Path Forward

2018 update

December 2018

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INTRODUCTION

Four States Clean Air Alliance

Air quality issues, while for years considered a problem for large metropolitan areas, have more recently been identified as a potential issue in mid-sized or smaller communities such as the Joplin Metro area. This is especially true for the air quality parameter of ozone, as federal ozone regulations have become more exacting in recent years as knowledge of the adverse health and environmental effects of ground-level ozone are recognized. With this increased regulation, acceptable ground-level ozone levels have been reduced to the point the Joplin Metro area could be considered in violation of these standards. To proactively address this issue before it occurs, the Four States Clean Air Alliance (FSCAA) was formed through a joint agreement of the Joplin Area Transportation Study Organization (JATSO) and the Environmental Task Force of Jasper and Newton Counties (ETF).

The FSCAA continues participation in EPA's Advance Program, focusing on ground-level ozone at this time. While the Path Forward deals solely with ground-level ozone, it may be amended in the future to address other air quality parameters (e.g., particulate matter) as necessary. The FSCAA Board voted to join EPA's Advance Program designed to assist communities striving to stay in attainment with current National Ambient Air Quality Standards (NAAQS), after the initial Clean Air Action Plan (CAAP) finalization and implementation. This Path Forward document was developed to guide both FSCAA involvement with the Advance Program as well as ongoing efforts to raise awareness of ground-level ozone concerns in the Four States region. The Governing Board of FSCAA is charged with the primary responsibility for development and implementation of the Path Forward document. The JATSO has final approval of all aspects of this document before it may be considered final.

The area encompassed by FSCAA efforts currently consists of Jasper and Newton Counties in southwest Missouri, Cherokee County in southeast Kansas and the Inter-Tribal Council of North Eastern Oklahoma (9 Tribes) [see Appendix A]. Entities in these geographical areas are more likely to be contributors to the formation of ground-level ozone in the Four States region.

Downtown Joplin

FSCAA goals include:

- Monitor results of designated air quality monitoring stations,
- Increase awareness of local public, governments, and businesses regarding air quality issues,
- Inform local public, governments, and businesses on environmental and health consequences of poor air quality,
- Educate community members about existing and proposed legislation concerning air quality affecting FSCAA area, and
- Promote voluntary participation in implementation of Path Forward strategies.

National Ambient Air Quality Standards

The Clean Air Act, which was last amended in 1990, requires the Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for pollutants considered harmful to public health and the environment. The six principal pollutants EPA has set NAAQS for include:

- Ozone (O3)
- Particulate Matter (PM)
- Nitrogen Dioxide (NOx)
- Carbon Monoxide (CO)
- Lead (Pb)
- Sulfur Dioxide (SO2)

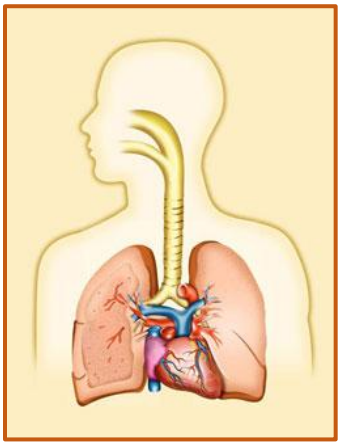
For more information on these pollutants, please visit https://www.epa.gov/criteria-air-pollutants/naaqs-table.

Ground-Level Ozone

Ozone is a gas composed of three oxygen atoms. While ozone can be found both in the Earth's upper atmosphere and at ground-level, the location where it is found determines if ozone is considered beneficial or harmful to humans and the environment. When it is found in the upper atmosphere, ozone is beneficial by protecting us from the sun's ultraviolet rays. However, when this same gas occurs at ground-level, it is harmful and causes significant negative effects on human health and the environment.

Ground-level ozone can cause the following health effects even at low concentrations:

- Aggravate asthma or other respiratory illnesses
- Irritate respiratory systems causing coughing and throat irritation
- Inflame and damage cells that line the lungs
- Reduce lung capacity, making it difficult to take deep breaths
- Increase susceptibility to respiratory illnesses
- Increase hospitalizations by aggravating respiratory illnesses



Ozone is a powerful oxidant that can irritate the airways.
Source: https://www.epa.gov/ozone-pollution/health-effects-ozone-pollution

High levels of ground-level ozone can damage plants and other vegetation by making them more susceptible to disease, harsh weather, insects and other pollution. Ground-level ozone is formed when volatile organic compounds (VOCs) and nitrogen oxides (NOx) react in the atmosphere with sunlight and heat. Since ozone requires the combination of sunlight and heat to form, it is mainly of concern during "Ozone Season" from March through November. Accordingly, FSCAA concentrates the efforts of various education and awareness campaigns immediately before and throughout this period.

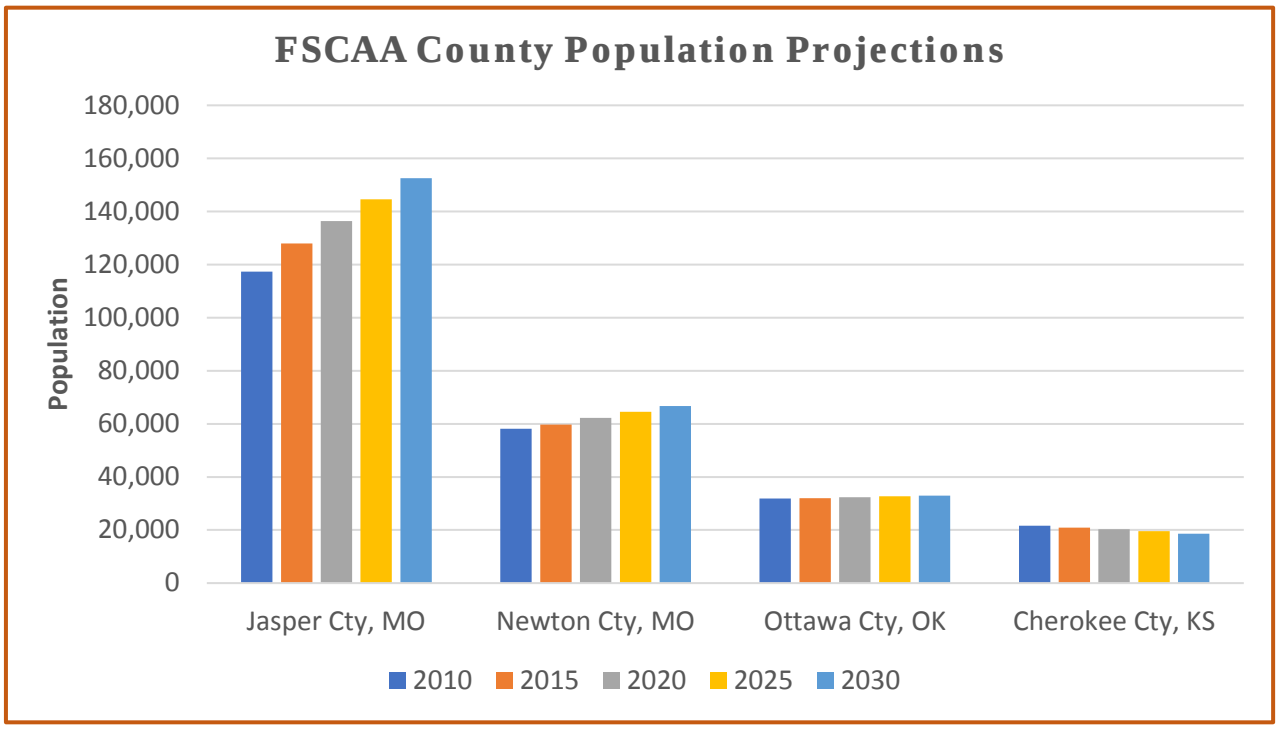
FSCAA Path Forward

The FSCAA area includes Jasper and Newton Counties in southwest Missouri, Cherokee County in southeast Kansas, and the Inter-Tribal Council of North Eastern Oklahoma (9 Tribes) (ITC) in Ottawa County, Oklahoma. This region was chosen based on existing planning boundaries and the potential sources that affect this area, while also taking into consideration the location of the air quality monitors for the region. There are two ozone monitors in the region, one at Alba in Jasper County, MO operated by MoDNR, and another monitor near Miami in Ottawa County, OK, which is operated by the Quapaw Nation of Indians (who also represents ITC on the governing board of FSCAA). [see Appendix A]

Air monitoring stations in Alba, MO (left) and Miami, OK (right)

The majority of the strategies in this Path Forward document are focused towards the FSCAA area. In future developments, it is planned to disseminate additional educational campaign material to other counties outside of this FSCAA area. FSCAA seeks to implement proactive and feasible voluntary strategies to protect public health and the environment while sustaining growth in the region. Some counties in the Four States region are projected to experience population growth in coming years. The fastest growing county, Jasper County, MO, is expected to grow by 30 percent between 2010 and 2030.

