



2014-2015 City of Wichita Ozone Action Plan

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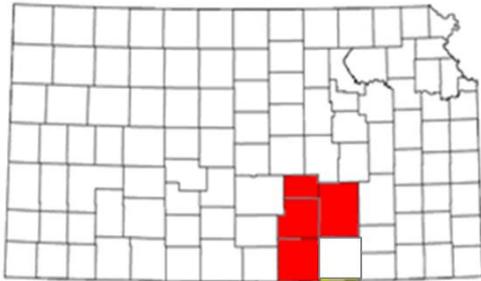
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# Executive Summary

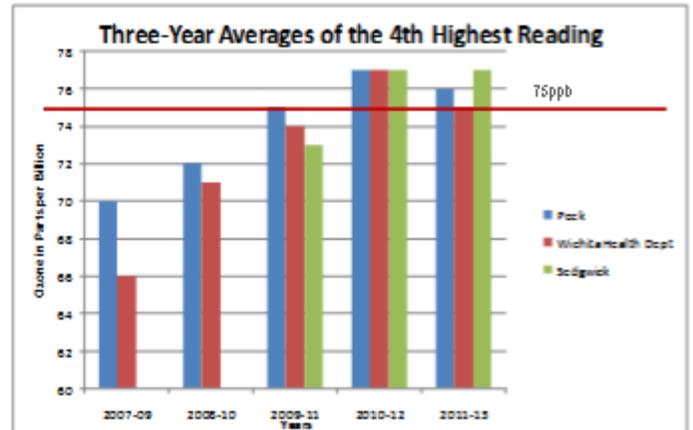
## Background

Ozone is the air pollutant of concern for the Wichita MSA. The four county MSA is at risk of being designated a nonattainment area for the national ozone standard. A nonattainment designation is costly to the community and local businesses.

In August of 2012, the City of Wichita voluntarily joined the EPA Ozone Advance (OA) program. The Air Quality Improvement Task Force (AQITF) is an advisory group to the Wichita City Manager and Council regarding air quality issues. The AQITF is taking the lead on the OA process.



The affected region is the **Wichita Metropolitan Statistical Area (MSA)** – Butler, Harvey, Sedgwick & Sumner Counties.



## Objectives of Ozone Advance

- Submit the **Ozone Advance Path Forward Plan** that includes intended action steps that reduce ozone-forming emissions
- Avoid a *nonattainment* designation or receive a favorable designation

## Roles

**AQITF**— Promotes and advises local governments, nonprofits or businesses to take on and implement Path Forward projects. Collect project data from the entire MSA for inclusion in Path Forward Updates.

**City of Wichita Staff**— Facilitate the AQITF. Select Path Forward Projects for consideration. Implement approved projects.

**Wichita City Council**—Support and approve projects that reduce ozone-forming emissions and fit with City goals and budget.

**Other Local Governments**—Support and implement projects. Report project outcomes to the AQITF.

**Local Businesses & Nonprofits**—Support and implement projects. Report project outcomes to the AQITF.

## City of Wichita Ozone Action Plan Projects

- Ozone Alert & Education Program
- Clean Air Car Clinics
- Free Fares Project
- Wichita Bicycle and Pedestrian Master Plans
- No Idling Policy
- Vanpool Study and Pilot Project
- Diesel Fleet Improvements
- AERO VOC reduction education program
- Open burn education & restrictions
- Model Contracts
- Workplace Partnership Program

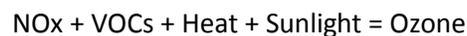
# Introduction

## BACKGROUND

The Wichita Air Quality Control program began in 1971 in cooperation with the Kansas Department of Health and Environment, Bureau of Air. The program consists of air monitoring activities; inspection of air pollution sources; and investigation of complaints. City of Wichita monitors ambient air for the criteria pollutants ozone (ground-level), nitrogen oxides, sulfur dioxide and particulate matter in accordance with regulations set forth in the federal Clean Air Act. Lead and carbon monoxide are no longer monitored in the Wichita area, on a continuous basis, due to significant decreases in these pollutants since the 1970s. Wichita has been in compliance with all six criteria pollutants since 1989. The Wichita Metropolitan Statistical Area (MSA), which includes Butler, Harvey, Sedgwick and Sumner Counties, is close to exceeding the National Ambient Air Quality Standard (NAAQS) for ozone.

