

# Ozone Advance Path Forward

Annual Progress Report

Southeast Missouri Regional Planning Commission

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## Background

In 2013, the Southeast Missouri Planning Commission joined the EPA's Ozone Advance Program to address the region's ground-level ozone concerns. This program essentially set out to promote awareness throughout the region. The Program detailed at the beginning of the project's conception is as follows:

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

As of 2022, this program has continued to guide program standards and has contributed to improved outreach and education. This has been crucial in the reduction of ozone precursors.

The program consisted of a comprehensive marketing campaign to raise general awareness within the community. The campaign promoted focused on the following:

1. “Stop At the Click for Clean Air.” Modern vehicles are so well sealed that refueling is pollution-free unless the systems are overridden. The most common way this occurs is by “topping off” the tank. A simple “stop at the click” program can avoid this. Since every vehicle is fueled regularly, this is the most direct way of reaching the widest audience.
2. “Fuel in the Evening for Clean Air.” Although fueling a modern vehicle is “almost” pollution free, it is not “completely.” 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 escape into the atmosphere have time to disperse before the heat of the following day starts cooking ozone.
3. “Mow in the Evening for Clean Air.” Oddly, the small engines that power Outdoor Power Equipment is much more polluting than the much larger modern vehicle engines. Small engines lack vehicles' sophisticated fuel management systems, 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.
4. “Plan Your Trips 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, a third to the library, a fourth to visit a friend, and so on. The simple combination of trips to eliminate some takes vehicles off the road and pollutants out of the air.
5. “Tune Your Car for Clean Air.” Cars that are tuned up pollute less. It is that simple. As part of this, other maintenance, such as checking tire air pressure, is vital to keep your vehicle as efficient as possible.
6. “Conserve Energy for Clean Air.” This project component focuses on the biggest producer of precursors, electric generation utilities (EGUs). Lowering demand has two impacts. First, the utilities can run at under 100% and emit less into the air. Second, enough reduction in order means that new plants will not have to be built. This is important since even modern, well-controlled EGUs are still large emitters of NOx, with upwards of 20 percent of NOx coming from EGUs. Also, a reduction in energy use equates to a decrease in energy bills.
7. “Ozone Alert System.” This project component 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 vital 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.

## Geographic Scope

The Southeast Missouri Regional Planning commission serves seven counties: St. Francois, Perry, Iron, Madison, Ste. Geneieve, Bollinger, and Cape Girardeau. Nestled into the Ozark plateau, this region is known for its extensive cave systems and forestry. Furthermore, this region is known for being home to the St. Francois Mountains, one of the oldest mountains (about 1.4 billion). Moreover, it must be noted that the region's combined population is 203,617.

There are only two ozone monitors with the Commission, located within two of the seven counties: Perry and Ste. Geneieve. While the remaining counties don't have any existing monitors, the monitors in place generally inform the air quality for the surrounding region. Thus, the data collected from these monitors help the commission plan per the level of ozone risk determined. Furthermore, the Ozone Advance plan set in place benefits the entire region and is not exclusive to monitored areas.

