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Rapides Area Planning Commission

OZONE Advance Program | Air Quality Initiative

ADVANCE
A U.S. Environmental Protection Agency Program

RAPC
Rapides Area Planning Commission

Introduction

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On April 4, 2012, EPA's Office of Air Quality Planning and Standards announced their new voluntary Ozone Advance Program. It continues and expands EPA's cooperative work with state, tribal, and local governments. The Program is patterned after earlier ozone mitigation programs such as Ozone Flex and Early Action Compacts, although divorced from ozone attainment regulatory requirements altogether. The overarching objective of the Ozone Advance Program is to encourage emission reductions in ozone attainment areas to help them to continue to meet the NAAQS.

Program goals designed to help achieve the objectives are:

1. Help attainment areas to ensure continued attainment of the ozone standard and health protection;
2. Better position areas to remain in attainment; and
3. Efficiently direct available resources toward actions to address ozone problems quickly.

We believe that participating in the program would facilitate the Alexandria Urbanized Area's efforts to achieve and maintain the ozone standard as well as provide for possible mitigation of consequences of failure to attain the standard.

On April 2, 2015, the Rapides Area Planning Commission (RAPC) prepared a letter with the Notice of Intent and request to be accepted into the EPA's Ozone Advance Program. On April 7, 2015, RAPC received a letter from EPA indicating that the the Alexandria Urbanized Area met the eligibility criteria and was welcomed as a participant in this innovative program.

The Alexandria Urbanized Area is not currently a non-attainment area for either the 2008 or the 2015 ozone National Ambient Air Quality Standards (NAAQS). The Louisiana Department of Environmental Quality has recommended that local government agencies reduce emissions by participating in the EPA Ozone Advance Program.

EPA announced the Particulate Matter Program in January 2013. The Ozone and Particulate Matter Programs then joined and became the Advance Program. RAPC is developing a short and long-term plan of measures aimed at reducing ozone pollution in the Alexandria urbanized area, which includes the City of Alexandria, City of Pineville, Town of Ball, as well as parts of Woodworth, Boyce, and all unincorporated Rapides Parish.

The Alexandria Urbanized area might benefit from participating in the Program through:

- Enhanced ozone attainment efforts and greater probability for maintaining the NAAQS for ozone;
- EPA Assistance;
- A rallying vehicle for public/stakeholder awareness and involvement;
- Recognition of the area's efforts to maintain and achieve ozone attainment;
- Preference for the Diesel Emission Reduction Act program funding.

Introduction

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Who We Are
RAPC is the Metropolitan Planning Organization (MPO) for the Alexandria/Pineville area. This area includes the City of Alexandria, City of Pineville, Town of Ball, as well as parts of Woodworth, Boyce, and all unincorporated Rapides Parish. The scope of this program focuses on the Alexandria Urbanized Area in Louisiana.

The program also includes collaboration between metropolitan planning and economic development organizations, local governments, state environmental agencies, businesses, industries, educational institutions and other community collaborators working in partnership with the Louisiana Department of Environmental Quality (LDEQ) to improve air quality in the Alexandria Urbanized Area.

Our Mission
RAPC is committed to improving air quality in the Alexandria Urbanized Area through voluntary actions and reasonable, effective regulatory actions.

Our Goals

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

RAPC has determined that our "path forward" should include the following tasks:

1. Develop and implement an effective public awareness/ outreach program;
2. Identification and documentation of ozone mitigation measures already implemented in the Alexandria Urbanized Area.
3. Identification and documentation of ozone mitigation measures that are in the process of currently being implemented, including scheduled completion dates;
4. Research, analysis, and completion of additional measures that would be feasible and cost-effective for implementation in the Alexandria Urbanized Area;
5. Selection of a suite of measures for which to pursue implementation;
6. Annual check-ins, to provide the status of local air quality, measures and programs in place and lessons learned. Re-evaluate and revise path forward as necessary.

RAPC continually seeks to help identify, evaluate, and implement innovative ozone mitigation measures in the Alexandria Urbanized Area to help improve air quality and maintain attainment status in the NAAQS for ozone and particulate matter.