Ozone is an air pollutant that can cause lung damage in healthy people and can have severe effects on sensitive groups like children, the elderly and people with respiratory diseases, like asthma and emphysema. There are more than 52,700 adult asthma sufferers in the Wichita MSA. Children and the elderly make up 20% (124,961 individuals) of the overall population in the four county region. The ozone standard is designed to protect the most sensitive groups in our population.

Ozone is formed when the nitrogen oxides (NOx) and volatile organic compounds (VOCs) from vehicle exhaust, paint, solvents, gasoline vapors and industrial processes react with heat and sunlight.



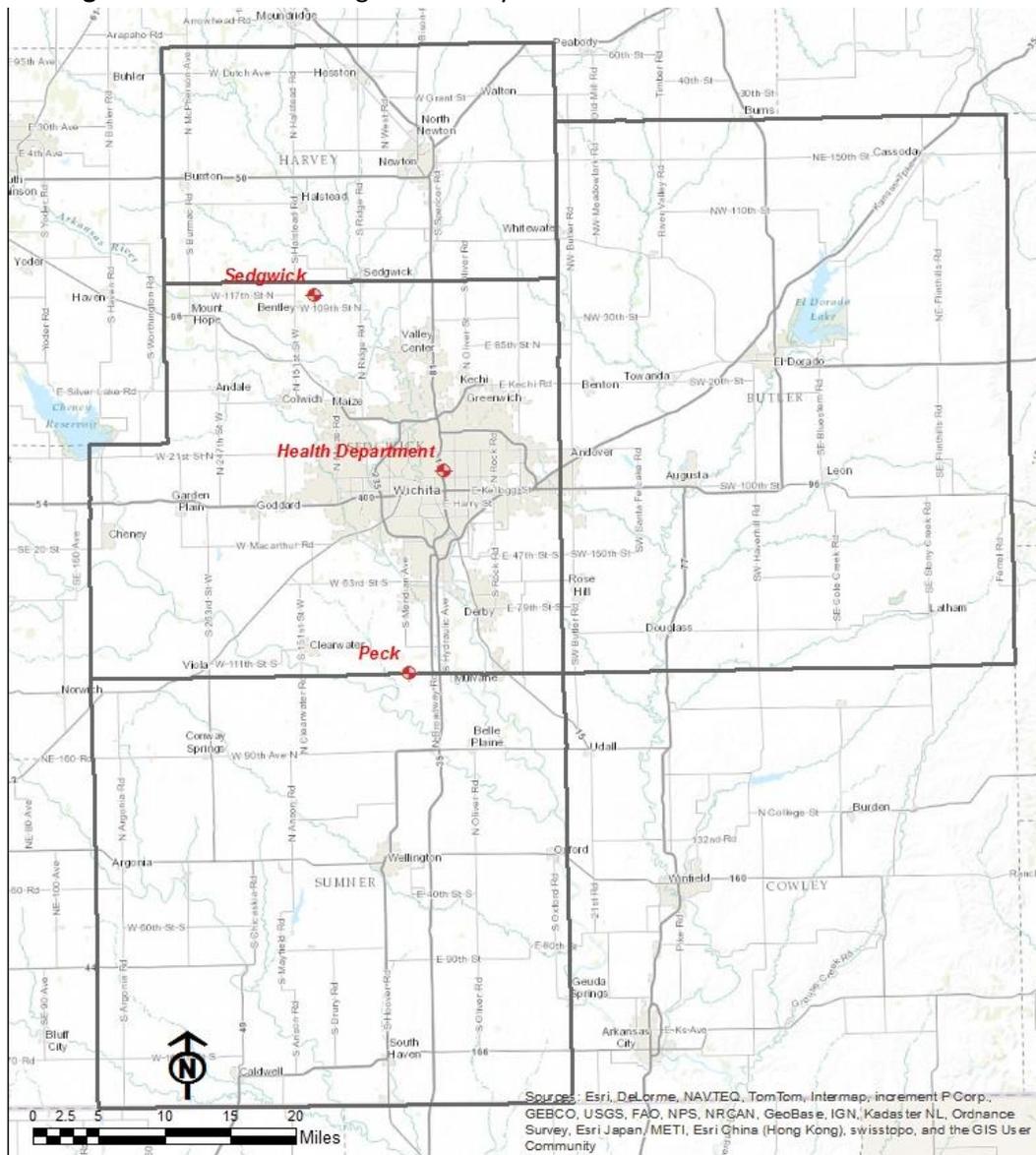
The Wichita MSA is taking proactive steps to avoid exceeding the 8-hour ozone standard and protect the physical health of residents by participating in the voluntary EPA program called [Ozone Advance](#). This collaborative effort between EPA, the Kansas Department of Health and Environment (KDHE) and the Wichita MSA encourages expeditious reductions in ozone levels in order to ensure protection of human health, remain in attainment of the federal ozone standard and efficiently direct resources towards actions that address ozone precursors.

