

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

Revised July, 2014

Air Quality Committee

Southeast Missouri Regional Planning Commission



TITLE: The “Path Forward” for the Southeast Missouri Region With
Regards to Ground-Level Ozone and Other Air Pollutants
AUTHORS: David P. Grimes, Deputy Director, Principal Author
DATE: July, 2014
PLANNING AGENCY: Southeast Missouri Regional Planning and Economic
Development Commission
SOURCE OF COPIES: Southeast Missouri Regional Planning and Economic
Development Commission
1 West St. Joseph Street
Perryville, MO 63701
PROJECT NUMBER: 4.31
NUMBER OF PAGES: 27

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 (NAAQS) when the standards are reviewed in 2014-15. Leaders in the region had their wake-up call when the NAAQS was last revised in 2008 and the standard was changed from 84 parts per billion (ppb) to 75 ppb. Understanding that under the new standards air quality had become a rural issue, the Southeast Missouri Regional Planning Commission established an Air Quality Committee (since renamed as the Environmental 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 from 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 first significant revision to the “Path Forward” that the Environmental Quality Committee has adopted. The Commission lacks the authority to impose any restrictions or controls. Instead, this “Path Forward” continues to propose a wide ranging citizen outreach and education program to address the myriad area sources of ozone precursors.

This document was prepared by professional staff employed by the Southeast Missouri Regional Planning and Economic Development Commission. It was funded by donations from local governments and private sector participants in the Air Quality Committee. It may be freely reprinted with the customary crediting of the source.

Cover photo: Mississippi River workboat engines replaced under the Diesel Emissions Reduction Act program. The man in the picture for scale is 6’5” tall.

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. When the allowable standard was changed from 84 parts per billion (ppb) atmospheric ozone to 75 ppb the region's monitors were in danger of being noncompliant with the new standard.

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.

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. In 2013, recognizing that the Regional Planning Commission should be addressing environmental issues beyond air quality the committee was renamed as the Environmental Quality Committee although its focus has remained largely on air quality since 2014-15 will see the NAAQS reviewed.

During the exceptionally hot summer of 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. These readings drove the "design value" of the two monitors up from previous levels. The "design value," the rolling average of the most recent three year's fourth highest readings, is

important because that is the number on which nonattainment area designations are based. When all was said and done, the design value of the Bonne Terre monitor remained in compliance, although barely, at 75 ppb. The Farrar monitor was out of compliance with a design value of 77 ppb.

The Summer of 2013 was much cooler. Fourth highest readings for the Perry and Ste. Genevieve County monitors were 65 and 64 ppb respectively. This yielded a design value for the monitors for the 2011-13 period of 71 ppb for the Perry County monitor and 70 ppb for the Ste. Genevieve County monitor.

By definition, then, both of these monitors are in compliance and the counties would continue to be designated as “attainment/unclassifiable” under the existing 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 expected that the final revised standard will be within that range. This is problematic for the region since it is a virtual certainty that both monitors will exceed 70 ppb even in good conditions. At this point (June, 2014) for example, even with cool weather and fourth highest readings in the mid 60 ppb range, the Perry County monitor already exceeds a 70 ppb standard with a design value of 71. The Ste. Genevieve county monitor is on the cusp with a design value of 70.

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 the issue of ground-level ozone 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:

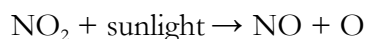
Ozone is not normally formed directly. Rather, a combination of Volatile Organic Compounds (VOCs) and Oxides of Nitrogen (NO_x), called “precursors,” combine on warm days in the presence of sunlight to form ozone (O₃). If any of these components are absent, ozone formation simply does not occur. 2012, 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.

The problems facing the rural southeast Missouri region were further highlighted when the 2011 National Emissions Inventory was released. This information, combined with a better understanding of whether or not an area is “NO_x limited” or “VOC limited” points out very clearly just how limited the options available to the region are when it comes to dealing with the issue of ground-level ozone.

Since ozone is not a “primary” pollutant a better understanding of how it is formed is needed. It is not formed directly except in rare and extreme cases (the vicinity of a lightning strike for example). Rather, ozone is a secondary pollutant formed from reactions with primary pollutants. These are the “precursors” we have been discussing for years now and include oxides of nitrogen (NO_x) and volatile organic compounds (VOCs).

There are two separate cycles and need to be understood as such. The NO_x cycle is, in its simplest form:



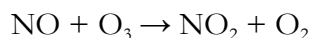
or



The free oxygen atom, then, being a gregarious sort does –



And the cycle is completed when the sun goes down, removing the “sunlight” from the cycle and yielding –



And the Cycle is complete.

The NO_x part of the cycle, then, is more or less a “zero sum game.” The problem is when those VOCs get involved. They do not actually produce ozone but, rather, they disrupt the natural process that destroys ozone during the “after dark” part of the NO_x cycle. The VOC part of the cycle is shown as, again vastly simplified:

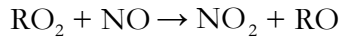
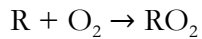
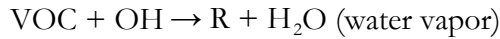
Volatile Organic Compounds are carbon based compounds, typically long chains of carbon and hydrogen atoms (hence the term hydrocarbons). The VOCs photochemical cycle results in more NO₂ available than would be normally, thereby increasing the ozone volume. To follow this cycle two more terms are necessary.

First is “Free Radical.” In chemical terms, this is a highly reactive group of atoms that combine with other atoms very easily

Second is the hydroxyl radical (OH), a single oxygen and single hydrogen atom. This is abundant in the atmosphere.

The OH radicals react with VOCs (long chain hydrocarbons) to produce a free radical RO₂ where R is one of the many possible VOC compounds.

The chemical transformations are, then –



Leaving that excess NO₂ available to go back to the first set of transformations and make more ozone leading to a buildup. The University of North Carolina at Chapel Hill has done a study on this and identified areas that are “NOx limited” and areas that are “VOC limited.” This has important implications for what can be accomplished.

“A NOx limited region is one where the concentration of ozone depends on the amount of NOx in the atmosphere. This occurs when there is a lack of Nitrogen Dioxides thus inhibiting ozone titration when oxygen mixes with VOCs. In these regions, controlling NOx would reduce ozone concentrations.” Further in that study they note that “Rural areas are usually NOx limited due to the large amount of trees that produce high levels of VOCs.”

