OZONE ACTION PROGRAM[1]

The Regional Clean Air Education Coalition includes the following counties:

- Knox
- Anderson
- Blount
- Cocke
- Grainger
- Jefferson
- Loudon
- Monroe
- Roane
- Scott
- Sevier
- Union

Purpose:
Decrease the formation of ground-level ozone during the summer in the 12-county area.

Goals:

1. **Improve air quality through voluntary actions.**
2. **Create public awareness and promote individual responsibility through education.**
3. **Provide credible measures of air quality improvement efforts.**

The Coalition:
The Coalition assembles a group of people from various sectors of the community such as government, business and industry, education, civic and environmental organizations. The Coalition works on clean air initiatives in the 12-County Region. The purpose of the Coalition is to decrease the formation of ground-level ozone during the summer in the 12-county area. Ground-level ozone forms when pollutants from vehicles, paints and solvents, unburned fuel, and industrial sources "bake" in hot, sunny weather.

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[1] Suggested Ideas for an Ozone Action Program come from the Louisiana Department of Environmental Quality

The program warns the public about forecasted high ozone days, and asks for voluntary actions to reduce emissions of ozone forming pollutants.

The Ozone Action Program is a voluntary public education program coordinated by the Clean Air Education Coalition. It is a 12-county community-based program designed to reduce ozone-forming emissions caused by vehicles and other sources during the summer months in the Early Action Compact Region and surrounding counties.

There are two major areas in the education initiative. The Ozone Action Day Program and The Commuter Services Program.

- **The Ozone Action Day Program**
  The Tennessee Department of Environment and Conservation issues an ozone alert in the afternoon on the day before an elevated level of ozone is expected to occur. Announcements for an Ozone Action Day will then be broadcast through television and other news media. At the same time, a system of employer notifications will advise participating employers to notify their employees before the end of the working day. Ozone Action Day coordinators at each employer will be notified by phone or fax. They will then notify employees through announcements, email, or printed notices posted at workplace exits. On the Ozone Action Day, organizations and individuals can voluntarily take planned measures to reduce emissions of ozone precursor pollutants. Following an Ozone Action Day, efforts will be made to estimate emissions reductions from the actions taken.

- **The 12-County Area Commuter Services Program**
  (to be completed)

Why Should We Have an Ozone Action Program?
Ground level ozone presents a significant air quality problem during the summer months. During ***the period from 2000 through 2002*** the area experienced ***over 60 days*** when federal air quality standards were ***exceeded***.

While acting as a protective shield in the upper atmosphere, ozone at ground-level is a major element of urban smog. Ozone can lower resistance to diseases such as colds and pneumonia, damage lung tissue, intensify heart and lung disease, and cause coughing and throat irritation. At highest risk

are children, the elderly, and those with heart or respiratory diseases. Elevated levels of ozone can also harm vegetation, farm crops, and the Smoky Mountains.

Ultimately, achieving attainment for ozone (air quality better than the national standard) will result in a healthier environment for the region's citizens and work force, and make it more attractive for economic development and relocations.

Ozone Action Programs are being implemented in many cities across America. They are cost-effective and do not require new regulations or mandatory actions. The Ozone Action Program is entirely voluntary and depends on everyone to share the responsibility. Suggested starting ideas for an Ozone Action Program in the 12-county area are listed below:

Ozone Action Programs for:

- Academic/Educational Institutions
- Businesses
- Industrial Facilities
- State Government Agencies
- Local Government Agencies

Starting an Ozone Action Program for: Academic/Educational Institutions

Employee Education, Notification and Participation

- Assign Ozone Action Program (OAC) Coordinator (s)
- Promote employee/student education/awareness of ozone issue and helpful individual actions
    - Conferences, seminars, workshops
    - Establish teams, task forces or committees
    - Posters/flyers/handouts
    - Element in student/new employee orientation
- Employee/student alerts (email, network boot up message, intercom, bulletin board, flags, etc.)
- Incentives for participating employees/students (e.g. raffle prizes, reserved parking, meals/drinks, certificates, caps/T-shirts)