The Wichita City of Wichita submitted a [“sign-up letter”](#) to the EPA in August 2012 on behalf of the Wichita MSA. This Path Forward lists actions steps, strategies and programs that the Wichita MSA will work to voluntarily implement to reduce ozone precursors. Creation of the Path Forward included community engagement that helped formulate the list of action steps that will result in reduction of ozone-forming emissions for public health and quality of life. Implementation of the Path Forward action steps will be led by the Air Quality Improvement Task Force, a regional partnership for clean air in South Central Kansas. A list of AQITF stakeholders can be found in Appendix A.

## GEOGRAPHICAL BOUNDARIES

The EPA may designate all or part of the Wichita MSA as a nonattainment area, even if only one monitor in the MSA violates the National Ambient Air Quality Standards (NAAQS). The entire Wichita MSA includes Butler, Harvey, Sedgwick and Sumner Counties. Ozone is monitored at three locations in the Wichita MSA:

1. **Peck** at the Sedgwick and Sumner County line
2. **Wichita Health Department** in central Wichita
3. **Sedgwick** in northwest Sedgwick County



**Figure 1.** Map of the ozone monitor locations in the Wichita MSA; Butler, Harvey, Sedgwick and Sumner Counties.

The four counties of the Wichita MSA are home to 628,242 residents (Table 1). The largest city is Wichita, 382,368 residents, who enjoy overall cost-of-living below the national urban average and grade “A” public education (US Chamber of Commerce). Wichita is known as the “Air Capital of the World” because of the more than 350 aerospace companies and 54,000 manufacturing employees, twice the national average in manufacturing workers per capita.

**Table 1:** 2012 US Census Bureau Population Estimates for the four counties within the Wichita MSA.

<b>2012 Population Estimates from the U.S Census Bureau</b>	
Sedgwick	503,889
Butler	65,827
Harvey	34,852
Sumner	23,674
<b>Wichita MSA</b>	<b>628,242</b>

In the Wichita MSA, 80% of the population lives in Sedgwick County. 22,606 residents travel from Butler, Harvey or Sumner County each day to work in Sedgwick County. These three counties make up 9% of the total Sedgwick County workforce, and contribute to the total number of vehicle miles traveled throughout the Wichita MSA.

## STAKEHOLDER ENGAGEMENT

In order to complete the Ozone Advance Path Forward, stakeholders were asked to provide feedback about which emission reduction activities they would be willing to support and adopt. During the summer of 2013, in focus groups and online, 253 stakeholders participated in the engagement opportunity. Participants were given a list of proposed ozone-forming emission reduction strategies and were asked to prioritize and indicate their willingness to adopt or support each strategy.

Road projects that increased traffic flow and reduced idling times for motor vehicles was voted the “Most Important” action that will decrease ozone-forming emissions, out-ranking the next most popular, Public No Idling Campaigns, by 56%.

52% WERE WILLING TO IMPLEMENT ENERGY EFFICIENT PRACTICES LIKE CAULKING TO SEAL LEAKS, INSTALLING ENERGY EFFICIENT WINDOWS, AUTOMATED THERMOSTATS, ENERGY STAR APPLIANCES, PROPER INSULATION, AND CFLs .  
*VESA Survey, 2011*

The three most popular strategies that participants indicated as important and that they were willing to take action on were:

1. **Public No Idling Campaigns.**
2. **Public Participation in Ozone Alert Day Activities.** (Ozone Alert Day Activities include no mowing, fueling early or late, reduced trips in the car, etc.)
3. **Development or Support of Alternative Fuels Infrastructure.**

Although, not deemed “most important,” some strategies received high marks for willingness to participate.

- Support biking and walking infrastructure in our region.
- Plant native grasses and support natives being planted in public areas for reduced watering and mowing.
- Implement energy efficiency projects at home and at work.
- Implement a School No Idling Campaign.

