AGENDA

- Why is Air Quality Important?

- Air Quality in NJ
  - Trends
  - Ozone and PM2.5

- Overview of the NJ Air Quality Flag Program
  - Goals of the Program
  - How the Program Works
  - Implementation of the Program
Why Is Air Quality Important?

- We breathe in air every day! Being outside, exercising, playing sports
- Air pollutants at certain levels can be harmful to our health
- Populations particularly vulnerable to unhealthy levels of Ozone and PM2.5 include those with asthma, heart/lung problems, children and teens, and the elderly
National Ambient Air Quality Standards

- National Ambient Air Quality Standards (NAAQS)

- Six Criteria Pollutants
  - Ozone
  - Particulate Matter
  - Carbon Monoxide
  - Lead
  - Sulfur Dioxide
  - Nitrogen Dioxide
New Jersey Air Quality Trends

Statewide NJ Ozone Trends, 1997-2020

4th Highest and 3-Year Average of the 4th Highest Daily Max 8-Hour Averages

Graph showing concentration (ppm) from 1997 to 2020, with data points indicating trends and standards for 1997, 2008, and 2015 primary standards.
New Jersey Air Quality Trends
Statewide NJ PM$_{2.5}$ Trends, 2001-2020
98$^{th}$ Percentile and 3-Year Average of the 98$^{th}$ Percentile 24-Hour Average Concentrations
Number of Days **2015 Ozone NAAQS*** was Exceeded

2000 - 2021

* NAAQS – National Ambient Air Quality Standard
Number of Days 2008 PM2.5 NAAQS* was Exceeded
2000 - 2021

*NAAQS – National Ambient Air Quality Standard
Sources of Ground Level Ozone

- Volatile Organic Compounds
- Nitrogen Oxides
Ground Level Ozone

- NJ’s most persistent air pollutant
- NOx and VOCs react with sunlight to form ozone
- Higher levels during summer months
- March to October – NJ Ozone Season
  - Higher levels of outdoor activity
Fine Particulate Matter (PM 2.5)

- A mixture of extremely small particles and liquid droplets found in the air

- High levels can be harmful and threatening to our health, and also reduce visibility
Sources Of PM 2.5

▪ Motor vehicles
▪ Power plants
▪ Industry sources
▪ Wood burning stoves
▪ Forest fires
Health Effects Of Ozone And PM2.5

- Damage to airways and lungs
- Difficulty breathing
- Shortness of breath and coughing
- Development of asthma and increased asthma attacks
- Death
Environmental (Welfare) Effects Of Ozone and PM2.5

- Increases plants susceptibility to disease, insects, other pollutants and harsh weather
- Damage to trees and other plants
- Destroys landscapes, regional haze
- Damage to man-made materials

Source: www.ars.usda.gov

Good visibility

Source: Newark/NYC Haze Camera

Poor visibility
You Can Help Reduce Air Pollution

✓ Ride your bike
✓ Take public transportation
✓ Carpool and combine trips

◊ Do not mow lawns on high ozone days
◊ Do not idle cars for more than 3 min
NJ Air Quality Flag Program Overview

• **Purpose:** provide a visible way for communicating outdoor air quality conditions to help protect public health, especially for the vulnerable population

• **Increase air quality awareness**
  • Know what actions to take
  • Know when it is safe to be active outside

• **Improve health and quality of life in NJ communities**
How Does The Program Work?

- Raise a color-coded flag each day to inform your community of outdoor air quality conditions

- Flag colors are based on the Environmental Protection Agency's "Air Quality Index" (AQI)
The Air Quality Index (AQI) is a color-coded national air quality rating system. It is used to report air quality for both ozone and PM2.5. Each color represents a level of air quality/health concern. Guidance on actions to take and when to be active is dependent on the air quality conditions.

<table>
<thead>
<tr>
<th>Air Quality Index (AQI) Values</th>
<th>Levels of Health Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 to 50</td>
<td>Good</td>
</tr>
<tr>
<td>51-100</td>
<td>Moderate</td>
</tr>
<tr>
<td>101-150</td>
<td>Unhealthy for Sensitive Groups</td>
</tr>
<tr>
<td>151-200</td>
<td>Unhealthy</td>
</tr>
<tr>
<td>201-300</td>
<td>Very Unhealthy</td>
</tr>
<tr>
<td>301 to 500</td>
<td>Hazardous</td>
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</tbody>
</table>
How Do I Know What Color Flag To Fly?

- Organization will sign up to receive "EnviroFlash" alerts

- EnviroFlash – free e-mail or text alert that provides daily Air Quality Forecasts

- Fly the corresponding flag color to let your community know the air quality conditions

Source: airnow.gov
What Actions Should I Take?

- AQI provides guidelines and recommendations for outdoor physical activity
- Adjust level of outdoor activity based on air quality