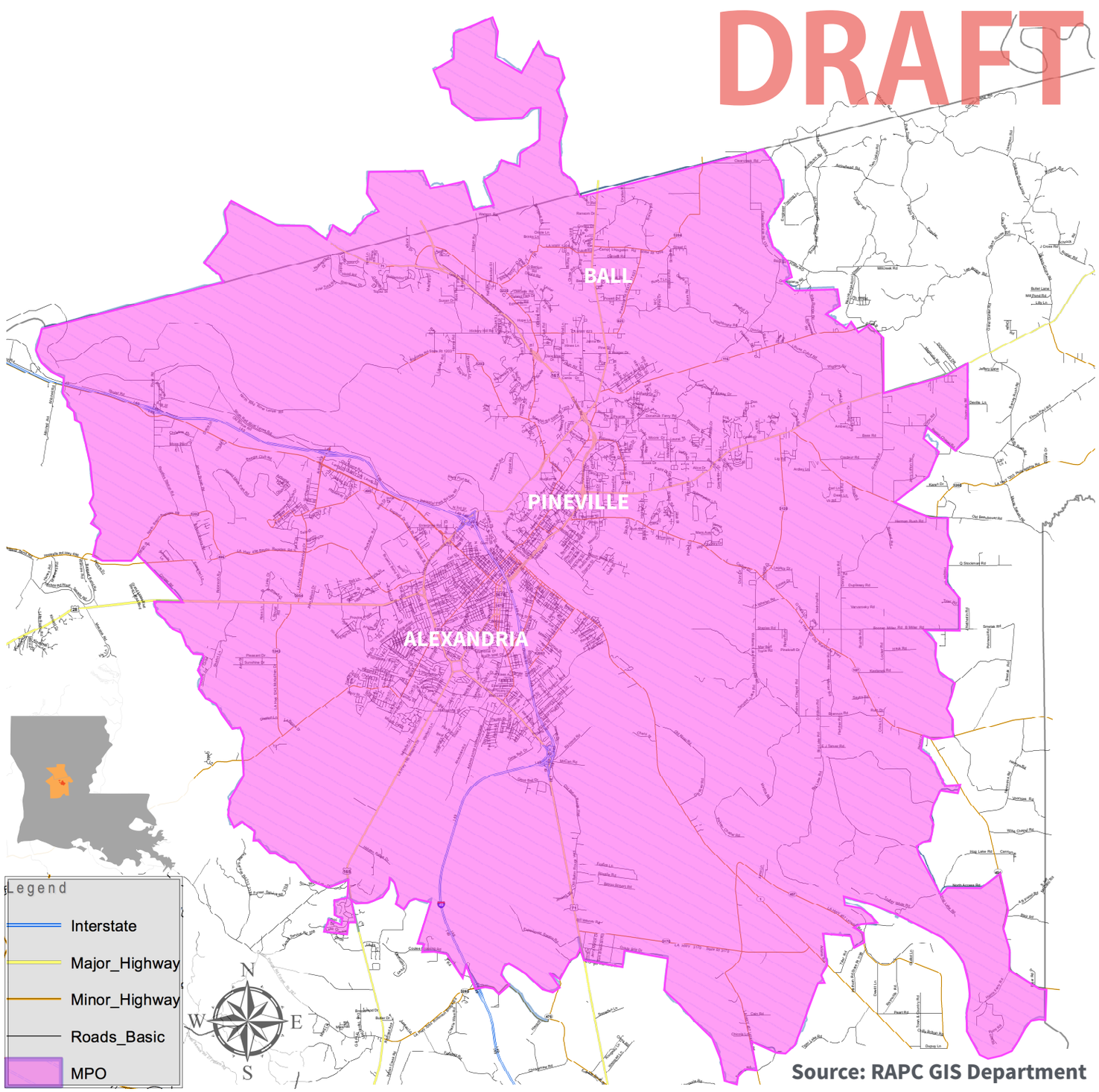
To stimulate thinking about possible ozone reduction measures, RAPC has compiled a preliminary list of innovative ozone mitigation strategies under the areas of alternative energy, energy efficiency, episodic controls, and urban heat island mitigation measures.

Overview

Population and Dwelling Units in Alexandria Urbanized Area

Based on the 2010 Census, the household population of the Alexandria, Louisiana, urbanized area was 88,036 persons. Based on the 2000 Census, group quarters population (college, military, prison, etc.) was 5,157. In 2010, the total population of the area (adding household population and group quarters population) was 93,193 persons. The state experienced an increase in population by 1.4% totally, while continuing to remain about 50% urban and 50% rural.

The area is composed of a mixture of land uses from woodlands, swamps, and vacant land to strip commercial uses, highly residential subdivisions, municipal buildings, and heavy industrial uses. The largest single type of developed land use in the study area is residential. Certain socioeconomic characteristics of the population are important links to understanding the transportation needs of the urbanized area.



Source: RAPC GIS Department

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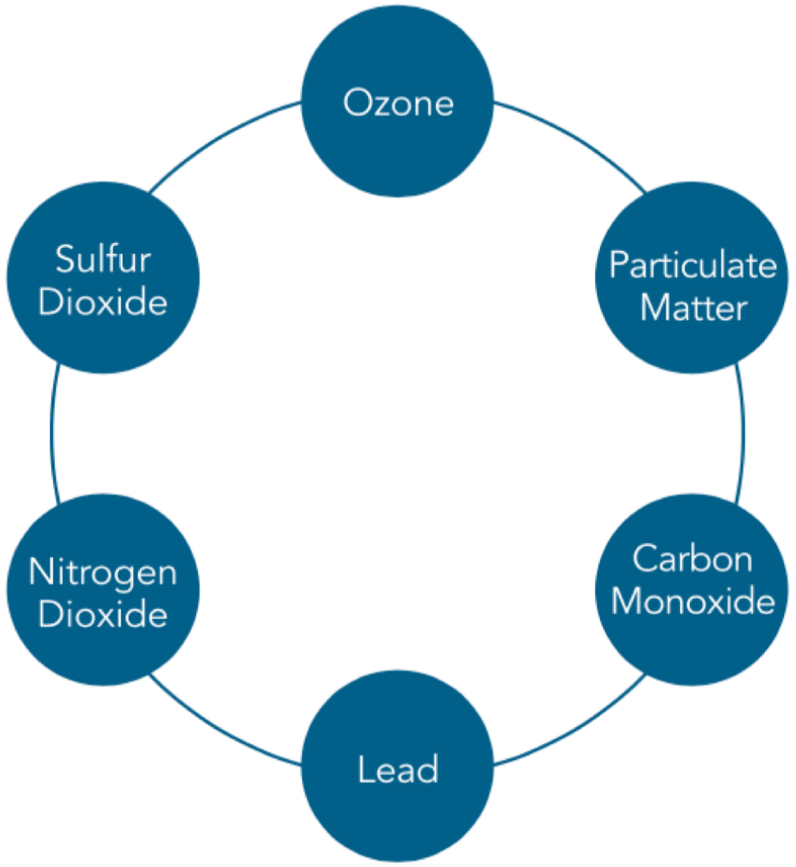
What is air pollution?