Additional areas to the south and to the west of the FSCAA area are considered vital to ozone air quality improvement efforts in the Joplin Metro area due to prevailing wind direction in the spring and summer months. These areas include McDonald County in southwest Missouri and Benton County in northwest Arkansas. These counties are upwind from the FSCAA area and are potentially contributors to FSCAA area's air quality through regional transport. Benton County, AR is also expected to grow significantly, by 56 percent, between 2010 and 2030.



Sources: Wichita State University – Center for Economic Development & Business Research; Missouri Office of Administration – Budget & Planning; Oklahoma Department of Commerce

ANNUAL UPDATE

Changes Made to Path Forward Document

The Path Forward document is updated annually. Differences between the 2017 and the 2018 Path Forward include:

- Updated design value graph in the Emissions Section;
- Addition of Solar Energy and Wind Farm as Long-Term Strategies under Energy Conservation & Utility;
- Use of AVERT to estimate the amount of emission savings in Energy Conservation & Utility; and
- Current list of strategies and accomplishments for the 2018 Ozone Season for each of the four strategy categories.

EMISSIONS DATA

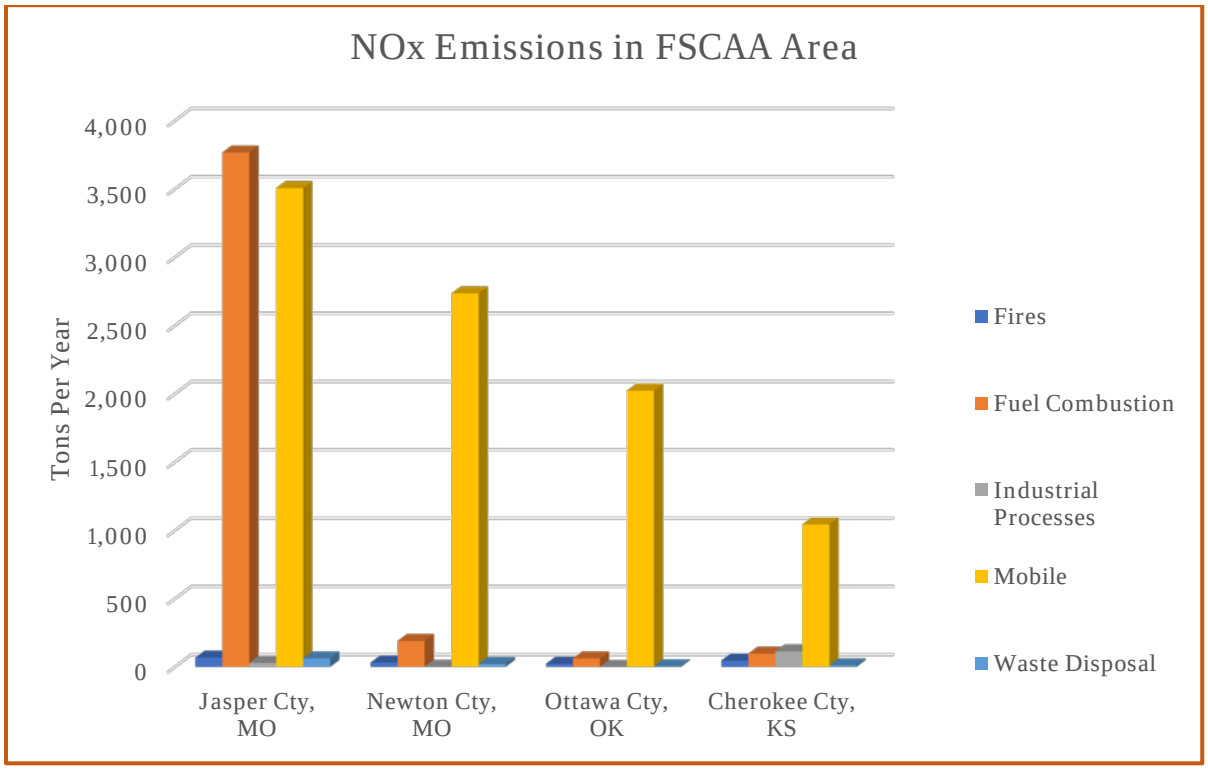
Ozone-Forming Emissions within the Four States Area

Emissions of NOx and VOCs that can contribute to the formation of ground-level ozone in the Four States area are generated from various sources. The four major categories of emission sources are: point, non-point, on-road, and non-road. Some examples of specific sources within these categories include fires, motor vehicles, gasoline vapors, chemical solvents, industrial processes, power plants, gas-powered off-road equipment and many more.

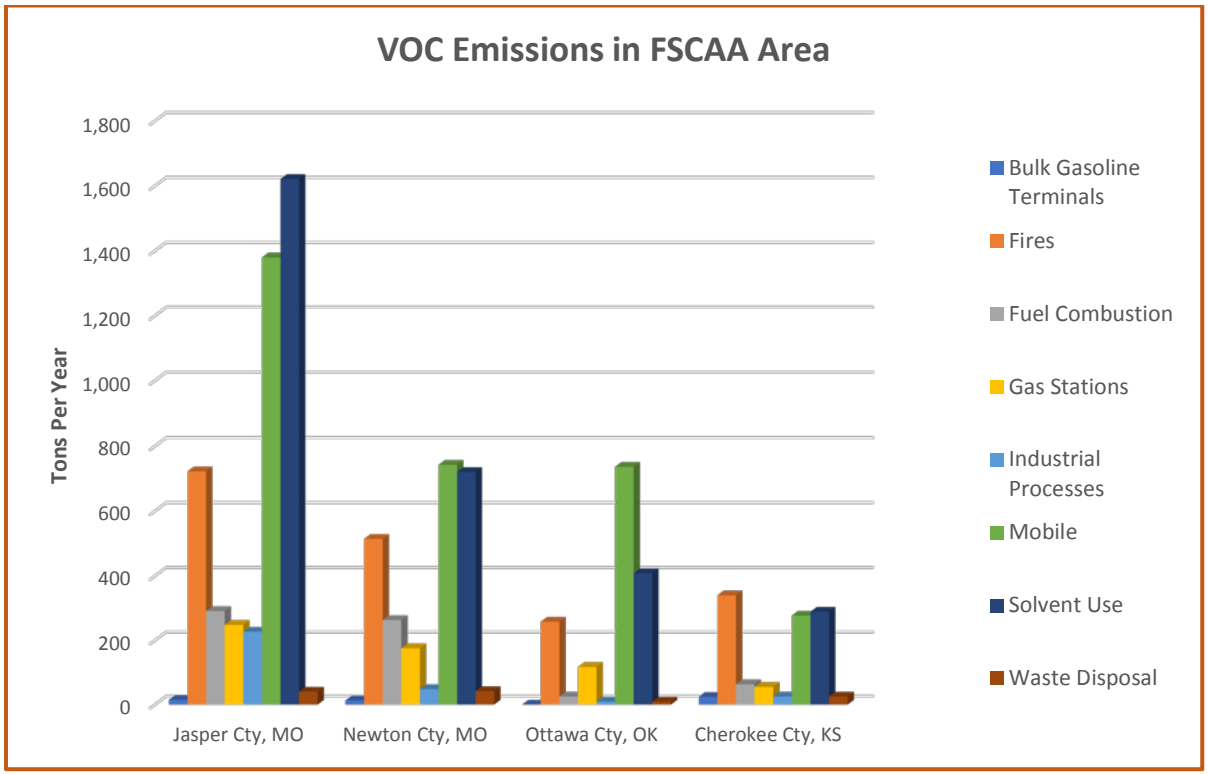
The graphs on the following pages 6 and 7 show the amount of Nitrous Oxides (NOx) and Volatile Organic Compounds (VOC) emissions released from man-made sources by county and by source. As can be seen in these graphs, fuel combustion and mobile sources account for most of the NOx emissions in the area, while mobile and solvent use account for most of the VOC emissions.

