



Department of  
Environmental  
Conservation

# South Albany Community Monitoring Study

## Overview

Division of Air Resources  
January 18, 2017

# Agenda

- Study Goals
- Pollutants & Sources
- Sampling Equipment & Proposed Locations
- Community Input



# Researchers

- Dirk Felton
- Brian Frank and Marilyn Wurth
- Randi Walker

# What we hope to learn

The main sources of air pollution in South Albany

1. How much particulate matter comes from motor vehicles versus Port activities?
2. How far does particulate matter travel from the road into the neighborhood?
3. How much benzene comes from sources in the Port versus vehicles on local roadways?
4. What approaches can we take to help the community understand air quality?



# Pollutants & Sources



# Pollutants

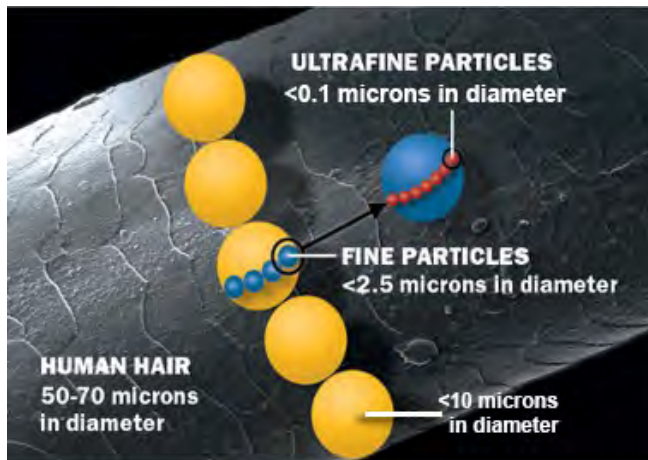
Particulate matter – tiny particles or droplets in air

PM<sub>10</sub> - less than 10 microns

PM<sub>2.5</sub> - less than 2.5 microns

Ultrafine particles - less than  
0.1 microns

Black carbon (BC) – part of  
PM<sub>2.5</sub> and soot



Modified image from Tufts University

# Pollutants

## Chemical Gases

Nitrogen oxides



Benzene

# Primary Sources – particulate matter

PM<sub>10</sub>

- crushing or grinding operations
- dust stirred up by vehicles on roads
- handling dry goods like grains

PM<sub>2.5</sub>

- emissions from the use of petroleum-based fuels for building heating and vehicle fuel
- dust from industrial activities like waste transfer stations, asphalt production, handling dry goods and scrap yards



# Primary Sources – gaseous chemicals

## Nitrogen oxides

- produced by combustion of petroleum-based fuels, mostly motor vehicles

## Benzene

- byproduct from the combustion of gasoline
- gases released from asphalt production, crude oil handling and movement of gasoline from terminal storage vessels to trucks

# Primary Sources – indicator pollutants

Ultrafine particles and black carbon are being used as **indicators** of local diesel emissions

## Ultrafine particles

- Emitted by diesel-powered vehicles and other combustion sources

## Black carbon

- Emitted by diesel-powered vehicles and equipment, industrial processes, combustion of petroleum-based heating fuels and wood

