BE AIR AWARE

SEDGWICK • BUTLER • HARVEY • SUMNER

Wichita Metropolitan Statistical Area

Ozone Advance Program

2018 Path Forward Plan

December 2019

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Executive Summary

The City of Wichita acts as the representational body for the Wichita Metropolitan Statistical Area (MSA) made up of four counties: Sedgwick, Butler, Harvey and Sumner and submits the yearly Ozone Advance-Path Forward update report to the EPA and the public on the local actions being taken to reduce ozone forming emissions. The Path Forward is a living document, meant to result in ozone reductions while maintaining public awareness of air quality a priority while continuing to meet the needs of health, the environment and the economy.

In 2018, the Air Quality team at the City of Wichita worked tirelessly to promote air quality friendly behaviors not only to the public but also within city staff. Regionally, the City has promoted that local governments and businesses in the region submit their own Ozone Action Plans, which list projects, activities, or programs that the business, agency or organization is currently doing or intends to do decrease ozone-forming emissions.

This report includes efforts by the City of Wichita, local stakeholders' private and public entities and other key players for the City.

Introduction

As participants in the EPA Ozone Advance Program, the City of Wichita submits annual updates of measures and programs in their Path Forward. These documents intend to describe the measures and/or programs that South Central Kansas is taking to reduce ozone-forming emissions.

1.1 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. The ozone standard is designed to protect the most sensitive groups in our population.

Wichita MSA residents most susceptible to health effects of high ozone:

- Children (<18): 168,315 people (27% of the population)
- Seniors (65+): 77,109 people (12% of the population)
- Adults (18-64) with asthma: 52,772 (8.4% of the population)
- 298,196 people in the Wichita MSA (47% of the total population) are vulnerable to elevated ozone levels

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.

NOx + VOCs + Heat + Sunlight = Ozone

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 City of Wichita submitted a "sign-up letter" to the EPA in August 2012 on behalf of the Wichita MSA. This Path Forward lists voluntary actions, steps, strategies and programs that the Wichita MSA will work to implement in order 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.

2. Wichita MSA Air Quality

2.1 Current Ozone Status

In 2015, the Environmental Protection Agency (EPA) revised the federal ozone standard to 0.070 parts per million (ppm). As of 2018, the Wichita area is in compliance, or in attainment with the federal standard for ozone with a 3-year rolling average of 0.063ppm. 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 (located in south in Peck, Downtown Wichita north in Sedgwick) exceeds the 0.070ppm limit during ozone season (March 1 – October 31.)

Monitoring Sites	11-13	12-14	13-15	14-16	15-17	16-18	17-19
NAAQS Standard	75	75	75	70	70	70	70
Peck	76	73	67	64	63	63	63
Wichita Health Department	75	73	67	64	62	63	63
Sedgwick	77	72	67	64	63	65	63

Table 1. Summary of fourth highest 8-hour Ozone Values average (PPM). Highlighted values indicate an exceedance of the National Ambient Air Quality Standards for Ozone (NAAQS).