This is clearly the case for the Southeast Missouri region as identified in the charts and graphs which follow. For purposes of this analysis the top four sources of either NOx or VOCs were selected from the 2011 National Emissions Inventory (NEI). Only 7 major categories of sources were needed to cover the top four sources in all seven counties.

It appears clear that the region meets the conditions to be described as NOx limited. Reviewing the “VOC Top Four Sources” section of the chart in Exhibit No. 1 shows that VOCs dramatically outweigh NOx in every county. Moreover, the total volume of VOCs outstrips all other factors, again, dramatically. Since the majority of these VOCs are identified as coming from “Biogenics – Vegetation and Soil” they are of a completely natural origin and not subject to controls or limits in any meaningful way.

And that leaves control of NOx as the potential method for local impact on our ozone levels. The only significant sources for NOx as identified in the area are “Biogenics – Vegetation and Soil,” “Mobile,” “Fuel Combustion” and “Industrial processes.” Biogenics are, again, trees and plants in the forests as they fall and decompose primarily. Mobile sources include on- and off-road vehicles, airplanes, rail and river transportation. Fuel combustion includes primarily process and space heat for manufacturing and other industrial operations. Industrial processes include, most relevant for purposes of this analysis, Cement Manufacturing and Mining.

In order then, let us review the potential mitigating actions that could be taken:

Biogenics – are essentially uncontrollable. In theory massive efforts to clean out decomposing plant matter from the forest floor would be possible, but it is not economically feasible nor does any entity have the authority to undertake such a project.

Mobile – mobile sources are far and away the most significant sources of NO_x and have been the primary targets of our efforts. These include the “stop at the click,” “plan your trips,” “watch your idling,” and other efforts to mobilize citizen involvement that have been centerpieces of the region’s efforts. In addition we have worked with Mississippi River barge operators and repowered six workboats making significant improvements to the emissions characteristics of the inland waterway fleet.

Fuel Combustion – industrial space and process heat that involves air emissions above a *de minimis* level are already permitted and held to Best Available Control Technology (BACT) standards. Beyond that local government lacks any authority.

Industrial Processes – the same comments apply. Industry is already permitted and held to BACT standards. Local government lacks authority to impose more restrictions.

A very high percentage of ozone precursors are the result of citizen’s actions. About 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, the great majority (in excess of 90%) are produced by “biogenics.” For NO_x, the more important consideration in this “NO_x limited” area, “mobile” sources account for almost half (47%) of emissions, with “industrial processes” the single largest other source at 34%.

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 Environmental 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 were invited to help 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 is being 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 were contacted and invited to attend an initial organizational meeting. This included network television outlets serving the local area, the cable and dish operators serving the area, radio stations and newspapers. Efforts were made to find local "champions" for the program among media personnel who have been attending Environmental 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 were utilized. Accounts were established and references will be made in all press releases. All information and releases were 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 compiled a listing of school boards and encouraged 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 was 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. KCLR, 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
 ll. 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 were established and a Twitter feed was started by the RPC. Where online local information outlets can be identified (the Viburnum News for example), they were invited 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 24/7/365 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, 2014 – reminder 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, 2014 – seek support for public service announcements. This was initiated but results so far have been disappointing.

April 1 through October 30, 2014 – 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. A twitter account has been established as SEMO Air and regular “tweets” are posted regarding ozone and related issues.

February, 2015 – program review and analysis. A program report will be prepared by the end of February, 2015 summarizing the activities undertaken, and the results achieved.

Summary of Results So Far

The first year of the program, essentially the ozone season of 2013, was generally successful. The initial contacts were made regarding air quality issues, and specifically ozone issues received reasonably good coverage in the media. Weekly monitoring reports provided by DNR were

forwarded to the Environmental Quality Committee and a mailing list of “interested parties” including all media outlets.

Since, however, 2013 was a season marked by extremely mild weather there was no particular sense of urgency. The old joke is that “you will never see a headline reading 10,000 planes landed safely today.” In that vein, media coverage was spotty. The reports were picked up and staff gave a few interviews on the subject. The full participation never materialized though, as had been anticipated. Similarly, inquiries were made to prepare Public Service Announcements but no response was forthcoming.

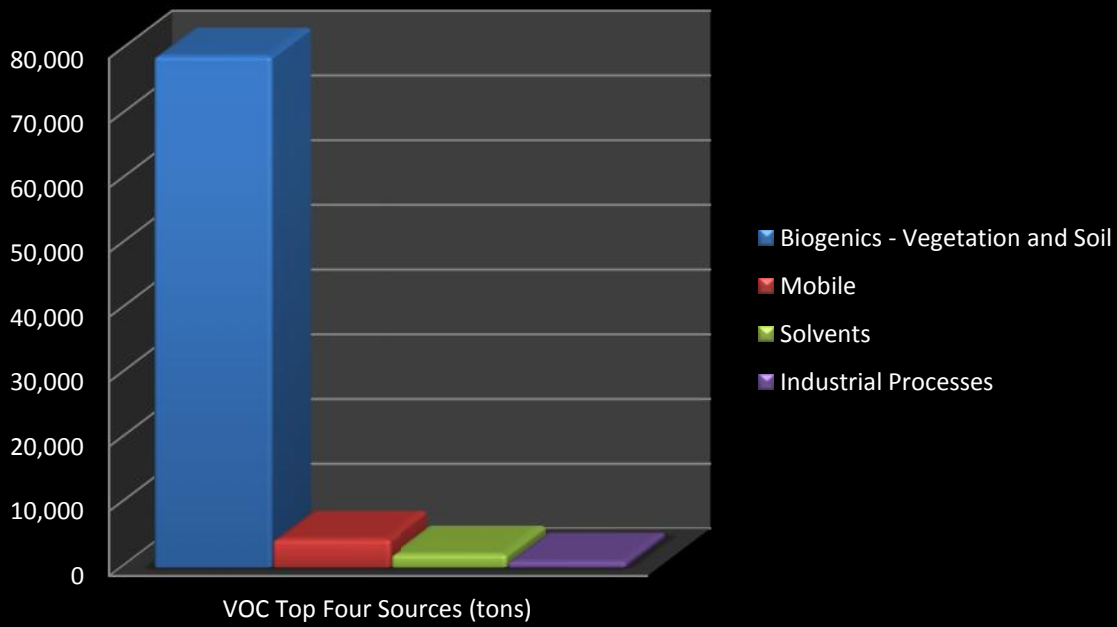
For 2014 RPC staff has already initiated the program of forwarding weekly monitoring reports and has received regular feedback. The release of Greenhouse Gas draft rules by EPA has stimulated interest in air quality as well. Staff has already been interviewed a few times on that subject.