Air pollution is the presence of substances, both gases and particles, in the air in amounts that cause discomfort or are harmful to the health and well-being of humans, animals, plants or materials.

The U.S. Environmental Protection Agency (EPA) has set both primary and secondary National Ambient Air Quality Standards (NAAQS) for six principal pollutants, which are called “criteria” pollutants. Primary standards provide public health protection, while secondary standards provide for the protection of public welfare. These six criteria pollutants include: ozone, particulate matter, carbon monoxide, lead, nitrogen dioxide and sulfur dioxide.

Ground-Level Ozone (Ozone)

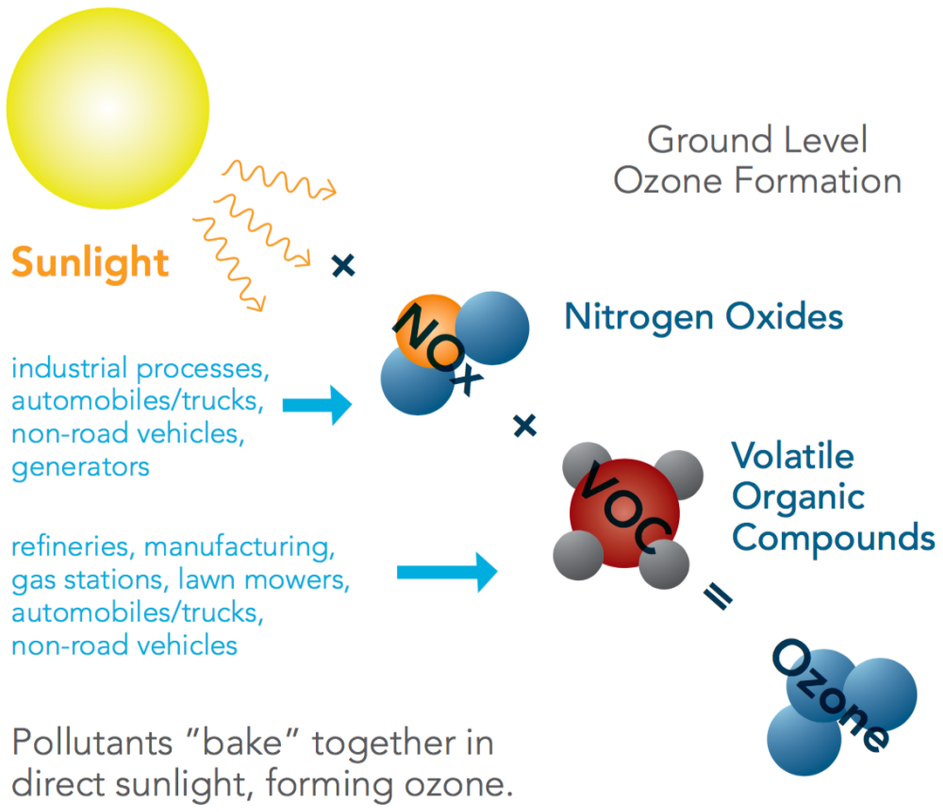
Ground-level ozone is not emitted directly into the air, but is formed by a series of complex atmospheric chemical reactions that involve nitrogen oxides (NOx) and volatile organic compounds (VOCs) in the presence of sunlight. NOx is produced almost entirely as a byproduct of high-temperature fossil fuel combustion, such as power generation and mobile sources. VOCs include many chemicals that vaporize easily, such as those found in gasoline and solvents emitted from industrial sources and vehicles.



What is air pollution?

Nitrogen OxIDES (NOx)
NOx is a generic term for the family of seven mono-nitrogen oxide compounds (NO). EPA regulates only nitrogen dioxide (NO2) as a surrogate for this family of compounds because it is the most prevalent form of NOx that is generated by human activities. Ozone is produced from the reaction between nitrogen and oxygen gases (NOx) in the air during combustion, especially at high temperatures. NOx is linked to a number of adverse effects on the respiratory system. This includes cars, trucks, buses, railroad engines, construction vehicles, and vehicles used to move goods within warehouses and manufacturing plants.

Volatile Organic Compounds (VOCs)
A Volatile Organic Compound (VOC) is the name given to a substance that contains carbon and that evaporates or “off-gases” at room temperature. Automobiles and other gasoline powered engines are a major source of VOC emissions. Some examples of VOCs include benzene, methylene chloride, hexane, toluene, trichloroethane, styrene, heptane, and perchloroethylene. Biologically generated VOCs or Green Leaf Volatiles (GLVs) such as myrcene and isoprene are also included.



Ozone Status in Louisiana

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Currently, there is no air monitor in or near the Alexandria Urbanized Area. As a result, EPA's Air Quality System (AQS) in Monroe, Louisiana, is currently used as a comparable site to estimate local ozone status.