A detailed report on the Stakeholder Engagement Process can be found in Appendix B of this document.

# Air Quality in the Wichita MSA

## Current Ozone Status

In 2008, in order to protect human health and the environment, the Environmental Protection Agency (EPA) revised the federal ozone standard to 0.075ppm. In spring of 2013, the Wichita area was in compliance, or *in attainment* with the federal standard for ozone. The EPA may designate the Wichita MSA as *nonattainment* if the “design value,” a three year rolling average of the fourth highest daily 8-hour average, at any one of the ozone monitors (see Map 1 for monitor locations) exceeds the 0.075ppm limit during ozone season (April 1 – October 31.)

Table 2 and Figure 2 show design values from 2007 through 2013 at each ozone monitor. The 3-year averages for 2010-2012 and 2011-2013 each exceed the 0.075ppm standard. However, during this time the EPA is reassessing the 8-hour ozone standard to determine if it is adequate to protect human health. While the assessment is in progress no nonattainment designations are being determined.

**Table 2.** Summary of 4<sup>th</sup> Highest 8-Hour Ozone Values (ppm). Highlighted values indicate exceedance of the NAAQS.

Wichita MSA Monitoring Sites	07-09	08-10	09-11	10-12	11-13	Critical Value 2014
Peck	0.070	0.072	0.075	0.077	0.076	0.076
Health Dept.	0.066	0.071	0.074	0.077	0.075	0.077
Sedgwick			0.073	0.077	0.077	0.077

