

**The “Path Forward”
for the Southeast Missouri Region
with Regards to Ground-Level Ozone
and Other Air Pollutants**

Revised May, 2013

Air Quality Committee

Southeast Missouri Regional Planning Commission

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ABSTRACT:

The seven-county southeast Missouri region faces the potential for two, and possibly more, counties being designated as nonattainment areas for ground-level ozone under the National Ambient Air Quality Standards when the standards are reviewed in 2013. Understanding this, the Southeast Missouri Regional Planning Commission established an Air Quality Committee in 2009. This Committee oversaw the preparation of a Clean Air Action Plan which was adopted in 2009 by the Commission and later received resolutions of support for all seven member counties and the larger municipalities.

When the Ozone Advance program was established by the U.S. Environmental Protection Agency, the Commission applied to, and was accepted into the program. This document represents the "Path Forward" that the Air Quality Committee has adopted. The Commission lacks the authority to impose any restrictions or controls. Instead, this "Path Forward" proposes a wide ranging citizen outreach and education program to address the myriad area sources of ozone precursors.

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Background:

The Southeast Missouri Regional Planning Commission (RPC) serves seven counties in Missouri. Within these counties are two ozone air quality monitors, one in Ste. Genevieve County near the city of Bonne Terre, and one in Perry County near the unincorporated community of Farrar. These monitors brought a sense of urgency to the RPC in 2008 when the National Ambient Air Quality Standard (NAAQS) for ground-level ozone was reviewed.

The RPC worked closely with the Missouri Department of Natural Resources (DNR) from April, 2008 through the completion of the nonattainment area recommendation process in December of that year, during the process of developing recommendations for nonattainment areas which is part of the NAAQS review. This coordination involved:

1. hosting meetings in cooperation with DNR;
2. attending every meeting on the subject held by DNR;
3. undertaking independent research;
4. preparing a formal Position Paper;
5. contracting with a private engineering firm with a national reputation in environmental matters; and,
6. testifying before the Missouri Air Conservation Commission (MACC).

These efforts were successful. The final recommendations, prepared by DNR, approved by the MACC, and ultimately forwarded to the U.S. Environmental Protection Agency (EPA) by Governor Jay Nixon in December, 2008 included Ste. Genevieve and Perry Counties as separate, single-county nonattainment areas. This reflected the best outcome from the point of view of the RPC. Ultimately, as the latest monitor readings were finalized, neither county was designated as a nonattainment area based on readings that had a design value in compliance with the 2008 NAAQS standard of 75 parts per billion (ppb).

The RPC recognized that ozone in particular and air quality in general were issues of ongoing concern and as a result an Air Quality Committee, comprised of elected officials, industry representatives, concerned citizens, and representatives from local schools, was formally established. This committee provided guidance as the Southeast Missouri Clean Air Action Plan (CAAP) was developed and later publicized through local media outlets. This plan was ultimately adopted by Resolution by the RPC in October, 2009. The plan subsequently received formal Resolutions of Support from all seven member counties and most of the member communities. The CAAP received an Innovation Award from National Association of Development Organizations in 2010. The “path forward” presented in the following pages is based on the CAAP.

During 2012, both of the region’s ozone monitors had readings that were out of compliance with the NAAQS for ground level ozone. Fourth highest readings were up to 83 ppb. Now that the ozone “season” is complete, those are the readings that will be subjected to final quality assurance and approval. This number is significant since it is the fourth highest reading on which the “design value” of a monitor is set. The “design value,” in turn, is the three year rolling average of the fourth highest readings. At this point, the design value of the Bonne Terre monitor remains in compliance, although barely, at 75 ppb. The Farrar monitor is out of compliance with a design value of 77 ppb.

By definition, then, the Farrar monitor is a “nonattainment area.” EPA could, in theory, move to make such a designation formal. Normally, though, such an action would be deferred until the next round of review of NAAQS standards. Since the discussion during 2010-11, when the existing standard was being “revisited,” centered on a new standard in the range of 60-70 ppb, it is unlikely in the extreme that whatever new standard is finally decided on would be above the existing 75 ppb level.

County borders are the presumptive minimum boundaries when nonattainment areas are designated. At present, then, Perry County would be so designated. In addition, though, areas “contributing” to nonattainment areas may also be included in the nonattainment area. An early draft of the recommended nonattainment areas under the 2008 DNR recommendations, for example, included St. Francois and Ste. Genevieve Counties as bordering on the St. Louis nonattainment area. It also included Perry, Iron, Madison, Bollinger, and Cape Girardeau Counties as contributing to the St. Louis nonattainment area.