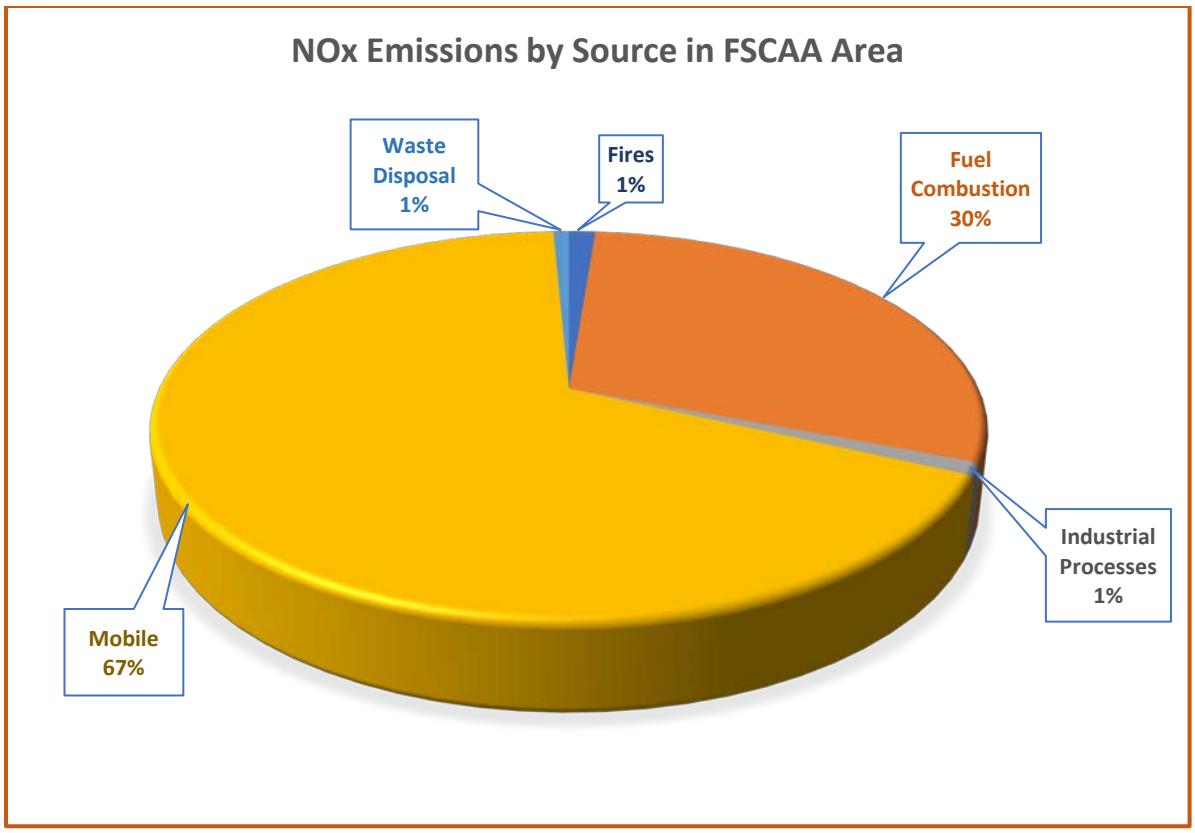
Ozone-Forming Emissions outside of the Four States Area

The Four States area's location at the intersection of four States, and downwind of rapid urban development in one of those States, places the Four States area in the path of potential exposure to air pollutants transported from upwind sources. FSCAA will continue to evaluate and consider the possible contribution of such air pollutants that could be introduced into the Four States area via regional transport in this manner.

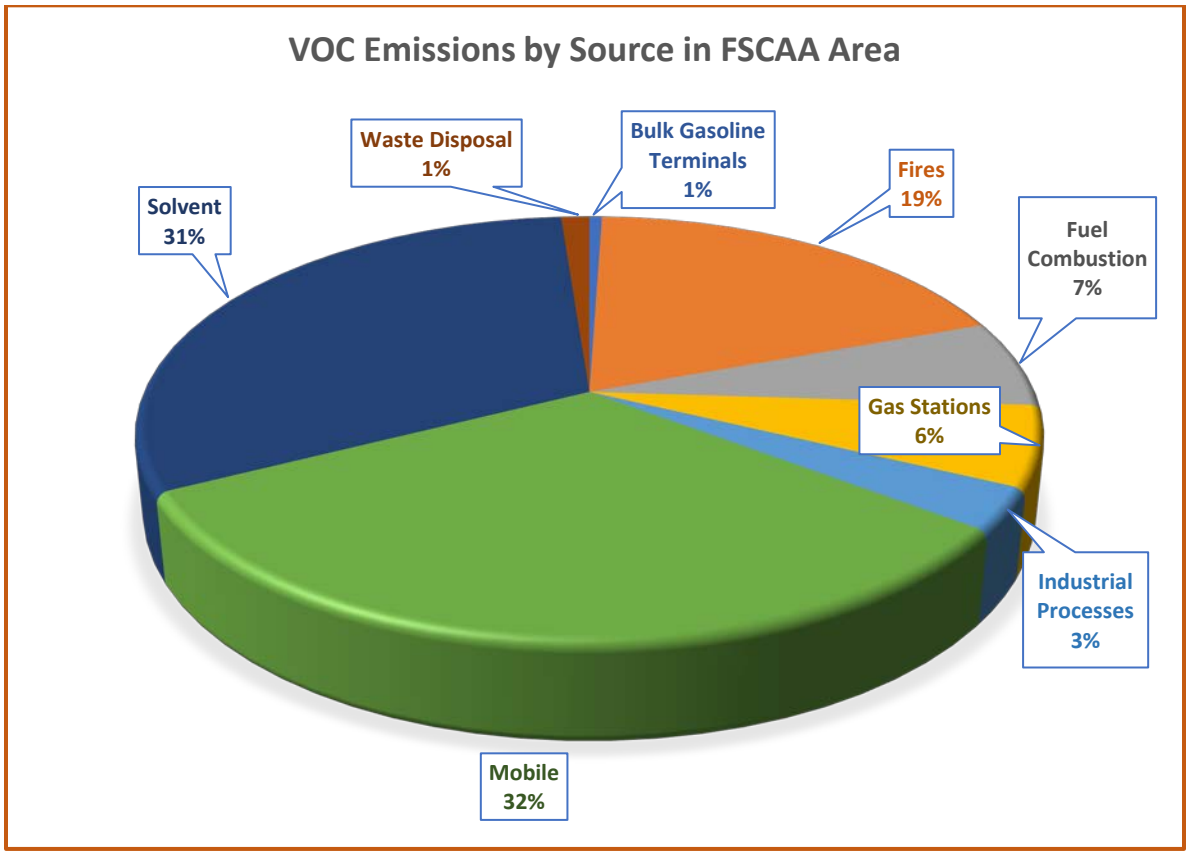


Source: 2014 EPA National Emissions Inventory (NEI)