# Sampling Equipment & Proposed Locations



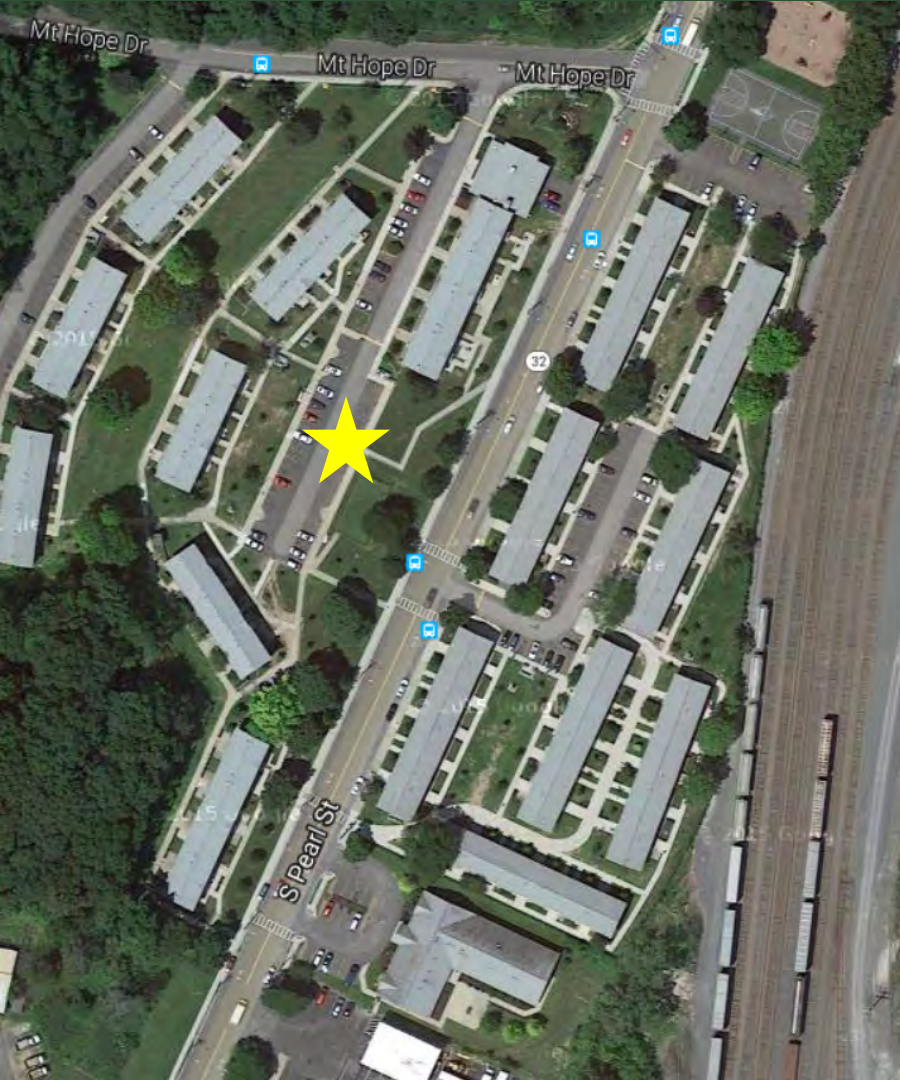


## Proposed Monitoring Shelter at Ezra Prentice

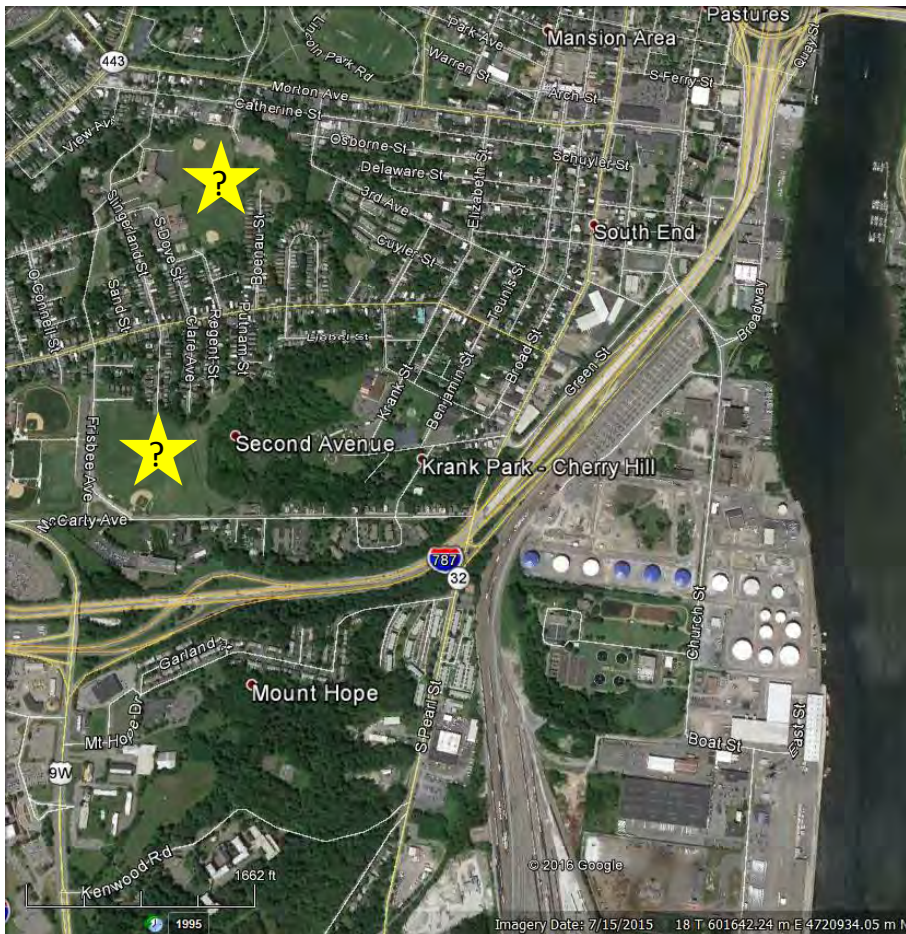
- Particulate matter
- Gaseous chemicals
- Wind speed and wind direction
- Results will be reported as they are collected

# Monitoring Shelter

Large Shelter proposed at Ezra Prentice







## Smaller Monitoring Shelters for Background Measurements

A location in the neighborhood away from the highway and Port



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# Small portable instruments

- Look at different types of particulate matter
- Take measurements as we walk step by step through the neighborhood



# Small benzene samplers

- Benzene is an invisible gaseous chemical that is odorless at low concentrations
- Looking for sources of it around Port facilities
- Looking at benzene levels near local roadways





# More to tell you about

## Portable equipment and sampling

- About the researchers working in your community
- How the equipment works
- How you can participate and help us

## Pollutants

- Sources for these pollutants
- How we plan to evaluate the results
- How we use traffic indicator pollutants

# Community input and communication

- What information would you like reported to you about the study before we start and while the data collection is underway?
- Does the planned study address questions you have about air quality in the community?
- South Albany Information is posted on a new web page



# Thank You

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## [South Albany Website:](http://www.dec.ny.gov/chemical/108978.html)

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