

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- Significant effort on this partnership over the past four months
  - Very high priority due to an explosion at a local coal pier and a major fire at an oil processing facility
- Effort includes:
  - A community driven partnership effort
  - Enhanced monitoring
  - New permit requirements
  - Targeted inspection and enforcement activities by MDE
  - Recently evolved to include multi-media targeted inspections and other community goals like a zero-waste center that also provides a center for community engagement and education





# The Port Partnership

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- A great example of a partnership between government and communities
- Government partners: Port, MDE, Maryland Department of Transportation, and the Maryland Energy Administration
- Community partners: Turners Station, St. Helena, Greater Baybrook, North Point, Fort Howard, and 10 other communities
- Diesel reduction has been a major focus, but the partnership includes other media and other issues
- Through 2020, about **\$15 million was invested into clean air and climate change, which eliminated over 4,000 tons of NOx emissions**, along with significant reductions in GHG and toxic emissions.
  - **Over \$35 Million investment by 2025**



# Diesel Emission Reduction Efforts: *Current and Into the Future*

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- Community Projects:
  - Turners Station
    - Marshall's Trash Truck
  - Curtis Bay
    - Diesel yard truck
- Projects in the Port of Baltimore area:
  - Port projects
    - Dray trucks, repower tugs and purchase trucks, handling equipment, and more
    - NOx reduced by 406 tons
  - Private Sector projects
    - Repower tugs and purchase diesel buses, locomotive switchers, electric cranes
    - NOx reduced by 1,876 tons
- Other Projects
  - Purchase new electric and alternative fuel school buses, trash trucks, transit buses
  - NOx reduced by 1,307 tons



# New Partnership Opportunities

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- The federal government has announced an unprecedented amount of new funding for community-based projects, citizen science, ports, climate change, and more
  - Maryland is perfectly positioned to take advantage of these grant opportunities
- In conversations with communities, there has been expressed interest in opportunities such as:
  - Diesel clean-up and electrification
  - Strengthened partnerships
  - Citizen science
  - Hyper-local air monitoring/sensor networks

A bright sun shining through a blue sky with white clouds. The sun is positioned in the upper right quadrant, casting rays across the sky. The clouds are scattered and vary in size, with some larger, more prominent ones in the foreground and smaller ones in the distance. The overall scene is bright and clear, suggesting a sunny day.

**NEW REGULATORY INITIATIVES  
TO BEGIN TO ADDRESS EJ  
ISSUES**





# Why Is this a Priority?

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- EJ is one of the highest priorities at MDE
- New policies and regulations to address some of the unique issues associated with EJ are needed
- These regulations begin to address three key concerns we have heard repeatedly in our discussions with communities that have concerns over EJ
- Some concerns shared include:
  - Transparency: “it is very difficult for the public to easily find information on why sources are clearly in continuous compliance with all of the air and climate regulations”
  - Cumulative Exposure to air pollution: “The air we breathe is full of many pollutants – not just a single pollutant”
  - Fugitive Dust: “This is a long-term problem in our community and the state’s regulation is too general and very old”

A bright sun is positioned in the upper right quadrant of the image, casting a strong glow and creating a lens flare effect. The sky is a deep, clear blue, and several large, fluffy white cumulus clouds are scattered across the upper half of the frame. The lower half of the image is a solid, uniform blue color, providing a clean background for the text.

# **New Transparency Requirements**



# The New Transparency Requirements

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- The concepts behind these amendments are generally already required
- There are some sources that clearly show why they are in continuous compliance with all air requirements, while others do not
- This regulation will ensure that existing sources like state operating permits or Title V permits and new sources that must get a construction permit:
  - Have a demonstration in their permit showing clearly that their operations are in full compliance;
  - Show clearly how the conditions that are included in their permit will ensure continuous compliance into the future; and
  - Have an MDE approved community engagement plan if they are a priority source



# Background on MDE Goals

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- MDE is looking at various COMAR provisions, such as COMAR 26.11.01, where basic requirements for monitoring, reporting, recordkeeping, and emission statements are spelled out
- MDE regulations already contain a clear requirement for submitting annual emission statements
- Our goal is to enhance the public's understanding of permit requirements, source emissions, and the process by which sources demonstrate that they are in compliance with air regulations. This could be included in as part of any permit renewal or permit to construct application
- All permits are available to the public for public review



# New Transparency Requirements:

## *Summaries of Compliance Demonstrations & Permit Conditions to Ensure Continuous Compliance*

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- Though summaries of compliance demonstration and permit conditions are included in permits, the information can be difficult to understand without background on the technical language used
- A new plain English summary as part of the permit application process would help communities better understand source requirements and compliance
- Summaries could address frequently asked questions such as:
  - What regulations is the source subject to?
  - How does the source demonstrate compliance with the regulatory requirements?
  - What are the permit conditions that allow for continuous compliance into the future be guaranteed?