Operations and Maintenance Activities

- Postpone maintenance activities which use small engines
- Postpone fleet refueling until the evening
- Use fleet vehicles to attend lunch and meetings
- Use alternate fuel (low emission) vehicles
- Restrict indoor and outdoor paint jobs on alert days
- Switch to low VOC solvents and architectural coatings
- Set up Task Force or TQM committee to focus on reduction of ozone-forming emissions

Commuter Actions

- Encourage commute alternatives for employees/students
    - Rideshare - carpool/vanpool
    - Telecommute/work at home
    - Public transportation
    - Walk/bike
    - Flexible work hours
- Establish shuttles for groups of employees/students going between sites or to/from transit stations
- Encourage (incentives) employees/students not to travel by auto at lunch time
    - Subsidize or provide lunches

    - Encourage brown bag lunches or ordering in
    - Provide shuttle service to common dining areas
- Parking management – preferences for rideshare vehicles

Starting an Ozone Action Program for: Businesses

Employee Education, Notification and Participation

- Assign Ozone Action Program (OAC) Coordinator(s)
- Promote employee education/awareness of ozone issue and helpful individual actions (e.g. internal newsletters, seminars, flyers, etc.)
- Employee alerts (email, network boot up message, intercom, bulletin board, flags, etc.)
- Incentives for participating employees (e.g. raffle prizes, reserved parking, casual dress, meals/drinks, flex time?

Operations and Maintenance Activities

- Postpone maintenance and landscaping activities which use small engines
- Postpone vehicle fleet refueling until the evening
- Use fleet vehicles to attend lunch and meetings
- Employ building energy conservation measures
- Restrict indoor and outdoor paint jobs on alert days
- Switch to low VOC solvents and architectural coatings
- Change work schedules to mitigate commute traffic jams

Commuter Actions

- Encourage commute alternatives for employees
    - Rideshare-carpool/vanpool
    - Telecommute/work at home
    - Public transportation
    - Walk/bike
    - Flexible work hours
- Establish shuttles for groups of employees going between sites or to/from transit stations
- Encourage (incentives) employees not to travel by auto at lunch time
    - Subsidize or provide lunches
    - Encourage brown bag lunches or ordering in
    - Provide shuttle service to common dining areas
- Parking management – preferences for rideshare vehicles

Starting an Ozone Action Program for: Industrial Employers

Employee Education, Notification and Participation

- Assign Ozone Action Program (OAC) Coordinator(s)
- Promote employee education/awareness of ozone issue and helpful individual actions (e.g. internal newsletters, seminars, flyers, etc.)
- Employee alerts (email, network boot up message, intercom, bulletin board, flags, etc.)
- Incentives for participating employees (e.g. raffle prizes, reserved parking, casual dress, meals/drinks, flex time?

Operations and Maintenance Activities

- Reduce high-emitting production activities
- Postpone maintenance and landscaping activities which use small engines
- Postpone vehicle fleet refueling until the evening
- Use fleet vehicles to attend lunch and meetings
- Switch to cleaner burning fuels
- Employ building energy conservation measures
- Restrict indoor and outdoor paint jobs on alert days
- Switch to low VOC solvents and architectural coatings
- Set up Task Force or TQM committee to focus on reduction of ozone-forming emissions
- Change work schedules to mitigate commute traffic jams

Commuter Actions

- Encourage commute alternatives for employees
    - Rideshare-carpool/vanpool
    - Telecommute/work at home
    - Public transportation
    - Walk/bike
    - Flexible work hours
- Establish shuttles for groups of employees going between sites or to/from transit stations
- Encourage (incentives) employees not to travel by auto at lunch time
    - Subsidize or provide lunches
    - Encourage brown bag lunches or ordering in

    - Provide shuttle service to common dining areas
- Parking management – preferences for rideshare vehicles

Starting an Ozone Action Program for: Local Governments

Employee Education, Notification and Participation

- Assign Ozone Action Program (OAC) Coordinator(s)
- Promote employee education/awareness of ozone issue and helpful individual actions (e.g. internal newsletters, seminars, flyers, etc.)
- Employee alerts (email, network boot up message, intercom, bulletin board, flags, etc.)
- Incentives for participating employees (e.g. raffle prizes, reserved parking, casual dress, meals/drinks, flex time?