Exhibit 1
Top Four Sources of VOC and NO_x
Table Form

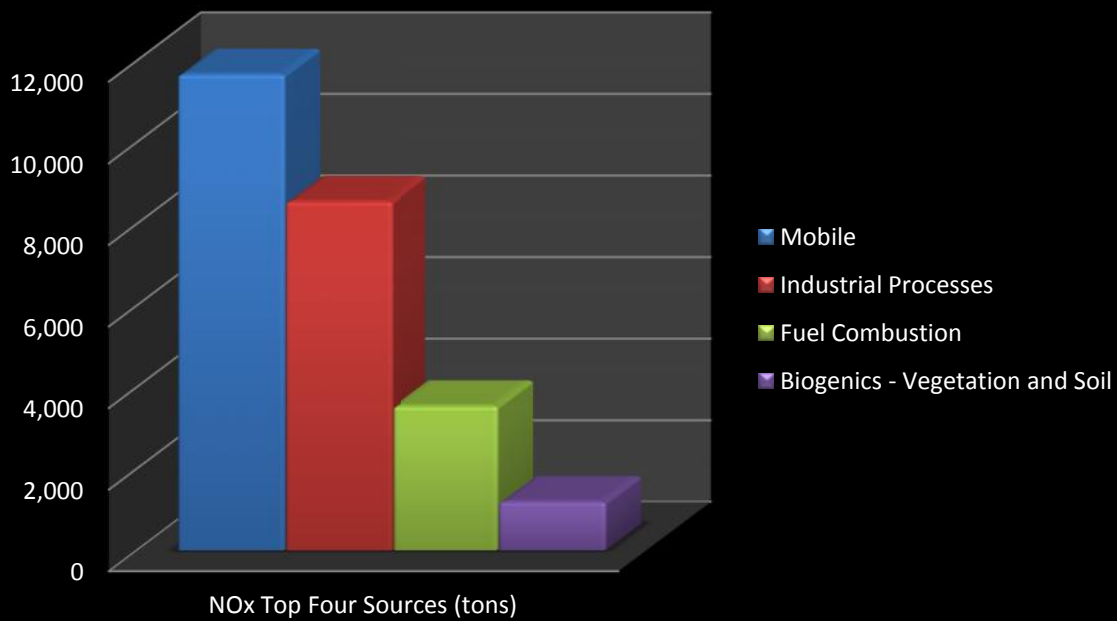
Southeast Missouri Region							
Sources of VOCs and Nox							
	Biogenics - Vegetation and Soil	Mobile	Fuel Combustion	Industrial Processes	Waste Disposal	Solvents	Gas Stations
NOx Top Four Sources							
COUNTY							
Bollinger	212	457	2,942		5		
Cape Girardeau	312	3,929		1,213			
Iron	71	383	45	53			
Madison	91	472	269		7		
Perry	237	2,240	69		7		
St. Francois	111	1,704	124	417			
Ste. Genevieve	159	2,485	90	6,869			
REGION	1,193	11,670	3,539	8,552	19		
VOC Top Four Sources							
Bollinger	12,694	252	120			108	
Cape Girardeau	7,640	1,331		482		760	
Iron	17,800	241	73				36
Madison	13,240	421		98		91	
Perry	8,112	663				425	106
St. Francois	10,038	809				486	217
Ste. Genevieve	9,494	660		329		191	
REGION	79,018	4,377	193	909		2,061	359
Source: U.S. EPA 2011 National Emissions Inventory							

