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?

Permitting

Planning (regulations)

Reduce air pollution to below federal standards

Compliance & Enforcement

Monitoring

Emissions Inventory

Reduce air pollution to below federal standards

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

JEOP-AIR-DY GAME

TEAMS

4 AIR QUALITY TEAMS

OZONE

PM

ENGINE IDLING

ASBESTOS
RULES

JEOP-AIR-DY GAME

RULES

• Each team nominates a spokesperson and a 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;
<table>
<thead>
<tr>
<th>Air Quality Index Levels of Health Concern</th>
<th>Numerical Value</th>
<th>Meaning</th>
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<tbody>
<tr>
<td>Good</td>
<td>0-50</td>
<td>Air quality is considered good, and air pollution poses little or no risk.</td>
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<tr>
<td>Moderate</td>
<td>51-100</td>
<td>Air quality may pose a moderate health risk, especially for those who are unusually sensitive to air pollution.</td>
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<tr>
<td>Unhealthy for Sensitive Groups</td>
<td>101-150</td>
<td>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.</td>
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<tr>
<td>Unhealthy</td>
<td>151-200</td>
<td>Everyone may experience health effects and should limit their outdoor activity; members of sensitive groups may experience more serious health effects.</td>
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<tr>
<td>Very Unhealthy</td>
<td>201-300</td>
<td>Everyone may experience more serious health effects and should avoid outdoor activities, especially individuals with heart and breathing ailments, children, and older adults.</td>
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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 (MWCOG) 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.

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<th>ASBESTOS</th>
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Office Hours
Monday to Friday, 9 am to 5 pm

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WHAT IS OZONE?
IT IS A COLORLESS GAS FOUND IN THE AIR WE BREATHE.
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
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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