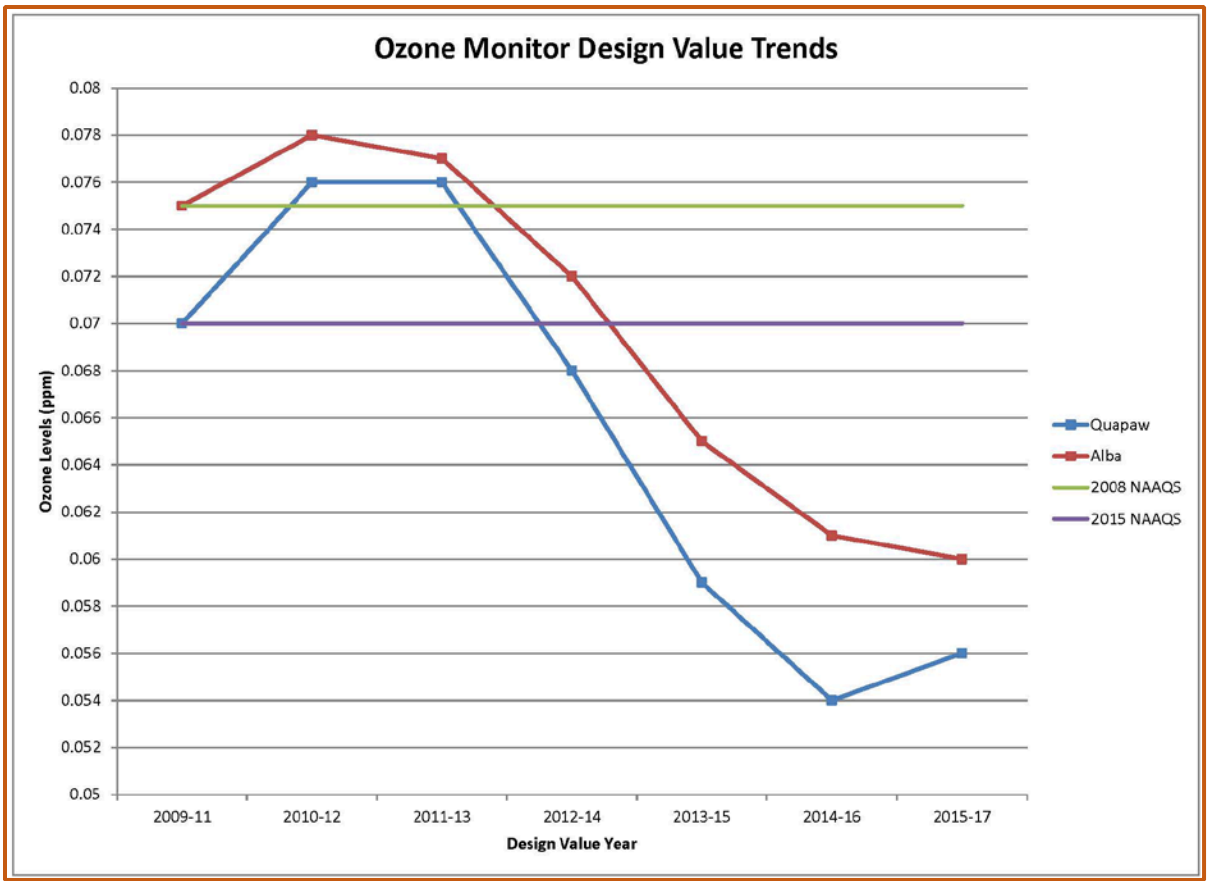


Source: 2014 EPA National Emissions Inventory (NEI)



Ozone Design Values

The following chart shows the design values for ozone monitoring conducted in Jasper County, MO and Ottawa County, OK since 2009. The ozone design value is the annual fourth-highest daily maximum 8-hour ozone concentration, averaged over 3 years. A violation occurs if an area's ozone design value exceeds the 8-hour ambient air quality standard established by the EPA. In October 2015, EPA lowered the 8-hour standard from 0.075 parts per million (75 ppb), shown as the green line in the graph below, to 0.070 parts per million (70 ppb), shown as the purple line in the graph below.



While a decreasing trend was evident for both locations since approximately the 2010-2012 design value period, an increase at the Ottawa County ozone monitor location occurred during the 2015-2017 design value period (0.056 ppm, up from 0.054 ppm for 2014-2016 design value period).

EMISSION REDUCTION STRATEGIES

Reducing ozone levels in the Joplin Metro area will be difficult due to many sources of ozone precursors that are not located in the area. Ozone generation is dominated by up-wind stationary sources and vehicular traffic on the adjacent throughways. The strategies identified in this document can be implemented by organizations and individuals in the region to reduce air pollution. The unavailability of photochemical modeling data prevents the region from quantifying the impacts of various strategies.

Many of these strategies have been proven effective in other communities, providing numerous benefits including:

- Protection of public health and environment
- Prevention of state and federal regulations following a non-attainment designation
- Reducing air pollutants from contaminating surface water
- Improving community health by encouraging bicycling and walking
- Conserving natural resources
- Reducing dependency on foreign oil
- Fiscal savings for individuals, businesses, local governments, and other organizations

The purpose of this Path Forward document is to implement specific viable voluntary strategies that can reduce the formation of ground-level ozone. There must be strong support and participation by local governments, industries, organizations, and the public for the program to be successful. Four target categories have been identified as specific areas in which to focus to reduce ground-level ozone.

ADMINISTRATIVE STRATEGIES

Description: The following duties and responsibilities to be conducted by the FSCAA board will allow the FSCAA to continue its work of raising awareness and reduction of ground-level ozone in the Four States region.

Short Term Strategies – Administrative

Ozone Advance Program

FSCAA will continue to participate in EPA's Ozone Advance Program including the annual update of this Path Forward document to provide direction for FSCAA efforts to increase awareness and promote reduction strategies of ground-level ozone in this region.

Funding

FSCAA continues to seek additional funding sources, such as local foundations, grants, or other avenues to provide financial support. FSCAA will continue to utilize the limited funds in the Joplin Health Department annual budget for the purchase of promotional items. Also, FSCAA will request another grant from the ETF in 2019 and beyond as monies are available.

Staffing

The City of Joplin Health Department has agreed to allow FSCAA to utilize personnel hired for the summer to perform work related to FSCAA's general education strategy. In addition to this summer hire, FSCAA seeks a long-term intern or volunteer, with experience in scientific, technical, marketing, or public relations, to assist with general campaign efforts. One avenue to pursue this will be to post an internment announcement on the MSSU Career Services website. The Board members and City of Joplin staff, including Health Department staff, carry out various FSCAA tasks currently.

Outreach

FSCAA re-evaluates the general education strategy before and during the Ozone Season to develop methods of increasing awareness levels in the community. FSCAA will attend public outreach events throughout the Ozone Season to continue distributing the campaign message. Funding from ETF or other sources may provide FSCAA the ability to advertise on local media outlets.

Long Term Strategies – Administrative

These tasks will be evaluated for completion as funding and other resources become available.

Outreach

Awareness efforts continue to reach into the local communities of Jasper and Newton Counties in southwest Missouri, Cherokee County in southeast Kansas, and ITC jurisdiction in northeast Oklahoma. The established media campaign is aired on local broadcast TV, cable and radio throughout the Four States region. As warranted, additional efforts will be made to reach other communities that could potentially impact the Joplin Metro region, such as counties in northwest Arkansas and northeast Oklahoma.

Accomplishments – Administrative

- Spring 2018 – Utilized a City of Joplin intern to make regular posts on social media, including Facebook, Twitter and Instagram
- Spring 2018 – FSCAA secured funding from ETF to promote FSCAA's education messaging. More details on how this funding was utilized can be found in the Education Strategy Accomplishments section.
- Summer 2018 - Utilized the City of Joplin Health Department summer personnel to add content to website and make regular posts on social media
- FSCAA continued participation in EPA's Advance Program, with annual updates to the Path Forward document
    - October 2018 - Path Forward document approved by FSCAA Board
    - November 2018 - Path Forward document approved by ETF Board
    - *November/December 2018 - Path Forward document approved by JATSO Board*
    - *November/December 2018 - Path Forward document submitted to EPA*

EDUCATION STRATEGIES

Description: Air quality awareness applies to both the public and the business community. Increasing education about air quality will aid in the decision-making process based on an understanding of the broader impacts of everyday activities. The objectives of the tasks in this section are to increase the level of knowledge of individuals and the business community about actions that can be done to reduce ground-level ozone.

Short Term Strategies – Education

Message

Identify options for communication message delivery methods, such as press releases, newsletters articles, media appearances, etc. Research IdleBox program on idle reduction for implementation in FSCAA area.

Public Service Announcement (PSA)

Continue to develop additional PSA campaigns on other ground-level related topics, such as Health Impacts, for use in educating the general public.

PSA Displays on Community Venues

Arrange for the existing PSA's to be shown on video scoreboards, Jumbotrons, or similar in the local area, such as school sports venues. Arrange for the existing PSA's to be shown on local TV stations, waiting room areas at public venues such as the Joplin Airport, Joplin Public Library, Government Access Channel, and others as identified.

Social Media

Promote and maintain a presence on social media, including but not limited to, Facebook, Instagram, Twitter and YouTube.

Website

Promote and maintain the FSCAA website at www.SummerAir.org to act as a central site to distribute information to the community.

Speaker's Bureau

Continue efforts to familiarize by speaking to community groups. Identify appropriate audiences and secure speaking opportunities to promote ground-level ozone awareness to create an educated population who will take actions to reduce ozone precursors.

Long Term Strategies – Education

These tasks will be evaluated for completion as funding and other resources become available.

Public Opinion Survey

Develop and administer a survey to determine the public's opinion on emission reduction strategies to obtain feedback from stakeholders regarding which specific emission reduction strategies they would be willing to support and adopt. This information would provide additional direction to future efforts. Survey participants would be provided with a list of proposed ozone-forming emission reduction strategies and asked to prioritize each one, as well as indicate their willingness to adopt or support each strategy. Example strategies to be included on a survey of this type might include a "Public No Idling Campaign", "School No Idling Campaign", "Public Participation in Ozone Alert Day Activities, "Support biking and walking infrastructure" or "Implement energy efficiency projects at home and at work".