Exhibit 2
Top Four Sources of VOC and NO_x
Graphic Form

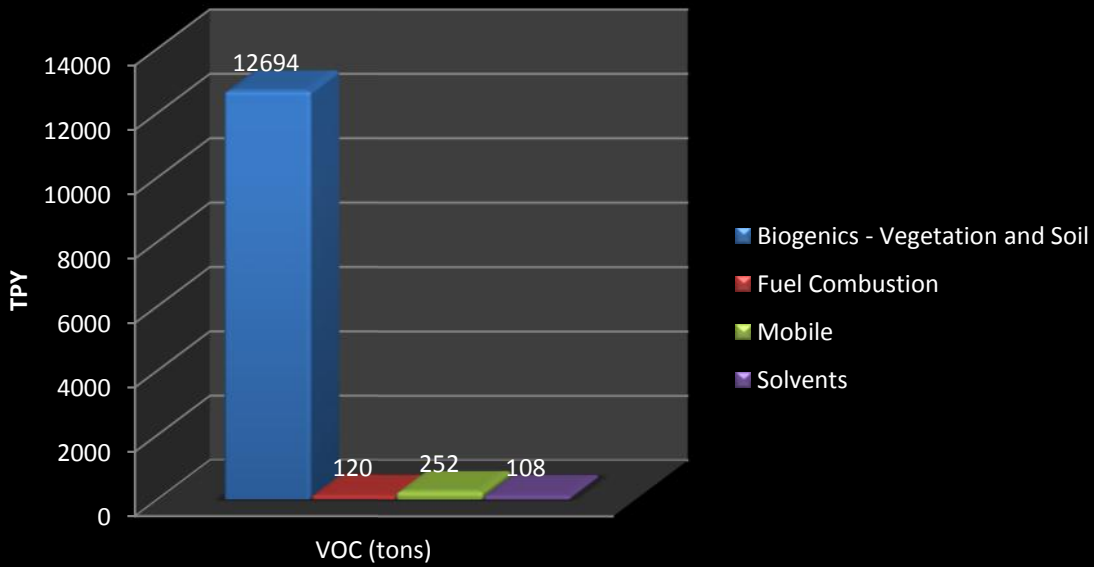
Southeast Missouri Region



Southeast Missouri Region

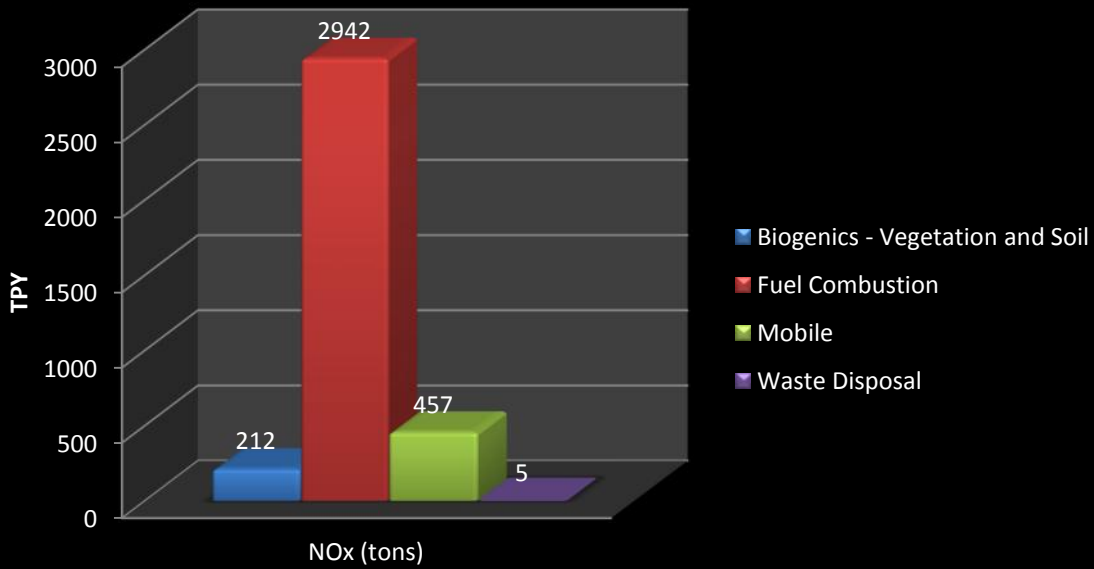


Bollinger County, MO