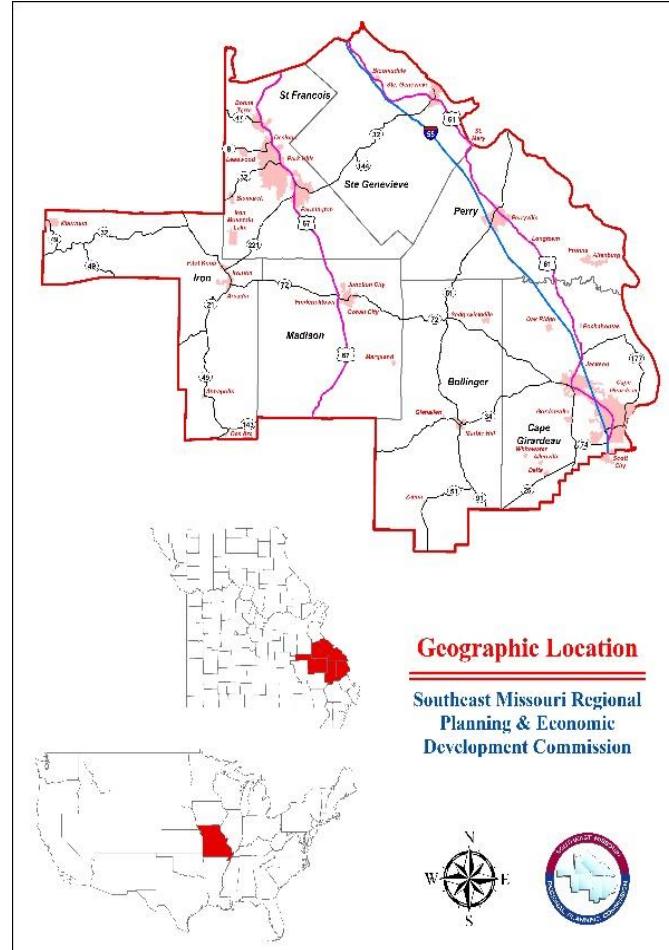


Figure 1

## Air Quality

In 2012, the region was concerned with being at risk of nonattainment. Since then, significant changes to ozone pollution levels have been documented. While there are only two monitors, the existing Ozone Path Forward extends to the commission's domain. The Graphs below demonstrate recent data collected from the region's two monitors from 2019 to 2021. Also, figure 3 shows daily exceedance from 2000 to 2022. The set exceedance value is 0.070 ppm, and since the last Path Forward, there have only been three exceedances found, which all occurred in the 2021 season. The first was recorded in Ste. Geneieve County (Bonne Terre), while the other two occurrences were recorded in Perry County (Farrar). The exceedances values observed were 0.070, 0.071, and 0.077, respectively.