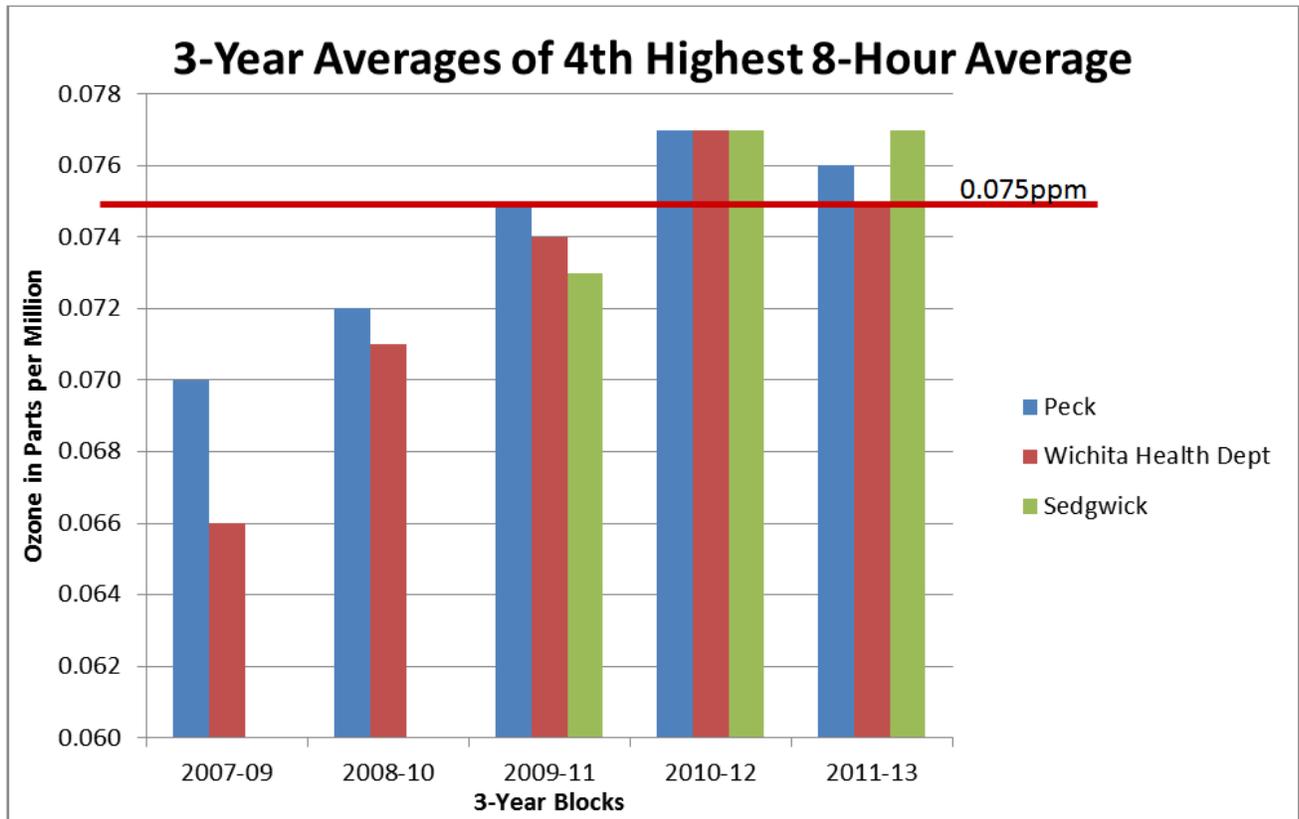


Figure 2. 3-year average of the fourth highest 8-hour ozone reading, in ppm, at each of the three ozone monitors in the Wichita MSA.

South Central Kansas is known for having hot, dry summers. High temperatures and sunlight are the perfect weather conditions for the chemical reaction that forms ozone from NO<sub>x</sub> and VOC emissions. As a result, elevated ozone levels were measured in 2011 and 2012, which increased the 3-year averages in which the measurements are a part. The critical values that, if exceeded in 2014, will push the 3-year average over the 0.075ppm standard are 0.076ppm at Peck and 0.077ppm at the Health Department and Sedgwick.

A nonattainment designation may result in more stringent regulatory requirements, increased fuel costs, loss of federal highway or transit funding, restrictive permitting and mandatory emissions offsetting, all of which reduce economic development opportunities and increase the cost of living in the Wichita MSA.

## Sources of Ozone Precursors

The National Emissions Inventory (NEI) is a comprehensive and detailed estimate of air emissions of both Criteria and Hazardous air pollutants from all air emissions sources. The NEI is prepared every three years by the EPA based primarily upon emission estimates and emission model inputs provided by State, Local and Tribal air agencies for sources in their jurisdictions, and supplemented by data developed by the EPA. The NEI contains much data, however the following will focus on nitrogen oxides (NOx) and volatile organic compound (VOC) emissions; the two main precursors of ozone formation.

NOx and VOC emissions are described according to source categories.

- **Onroad Mobile Sources** include motorized vehicles that are normally operated on public roadways for transportation of passengers or freight. This includes passenger cars, motorcycles, minivans, sport-utility vehicles, light-duty trucks, heavy-duty trucks and buses.
- **Nonroad Mobile Sources** include aircraft, locomotives and other nonroad engines and equipment such as lawn and garden equipment, construction equipment, engines used in recreational activities and portable industrial, commercial and agricultural engines.
- **Nonpoint Sources** include any stationary sources not required to have emission permits. The term refers to smaller and more diffuse sources within a relatively small geographic area.
- **Point Sources** include large, stationary emissions sources that can be located on a map.

1,500 WICHITANS IDENTIFIED  
**MOBILE SOURCE AIR POLLUTION**  
AS THE 4<sup>TH</sup> MOST IMPORTANT  
**ENVIRONMENTAL CONCERN,**  
OUT OF 19 – ONLY TRASH  
DISPOSAL, THE ARKANSAS RIVER  
& GROUNDWATER RANKED  
HIGHER.

*Wichita Initiative to Renew the  
Environment, Public Engagement  
2008*

The majority of NOx emissions in all four Wichita MSA counties come from onroad sources, which are the cars, trucks and motorcycles that drive on the roadways every day for business and personal trips (Figure 2).