Impacts of Revised Ozone Standard

Designations and Classifications

(Based on 8-Hour Ozone Design Values)

MSA	70 (ppb)	65 (ppb)	60 (ppb)
New Orleans-Metairie-Kenner	NA	NA	NA
Baton Rouge	NA	NA	NA
Shreveport-Bossier City	A	NA	NA
Lafayette	A	NA	NA
Houma-Bayou Cane-Thibodaux	A	NA	NA
Lake Charles	A	NA	NA
Monroe	A	A	A
Alexandria	NM	NM	NM

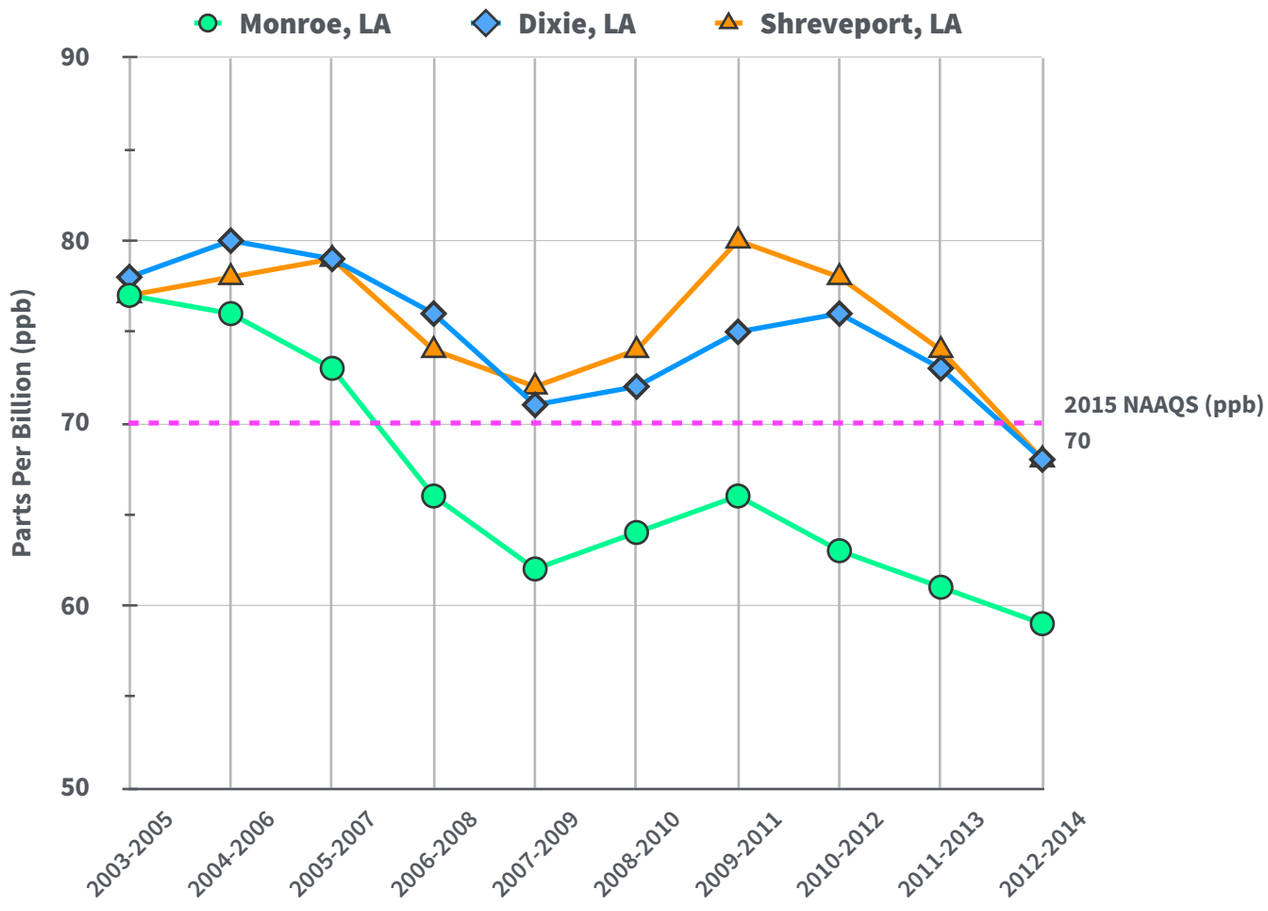
NOTE: A=Attainment; NA=Non-attainment; NM=Not Monitored

1. Revised 8-hour ozone NAAQS as of October 1, 2015, is 70 parts per billion (ppb). The design value is the 3-year average of the annual 4th highest daily maximum 8-hour ozone concentration. Monitors with design values less than or equal to 0.070 ppm must have 75% annual data capture and 90% 3-year average data capture in order to be considered valid.

2. The design values shown here are computed using Federal Reference Method or equivalent data reported by State, Tribal, and Local monitoring agencies to EPA's Air Quality System (AQS) as of July 16, 2015. Concentrations flagged by State, Tribal, or Local monitoring agencies as having been affected by an exceptional event (e.g., wildfire, volcanic eruption) and concurred by the associated EPA Regional Office are not included in these calculations.