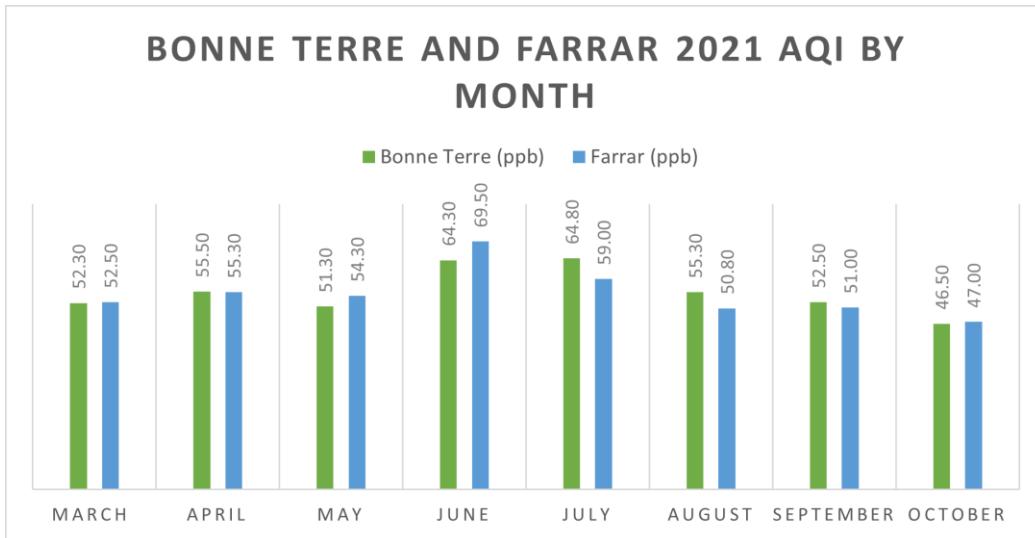
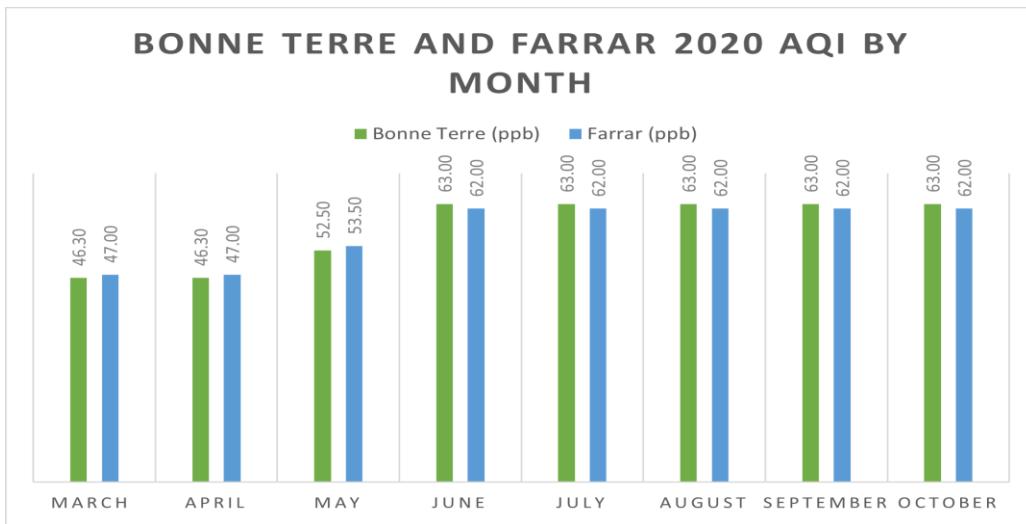
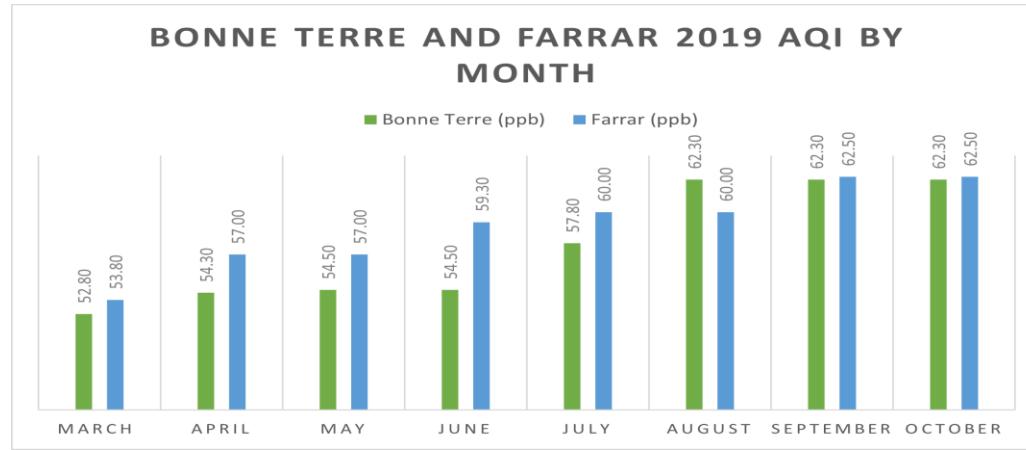
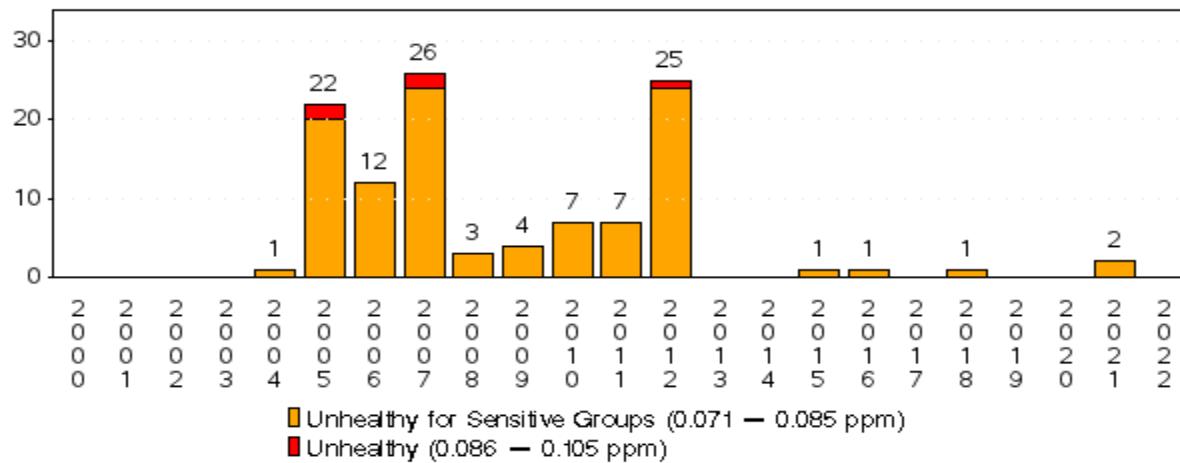