Such a nonattainment area designation presents problems for three separate reasons. Directly, the regulations imposed would result in costs to local business, industry, and governments. Indirectly, the simple fact of designation would make economic development efforts more difficult. Generally, conditions that lead to such designation indicate a health risk is present and must be addressed.

Proposal:

To address this nonattainment issue the Southeast Missouri Regional Planning Commission proposes the following program:

Saturation program to educate, inform, and persuade citizens of the southeast Missouri region to undertake the no-cost changes in behavior that can affect levels of ozone in the atmosphere.

Rationale:

Ozone is not normally formed directly. Rather, a combination of Volatile Organic Compounds (VOCs) and Oxides of Nitrogen (NO_x), called “precursors,” combine on warm days in the presence of sunlight to form ozone (O₃). If any of these components are absent, ozone formation simply does not occur. 2012, with its well documented “heat wave,” low wind levels, high humidity and clear skies provided the perfect recipe for ozone formation, with the result being the high monitor readings seen.

A very high percentage of ozone precursors are the result of citizen’s actions. Over half, for example, are from highway and off-highway vehicles. Each trip to the store, in other words, adds some VOCs and NO_x to the atmosphere. For VOCs, vehicles and “solvent utilization” in various processes account for over 70% of all precursors. For NO_x, vehicles and “Other Industrial Processes” account for over 80% of precursors.

In rural areas such as the southeast Missouri region, there is essentially no “low hanging fruit.” In urban areas, for example, “Other Industrial Processes” might be addressed through controls on large manufacturing operations. Few such opportunities are available in rural areas. Similarly,

controls on dry cleaners alone were considered important enough to be specifically included in the St. Louis nonattainment area programs. In rural areas, there are simply not enough dry cleaners to make this significant.

More to the point, even when such specific sources can be identified the Regional Planning Commission lacks authority to mandate controls. Such measures are solely within the authority of the Missouri Department of Natural Resources and the U.S. Environmental Protection Agency. The Air Quality Committee assumes that, should one or both monitors be out of compliance and, as a result, one or more counties designated as a nonattainment area(s), the State Implementation Plan would include any applicable measures.

With no large “point sources” to control, the much more dispersed “area sources” must, of necessity, become the target for reduction of ozone precursors. This, in rural areas, means basically all citizens.

Program:

In order to reach such a broad group, the Commission proposes a “Saturation Campaign of Awareness.” Under this program, beginning in February, 2013, all media outlets would be involved in reaching as many citizens as possible with the program to reduce ozone precursors put into the air. This is envisioned as a phased approach that would provide background first followed by specifics. In essence, since such a significant portion of local air emissions are the result of citizens’ actions, the only feasible way to reduce these emissions is through the cooperation of literally thousands of individuals.

The program would be implemented in clear steps as follows:

1. Initial meeting with media. The only way this program can work is if it is presented broadly to the citizens of the region. To accomplish this, all relevant media will be contacted and invited to attend an initial organizational meeting. This includes network television outlets serving the local area, the cable and dish operators serving the area, radio stations and newspapers. Efforts will be made to find local “champions” for the program among media personnel who have been attending Air Quality Committee meetings regularly and reporting on the issue.
2. Preparation of appropriate “scripts.” Ideally, a regular feature could be developed across news media. An “Ozone Thursday” report, for example, could be made a part of local television news broadcasts, local radio news broadcasts, and local newspapers. Any local cable operations or low power media (Southeast Missouri State University’s KRCU for example) that can be identified will be included. Scripts and press releases will be prepared in consultation with media personnel.
3. Social media. At least on an experimental basis, Facebook, LinkedIn, Twitter, and any other social media that can be identified will be utilized. Accounts will be established and references will be made in all press releases. All information and releases will be summarized or posted using this vehicle.
4. Recruit filling station/convenience store operators. Every automobile requires fuel. Something as simple as filling station/convenience store operators allowing a decal promoting “Stop At The Click For Clean Air” would keep that specific message in front of

the public on a regular and intimate basis and, additionally, would keep the general concept of “being careful for clean air” at the forefront as well.