Permanent Education Display

Create and purchase a display like the portable unit but one that can be installed permanently at an appropriate location, such as the Wildcat Glades Conservation and Audubon Center in Joplin, MO; the Southeast Kansas Nature Center at Schermerhorn Park in Galena, KS or at a tribal center in northeast OK.

School involvement/participation

Modify current FSCAA PowerPoint presentation for use in local elementary schools. Develop events to interest school-age groups to participate and learn about ground-level ozone, such as essay contest, art shows, science fairs, or similar. Educate and encourage local schools and other organizations to join the EPA-sponsored Air Quality Flag program to provide visible information about the current air quality forecast using raised colored flags.
http://airnow.gov/index.cfm?action=flag_program.index

Video

Identify partners to produce a 10- to 15-minute video to be used as part of an educational package.

Accomplishments – Education

- March 2018 – An Instagram account (https://www.instagram.com/fscaa_summerair/) was created as another social media avenue to reach a wider audience.
- April 2018 – FSCAA representatives set up a booth during the Environmental Festival held by the Wyandotte Nation.

- April 2018 – FSCAA representatives set up a booth at the annual Earth Day celebration at Missouri Southern State University.

FSCAA booth at MSSU Earth Day 2018

- May 2018 – FSCAA Chair, Dan Pekarek, was interviewed on the "Joplin Insider" interview program. This episode aired throughout the spring on a local broadcast channel and cable systems, as well as Missouri Southern's YouTube channel at https://youtu.be/2pcCuhCbRyU. This 30-minute interview provided viewers information about ground-level ozone and the work that FSCAA has conducted to help educate the public about this issue.

- June 2018 – FSCAA partnered with Ramsey MediaWorks to create a social media campaign on Google Ads and Facebook to redirect users to the www.summerair.org website. This campaign will continue through November. After Ozone Season ends, Ramsey will provide an overview of the effectiveness of the campaign for the Board's consideration.

Messaging for Google Ads and Facebook

- July 2018 – FSCAA Chair, Dan Pekarek, was interviewed on the "Newsmakers" interview program, a program focused on the news and issues in the Joplin area. This episode aired on MSSU's channel 22, as well as their YouTube channel, where the video can still be viewed,

https://www.youtube.com/watch?v=mNwLYvf4Fy4. This 30-minute interview gives viewers an update on FSCAA's efforts to raise awareness of ground-level ozone in our area.

- August 2018 – FSCAA representatives set up a booth at the Shoal Creek Water Festival held by the Friends of Wildcat Glades. This year's message focused on wind power as an alternate to fossil fuels. Liberty/Empire loaned a model wind turbine for this event, along with an informational handout and pinwheels for booth visitors.

FSCAA Board assembling pinwheels

Liberty/Empire's model wind turbine

- October 2018 – The FSCAA display was set up at the Carthage Water & Electric Plant lobby for general viewing by customers, including print materials and promotional items.

FSCAA booth at CW&EP lobby

- Fall 2018 – As part of Liberty Utilities/Empire District sponsorship package with Missouri Southern State University, the PSA on Energy Efficiency will be shown on the new video scoreboard during MSSU home football games.

MSSU new video board to show Energy Efficiency PSA

ENERGY CONSERVATION & UTILITY STRATEGIES

Description: The implementation of energy conservation programs by individuals, businesses, and municipalities can have an impact on energy production thus reducing air pollutants.

Short Term Strategies - Energy Conservation & Utility

Energy Conservation Outreach

Promote energy conservation and efficiency messaging in conjunction with utility energy conservation efforts for their customers as well as encourage local city and county governments to implement similar energy efficiency programs. Use EPA's Energy Efficiency in Local Government Operations guide on this topic.

NOx reductions from power plants

Liberty Utilities/Empire District to maintain NOx levels at or below 2007 baseline. In practice using over-fire air and Selective Catalytic Reduction (SCR).

VOC reductions from power plants

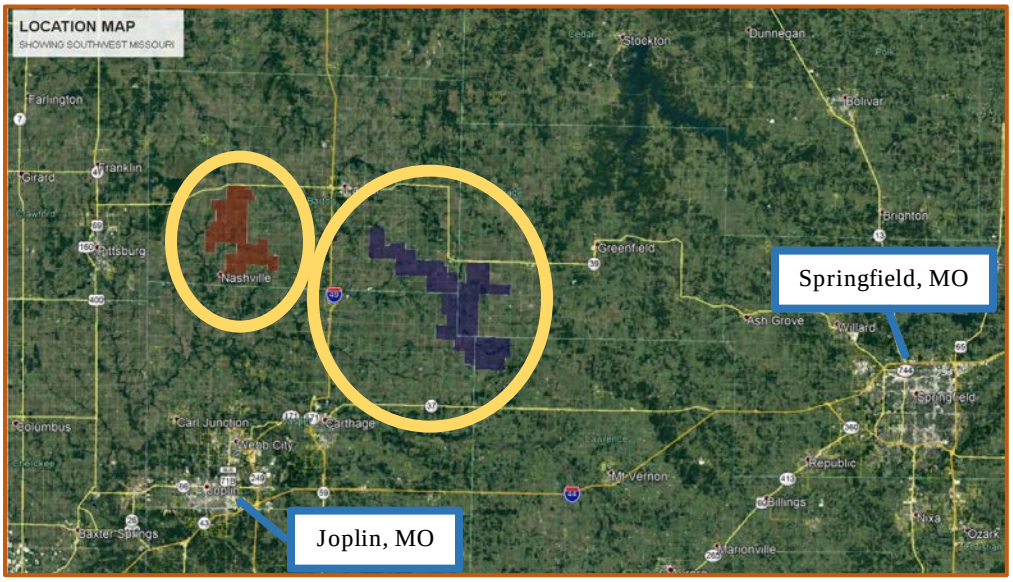
Carthage Water & Electric Plant to maintain VOC levels at or below 2011 baseline. CW&EP has a project scheduled to install catalytic converters on 5 additional engines at its power plant. The

project is scheduled to be completed by the end of calendar year 2018. Catalyst efficiencies will be determined after installation is complete and added to the next update of the Path Forward document.

Long Term Strategies - Energy Conservation & Utility

Wind Farm

The Missouri Public Service Commission, on July 11, 2018, supported the addition of 600 MW of wind generation to be located within the Southwest Power Pool footprint. Based on the EPA's AVoided Emissions and geneRation Tool (AVERT), this 600 MW wind generation could avoid approximately 1,160 tons of NOx emissions each year.



Approximate locations of 2 potential sites considered for wind farms

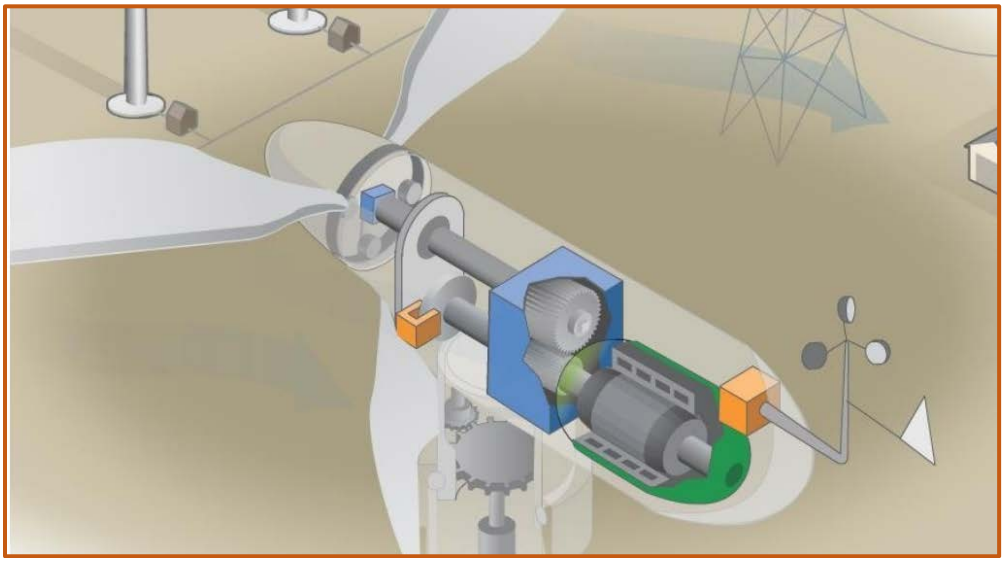


Diagram inside a typical wind turbine

Solar Energy

Research and determine ways to incorporate SolSmart, a national designation program designed to address local barriers to solar energy, funded by the U.S. Department of Energy Solar Energy Technologies Office, into FSCAA's general education strategy. Advocate for community involvement in solar energy projects.