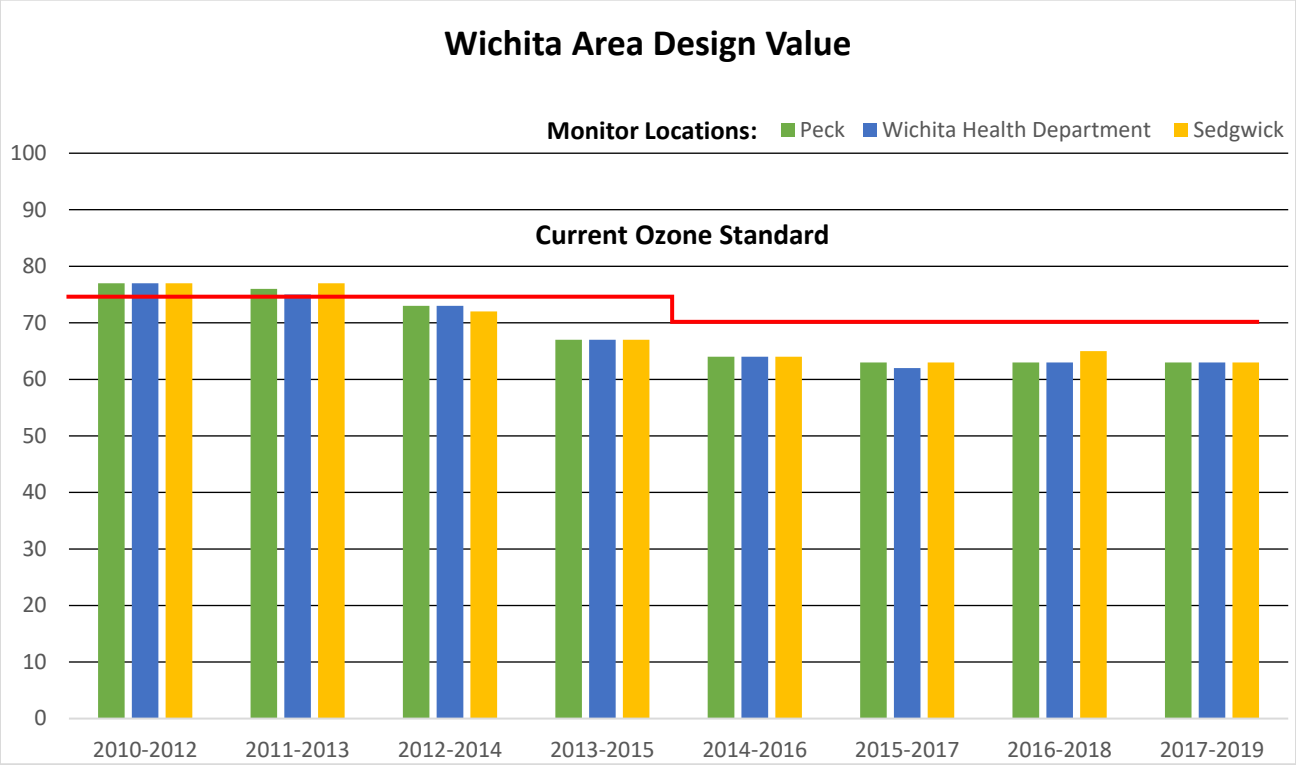

Figure 1. 3-year average of the fourth highest 8-hour ozone reading, in ppm, at each of the three ozone monitors in the Wichita MSA.

The Wichita MSA is located in the South Central region of Kansas. Hot, dry summers are the norm and create the perfect weather conditions for NOx and VOC emissions to reach and create ozone. As a result, elevated ozone levels were measured in 2011 and 2012, increasing the 3-year average during that time. In 2014 and 2015, a combination of community efforts, cooler temperatures and increased rainfall dramatically decreased ozone levels, lowering the 3-year average to below the newly revised National Ambient Air Quality Standard of 0.070 parts per million.

Currently, the Wichita area complies with the National Ambient Air Quality Standards for Ozone (NAAQS) with a 3-year average of 0.063ppm. However, the city acknowledges that work must continue as standards will continue to be revised and likely lowered.

A nonattainment designation may result in stringent regulatory requirements, increased fuel costs, loss of federal highway or transit funding, restrictive permitting and mandatory emissions offsetting. This would not only affect local industry but all resident of the Wichita MSA.

2.2 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.

- **On-road 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.
- **Non-road Mobile Sources** include aircraft, locomotives and other non-road 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.

Wichita MSA NOx and VOC emissions:

- Ozone forms through reactions between NOX and VOC emissions.
    - Local NOX emissions: about 70 tons per day.
    - Local VOC emissions: about 75 tons per day.

Sources of NOX and VOC emissions are on-road, non-road, point, and area sources.

- On-road mobile sources (cars, buses, trucks) account for
    - 47% of NOX
    - 20% of VOC
- Non-road mobile sources (construction equipment, farm equipment, trains and airplanes):
    - 17% of NOX
    - 9% of VOC
- Point (large stationary/permitted) sources:
    - 15% of NOX
    - 13% of VOC.
- Area (small stationary)
    - 20% of NO_x
    - 58% of VOC.