Operations and Maintenance Activities

- Postpone mowing and motorized construction activities where practicable
- Postpone maintenance and landscaping activities which use small engines
- Postpone vehicle fleet refueling until the evening
- Use fleet vehicles to attend lunch and meetings
- Employ building energy conservation measures
- Restrict indoor and outdoor paint jobs on alert days
- Switch to low VOC solvents and architectural coatings
- Change work schedules to mitigate commute traffic jams

Commuter Actions

- Encourage commute alternatives for employees
    - Rideshare-carpool/vanpool
    - Telecommute/work at home
    - Public transportation
    - Walk/bike
    - Flexible work hours
- Establish shuttles for groups of employees going between sites or to/from transit stations
- Encourage (incentives) employees not to travel by auto at lunch time
    - Subsidize or provide lunches
    - Encourage brown bag lunches or ordering in
    - Provide shuttle service to common dining areas
- Parking management – preferences for rideshare vehicles

Starting an Ozone Action Program for: State Agencies

Employee Education, Notification and Participation

- Assign Ozone Action Program (OAC) Coordinator(s)
- Promote employee education/awareness of ozone issue and helpful individual actions (e.g. internal newsletters, seminars, flyers, etc.)
- Employee alerts (email, network boot up message, intercom, bulletin board, flags, etc.)
- Incentives for participating employees (e.g. raffle prizes, reserved parking, casual dress, meals/drinks, flex time?

Operations and Maintenance Activities

- Postpone maintenance and landscaping activities which use small engines
- Postpone vehicle fleet refueling until the evening
- Use fleet vehicles to attend lunch and meetings
- Employ building energy conservation measures
- Restrict indoor and outdoor paint jobs on alert days
- Switch to low VOC solvents and architectural coatings
- Change work schedules to mitigate commute traffic jams

Commuter Actions

- Encourage commute alternatives for employees
  - Rideshare-carpool/vanpool
  - Telecommute/work at home
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- Establish shuttles for groups of employees going between sites or to/from transit stations
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- Parking management – preferences for rideshare vehicles

Tennessee Air Quality Roundtable

April 14th, 2003

Roundtable Notes

Morning Session

Dr. Wayne Davis and Dr. Terry Miller of the University of Tennessee (UT), Department of Civil and Environmental Engineering, presented a draft report, Emission Inventories and Potential Emission Control Strategies for Ozone Early Action Compact Areas in Tennessee. UT developed the report as part of a research project funded by the Tennessee Department of Transportation (TDOT) specifically designed to provide assistance for local agencies that are participating in the Early Action Compacts for the 8-hour ozone standard.

Dr. Davis and Dr. Miller summarized the report, noting that for each of the Early Action Compact (EAC) areas the report provides emission inventory information in tons/day, broken down by county and source. The report also provides an estimation of the 2007 Emissions Contribution by Each Vehicle Type.

The focus of the report is the Emission Reduction Actions potentially available to each of the EAC areas. Each Emission Reduction Action is explained and it's use summarized, includes potential reductions in terms of tons/day, and by percentage of reduction, the costs associated with implementation, and other considerations.

Alan Powell of EPA relayed to the group that the 3% limit for voluntary measures does not apply to those areas under the early action compacts. This opens up options for local agencies to pursue more local/and in some cases less costly actions to address ozone levels.

Groups were formed by location to discuss the strategies and to begin to evaluate the emission reduction actions for their EAC area. Groups prioritized the actions, and discussed barriers to implementation.