Accomplishments - Energy Conservation & Utility

- **Liberty Utilities/Empire District**

  Liberty/Empire has already taken steps to significantly reduce NOx emissions from their plants. Since 2009, Liberty/Empire has reduced an average of 833 tons of NOx per year from the Riverton Plant, 3,371 tons of NOx per year from the Asbury Plant and 640 tons of NOx per year from the Iatan 1 Plant. Prior to the operation of the new wind farm, Liberty/Empire expects they will continue to produce 15 percent to 17 percent of their total net system input with their hydro facility at Ozark Beach, Missouri and through power purchase agreements with Elk River Wind Farm, LLC, and Meridian Way Wind Farm, LLC. Liberty/Empire anticipates they will sell most of the environmental attributes associated with the wind farm generation.

  During 2017, Liberty/Empire reduced 993 tons of NOx from the Riverton Plant, 3,944 tons of NOx from the Asbury Plant, and 669 tons of NOx from the Iatan 1 Plant. Improvements at the Asbury and Iatan 1 Plants are due to the installation of Selective Catalytic Reduction NOx Systems. Liberty/Empire produced 13 percent of their total net system input in 2017 with their hydro facility at Ozark Beach, Missouri, and through power purchase agreements with Elk River Wind Farm, LLC, and Meridian Way Wind Farm LLC. Empire has sold most of the environmental attributes associated with the wind farm generation.

  At Liberty/Empire's Riverton, KS plant, an existing simple cycle combustion turbine, was converted to a more efficient combined cycle unit which began full operation in 2016. A combined cycle unit recovers heat from the combustion turbine to produce steam and generate additional electricity via a steam turbine. This conversion project included the addition of a SCR to reduce NOx emissions. Also, in conjunction with bringing the combined cycle unit on-line, two coal/natural gas fired boilers were permanently retired.

  From 2009-2017, Liberty/Empire has implemented 21 different energy conservation incentive programs, saving its customers across the four state region the electric usage of nearly 19,000 homes (225,000 MWh) and one state with lower natural gas usage. Based on EPA's AVERT emission tool, this equals an estimated avoidance of approximately 173.25 tons of NOx emissions.

  In 2016, Liberty/Empire began partnering with local businesses to install EV charging stations. As of August 31, 2018, this effort has resulted in public charging stations at 14 separate locations in Joplin, Branson and Ozark. This program will gear up installation of several additional charging stations beginning in 2019.

Electric vehicles (EVs) offer an increasing potential to reduce VOC and NOx emissions. Liberty/Empire is committed to expanding their use of EVs as well as encouraging broader adoption of EVs throughout its service area. According to the Department of Energy's Alternative Fuels Data Center, personal EVs in Missouri emit 27.2% less pollutants than gasoline counterparts, on average. As an increasing amount of renewable energy is added to the electric grid, emission reduction opportunities are growing. When powered by renewable energy sources, such as wind, EVs can operate emission free.

Liberty/Empire's EV & charging station

Liberty/Empire's electric powered bucket truck

Liberty/Empire dedicates over 5% of its annual fleet replacement budget to the purchase of plug-in vehicles. Currently, there are 8 plug-in hybrid EVs in Liberty/Empire's fleet and 3 hybrid bucket trucks. Traditional bucket trucks require the gasoline motor to run, at high RPM, while the bucket is in operation. The hybrid bucket truck allows the bucket to operate without the gasoline motor running, providing fuel savings and lower emissions.

Beginning in December 2016, Liberty/Empire began a program of installing idle mitigation systems (IMS) in its service and bucket trucks. The IMS allows the trucks to maintain cab comfort and bucket truck operations without consuming gasoline fuel, which mitigates VOC and NOx emissions during such operation. Since beginning this program, there have been three pick-up trucks and two bucket trucks equipped with an IMS.

A power/heating/cooling IMS installed in a service truck.

- **Carthage Water & Electric Plant**

  (CW&EP) has already taken steps to reduce VOC emissions from the Carthage power plant. In the winter of 2011/2012, CW&EP installed catalytic converters on its engines, which reduce the amount of VOC being emitted from the plant. During 2017, emissions were reduced by an estimated 58.99 percent. [*Note*: The Carthage power plant is a peaking facility, meaning the plant only generates power on days when power is in highest demand. Therefore, the amount of generation can fluctuate depending on the weather. Because of these fluctuations, simply stating the amount of reduction in tons per year may not accurately reflect the overall efficiency of reduction. For this reason, the reduction is instead shown as a percentage.]

  CW&EP also has a purchase power agreement with Southwestern Power Administration for hydro power generated at U.S. Army Corps of Engineers reservoirs. During 2017, CW&EP received 6.40 percent of its total net system input from hydro resources operated by Southwestern Power Administration.

  In 2015, CW&EP, in cooperation with Eagle Picher Technologies LLC, completed the installation of a renewable energy storage system at the Centennial Complex in Carthage. The system utilizes lead-acid batteries in conjunction with solar and wind technologies to offer a glimpse at available technologies that can be used for peak shaving in demand metering applications. The system also tracks solar and wind charging so that accurate data can be given to potential customers who would like to install similar equipment in their home or business for peak shaving, net metering, or off-grid applications. The installation utilizes bi-directional metering that measures the utility supply and renewable contributions.

  In 2014, CW&EP began offering access to a free home energy calculator on its website that customers can use to gauge their energy use and receive tips for how to decrease their use and save money. Earlier in 2018, this website was revamped to make it more user friendly. This calculator allows the customer to look at what is using electricity in their household and provide help in identifying those items that are using electricity, even when not in use. It is an easy, fun and uncomplicated way to allow the customer to explore the energy users in their house and showcase how small changes can impact their bill and usage. The calculator can be accessed through the following link: https://cwep.com/electric/home-energy-calculator/.

CW&EP home energy calculator

  CW&EP has been exploring an energy efficient lighting rebate program to begin this fiscal year. The program will be targeted to local large industrial customers to help with highly efficient lighting upgrades at their facilities. Lighting is a very effective way to let large electric customers lower their energy use and therefore lower their overall electric bill. This in turn helps the utility lower overall demand and reduce the need to build more power plants. This is a great partnership between the customer and the utility.

TRANSPORTATION STRATEGIES

Description: Transportation sources are a significant contributor to emissions in the region. Steps to reduce emissions in this area can be taken by individuals, businesses, and through engineering and traffic management. FSCAA's role is to advocate for transportation improvement projects and help spread news about funding notices and related information as it comes available. FSCAA will communicate with interested stakeholders to give support for initiatives as they arise.

Short Term Strategies – Transportation

Volkswagen Trust

Monitor news releases from MDNR regarding funding opportunities from the VW Trust allocation. MDNR has been designated as Missouri's lead agency for the distribution of the state's share of the VW settlement. Any funding opportunities will be shared with all FSCAA members and any eligible entities in the Four States region. The established network of Harry S. Truman Coordinating Council, a FSCAA partner, will be utilized as one distribution method to disseminate these funding notifications, especially to school districts throughout the region.

Sunshine Lamp Trolley

Promote the use of the Sunshine Lamp Trolley, Joplin's public transportation system. Increase overall awareness and encourage the use of Sunshine Lamp Trolley through social media. Advocate for increased services and additional routes to be added to increase ridership throughout the Joplin metro area.

Sunshine Lamp Trolley transit vehicles

Idle Reduction

Develop a message to promote and encourage idle reduction efforts. Research DOE's IdleBox Toolkit for Idling Reduction Projects. Ideally, a 2-pronged approach would be developed to address businesses with fleets as well as the general driving public. A survey will be created to gauge the interest level of businesses with fleets in implementing idle reduction efforts. A separate campaign will also be developed for use with the local school bus fleets and the general driving

public. During the development phase, a library of "No Idle" policies from other entities will be compiled as reference tools.