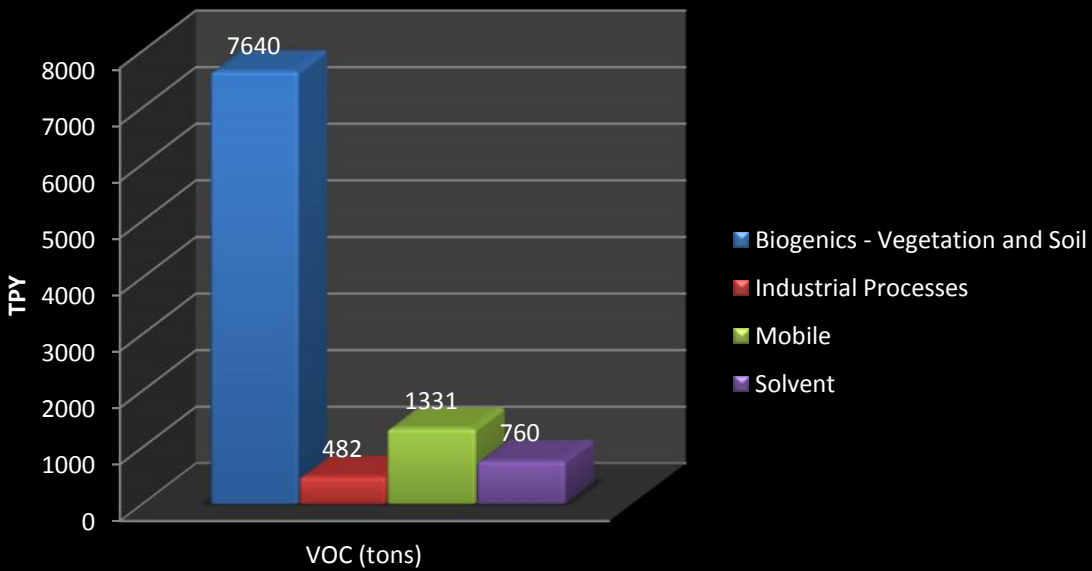
2011 NEI

Bollinger County, MO



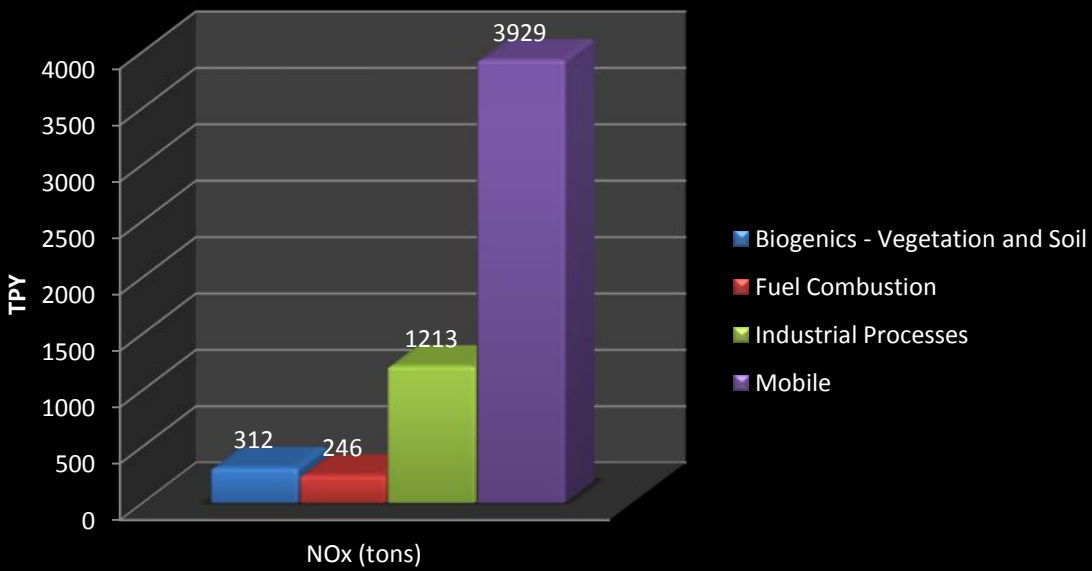
2011 NEI

Cape Girardeau County, MO

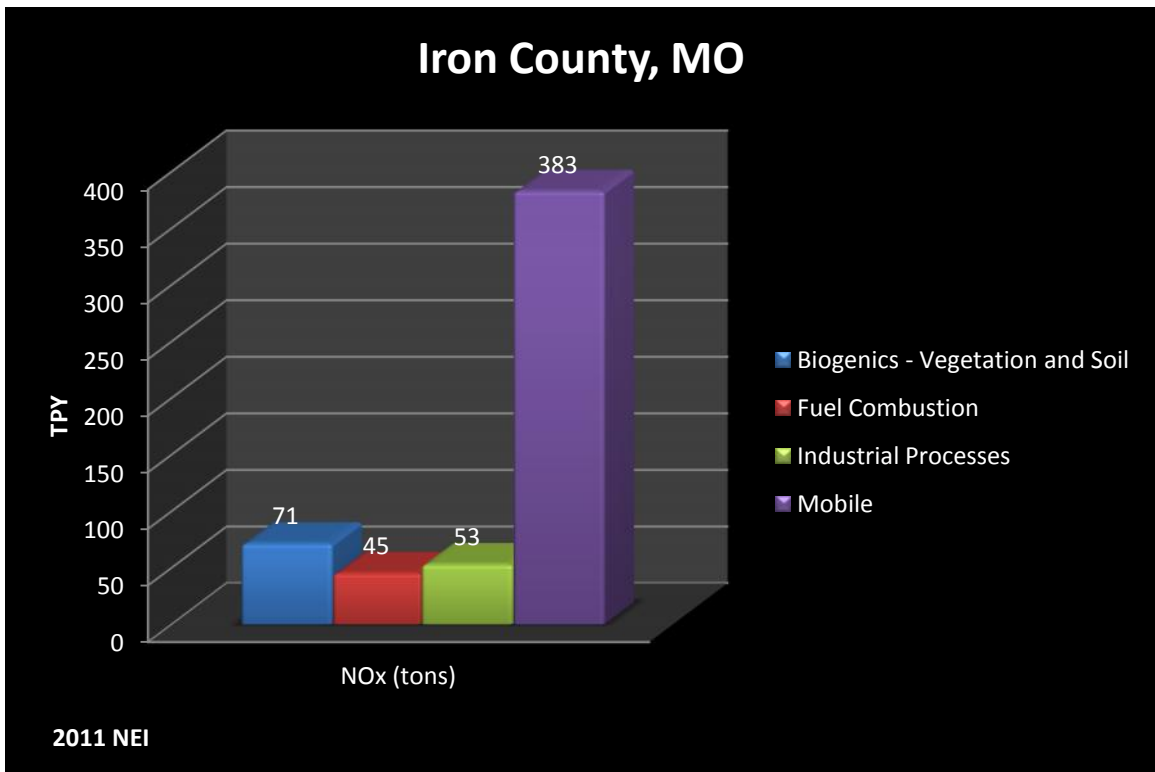
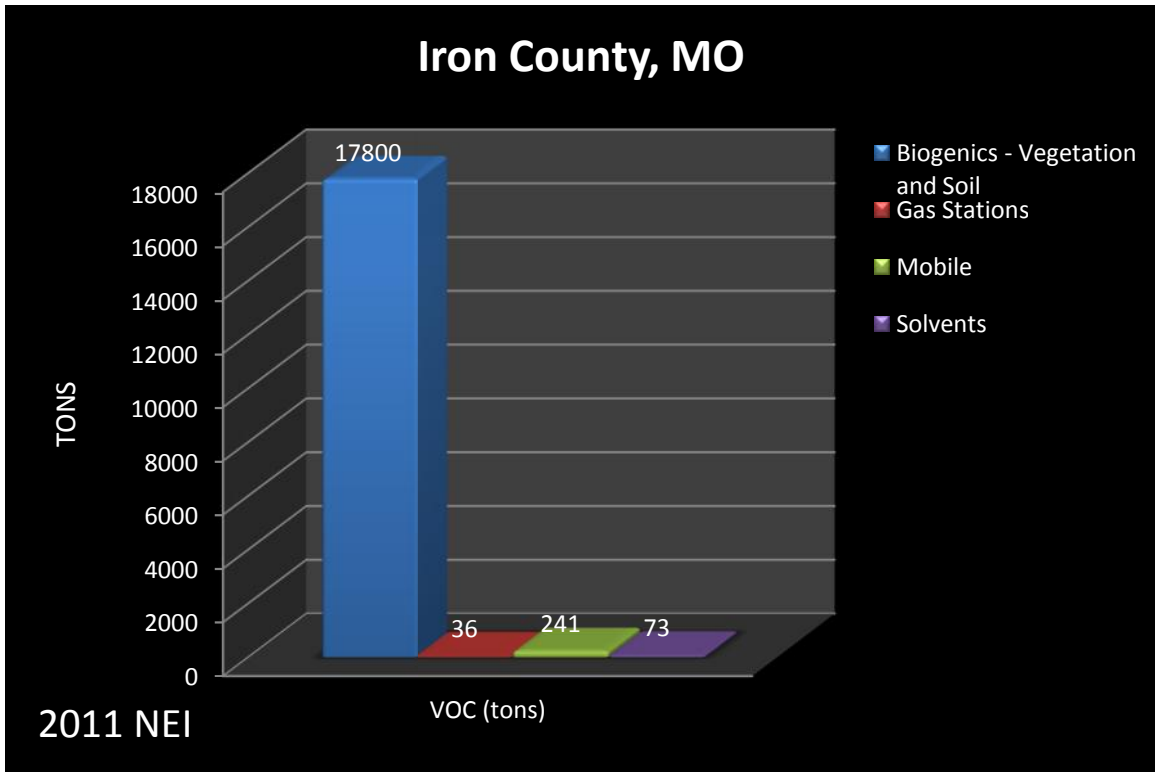


