



Communicating Air Quality to the District's Youth

Washington, DC's Green Zone Environmental Program

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Department of Energy and Environment

WHAT IS GZEP?

- Green Zone Environmental Program
- Youth program that provides hands-on experience and classroom training on the various fields within the Department of Energy and Environment (DOEE).
- Ages 14-24
- Participants of the program also take part in community-based work
- One of the largest youth programs in the country.



CLASSROOM INSTRUCTION

- ❖ Air Quality Division (AQD) will participate in the classroom instruction
- ❖ We give a brief overview of the division
 - Discuss the branches within the air quality division
 - Monitoring and assessment, compliance and enforcement, permitting, and indoor air quality
- ❖ We also discuss air quality topics
 - Ozone and PM2.5, asbestos, anti-idling, and the AQI
 - Brochures



Why do we care about air quality?

▶ Health effects of ozone:

- Chest pain, coughing, throat irritation, airway inflammation, reduced lung function, lung tissue damage, makes bronchitis, emphysema, and asthma worse



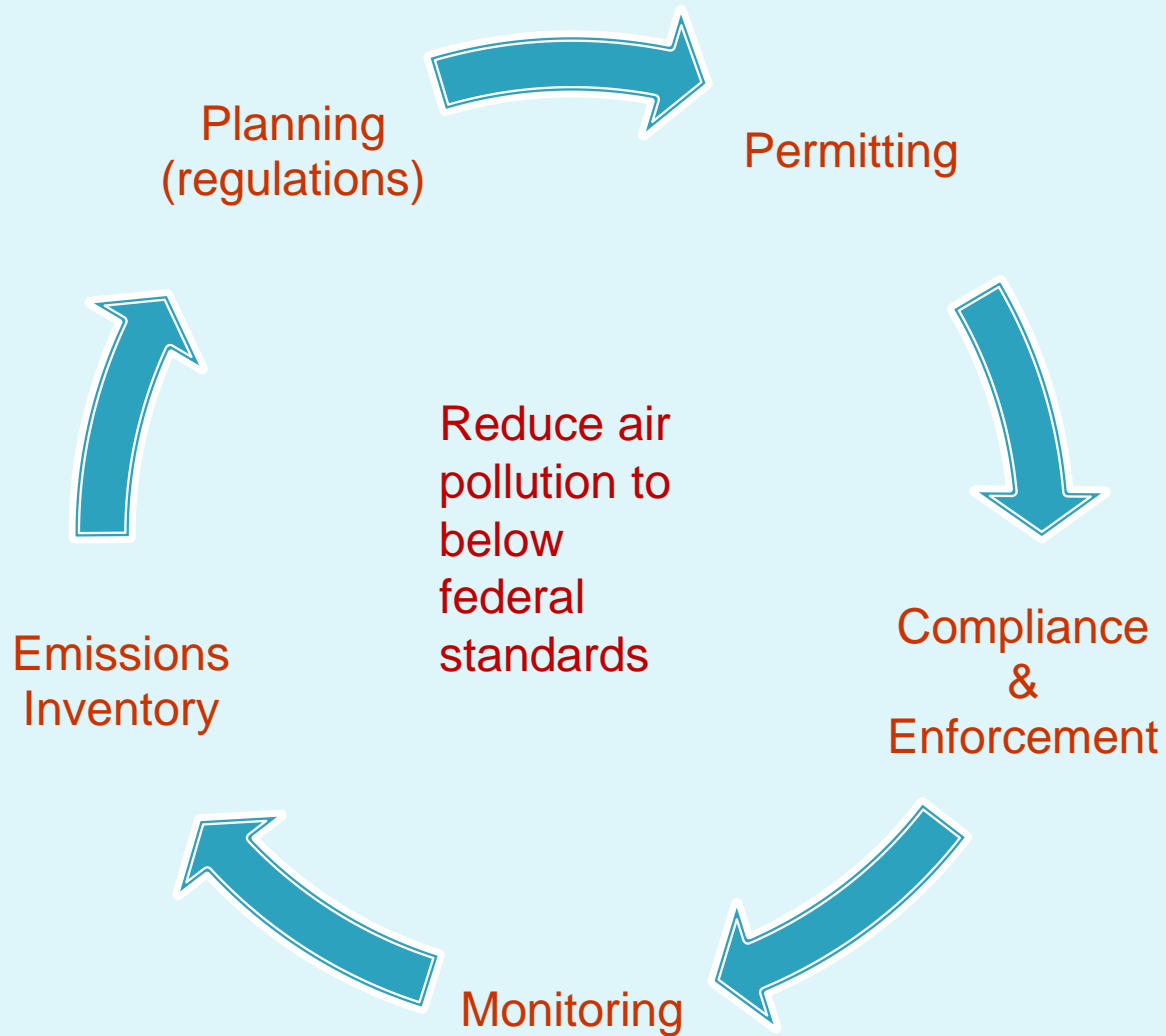
▶ Health effects of particles:

- Coughing or difficulty breathing, aggravated asthma, decreased lung function, irregular heartbeat, nonfatal heart attacks, and premature death in people with heart or lung disease

▶ Health effects of asbestos:

- lung cancer; mesothelioma, cancer found in the lining of the lung, chest, abdomen and heart; asbestosis, a progressive, long-term, non-cancer disease of the lungs

What Does AQD Do?



What Can You Do To Reduce Ozone?

- Plan yard work and chores – During smoggy days, avoid gas/diesel-powered lawn equipment; wait to mow lawns after 7 pm; postpone the use of paints, solvents, varnishes, and cleaning products that produce fumes; avoid sprays; tightly cap all chemicals and store them in a cool place.
- Play smarter – Replace charcoal with a propane gas grill; reduce wood burning; avoid using outboard motors, off-road vehicles, or other gas/diesel-powered recreational vehicles.
- Conserve energy – Turn off lights, appliances, and electronics when not in use; clean heating filters; set the air conditioner at a higher temperature; use timed thermostats; choose ENERGY STAR™ products.
- Drive less – Share a ride, walk, bike, use public transit, or telework when possible.
- Develop good driving habits – Combine errands and trips to reduce vehicle starts; don't speed, since wind resistance from increased speed burns more fuel; avoid idling.
- Wait to refuel your car – During summer months, do so after 7 pm; avoid spilling gas and “topping off” the tank; replace the gas tank cap tightly.
- Maintain your vehicle – Replace oil and air filters regularly; keep tires properly inflated and aligned; avoid engines that smoke; get your vehicle inspected on schedule.

"JEOP-AIR-DY"

- ❖ Categories include asbestos, pollutants, sources, and potpourri
- ❖ Participants are separated into groups
- ❖ Rules
- ❖ Participants were able to look at brochures of the topics.

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Mayor Muriel Bowser



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DIVIDE INTO TEAMS



The graphic features a green background with white circuit-like lines. In the top left corner, there is a logo for the Department of Energy & Environment, Air Quality Division, consisting of three stars and two horizontal bars. The main title 'JEOP-AIR-DY GAME TEAMS' is displayed in large white and green letters. Below the title, five horizontal bars of different colors (light blue, light green, yellow, orange, and red) list the team categories: '4 AIR QUALITY TEAMS', 'OZONE', 'PM', 'ENGINE IDLING', and 'ASBESTOS'.

★ ★ ★ DEPARTMENT OF ENERGY & ENVIRONMENT

AIR QUALITY DIVISION

JEOP-AIR-DY GAME TEAMS

4 AIR QUALITY TEAMS

OZONE

PM

ENGINE IDLING

ASBESTOS

RULES



AIR QUALITY DIVISION

JEOP-AIR-DY GAME RULES

- Each team nominates a spokesperson and buzzer person;
- Each team should assign two people to find answers in the supporting documentation that will be provided;
- One question will be asked to determine which team will choose the first category and question. No points will be awarded for this question;
- Wait until the Host finishes reading the question to buzz in;
- Only the answer given by the spokesperson will be considered;
- Teams will take turns in a clockwise order;
- Be ready to answer your chosen question within ten seconds;

BROCHURES - AQI



The graphic features a green background with white and yellow text. At the top left is the Department of Energy & Environment logo, which includes three stars and the text 'DEPARTMENT OF ENERGY & ENVIRONMENT'. Below this is a dark green box with 'AIR QUALITY DIVISION' in white. The main title 'JEOP-AIR-DY GAME' is in large white letters, and 'AIR QUALITY INDEX - AQI' is in large green letters below it. A table with five rows and three columns is centered on the page. The columns are 'Air Quality Index Levels of Health Concern', 'Numerical Value', and 'Meaning'. The rows are color-coded: Good (green), Moderate (yellow), Unhealthy for Sensitive Groups (orange), Unhealthy (red), and Very Unhealthy (purple).