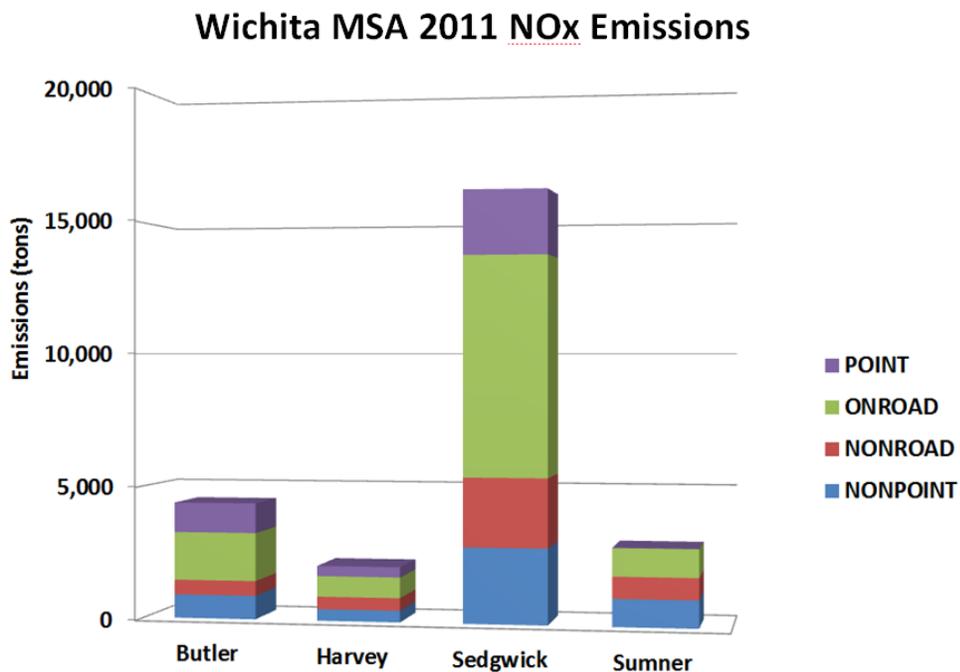


Figure 2. Source: 2011 Kansas Emissions Inventory and Draft NEI Mobile Source Emissions. NOx emissions in tons by county.

The majority of VOC emissions in all four Wichita MSA counties come from stationary nonpoint sources that are not required to file an operation permit with KDHE (Figure 3).

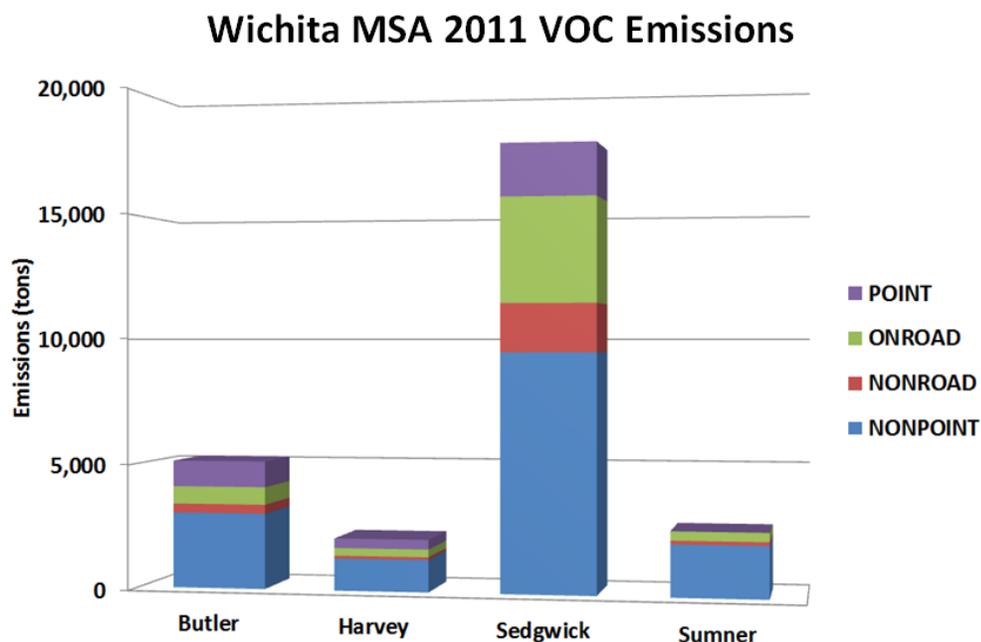


Figure 3. Source: 2011 Kansas Emissions Inventory and Draft NEI Mobile Source Emissions. VOC emissions in tons by county.