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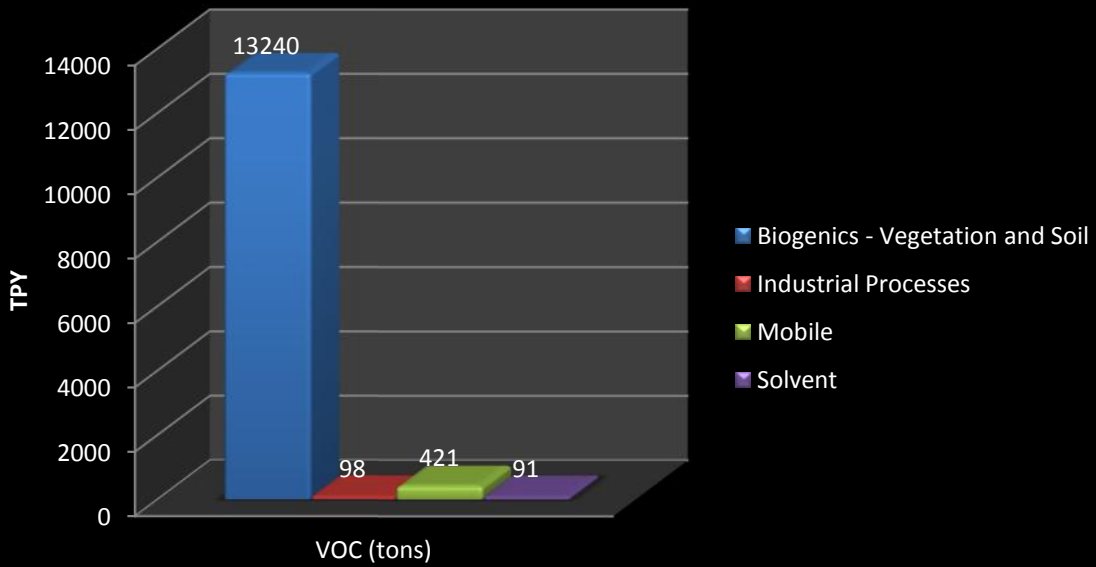
Cape Girardeau County, MO