5. Recruit school administrations. School drop-off/pick-up areas are notorious long idle locations. Since so much of the emission of air pollution is associated with vehicle exhausts, recruiting school administrations to identify “no idle” zones would be another way to directly address a problem as well as to keep the general issue of air pollution before the public. The use of schools has the added benefit of involving young people and, presumably, establishing good habits.
 - a. In addition to the “no idle” zone program, EPA also sponsors a school flag program in which colored flags are raised to indicate air quality. The Regional Planning Commission will compile a listing of school boards and encourage their participation in this program.

Specifics:

1. “Stop At the Click for Clean Air.” Modern vehicles are so well sealed that refueling is essentially pollution free, unless the systems are overridden. The most common way that this occurs is with “topping off” the tank. A simple “stop at the click” program can avoid this. Since every vehicle is fueled regularly, this is also the most direct way of reaching the widest audience.
 - a. Private Sector – at a minimum this project would require permission from filling station/convenience store owners.
 - b. Media – this would be one of the first topics addressed with the media campaign. When citizens understand the “why,” getting them to undertake the “how” will be easier.
2. “Fuel in the Evening for Clean Air.” Although fueling a modern vehicle is “almost” pollution free, it is not “completely” pollution free. By simply waiting until the evening, or changing your habit to fueling on the way home from work rather than on the way to work, the pollutants that do escape into the atmosphere have time to disperse before the heat of the following day starts cooking ozone.
 - a. Private Sector – again, permission to affix decals would be required.
 - b. Media – this is another topic for early presentation through the saturation campaign.
3. “Mow in the Evening for Clean Air.” Oddly, the small engines that power Outdoor Power Equipment are much more polluting than the much larger modern vehicle engines. Small engines lack the sophisticated fuel management systems of vehicles, virtually all of which use electronic fuel injection. Also, the two-stroke cycle engines require oil mixed with fuel for lubrication, leading to air pollution issues.
 - a. Private Sector – again, permission to affix decals would be required.
 - b. Media – this would be another very early topic addressed in the media campaign.
4. “Plan Your Trip for Clean Air.” This specific component focuses on habits. It is common to “hop into the car” and run to the store for a small purchase. Later, a second trip might be made to the video rental store and a third to the library and a fourth to visit a friend and so on. The simple combination of trips to eliminate some takes vehicles off of the road and pollutants out of the air.
 - a. Media – this is purely an education/outreach effort and will be done exclusively through the media.
5. “Conserve Energy for Clean Air.” This component of the project focuses on the biggest producer of precursors, electric generation utilities (EGUs). Lowering demand has two

impacts. First, the utilities can run at something under 100% and therefore emit less into the air. Second, enough reduction in demand means that new plants will not have to be built. This is important since even modern, well controlled EGUs are still large emitters of pollutants. Also, reduction in energy use equates to a reduction in energy bills.

- a. Media – will play a central role in the education/outreach effort which will be at the center of this effort.
 - b. Private Sector – utilities offer a variety of incentives for conservation measures. This program will help get information disseminated about these incentives.
6. “Ozone Alert System.” This component of the project focuses on tracking weather and temperature conditions and instituting an “ozone alert” or “ozone warning” system. The existing systems available through the National Oceanic and Atmospheric Administration will be a central component of this effort and the RPC will serve as the dissemination point. A simple email alert system will get the information to the media.
- a. Media – will be the central focus of this effort. Since these alerts will be extremely time sensitive, efforts to enlist the local network television affiliates for ABC, NBC, CBS, Fox and others, local radio stations, and local newspapers will be made to ensure the broadest dissemination possible.

The Regional Planning Commission has been closely involved in the formation of a new Metropolitan Planning Organization (MPO) for transportation planning in the Cape Girardeau/Jackson Micropolitan Area. Specifically for the City of Cape Girardeau, the largest city in the region, a recommendation will be made to the MPO encouraging the city to investigate the possibility of timing traffic signals for improved traffic flow. Anecdotally, the existing system lends itself to forced idling at virtually every stop light. This improvement would cut down on idling time, reduce trip time and reduce fuel use through improved efficiencies.

Initial Organization

The key to this project is participation across the media spectrum. Print, radio and television must all be involved or there is no chance whatsoever that this project will accomplish anything. Therefore, the initial organizational outreach will be directed at key personnel from this group.