North Louisiana Air Monitor Trends 2003-2014

Monitor Level Design Values for the 8-Hour Ozone NAAQS



SOURCE: EPA 2015 Air Quality System (AQS)

Local Contributors | Nitrogen OxIDE (NOx)

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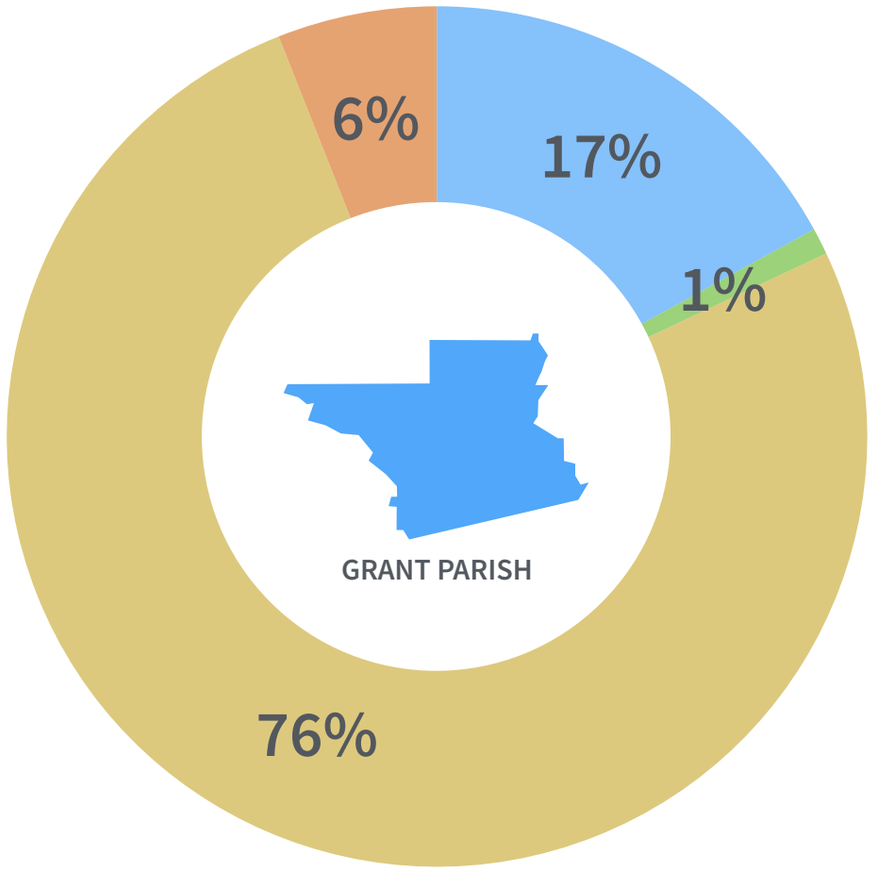

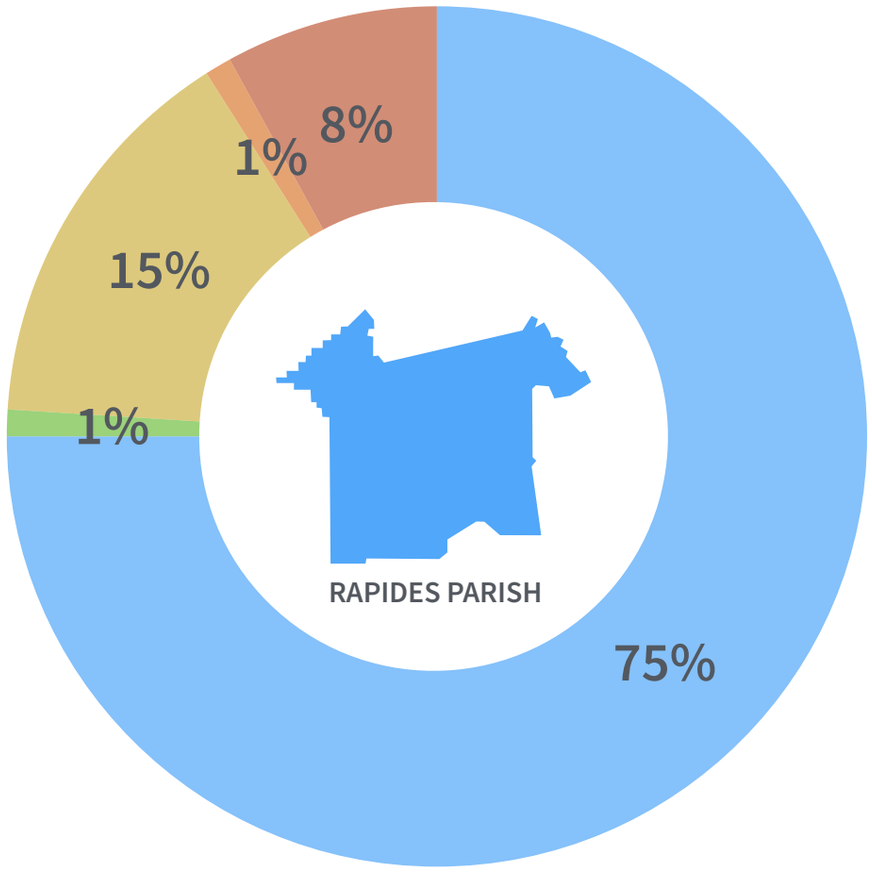

Fuel Combustion **Waste Disposal** **Mobile** **Industrial Processes** **Fires**

SOURCE: EPA 2011 National Emissions Inventory (NEI)

Local Contributors | Volatile Organic Compound (VOC)