3. Ozone Advance Projects

In the Wichita MSA there are a number of programs and activities currently implemented to address ozone-forming emissions and air quality. Some of these are led by private entities, businesses, non-profits or cities while the City of Wichita's Be Air Aware Program leads others. Some of these projects are then reported to the City of Wichita and are included in the Ozone Advance data collection.

3.1- Public Outreach and Education

Strategy	Impact	Performance Measure	Target Date	Lead Agency	Current Status and Outcome
Be Air Aware Program- Public outreach and education program	Increased air quality education and awareness to promote ozone emission reduction strategies.	•Number of website "hits" and pledges submitted throughout campaign and or year. • Number of people reached throughout events such as presentations at educational facilities or local stakeholders.	Ongoing	•City of Wichita- Department of Public Works and Utilities- Strategic Services Division	•Robust marketing strategies including radio, google ads, transit bus with Be Air Aware wrap. •Launch of "Beeatrice" the City of Wichita's air quality mascot. • New website (www.BeAirAwareKS.org) with useful information regarding ozone awareness, air quality, consequences of bad air quality, and tips to reduce ozone-causing emissions. •Website includes a "take the pledge" section where members of the community and stakeholders can take the pledge to "be air aware", and reduce their ozone causing emissions. •Since the launch of BeAirAwareks.org on May 1st, 2018 5,638 users visited the site, with about 1% of visitors taking the pledge.

Strategy	Impact	Performance Measure	Target Date	Lead Agency	Current Status and Outcome
					• "take the pledge" is broken down into seven main categories. •The top three responses include •21% of pledged to conserve energy at home and work •18% pledged to avoid drive-troughs • 17% pledge to reduce mobile idling
April Burn Ban – in 2010 Kansas Administrative regulation 28-19-645a, created open burning regulations including the April Burn Ban in support of the State of Kansas Flint Hills smoke Management Plan.	Reduction in ozone caused by field burning	Number of counties and denied fire permits	Ongoing / yearly	•State of Kansas •Kansas Department of Health and the Environment (KDHE) •In the Wichita Metropolitan Area the following counties: ➢ Sedgwick ➢ Butler ➢ Cowley	The ban ran from April 1st to the 31st and will be re-instated yearly.

3.2- 2018 Partnerships

Organization	Impact	Performance Measure	Target Date	Lead Agency	Current Status and Outcome
JumpStart – Be Air Aware partnership	Higher use of high ethanol fuels on internal combustion vehicles lessens ozone-causing emissions	Number of people utilizing high ethanol fuel over regular, mid or high-grade gasoline.	Ongoing	• City of Wichita Department of Public Works and Utilities- Strategic Services and Division • JumpStart Gas Stores	JumpStart has been a continuous supporter of the Be Air Aware program by displaying advertisements with tips and facts at every store, and providing discounts on high ethanol fuel during ozone alert days.
Wichita State University Non-Point Source Research	Better targeted Ozone Action Plans	Ozone Action Plans Received	Ongoing	• City of Wichita Department of Public Works and Utilities- Strategic Services and Division • Wichita State University	By utilizing Wichita State's research the City of Wichita will be better able to target non-point sources for Ozone Action Plans.

3.3 Energy

Strategy	Impact	Performance Measure	Target Date	Lead Agency	Current Status and Outcome
Street Light Upgrade for the Wichita Metropolitan Area- Streetlight upgrade to LED lighting around the City of Wichita and the metropolitan area.	Better visibility, lower energy consumptions, increased efficiency and reliability, lower maintenance costs	-Number of streetlights replaced or fixed along with estimated energy savings.	Ongoing	• Everygy (at the time known as Westar)	On March 2018, Westar Energy replaced or upgraded streetlights around Intrust Bank Arena to full LED. This came as part of a 6-month project to replace all streetlights. Once Wichita's project is complete, the project is set to begin in the surrounding areas.
Renewable Direct Program- in July 2018, Westar announced a new program which was designed to allow large customers the opportunity	Reduce dependency on non-renewable energy sources by enrolling businesses to receive electricity from a wind farm.	Number of businesses in the Wichita Metropolitan Area enrolled in the program.	Ongoing	• Evergy (at the time known as Westar) • Private Businesses	• The Kansas Corporation Commission approved a 300-acre wind farm in Nemaha County. The farm is set to begin operations by the end of 2020. • Fourteen Kansas organizations enrolled in the program including the following in the Wichita Metropolitan Statistical Area: Ardent Mills (Newton & Wichita), Cargill Cummings (Wichita), Cox Communications (multiple Kansas locations), Sedgwick