2011 NEI

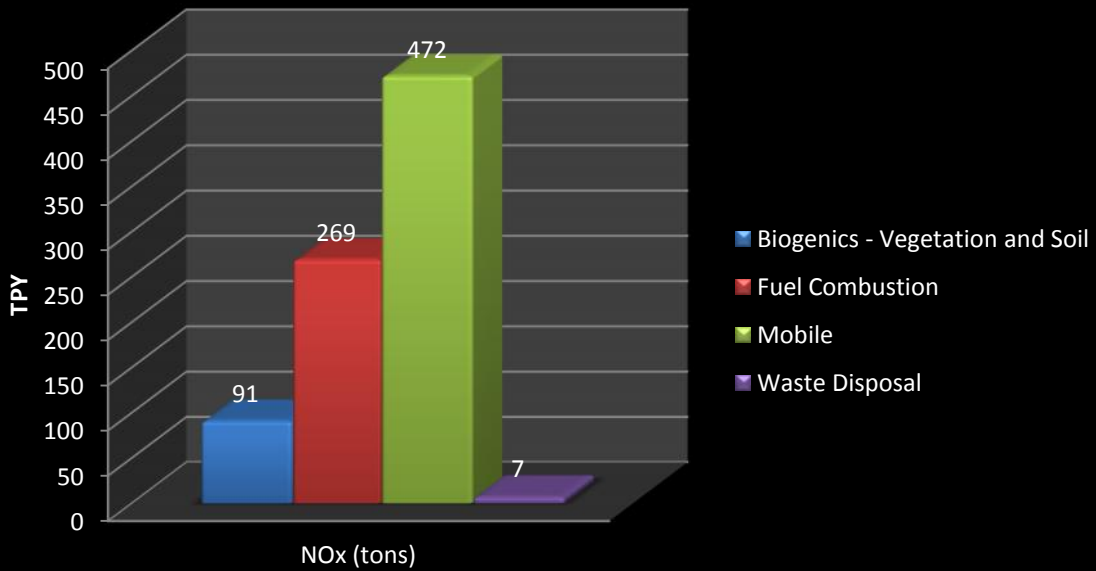


Madison County, MO



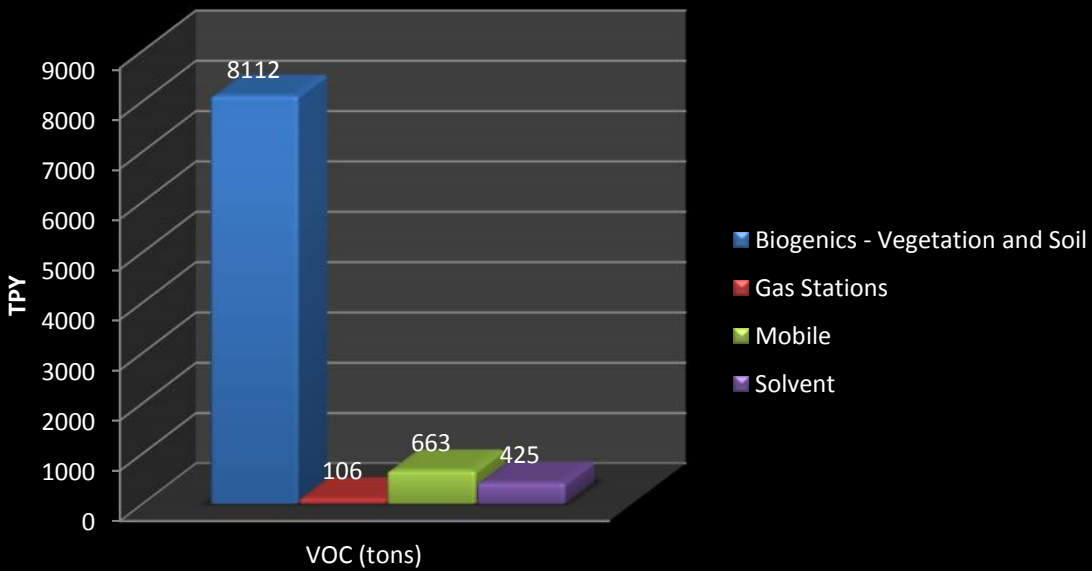
2011 NEI

Madison County, MO



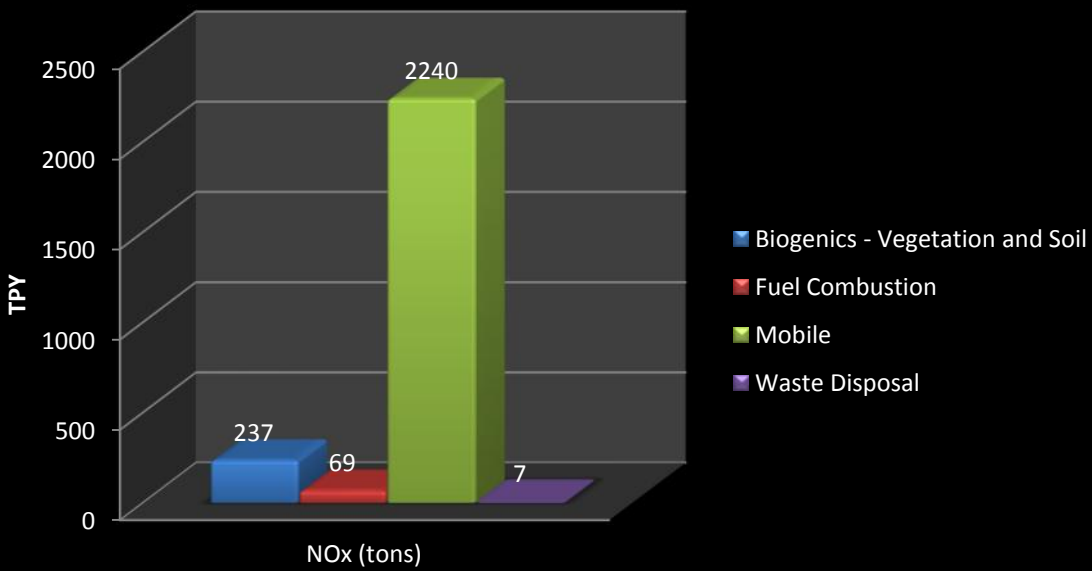
2011 NEI

Perry County, MO

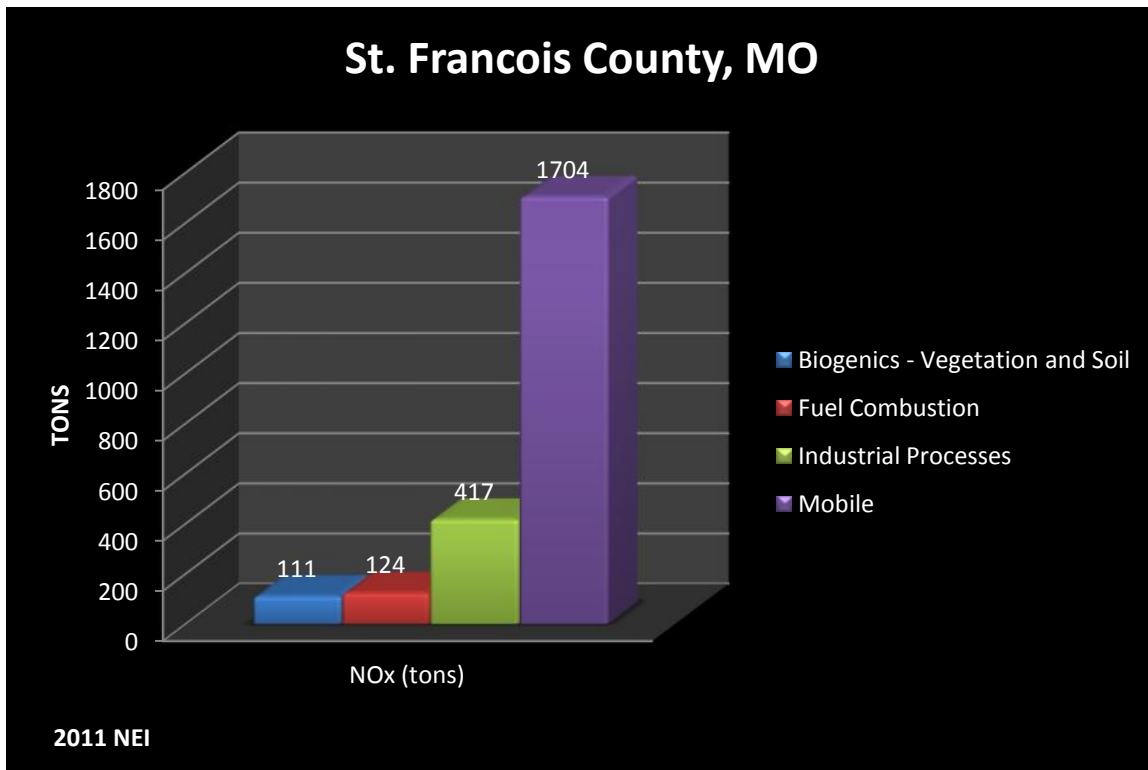
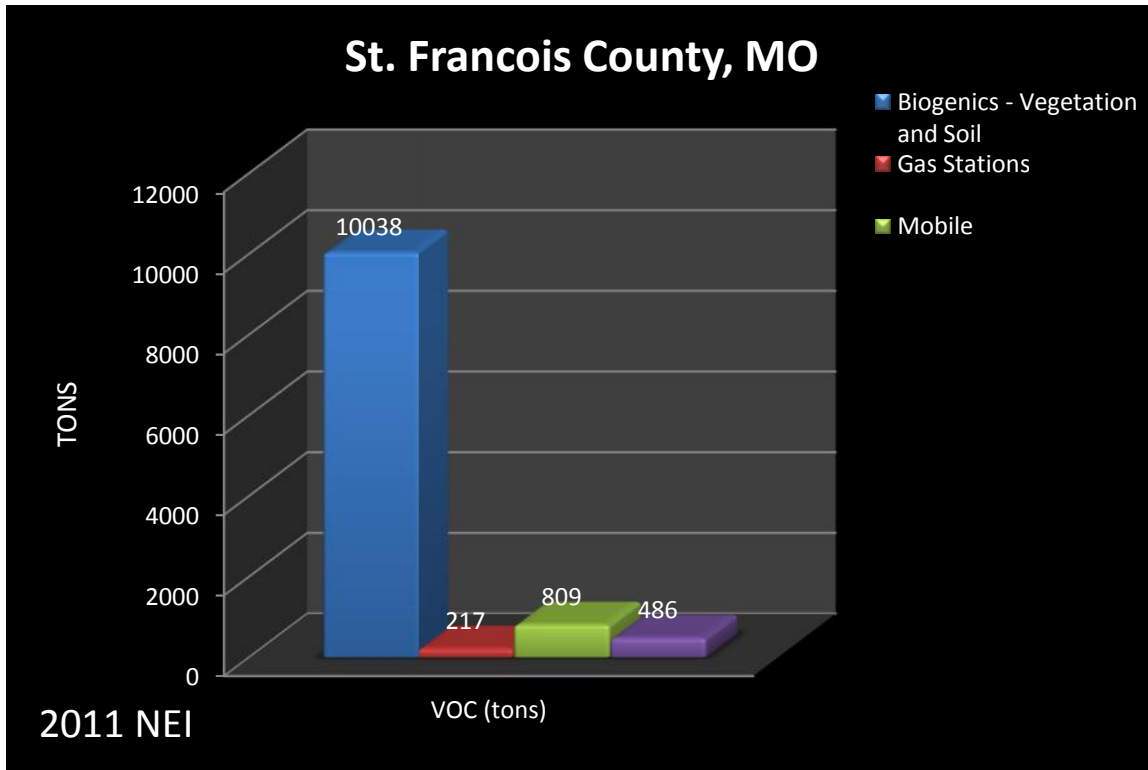