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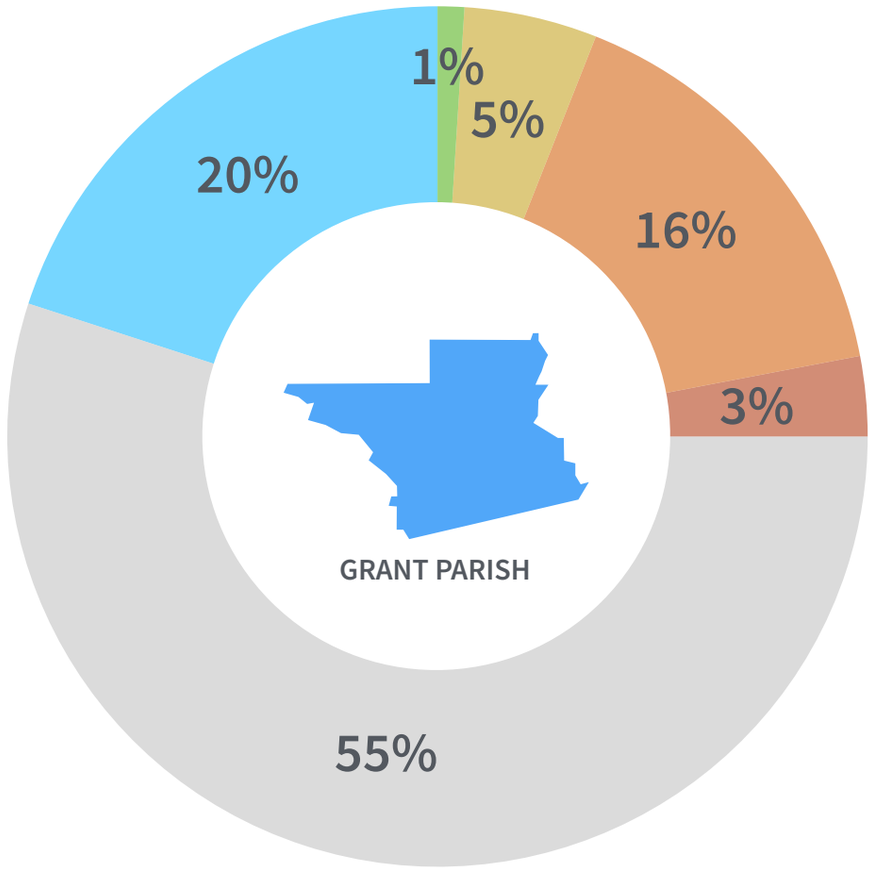

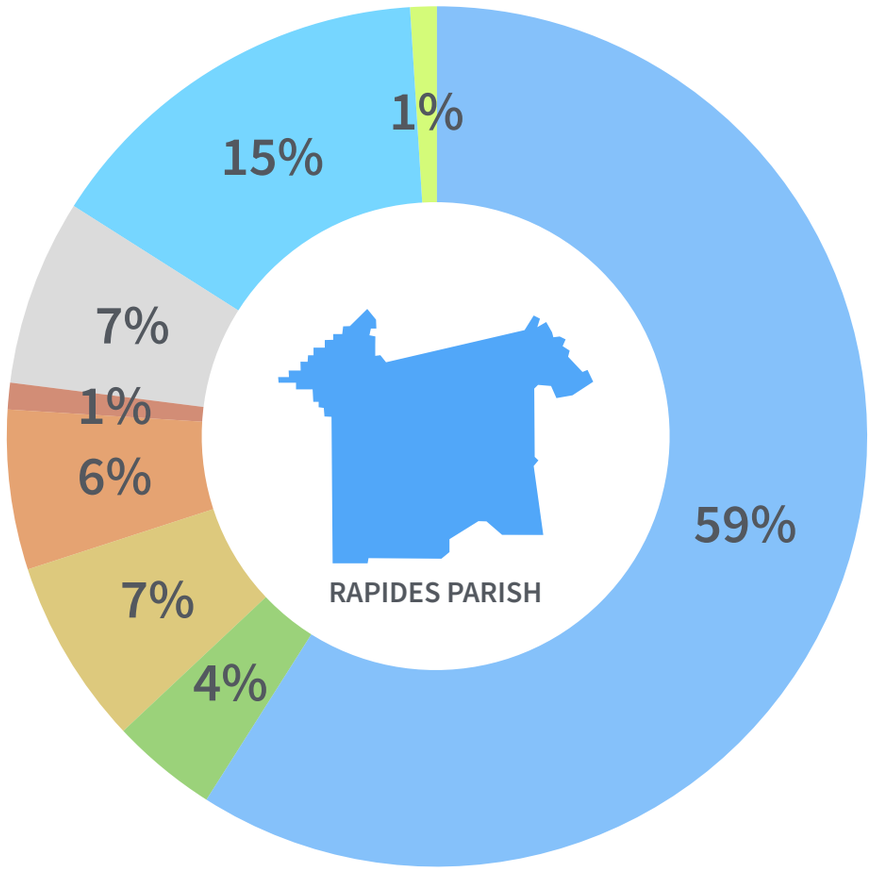

- Fires
- Non-Industrial NEC
- Fuel Combustion
- Mobile
- Gas Stations
- Solvents
- Industrial Processes
- Waste Disposal

SOURCE: EPA 2011 National Emissions Inventory (NEI)