## 2014-2015 Voluntary Ozone Action Projects

Project	Impact	Performance Measure	Target Date	Lead
<p><b>Ozone Alert Day Outreach</b> - Education and outreach campaign for Ozone Alert Days throughout the Wichita MSA.</p>	<p>Increased <b>awareness</b> of Ozone Alert Days and participation in the <b>behavior changes</b> that <b>reduce ozone-forming emissions</b>. <b>Expand</b> the program to incorporate all cooperating city and county governments within the MSA to maximize ozone reduction opportunities.</p>	<p>Number of users of the Ozone Alert system</p> <p>Number of acres not mowed on Ozone Alert Days as reported by local governments</p>	<p>2014 &amp; 2015 Ozone Season</p>	<p>City of Wichita Environmental Health (EH), AQITF, other city and county governments</p>
<p><b>Free Fares Week &amp; Free Fares on Ozone Alert Days</b> - Increase use of Wichita Transit with a week of Free Fares, and the Free Fares on Ozone Alert Days. Free Fares provide mass transit incentives to reduce on-road traffic on potentially high ozone days. Travel Trainings will provide knowledge and skills to new riders so that they are able to easily participate in Free Fares opportunities.</p>	<p>47% of ozone forming NOx comes from on-road traffic. Every city bus rider equals one less on-road vehicle, which reduces ozone-forming emissions. The goal is to create <b>new “regular riders”</b> by providing a free opportunity to ride the bus and break down barriers often associated with riding public transportation. <b>Increased number of riders on Ozone Alert Days</b> will also positively impact ozone levels on days that are expected to exceed federal limits.</p>	<p>Number of attendees at Travel Training events</p> <p>Number of Travel Training bus passes used throughout ozone season</p> <p>Number of bus riders during Free Fares Week</p> <p>Number of individuals riding the bus overall</p> <p>Number of bus riders on Free Fares Ozone Alert Days</p>	<p>2014 July-Oct</p> <p>2015 April –Oct (grant pending)</p>	<p>City of Wichita EH, Wichita Transit, AQITF</p>
<p><b>Ozone Modeling –</b> Design and implement a sensitivity model that focuses on emission source modeling that would identify emissions sources, their impacts and potential control measures.</p>	<p>Identify local and transported emissions sources.</p> <p>Effectively reduce emissions and improve air quality at the source.</p>	<p>An effective model of ozone sources.</p> <p>A model that predicts effective control measures.</p>	<p>2015</p>	<p>City of Wichita</p>

Project	Impact	Performance Measure	Target Date	Lead
<b>Wichita Bicycle Master Plan - A</b> planning guide for City projects that make it easier, safer and more convenient to get around on a bicycle. The plan guides the provision of bicycle related infrastructure, policies and programs.	Increased ease and convenience of bike routes will <b>increase the number of bike riders</b> and <b>decrease the number of vehicle users</b> .	Miles of new bikeways (on- and off-street)  Number of riders counted in annual bike count	Ongoing	Wichita-Sedgwick Co WAMPO, City of Wichita EH, Wichita Bicycle & Pedestrian Advisory Board
<b>No Idling Policy –</b> Continue promotion of no idling policy. May include educational presentations (live or via webcast) or contests for participation.	No idling programs <b>reduce vehicle emissions</b> that contribute to ozone formation and negatively affect human health.	Number of cars affected by no idling policies.  Number of no idling presentations given.  Number of calls to report City vehicles that are idling.	Ongoing	All Departments, EH project lead
<b>Clean Air Car Clinics –</b> Personal vehicle emissions and gas cap testing. Information provided on car emission performance and air quality.	Increased public <b>awareness</b> of mobile source impacts on air quality and Ozone Alert Day information.  Increased public awareness of vehicle condition and potential fuel savings if problems are remedied.  <b>Decrease in ozone-forming emissions</b> due to car condition improvement.	Number of cars and gas caps checked  Number of emission and gas cap failures	April-River Trash Round Up  June – Beachcraft Haz Waste Drop-Off Event  Others as requested	City of Wichita EH, AQITF
<b>Diesel Fleet Improvements –</b> Partner with KDHE Bureau of Air and the Kansas Clean Diesel Program. Implement strategic diesel emission reduction projects using EPA’s National Clean Diesel funding as available.	The Clean Diesel Program <b>reduces capital costs</b> for fleet improvements and <b>reduces fuel use</b> ( <a href="#">Diesel Emission Quantifier</a> ).	Number of Clean Diesel Program projects  Tons of NOx and VOCs saved due to new equipment or technology	Ongoing	CMF