2011 NEI

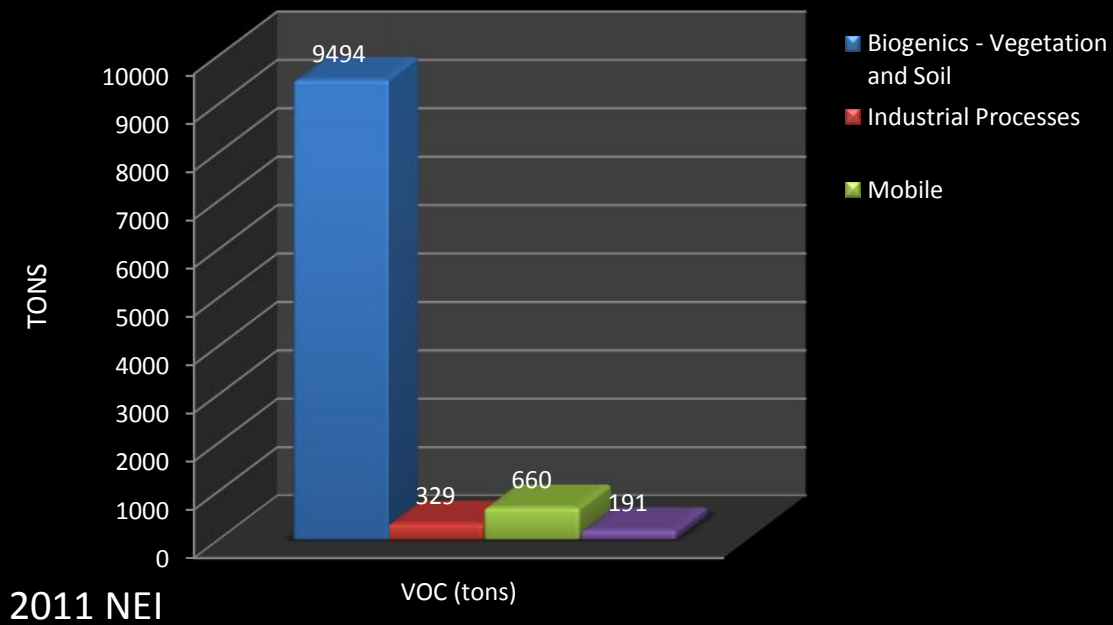
Perry County, MO



2011 NEI



Ste. Genevieve County, MO



Ste. Genevieve County, MO

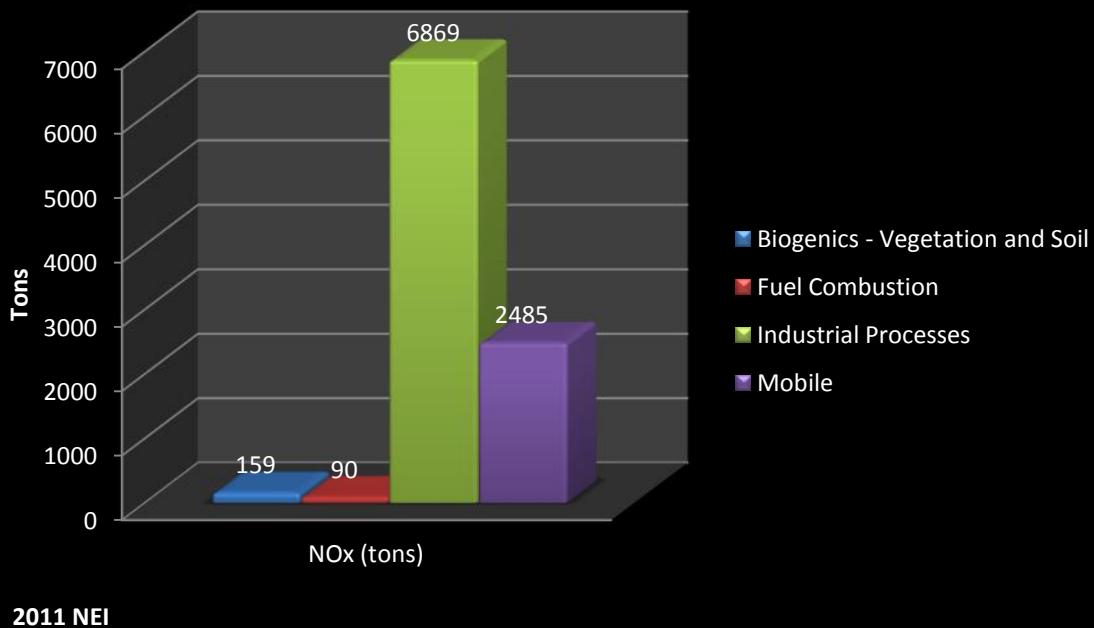


Exhibit 3

First Contact Letter

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