Specifically identified for contact are:

1. Television
 - a. WSIL TV, Harrisburg, IL, ABC affiliate
 - b. WPSD TV, Paducah, KY, NBC affiliate
 - c. KFVS TV, Cape Girardeau, MO, CBS affiliate
 - d. KBSI TV, Cape Girardeau, MO, FOX affiliate
 - e. WSIU TV, Carbondale, IL, PBS affiliate
 - f. WKMU TV, Murray, KY, PBS affiliate
 - g. WKPD TV, Paducah, KY, PBS affiliate
 - h. WTCT TV, Marion, IL, TBN affiliate
 - i. WDKA TV, Paducah, KY, MYTV affiliate
 - j. CHARTER Communications, CABLE TV provider
 - k. DISH Network, Satellite TV provider
 - l. KDKZ TV (Channel 18 News), Farmington, MO, Local

- m. PEG (Public, Educational and Governmental Access) stations in Cape Girardeau, Farmington, Perryville and Ste. Genevieve)
2. Radio
- a. WBEL, Cairo, IL, Christian Contemporary
 - b. WGCF, Paducah, KY, Christian Contemporary
 - c. WXAN, Ava, IL, Christian Contemporary
 - d. KMHM, Marble Hill, MO Christian Contemporary
 - e. KUGT, Jackson, MO, Christian Contemporary
 - f. WBCE, Wickliffe, KY, Christian Contemporary
 - g. KRHW, Sikeston, MO, Christian Contemporary
 - h. KBGM, Park Hills, MO, Christian Contemporary
 - i. KHZR, Potosi, MO, Christian Contemporary
 - j. KHCR, Bismarck, MO, Christian Contemporary
 - k. KBIY, Viburnum, MO, Christian Contemporary
 - l. KOKS, Poplar Bluff, MO, Christian Contemporary
 - m. KHIS, Jackson, MO, Christian Contemporary
 - n. KRCU, Cape Girardeau, MO, Public Radio
 - o. WSIU, Carbondale, IL, Public Radio
 - p. WDBX, Carbondale, IL, Variety
 - q. WVZA, Herrin, IL, Top 40
 - r. WKIB, Anna, IL, Top 40
 - s. WCIL, Carbondale, IL, Top 40
 - t. KBDZ, Perryville, MO, Country
 - u. WGKY, Wickliffe, KY, Country
 - v. KBXB, Sikeston, MO, Country
 - w. KDEX, Dexter, MO, Country
 - x. KEZS, Cape Girardeau, MO, Country
 - y. KWKZ, Charleston, MO, Country
 - z. KCHR, Charleston, MO, Country
 - aa. WIBH, Anna, IL, Country
 - bb. WKRO, Cairo, IL, Country
 - cc. KYLS, Ironton, MO, Country
 - dd. KPWB, Piedmont, MO, Country
 - ee. KKLR, Poplar Bluff, MO, Country
 - ff. KGKS, Scott City, MO, Adult Contemporary
 - gg. WUEZ, Carterville, IL, Adult Contemporary
 - hh. KYRX, Marble Hill, MO, Adult Contemporary
 - ii. KREZ, Chaffee, MO, Adult Contemporary
 - jj. KBHI, Miner, MO, Adult Contemporary
 - kk. KTJJ, Farmington, MO, Adult Contemporary
 - ll. KDBB, Bonne Terre, MO, Adult Contemporary
 - mm. KLUE, Poplar Bluff, MO, Adult Contemporary
 - nn. KTNX, Arcadia, MO, Adult Contemporary
 - oo. KPNT, Ste. Genevieve, MO, Alternative
 - pp. KQQX, Stelville, MO, Alternative
 - qq. KCGQ, Gordonville, MO, Rock
 - rr. WTAO, Murphysboro, IL, Rock
 - ss. KGMO, Cape Girardeau, MO, Classic Rock