Air Quality Index Levels of Health Concern	Numerical Value	Meaning
Good	0-50	Air quality is considered good, and air pollution poses little or no risk.
Moderate	51-100	Air quality may pose a moderate health risk, especially for those who are unusually sensitive to air pollution.
Unhealthy for Sensitive Groups	101-150	Members of sensitive groups, children and adults with respiratory and heart ailments, may experience health effects and should limit time spent outside. The general public is not likely to be affected.
Unhealthy	151-200	Everyone may experience health effects and should limit their outdoor activity; members of sensitive groups may experience more serious health effects.
Very Unhealthy	201-300	Everyone may experience more serious health effects and should avoid outdoor activities, especially individuals with heart and breathing ailments, children, and older adults.

BROCHURES - SOURCES

What You Should Know about Ground Level Ozone and Particle Pollution



What is Ground Level Ozone?

Common air pollutants, such as Volatile Organic Compounds (VOCs) and Nitrogen Oxides (NOx), react with heat and sunlight, producing ground level ozone. Particles enter the air from a variety of sources and may be either directly emitted or may form under a chemical process much like the way ground level ozone forms. Both pollutants can be harmful to your health and the environment.

Common Sources of Air Pollutants



POINT
Power Plants, Factories



AREA
Dry Cleaning, Solvents,
Gas Stations (Refueling)



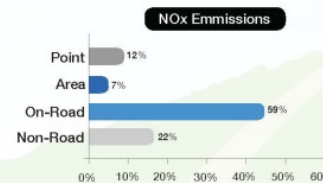
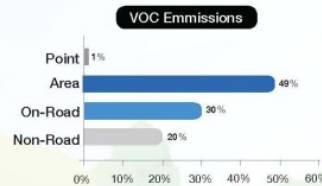
NON-ROAD
Gas-Powered Lawn Mower,
Tractor, Airplane, Boats



ON-ROAD
Truck, Car, Buses,
Motorcycle


What are the largest contributors?


Data provided by:
The Metropolitan Washington
Council of Governments (MWCOC)
and Clean Air Partners.



Additional data available at:
www.cleanairpartners.net


BROCHURES – ANTI-IDLING



 **Useful Tips**

More Ways to help keep the District's air clean:

- Adjust air-fuel ratio.
- Clean or replace air filter.
- Adjust or replace turbocharger.
- Adjust or replace throttle delay and/or puff limiter.
- Adjust governor, fuel rack and injector timing to manufacturer's specifications.
- Clean or replace injector nozzles.
- Reset valve timing.
- Replace fuel pump.
- Invest in an Alternative Power Unit (APU) for your vehicle.

 **DEPARTMENT OF ENERGY & ENVIRONMENT**


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Air Quality Division
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doee.dc.gov

turnyourengineoff.org

TURN IT OFF

Help keep the District's air clean and avoid fines that start at \$500

STOP ENGINE IDLING OF ONROAD VEHICLES & NONROAD ENGINES IN THE DISTRICT OF COLUMBIA

 **DEPARTMENT OF ENERGY & ENVIRONMENT**



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ASBESTOS

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POLLUTANTS

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SOURCES

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POTPOURRI

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POLLUTANTS

WHAT IS OZONE?





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POLLUTANTS

WHAT IS OZONE?

**IT IS A COLORLESS GAS
FOUND IN THE AIR
WE BREATHE.**





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POLLUTANTS

PM	PM	PM	PM
PM	PM	PM	PM
PM	PM	PM	PM



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OZONE IS GOOD OR BAD, DEPENDING WHERE IT OCCURS.

GOOD OZONE

IS PRESENT NATURALLY IN THE EARTH'S UPPER ATMOSPHERE;

10 TO 30 MILES ABOVE THE EARTH'S SURFACE;

THIS NATURAL OZONE SHIELDS US FROM THE SUN'S HARMFUL ULTRAVIOLENT RAYS.

BAD OZONE

FORMS NEAR GROUND LEVEL WHEN AIR POLLUTANTS REACT CHEMICALLY

IN THE PRESENCE OF SUNLIGHT



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POTPOURRI

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CONCLUSION



- ❖ Kids were pretty competitive
- ❖ They were interested in the subject by the end of the game
- ❖ Interactive learning is key
- ❖ Gave out a few prizes to the winning team
- ❖ Great way to raise awareness to the younger generation on air quality issues



CONTACT INFORMATION

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