Figure 2

### Number of Days 8-hr Ozone Daily Max > 0.070 ppm

2000-2022

in Perry County, MO



Note: Based on ALL sites

Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>

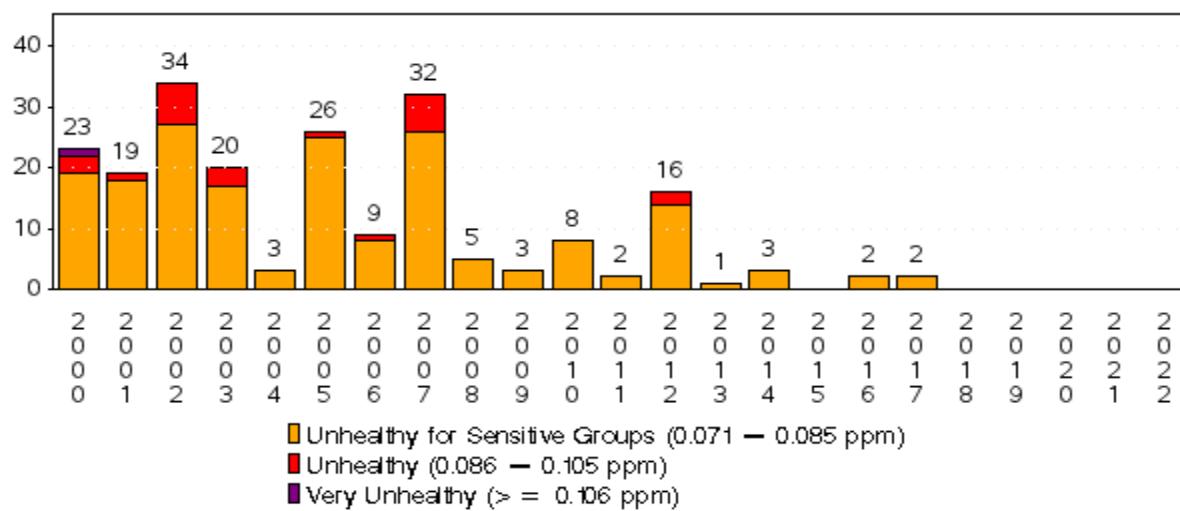
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Figure 3

### Number of Days 8-hr Ozone Daily Max > 0.070 ppm

2000-2022

in Sainte Genevieve County, MO



Note: Based on ALL sites

Source: U.S. EPA AirData <<https://www.epa.gov/air-data>>

Generated: October 12, 2022

Figure 4

## Emissions Inventory

Based on available 2017 NEI data, the following emissions data was calculated for the region's seven counties. Each figure represented models' emission factor by county concerning 2017's reported NOx and VOC emissions. Furthermore, the statistics below show O<sub>3</sub> emissions from 2014 compared to 2019's Annual Progress Report.