Congestion Management Projects

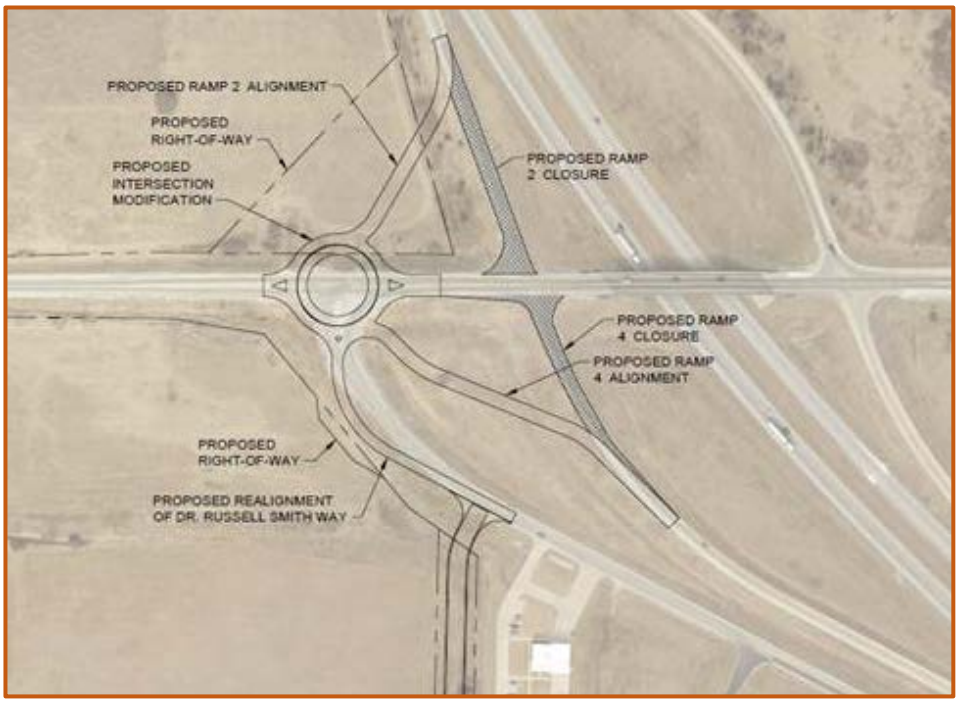
Advocate the design and construction of congestion management projects targeted at local governments, engineers and others responsible for making improvements to the transportation system that will reduce idle time. Examples of these types of efforts include access management, dual left turn lanes, DDI (Diverging Diamond Interchange), ITS (Intelligent Transportation Systems), and roundabouts.

Alternative Transportation and Commute Projects

Advocate the design, construction and/or implementation of alternative transportation and commute projects such as sidewalks, trails, bike paths and public transit, to encourage the development of a multi-modal system. Encourage employee commuter transportation programs. Support additional dedicated funding for such projects.

<u>Planned Projects:</u>

- Intersection improvement project, with a new roundabout, in Carthage, MO



Conceptual drawing of the Carthage intersection improvement project

- Bridge replacement project over Shoal Creek in Newton County, MO
- Continue to plan and develop the West Bypass on the west side of the Joplin metropolitan area that will reduce idling on other routes
- Update of Master Trail Plan, which is expected to add an additional 35 miles of trails in Joplin. See Appendix B for a map of this Master Trail Plan.

- Various walking trail projects in Joplin, including one between a local university, MSSU, and a large retail shopping center
- Promote additional sidewalks through Transportation Alternatives funding
- Sidewalk improvement projects in:
    - Joplin, MO
    - Carthage, MO
    - Carl Junction, MO
    - Webb City, MO
- Encouraging multi-modal transportation usage through planning, zoning, and design requirements at the local government level
- Encourage development and use of park & ride lots

Educate against overfilling gas tanks

Develop and promote a "stop at the click" message for use at convenience stores and fleet fueling islands. Provide convenience store operators with decals with appropriate messaging about not overfilling gas tanks. Posting these decals on fuel dispenser islands will keep this message in front of the public on a regular basis.

Long Term Strategies – Transportation

These tasks will be evaluated for completion as funding and other resources become available.

Volkswagen Trust

FSCAA will work with MDNR on utilizing VW Trust funds to mitigate NOx Emissions over the next 6 to 10 years. MDNR has been designated as Missouri's lead agency for the distribution of the state's share of the VW settlement over the course of the next 10 years. Funding opportunities will be shared with all FSCAA members and any eligible entities in the Four States region.

Diesel Emissions Reduction

Continue to research and promote funding for the retrofitting or replacement of commercial diesel vehicles or equipment as it becomes available.

Transportation Funding

Continue to seek funding for transportation-specific strategies in this Path Forward document from JATSO.

Vehicle electrification

Advocate for research and future transition to electric or hybrid emergency vehicles to be used at area hospitals, emergency transport stations, and similar locations. Emergency vehicles equipped

with the ability to connect to electrical charging stations instead of idling can maintain their response-readiness while reducing NOx emissions.

Rideshare

Develop and promote a Rideshare or similar program in the Joplin Metro area. The goal would be to create a pool of vehicular resources for individuals driving into the Joplin Metro area from outlying communities on a regular basis for work, shopping, school or other shared activities.

Accomplishments – Transportation

- An electric vehicle charging station was installed at the Downstream Q-Store convenience store adjacent to Interstate Highway 44 along the border between Missouri and Oklahoma. This facility, owned by the Quapaw Nation, allows interstate travelers a convenient location to top-off their EV charge.

Downstream charging station

- 2017 - Fairview R-XI School District in Newton County and Webb City R-VII School District in Jasper County were selected as award recipients for EPA's DERA (Diesel Emissions Reduction Act) School Bus Rebate Program along with 16 other Missouri school districts. EPA offers these rebates to reduce harmful emissions from older, dirtier diesel vehicles, including buses.
- Spring 2018 – FSCAA wrote a letter of support to JATSO for the Bicycle and Pedestrian Transportation Plan, which was approved and finalized in May 2018. This document provides a comprehensive non-motorized transportation plan for the Joplin Area. The Plan will communicate the vision for the area's bicycle and pedestrian network and identify policy, program, and project recommendations to guide implementation.
- June 2018 – FSCAA wrote a letter of support for a grant application by the Metropolitan Energy Center for the electrification for parked diesel trucks at a local trucking company in Joplin.

- Numerous sidewalk and street improvements made during the road widening projects in the Joplin metro area as part of the Complete Streets effort. These improvements include the creation or enhancement of sidewalks and the creation of bicycle lanes in many project areas.