Project	Impact	Performance Measure	Target Date	Lead
<p><b>Vanpool Plan Study and Pilot Project-</b> Assess the feasibility, cost effectiveness and potential participation for a regional employer vanpool program for Wichita Transit. Implement small pilot projects to test the waters.</p>	<p>Vanpooling can <b>reduce the number of cars</b> on the road by combining employees who live near each other and drive to the same employer for work each day. Vanpooling reduces NOx and VOC emissions due to fewer vehicles on the road.</p> <p>The Vanpool Plan Study will <b>determine the willingness and feasibility</b> of a employer centered vanpool program in the Wichita area.</p>	<p>Study Results</p> <p>Number of businesses willing to implement vanpooling</p> <p>Number of employees willing to participate in vanpooling</p>	<p>2014</p>	<p>Wichita Transit, EH, WAMPO, Local Employers</p>
<p><b>Small- to Medium-Sized Business VOC Reduction Education Project</b> - The Air Emission Reduction Opportunity (AERO) program started by the Kansas Small Business Environmental Assistance Program (SBEAP), promotes VOC reduction strategies to area small and medium-sized businesses that use solvents and coating in their process. SBEAP will not host a workshop in 2015, but the COW will provide a workshop or educational effort for this group.</p>	<p><b>Increased skills</b> of employees who do painting and coating at small to medium sized businesses.</p> <p><b>Reduced solvent use.</b></p> <p>Changes in process or technology at businesses that do painting and coating.</p>	<p>Number of AERO program participants</p> <p>Number of those trained in the virtual paint booth</p> <p>Gallons of solvent saved</p>	<p>Ongoing</p>	<p>EH, AQITF, SBEAP</p>

Project	Impact	Performance Measure	Target Date	Lead
<p><b>Open Burn Education and Restrictions</b> - Provide information and education regarding regulations and air quality Best Management Practices for open burning.</p>	<p>Currently, the City of Wichita Air Quality Program provides State of Kansas Open Burn Approvals for Sedgwick County. <b>Education and information</b> is provided to individuals or commercial businesses during burn site inspections in order to increase fire safety and decrease air pollution, which includes ozone forming emissions.</p> <p>Non-agricultural open burns are prohibited in April when agriculture burns are prevalent in order to <b>decrease ozone precursors</b>. Ozone Alert Days are also considered no burn days.</p>	<p>Number of open burn applications approved</p> <p>Number of burn sites inspected</p> <p>Number of burning violations</p>	<p>Ongoing</p>	<p>EH, KS Smoke Management</p>
<p><b>Workplace Partnership Program</b> - Increased adoption of ozone best practices by employees through workplace education and incentive programs.</p>	<p>As a large employer, the City of Wichita will participate in the Workplace Partnership Program to engage employees to make <b>behavior changes</b> at work and at home that improve air quality.</p>	<p>Number of employee participants in the program.</p> <p>Number and type of actions taken by participants.</p>	<p>2015</p>	<p>All COW Staff</p>
<p><b>Model Contracts for Public Projects</b> – Create and adopt contracts that reduce air quality impacts with low emissions specifications for contracts, including landscape services. Use developed contracts as models for other agencies and businesses.</p>	<p>A major source of ozone forming emissions is nonroad engines and equipment such as lawn and garden equipment, construction equipment, engines used in recreational activities and portable industrial, commercial and agricultural engines. Implementing contract requirements that focus on emissions performance specifications for projects would <b>reduce air quality impacts of nonroad work</b>.</p>	<p>Contract specifications.</p> <p>Number of contracts that include air quality requirements.</p> <p>Number of other adopting organizations</p>	<p>2015</p>	<p>AQITF, COW, Subcommittees</p>

Project	Impact	Performance Measure	Target Date	Lead
	<p>Model contracts could include specifications such as: emissions limits, equipment &amp; vehicle performance requirements, a points system that rewards clean diesel equipment &amp; vehicles (which could include alternative fuel options) while remaining consistent with the requirements of best-value contracting.</p> <p>Model landscape services guidelines will <b>reduce air quality impacts of landscaping services</b>. The model would include best practices such as age or type of equipment (lawnmowers, leaf blowers, etc.), limiting usage times, no mowing on Ozone Alert days, and preferred landscape plans that include low water use plants.</p>			
<p><b>Wichita Pedestrian Master Plan</b> - The Wichita Pedestrian Master Plan guides City projects to make it easier, safer and more convenient for pedestrians to get around on foot.</p>	<p>Increased walkability will <b>increase the number of pedestrians</b> that choose to walk instead of driving a car to work or on errands.</p>	<p>Miles of new walkways (on- and off-street)</p> <p>Number of pedestrian friendly infrastructure improvements</p> <p>Number of pedestrians counted during annual count</p>	<p>2015</p>	<p>Wichita-, Sedgwick County Metropolitan Area Planning Dept.</p>