Available Reduction Strategies

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Alternative Energy	Episodic Controls	Energy Efficiency Renewable Energy	Urban Heat Island Mitigation
Use of Renewable Energy in the Residential and Commercial Sector	Electric Demand Days	Green Buildings	Reflective Roofs
On-Road Fleet Vehicles Retrofitting/Alternative Energy Incentive Program	Traffic Congestion Mitigation and Reduction	Building Energy Management	Increase in Vegetative and Tree Canopy Cover
Off-Road Vehicle Retrofitting/ Alternative Energy Incentive Program (i.e. locomotives)	Delay of Low priority Activities	Energy Efficient Lighting	Environmental Surface Albedo Changes – Public and Private Sectors
Incentive Program for Use of Alternative Energy/Clean Fuels in Non-Road Source Category (i.e. construction)	High Use of Low Emission Fuel	Energy Star Program	
Truck Idle Emission Reductions		Combined Heat and Power (CHP)	
Locomotives Idle Emission Reductions		State EERS Standards	
Waste to Energy		Indirect Source Mitigation	
Tax Credit for Purchase of Alternative Fuel On-road Vehicles for Non-Commercial Use		Public Outreach/Education	
Renewable/Cleaner in Oil and Gas Industries		Weatherization of Older Homes in Low Income Areas	
		Expanded Research, Development, and Demonstrations (RD&D)	

RAPC Air Quality Strategies | Awareness & Outreach

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Awareness & Outreach				
Strategy	**Activity Description**	**AQ Impact**	**L-T Impact**	**Commitment Level**
Regular education and awareness of AQ status to the community	Ongoing efforts to improve air quality awareness, increase participation in RAPC AQ activities and programs (Forecast on website, AQ section in newsletter)	Med	High	When Appropriate
Special announcements/presentations to community members	Special outreach efforts related to air quality or RAPC program news. Ex. AQ announcements or start of ozone season (email blast, graphic on homepage, signs up on site, etc.)	High	Low	When Appropriate
Establish/Join Clean Cities Coalition	Public/private partnerships to promote the use of alternative fuels, the adoption of advanced vehicle technologies, the expansion of alternative fuel infrastructure, and the implementation of fuel conservation strategies.	Med	High	When Appropriate

AQ - Air Quality **L-T** - Long Term

RAPC Air Quality Strategies | Environmental Protection & Energy Efficiency

Environmental Protection/Energy Efficiency				
Strategy	**Activity Description**	**AQ Impact**	**L-T Impact**	**Commitment Level**
Perform an annual air quality/energy audit	Audit interior and exterior spaces to identify indoor and outdoor VOC & NOx emission sources and energy conservation opportunities	Low	Med	Annually
Address air quality/energy deficiencies	Replace fixtures, tools and equipment with energy efficient options, install motion sensors on room lights, replace bulbs with efficient options, add programmable HVAC controls	Med	High	When Appropriate
Install regulators/timers for HVAC and lighting systems	Install room sensors so lights turn on upon entry and turn off a set time after motion ceases, install thermostats to reduce HVAC use in off hours,	Low	High	When Appropriate
Weatherization Assistance	Work with local governments and nonprofit agencies to provide weatherization services to those in need using the latest technologies for home energy upgrades. Services consist of cost-effective energy efficiency measures for existing residential and multifamily housing with low-income residents.	Low	Med	One-Time
Install LED Street & Traffic Lighting	Conversion of street and traffic lights to LED. Because LEDs have a longer life and use less energy than traditional street lights, immediate benefits will include reduction in energy consumption and reduction in service trips/vehicle usage.	Low	High	When Appropriate

AQ - Air Quality **L-T** - Long Term

RAPC Air Quality Strategies | Mobile Source Emissions

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Mobile Source Emission Reduction				
Strategy	Activity Description	AQ Impact	L-T Impact	Commitment Level
Replace aging fleet vehicles with alternative fueled and more efficient options	Replace 8-cylander vehicles with 4 or 6-cylander options with newer emission standards, less refueling needs, alternative fuel, electric hybrid, or other option	High	High	When Appropriate
Replace/Retrofit diesel fueled fleet vehicles and equipment	Make systematic upgrades to existing diesel equipment that includes retrofitting engines to run more efficiently and/or are fueled by cleaner sources, like natural gas	High	High	When Appropriate
Install speed governors on fleet vehicles	Install governors on 18-wheelers in the fleet restricting them to 65 or 70 mph	Med	Med	Continuous
Install Intelligent Transportation Systems	Work with LADOTD and local traffic management entities to deploy Intelligent Transportation System elements to help manage traffic within the Alexandria Urbanized Area.	Med	Med	Continuous
Encourage Clean School Buses	Work with the Rapides Parish School Board to help identify and obtain rebate incentives to replace school buses powered by model year 2006 or older engines with new buses powered by a certified 2015 or newer model year engine, or operate solely on electricity.	High	High	Continuous