Afternoon Session

Ms. Cecilia Ho, the Transportation Conformity Team Leader in the Office of Natural and Human Environment, at the Federal Highway Administration, provided a presentation on the implementation of Transportation Control Measures (TCMs). She described the process of including TCMs in the Statewide Implementation Plan (SIP), and the requirement of including TCMs in Early Action Compacts (EACs). Cecilia also

discussed some of the consequences of not meeting milestones set in the EACs, and the consequences of not meeting performance measures set in the SIP.

Cecilia provided several examples of how specific strategies have been implemented, and their effectiveness in reducing emissions to meet ozone standards. One example from California, included the use of HOT lanes, a concept that provides SOVs the option to pay to use HOV lanes. Another example included the implementation of Transit a TCM included in the SIP. In this case, the performance measure was not met, and the local agency was sued for not meeting the appropriate measure.

The groups reconvened and discussed the steps necessary to implement the Actions identified in the morning break-out session.

Below, are the notes from the morning and afternoon break-out sessions by group/groups.

Knoxville #1 (Morning Notes)

Prioritized list of actions to consider include (in order of priority):

1. Truck Electrification
2. Diesel Fuel Additives
   - availability issues
   - additives are fairly cheap
3. Contractors working for or with public agencies be required to use alternative fuels/alternative fuel sources/bio-diesel
4. Lower the speed limit to 55 mph on ozone action days
   - Use ITS Boards to promote as good citizen action and thru the media
   - Limit this to May through September
5. Education, Education, Education – Public Awareness
6. Accelerate the use of Low Sulfur gas by 2005 or sooner than required

Other Actions considered by the group included:

- Traffic signal synchronization;
- Commuter choice/smart trips programs;
- Greenways and bike trails;
- Bus replacement to alt. Fuel vehicles;
- I/M program

The Group also identified issues that need to be considered with any actions that take place:

- Enforcement of existing speed limits;
- Availability of alternative fuels;
- Additional funding sources to pay for air quality actions;
- Knoxville's Clean Cities Design Goal;
- Off Road: the cost of retrofitting, for example, lawnmower buy-back to reduce NOX;

- Time;
- Health Issues;
- Energy Efficiency – things like air conditioners, water heaters, etc.

Knoxville #2 (Morning Notes)

#1. The highest contributor to NOX is Heavy Duty Vehicles (trucks) at 26%. The group focused on how best to address this issue first:

Issue: We don't know how many trucks we have control over, what's passing through, and what's local.

What we have now:

- 1,000 Parking Spaces for Trucks at local truck stops;
- 100 Spaces funded for electrification

Actions/Issues to consider:

- Move freight to rail
  - Issue: This is a long term option, and won't be something to count on immediately.
- Retrofit existing diesel engines including catalytic converters
  - Issue: Not sure if this option is currently available, or practical right now.
- Additional Electrification
  - Issue: This has already been started.
  - Issue: Capital Costs for Idle Aire is $10,000 per space.
  - Issue: Consider passing an Idling law, but offer basic electrification at truck stops – any additives would be at the cost of the dealer.
- Alternative Fuels/Bio Diesel
  - Issue: Kat is moving to alt fuels now, and is also in the process of purchasing electric hybrid buses.
  - Issue: No stations are currently available for bio diesel.
  - Issue: Cost is unknown to convert to bio diesel.
  - Issue: The effectiveness for NOX reduction is minimal without the additive.
  - Issue: The long term effect on engines using bio diesel is unknowns, and there may be increased maintenance costs.
  - Issue: The good news is that bio diesel does NOT require retrofitting the engines to use.
- All measures for HDV need to be implemented statewide in order to be effective
  - Issue: The truck lobby is strong and will oppose.
  - Issue: If only in Knoxville, the truckers will pass through, and stop in other places which will impact local revenue.

#2. Off-Road Mobile Emissions