					County Zoo (Wichita), and Veteran's Affairs Medical Centers (Wichita), among others. • On August 2018, Westar (Evergy) wind farms reached a milestone of 25 million megawatt hours of wind electricity, which according to Westar is enough electricity to power Wichita for nine years. • Over the last 10 years Westar (Evergy) increased its' energy generation by renewables by more than 1,250%, and has reduced carbon dioxide emission by nearly 40% since 2005.

3.4 Transportation

Strategy	Impact	Performance Measure	Target Date	Lead Agency	Current Status and Outcome
Connecting Communities- The Wichita Area Feasibility Study is a regional evaluation for transit service demand and support for the cities of Andover, Derby, Haysville and Maize.	The study includes an overview of three main criteria. Existing Conditions: to help determine current demand for transit in each surrounding community. Community Engagement: Emphasizing the importance of public feedback on service concepts through various outreach efforts. Implementation: Finally, the reports recommends transit solutions the cities of Andover, Debry, Haysville and Maize	Increased number of surrounding areas community members reached by public transportation enhancement strategies.	**Ongoing-Study ended October 2018**	• City of Andover, • City of Derby, • City of Haysville, • City of Maize • Wichita Transit • Wichita Area Metropolitan Planning Organization (WAMPO).	• The report yielded three recommendations: Short term, mid-term and long term. • Short term: the report found that the City of Derby demonstrates sufficient demand to create a fixed-route transit service. The City of Haysville showed the strongest interest in the creation of the fixed-route out of all four cities. Based on these findings the report recommended a partnership between Wichita Transit, the City of Derby, and the City of Haysville to create an intercity route connecting these three communities. The route is set to accommodate multiple trip types (employment, education, medical, shopping, recreation among others. This route will also allow for the re-installment

Strategy	Impact	Performance Measure	Target Date	Lead Agency	Current Status and Outcome
					of transit/bus service to the Oaklawn neighborhood. • Mid-term recommendation: While the analysis and community engagements phases didn't indicate significant interest in the create of fixed-route for the City of Andover, looking forward to population growth and increased reverse commute it may prompt further investigation and consideration for a set transit service. • Long-term recommendations: The City of Maize has insufficient total population and employment to justify or support a fixed-route transit service. Transit demand should be revised in at least five years.
Wichita Transit Ridership	Increase in ridership usually correlates with a decrease in driving lowering	Number of riders	**Ongoing**	• Wichita Transit	• Wichita transit saw an increase in ridership throughout most of the year besides the month of February. At the end

Strategy	Impact	Performance Measure	Target Date	Lead Agency	Current Status and Outcome
	ozone-causing emissions.				of the year, Wichita Transit saw an increase of 13% ridership, going from 1,262,552 riders in 2017 to 1,420,610 in 2018. • Q-line a free ridership system in downtown Wichita saw an overall ridership increase of 58% from 2017 to 2018 reducing emissions and traffic in the Wichita Downtown area the College Hill neighborhood and the Delano District.

Conclusion

The Wichita Metropolitan Statistical Area (MSA) has been in compliance with all EPA standards regarding air quality since 1989. However, understanding the impact that bad air quality could have on public health and the local economy the City of Wichita has taken a proactive initiative to address air quality concerns and joined the Ozone Advance program.

This initiative includes inner City actions such as the City's no-idling policy (A.R. 9.1), an education and outreach program "Be Air Aware" and municipal partnerships with cities in the surrounding counties.

Looking forward the City of Wichita will continue to be a regional leader and work with surrounding communities to create awareness and incite actions to reduce ozone-forming emissions creating a safe and clean community where people want to live and grow.