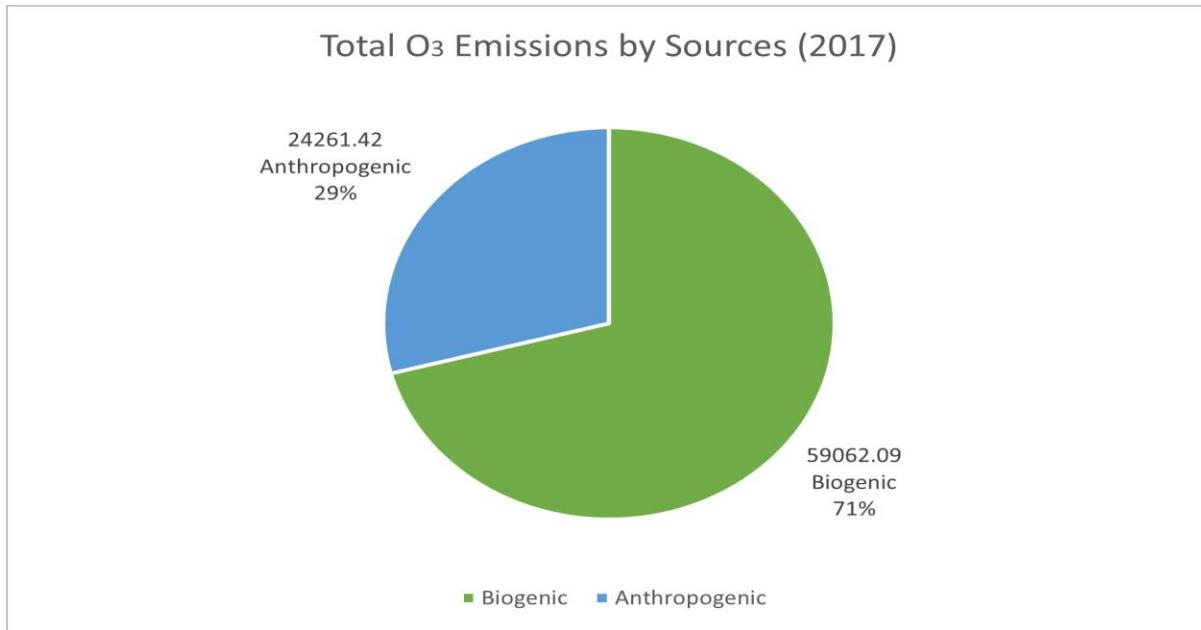


Figure 5

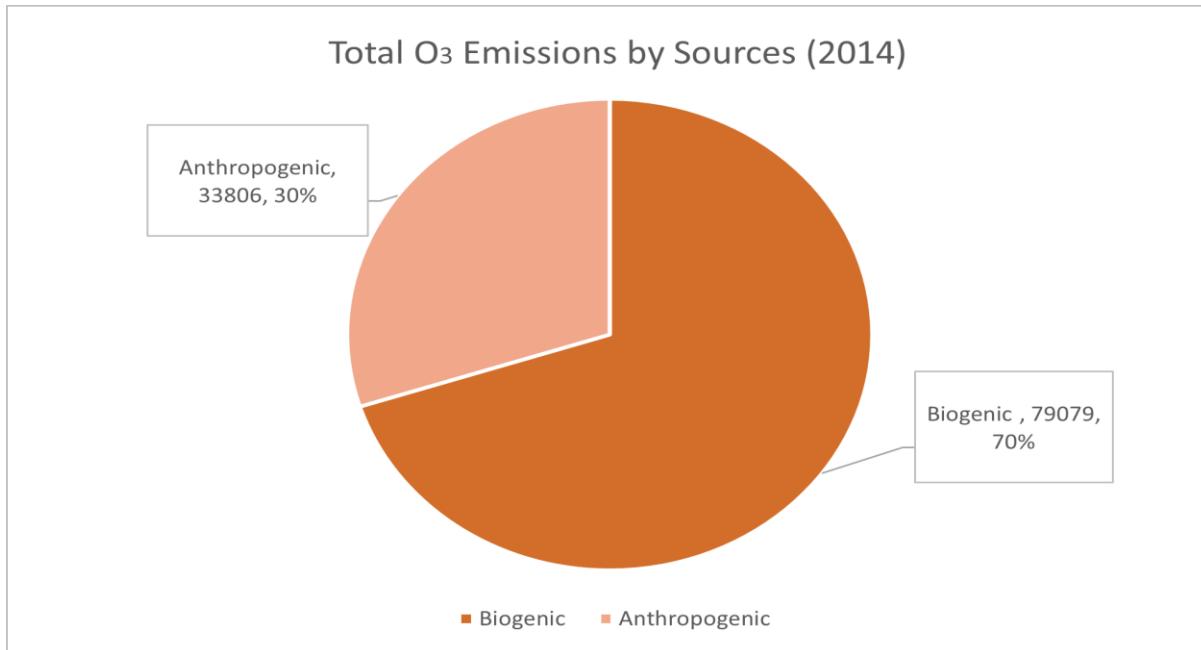


Figure 6

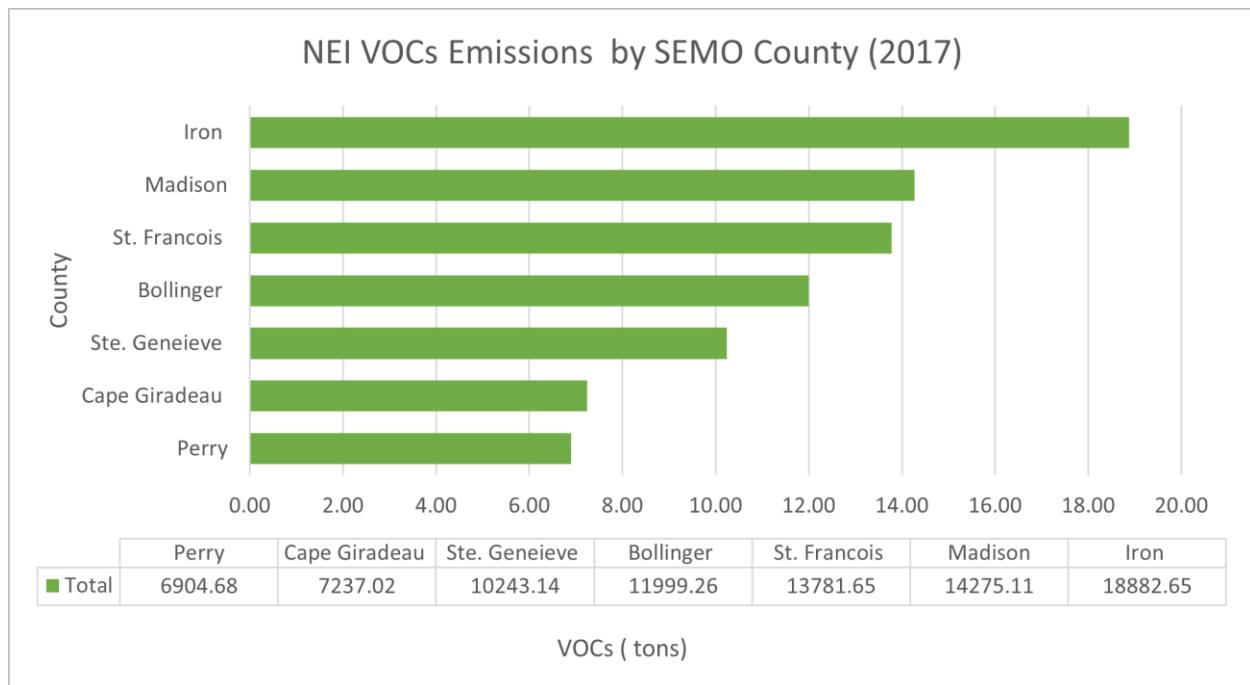


Figure 7

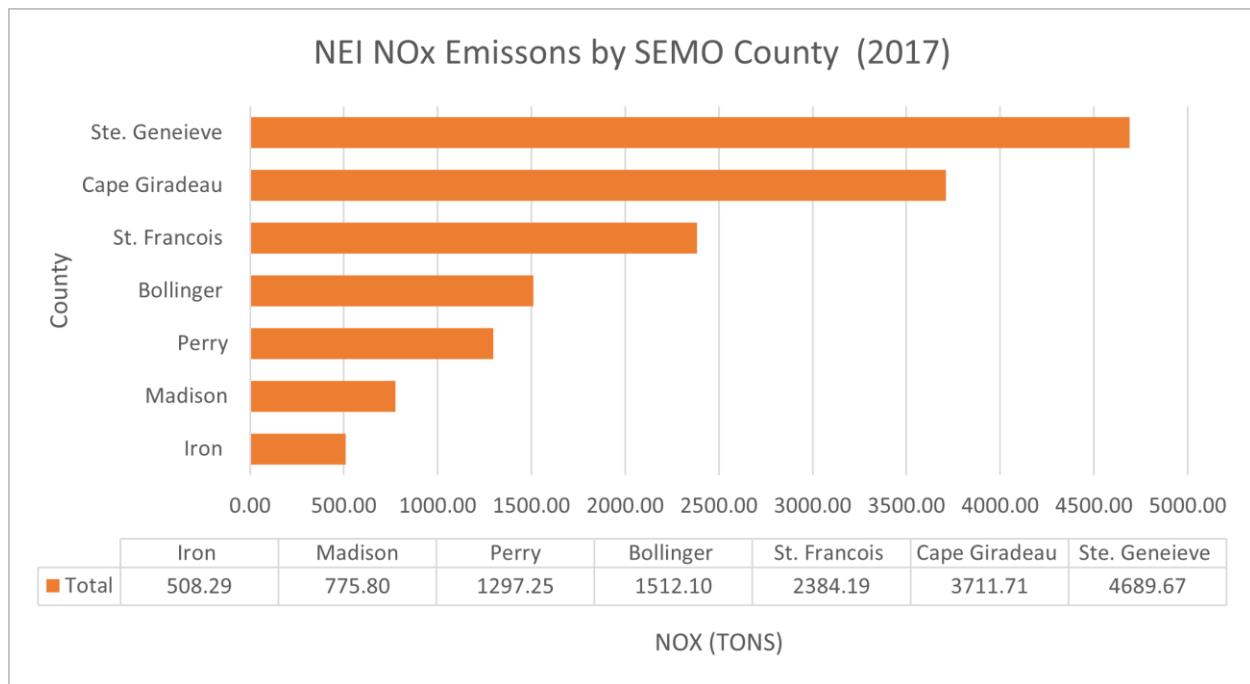


Figure 8

The ratio of anthropogenic to biogenic has continued to be 1:3 based on the 2014 and 2017 data. Yet, total emissions lowered by nearly 25% in 2017. While overall emissions may have reduced, there is still much to be concerned about especially considering the three days of exceedance reported in 2021. The data in figures 6 and 7 present an interesting juxtaposition because Iron County has written the highest VOC emissions while also touting the region's lowest NOx emissions.

### Media Champaign

The media awareness and education campaign begin every year before Ozone Peak season. The RPC reaches out to an amalgam of local radio and television stations and newspapers to spread general awareness of the anticipated increase in O3 emissions.