AQ - Air Quality **L-T** - Long Term

RAPC Air Quality Strategies | Mobile Source Emissions

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Mobile Source Emission Reduction				
Strategy	**Activity Description**	**AQ Impact**	**L-T Impact**	**Commitment Level**
Expand Bicycle and Pedestrian Infrastructure	Work with local stockholders to develop facilities, policies, and projects that improve mobility and safety for pedestrians and bicyclists throughout the Alexandria Urbanized Area.	Med	Med	Continuous
Synchronize Traffic Signals	Work with LADOTD and local traffic management entities to synchronize traffic signals within the Alexandria urbanized area. RAPC will seek funds to expand the local fiber optic network to include additional traffic signals and traffic monitoring stations.	High	Low	One-Time
Monitor and reduce on-site idling of personal & company vehicles, trains, ships, trucks, equipment, etc.	Establish a policy to discourage idling staff cars, delivery trucks, pick-up/ drop-off drivers, etc. Engage security to monitor the program and to help enforce the anti-idling policy	High	High	Continuous
Install infrastructure for truck stop electrification	Install truck electrification stations for drivers who stay long-periods or overnight to reduce their constant idling	High	High	One-Time
Install on-board idle reduction technologies	Available for locomotive and trucks. It times off, shutting off engine but leave other cab functions running on APU's - auxiliary power units	High	High	One-time

AQ - Air Quality **L-T** - Long Term

RAPC Air Quality Strategies | Reduce Miles Travelled

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Reduce Vehicle Miles Travelled (VMT)				
Strategy	Activity Description	AQ Impact	L-T Impact	Commitment Level
Provide ride share options and participation incentives	Provide vanpool vehicles, provide free/reduced bus passes, offer trolley services to reduce circling in parking lots - Designate preferred parking spaces for car/van poolers, etc.	High	High	Continuous
Improve ride share infrastructure	Conduct a clean-up at vanpool pick up locations, partner with jurisdictions/agencies to upgrade park & ride facilities, host an event or develop a communication forum to connect potential carpoolers (good ozone season annual kick-off events)	Med	Low	When Appropriate
Provide supportive infrastructure for non-motorized commuters	Bicycle racks close to entrances, covered bike parking areas, bike lock system, discount rates at local bike shop, benches, lockers for gear, shower stalls, etc.	Low	Med	One-time
Provide incentives for alternative fueled & lower emission vehicles	Install electrification spaces for vehicles near front entrances, transform a few regular parking spaces into motorcycle/scooter parking spaces	High	High	One-Time
Assist Public Transportation Multimodal Facility Development	Support construction of a multi-modal facility for various modes of transit to meet and provide options for passengers other than single occupancy vehicles.	Med	High	When Appropriate

AQ - Air Quality **L-T** - Long Term

RAPC Air Quality Strategies | Public Education & Engagement

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Public Education & Engagement				
Strategy	**Activity Description**	**AQ Impact**	**L-T Impact**	**Commitment Level**
Regularly maintain vehicles for peak performance	Emission control is greatly enhanced with well maintain vehicles. Ex. ensure fluids are full, tires are inflated and that filters are clean	Med	Med	Continuous
Defer trips until later in the day	Reduce ozone creation by making driving trips later in the day	High	Med	Continuous
Turn off office equipment nightly and on weekends	Promote energy efficiency by employee by unplugging kitchen equipment, turning off computer, copiers, etc.	Low	High	Continuous
Delay/Reschedule activities using small gas engines	Avoid activates that require the use of a gas powered engine (lawn mower, weed trimmer, Chain saw, generator, power washer, gator/golf cart, etc.)	High	Med	Continuous
Delay/Reschedule activities with diesel fueled equipment	Avoid activates that require the use of diesel powered equipment (tractors, generators, boat engines, construction equipment, etc.) includes testing activities where equipment may run for long periods	High	Med	Continuous
Use low VOC producing materials and systems	Select low VOC solvents, paints and striping materials, etc.	Med	Med	Continuous
Delay or reschedule painting activities	Avoid emissions by postponing painting activities to non-ozone season months or non-action days	High	Med	Continuous
Evening refueling and no top-off	Stop at the click to avoid spills and extra fumes and require refueling of vehicles and equipment at the end of the day to minimize fume exposure to sunlight	High	High	Continuous
Promote trip reduction at lunch times	Encourage bag lunches, carpool to lunch, arrange for lunch trolley and/or arrange onsite service (ex. food truck)	Med	Med	Continuous
Promote route efficiency	Encourage employees to map and time their travel to combine stops to reduce fuel consumption and trips	Med	Med	Continuous
Replace gas mowers, trimmers, saws, golf carts with electric options	Eliminate the ozone production caused by small engine equipment by replacing it with electric options	High	High	When Appropriate
Reduce or eliminate open burning/Enforce burn bans	Especially on ozone action days, open burning will be eliminated or significantly reduced.	High	High	Continuous

AQ - Air Quality **L-T** - Long Term

Conclusion

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Ozone pollution is a serious public health issue and an environmental problem. RAPC is committed to improving air quality in the Alexandria Urbanized Area through voluntary actions and reasonable, effective regulatory action. In addition to awareness and outreach, it includes voluntary strategies that help improve efficiency of traffic flows, but also help public and private organizations save costs and help the area combat air quality concerns.

Effective solutions to these challenges will continue to stem from RAPC's strong partnerships with local governments, residents, and businesses to maintain a strong commitment to both economic growth and environmental quality. RAPC seeks to create a program that not only supports and develops innovative solutions to the area's air quality challenges and reduces ozone precursors, but also integrates into existing area projects and programming. This mix of strategies will allow for more expeditious implementation and provide flexibility for program stakeholders.

RAPC's Air Quality Initiative is a living document and will be updated as strategies are added and the program evolves.