# New Transparency Requirements: *Community Engagement Plans*

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- MDE is continually looking at ways to ensure that communications between sources and the nearby communities are taking place
- MDE will focus on a subset of the 400+ sources with Title V or state operating permits. Additionally, the Department is looking at options to enhance collaboration with community engagement plans and other collaborative mechanisms



# **Amendments to the Maryland Air Toxics Regulations**



# Amendments to the Air Toxics Regulations

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- One of the critical issues being worked on across the country is the issue of cumulative impacts in communities with lots of environmental burdens
- One piece of the cumulative impact challenge is areas with multiple emission sources, both stationary and mobile sources, and citizens breathe mixtures of air pollutants, not just a single pollutant
- Maryland's air toxics regulations were designed to address these concerns, but they should be continually updated to utilize modern exposure assessment on multiple pollutants





# Basic Requirements of MDE's Current TAP Regulations

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- COMAR 26.11.15 and COMAR 26.11.16
- The basic requirements are:
  - New sources must address any chemical they emit and install Toxics Best Available Control Technology
  - Existing sources, operating prior to July 1988 with Title V or state operating permits (the 400 largest or most challenging sources), must address a list of 546 Toxic Air Pollutants (TAPs) listed in the current regulation
  - All sources must conduct an “ambient impact analysis” to show that for all the TAPs they emit, that offsite exposures/concentrations to the most exposed residents that live around their facility do not endanger public health



# Basic Requirements of MDE's Current TAP Regulations- Ambient Impact Analysis

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- Provides for a two-step analysis system:
  - Step 1: A conservative screening analysis
  - Step 2: A second set of more complicated options that the source may use if the conservative screening process does not ensure that public health is protected
- Both options are based upon the relatively simple concept of:
  - Predict off site concentrations
  - Compare offsite concentrations to health protective levels
  - If necessary, a case-by-case, “Second Tier” analysis, “Special Permit” or other more complicated analysis options, may be used to demonstrate that public health is protected
    - For both carcinogens (TAPS that are linked to cancer) and non-carcinogens



# Basic Requirements of MDE's Current TAP Regulations: The Screening Analysis Option

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- Compares the maximum potential predicted off-site concentrations to conservative, protective screening levels
  - Simplified, conservative dispersion modeling techniques provided as part of the regulation
- Assumes constant exposure 24 hours a day for 70 years
  - The porch potato on wheels concept
  - Screening levels for carcinogens are based upon an upper bound 1 in 100,000 risk assuming constant exposure for 70 years
- Screening levels for non-carcinogens are based upon the chemical specific levels used to protect workers with an additional safety factor of 100



# Basic Requirements of MDE's Current TAP Regulations- The More Complicated Options

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- The regulation spells out several other option sources that can be used to demonstrate compliance with the ambient impact analysis, if the screening analysis can not be used
  - Second tier analysis, special permits, and several other options
  - Allows for use of a less conservative ambient health protection standard and a more sophisticated and complicated dispersion models
  - Requires that all sources contributing to ambient levels be considered and modeled
- All of the processes that are available in this more complicated set of options are subject to some form of public hearing requirement



# Are the TAP Regulations Working?

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- When first implemented in the late 80s, dramatic reductions in TAPs were achieved
- Very few sources have chosen to try and use any of the more complicated set of options for demonstrating compliance with the ambient impact analysis
- Instead, they have chosen to add technology or change their processes to use less toxic chemicals so they can demonstrate compliance with the ambient impact requirement using the conservative screening analysis process
- To a certain extent, the regulation has been a technology, process change and pollution prevention forcing tool



# Amendments to the TAP Regulations

## Concepts Under Consideration

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- MDE is considering ways to provide further protection to areas overburdened by air pollution sources (stationary and mobile sources)
  - Curtis Bay is an example of such an area
- MDE is reviewing a variety of tools and factors related to air pollution in overburdened communities:
  - EJ screening tools
  - New concepts included in the Climate Solutions Now Act of 2022
  - The number of stationary sources
  - Mobile source emission densities
  - Emissions
  - Prevalence of non-traditional emission sources like truck idling
  - MDE expert judgement based upon 40 years of front-line experience and inspections



# Amendments to the TAP Regulations: *Strengthened Screening Analyses*

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- MDE is looking at strengthened procedures for conducting screening analyses for multiple pollutants at sources in overburdened areas
- The goal is to consider multiple source emissions and issues with potentially additive risks, associated with breathing mixtures of air pollutants
- Seeking expert input on these issues from the Maryland academic community with expertise on public health protection



# Amendments to the TAP Regulations: *Continuous Emissions Improvement Plans*

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- Many of the larger sources already have a emissions improvement plan as corporate policy
- Communities would benefit by having large sources develop continuous emissions improvement plans that could be updated with each renewal of their permit
  - Plans may help to drive emission reduction progress over time
  - The development of plans may help to drive technological innovation, process innovation, and pollution prevention



A bright sun is positioned in the upper right quadrant of the image, casting rays across a clear blue sky. Several large, fluffy white clouds are scattered across the sky, with some appearing in the foreground and others further back. The overall scene is bright and clear.

# **Modernizing the Maryland Regulations for Fugitive Dust**



# Fugitive Dust Amendments:

## *Why are they Important?*

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- MDE has heard concerns about Fugitive Dust from many different communities
- Our inspectors real-world experience support these concerns
  - An increase of Fugitive Dust occurs during summer due to hotter temperatures and drier conditions
- MDE's Current Fugitive Dust regulation is 30+ years old
  - Very general; requiring “reasonable precautions” be taken to control fugitive dust. This requires a lot of judgement from the Department
  - Current regulations do not have specific source category abatement requirements, though compliance plans are required of some sources
- MDE is reviewing regulations in other areas of the country



# Fugitive Dust:

## *What is Being Done Now?*

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- Initiatives to address the issue of fugitive dust are already underway in several areas in Maryland via MDE's Air Compliance/Enforcement staff
- In 2021, MDE began to implement this enhanced enforcement initiative in the Cheverly area and currently is being implemented in the Curtis Bay area
  - Much more frequent area-wide observations and site inspections
  - Compliance advisories distributed
  - Three NOVs have already been issued by MDE
- This initiative also includes dust from permitted emission sources and non-traditional emission sources such as construction sites and warehouse business areas
- Significant benefit can be achieved with early outreach



# Questions & Discussion

**MDE is hoping to receive early input from AQCAC as we work to develop these critical new regulations.**