The commitment schedule for this campaign begins yearly in February and is as follows:

- February/March- Media Contact
- March-April: Public Service Announcements
- March-October: Regular Social Media engagement, press releases, and newsletters are sent out

### DERA Diesel Program

Over the past few years, the RPC has received the DERA grant, which is geared toward replacing and retrofitting harmful diesel engines. These funds have been placed towards many projects in our respective counties. Most recently, the grant has replaced two dump trunks in Cape Girardeau and Ste. Genevieve, respectively. The new trucks purchased were up to current EPA standards for heavy-duty vehicles. This program, although small, has proven to be crucial in lowering ozone emissions. The upgrade of these new trucks has empirically shown to reduce GHG emissions by 13.5 tons. Without this grant, the counties would have been left with inefficient and environmentally harmful service vehicles.

### EV support

While the region does not have an established EV infrastructure, recent advocacy has increased EV charging stations and vehicles. Initiatives such as the Volkswagen Trust Fund, which promotes and supports EV infrastructure along certain highways and designated zones to make EV travel accessible throughout the state. These programs are vital because they aid in the transition toward renewable infrastructure. Several initiatives, like the Volkswagen Settlement, work to help lower emissions and increase the total mileage of charging corridors. The region is among those listed within the charging corridor, which has incentivized communities to consider EV charging stations. Not only does this increase the capability of EVs, but it also increases the overall accessibility of owning EVs in the region.

### Environmental Quality Committee

The RPC has formed a committee that used to focus primarily on the region's air quality, but within the past few years, ozone concerns in the region diminished, and so did the urgency for an Air Quality Committee; thus, the Commission made the executive decision to consolidate the committee, which is now known as the Environmental Quality Committee. The committee meets several times yearly to discuss concerns and progress on existing regional projects.

At every meeting, the ozone readings are announced and discussed. The committee determines which areas are at risk and nonattainment. Furthermore, the conference is also used to address other environmental concerns like water, waste, and wildlife.

In addition to these meetings, the RPC participates in sessions facilitated by the EPA to collaborate and discuss Ozone and PM management and Concerns. These meetings take place regularly and include special topic discussions concerning energy and renewables.

## Proposed New Action

The region has reported design values that fall within attainment consistently for the past few years. This does not mean that concerns for air quality should dissipate, instead gives rise to other opportunities to circumvent rising GHG emissions. While the existing plan currently follows the ozone schedule, observing a year-round program will only help mitigate the adverse effects of ozone pollution. Another consideration is implementing a PM 2.5 and PM 10 action plan. The lack of PM monitors in the region does not deter the need for such action plans, as PM initiatives will only work to improve overall air quality and public health. Equally important, creating a Regional Climate Action is necessary to unify environmental efforts within the region. A Climate Action Plan would set standards and emission targets to protect Southeast Missouri's environment. The current saturation Program has shown steady empirical results, but it would be beneficial to survey the community to gauge the impact of these yearly campaigns. Following the survey, a new community-based education program would be implemented. These actions will unify the region's goals toward healthier, sustainable communities. Below are a few other noteworthy actions that the RPC will consider in the following year:

- Update data collection methodology
- Carbon Credit initiatives
- Electric vehicle initiatives
- Formation of Climate Action Taskforce

## Conclusion

In the past few years, the Southeast Missouri Region has seen steady improvements in Ozone quality, partly because of our existing saturation program, which has increased collective awareness. We can continue using this program to improve air and environmental quality significantly. The data shown throughout this report show the potential risk within the region and allow us to understand which counties pose the most concern. We can use this information and modify our existing program to address these areas of concern. The ultimate goal for the upcoming ozone season is to lower the amount days of exceedance. This will require us effectively communicate with the public about air quality and how the public can help. Considering the recent trends in air quality, this goal lies in reducing anthropogenic emissions as much as possible and finding creative solutions to aid in this goal.