- tt. KLSC, Malden, MO, Classic Rock
 - uu. KJEZ, Poplar Bluff, MO, Classic Rock
 - vv. KYMO, East Prairie, MO, Oldies
 - ww. WMSH, Sparta, IL, Oldies
 - xx. KPWB, Piedmont, MO, Oldies
 - yy. KJXX, Jackson, MO, Oldies
 - zz. KDMC, Cape Girardeau, MO, College Radio (SEMO University)
 - aaa. KSEF, Ste. Genevieve, MO, College Radio (SEMO University)
 - bbb. KZIM, Cape Girardeau, MO News/Talk
 - ccc. KSGM, Chester, IL, News/Talk
 - ddd. KSIM, Sikeston, MO, News/Talk
 - eee. WCIL, Carbondale, IL, News/Talk
 - fff. WINI, Murphysboro, IL, News/Talk
 - ggg. KREI, Farmington, MO, News/Talk
 - hhh. KFMO, Park Hills, MO, News/Talk
 - iii. KDKN, Ellington, MO, News/Talk
 - jjj. KWOC, Poplar Bluff, MO, News/Talk
 - kkk. WKYX, Paducah, KY, News/Talk
 - lll. KYMO, East Prairie, MO, Sports
 - mmm. KGIR, Cape Girardeau, MO, Sports
 - nnn. KAPE, Cape Girardeau, MO, Nostalgia
3. Newspapers
 - a. The Republic-Monitor, Perryville, MO
 - b. The Banner-Press, Marble Hill, MO
 - c. The Southeast Missourian, Cape Girardeau, MO
 - d. The Cashbook-Journal, Jackson, MO
 - e. The Mountain Echo, Ironton, MO
 - f. The Democrat-News, Fredericktown, MO
 - g. The Daily Journal, Park Hills, MO
 - h. The Ste. Genevieve Herald, Ste. Genevieve, MO
 4. Internet Only News Outlets
 - a. Sun Times News Online (Ste. Genevieve, Perryville, Chester, IL)
 - b. Perryville Buzz
 5. Cable/Dish
 - a. Charter Communication, Cable/Internet/Telephone/Bundles
 - b. ComCast, Cable/Internet/Telephone/Bundles
 - c. Time Warner, Cable/Internet/Telephone/Bundles
 - d. DishNetwork, Satellite/Internet
 - e. DirecTV, Satellite/Internet
 - f. Century Link, Satellite/Internet
 - g. 4dtv, Satellite/Internet

Besides these traditional outreach vehicles, social media will be part of the effort. Facebook and LinkedIn pages will be established and a Twitter feed started by the RPC. Where online local information outlets can be identified (the Viburnum News for example), they will be recruited into the effort as well.

Diesel Emissions Reduction Act Program

Although there is no “low hanging fruit,” a point made throughout this Path Forward, there is one program with potential to directly impact not only the Southeast Missouri Regional Planning Commission’s service area, but the entire Mississippi, Ohio, Illinois, and Tennessee river valleys. The Regional Planning Commission has been very active and successful in participating in the Environmental Protection Agency’s Diesel Emissions Reduction Act (DERA) program. DERA funds have shown a leverage ratio of roughly 4:1, private:public money and have been used or are being used at this writing, to repower four Mississippi River workboats. The large diesel propulsion engines on these boats run 24/7/265 and, since the boats can be refitted and refurbished to a virtually indefinite useful life, old engines stay in service. Through the DERA program funding 6 unrated Tier 0 engines have been, or soon will be, replaced with new Tier 3 rated engines.

The Regional Planning Commission staff will be preparing application for this program for 2013. The private sector participants have already agreed to participate again. Depending on funding levels the program will repower another two or four boats in the upcoming year.

The Commission has not charged administrative costs to these grants. Rather, we have considered this as part of our participation in the Ozone Advance program. This policy will be carried forward next year.

Timing and Milestones

The program will be initiated and operated to correspond with the ozone season. Specifically:

February/March, 2013 – initial contacts. This has been accomplished with every identifiable radio station and newspaper of record in the region contacted and alerted to the upcoming program.

March/April, 2013 – seek support for public service announcements. This was initiated but results so far have been disappointing.

April 1 through October 30, 2013 – regular updates, twitter and facebook announcements, ozone alert system, monitoring, press releases. This has been initiated. The Missouri Department of Natural Resources provides a weekly summary of all ozone monitor readings in the state and this is forwarded to a wide mailing list of interested parties. The first press release on the topic has been forwarded and the next will be prepared during the week of May 6, 2013. A twitter account has been established as SEMO Air and regular “tweets” are posted regarding ozone and related issues.

February, 2014 – program review and analysis. A program report will be prepared by the end of February, 2014 summarizing the activities undertaken, and the results achieved.

First Contact

DATE

Name

Address

City, State Zipcode

Dear _____:

We need your help.

Southeast Missouri is at risk of being designated as a nonattainment area by the U.S. Environmental Protection Agency. Since we don't have any big steel mills or refineries to regulate, this problem must be taken on by our citizens. And that is why we need your help. In order to mobilize we need to inform. That will be impossible without you.

We will be hosting a meeting on _____ here in Perryville to kick off this effort. I know that you know much better than I do how to do this in an effective way. If you can make time for me between now and then I would appreciate the opportunity to sit down with you to get some ideas on how to approach this effort. Just let me know and I will make the time to come to your office.

Thanks in advance for your interest.

Sincerely,

David P. Grimes
Deputy Director