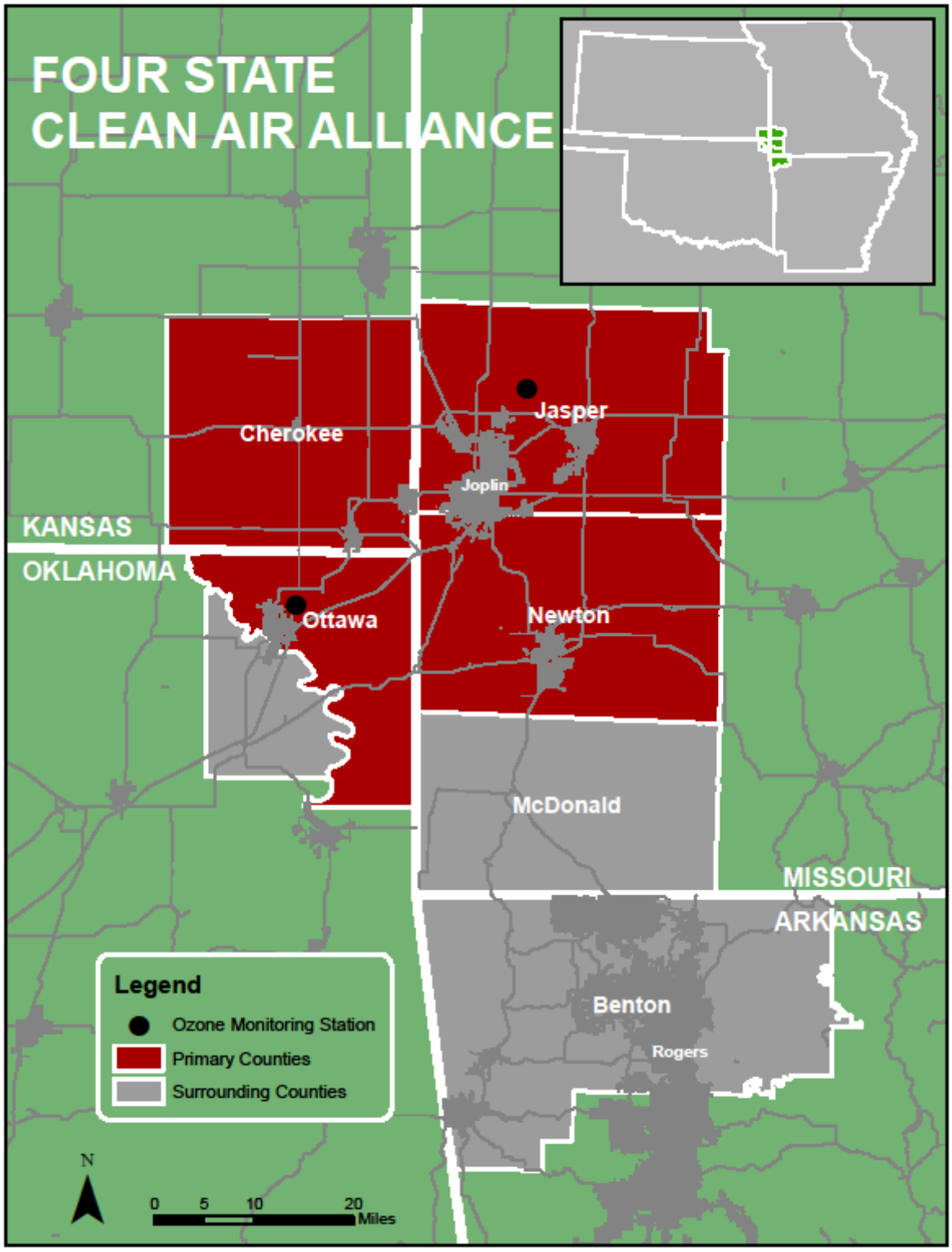

Sidewalk improvements in Carl Junction, MO and Carthage, MO

- Summer 2018 – The design plan for the Mohaska Trail was finalized after several community meetings. This trail, scheduled for completion in 2019, is in the City of Joplin's Master Trail Plan outlining a network of sidewalks and trails connecting large residential areas to one another along major street thoroughfares. See Appendix B for the Master Trail Plan map.

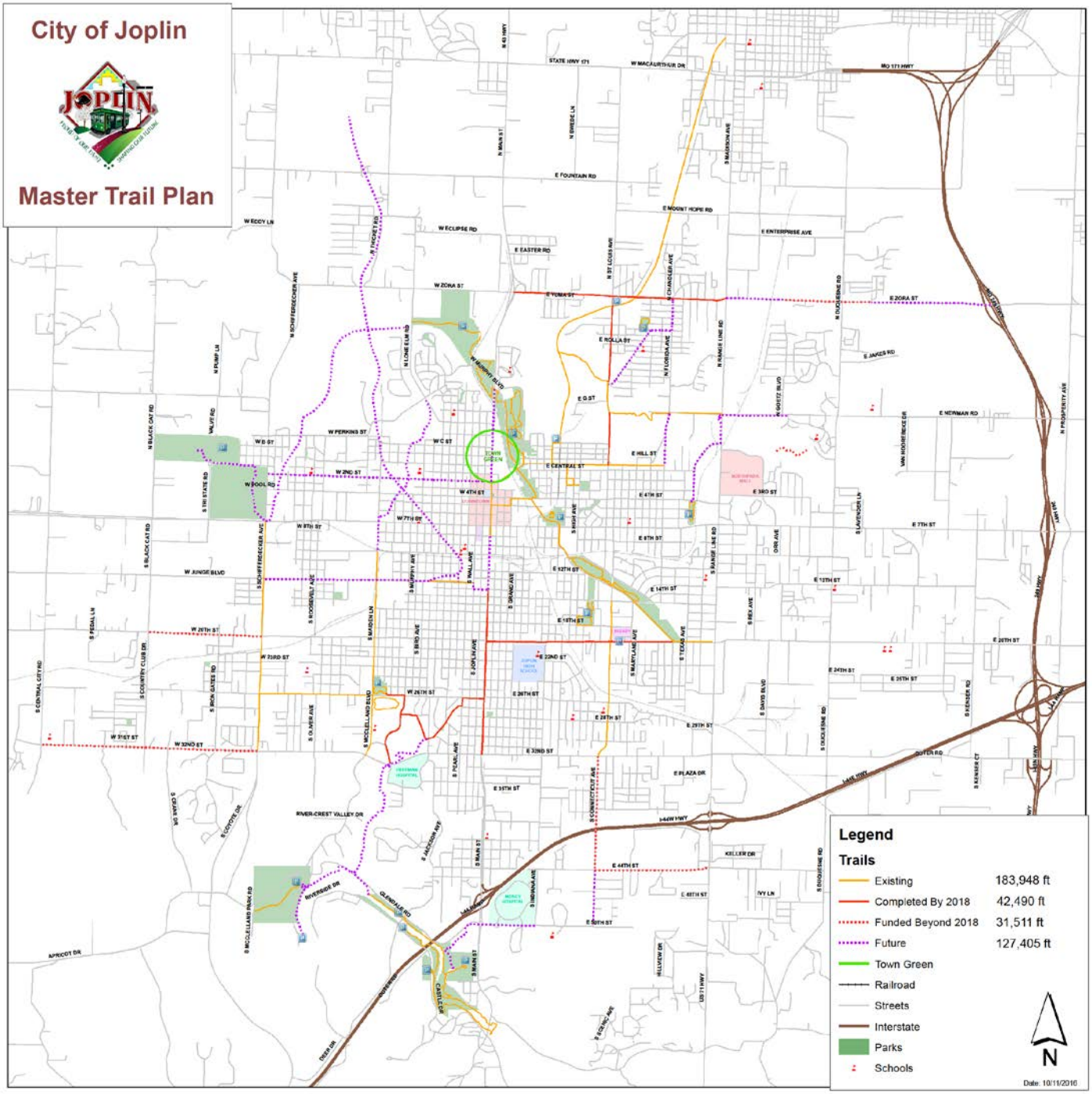
Mohaska Trail planned route

- September 2018 - Joplin School District in Jasper County was selected as an award recipient for the MDNR's Volkswagen Trust School Bus Replacement program. The MDNR received 67 applications for 137 buses. The combination of DERA grant (Clean Diesel) and Volkswagen Trust funds amounts to $1,638,000. Based on the Department's Implementation Guidelines, all of the round 1 applicants (the remaining 63 buses) will be replaced in the future.

APPENDIX A: MAP OF FSCAA AREA



APPENDIX B: CITY OF JOPLIN MASTER TRAIL PLAN



APPENDIX C: ACKNOWLEDGEMENTS

The Four States Clean Air Alliance thanks these members and organizations involved with implementation of the Path Forward document for the Joplin Metro area in Missouri, focusing on Jasper and Newton Counties.

FSCAA Board Members

- Environmental Group – *Open*
- Environmental Task Force – Dan Pekarek; City of Joplin Health Department
- Inter-Tribal Council of North Eastern Oklahoma (9 Tribes) – Susie Attocknie, Craig Kreman
- Jasper County City – Cassandra Ludwig, Kevin Emery; Carthage Water & Electric Plant
- Jasper County Government – John Bartosh; Jasper County Commission
- Jasper County Industry – Jeff Burkett; Liberty Utilities/Empire District
- Jasper County Public Member – Heidi Scheffler
- JATSO – *Open*
- MDNR – Emily Wilbur, Mark Leath; Missouri Department of Natural Resources
- MoDOT – Zeke Hall; Missouri Department of Transportation
- Newton County City – John Harrington, City of Neosho
- Newton County Government – Jim Jackson; Newton County Commission
- Newton County Industry – Denise Dugan; Mercy Hospital
- Newton County Public Member – Bob Hockman; TAMKO Building Products, Inc.
- Regional Planning Council – Jill Cornett; Harry S. Truman Coordinating Council

Participating Organizations

- Environmental Protection Agency
- Missouri Department of Natural Resources
- Missouri Department of Transportation
- Inter-Tribal Council of North Eastern Oklahoma (9 Tribes)
- Jasper County Commission, MO
- Newton County Commission, MO
- Cherokee County Commission, KS
- City of Carthage, MO
- City of Joplin, MO
- City of Neosho, MO
- Environmental Task Force of Jasper and Newton Counties
- Joplin Area Transportation Study Organization
- Harry S. Truman Coordinating Council
- Ozarks Clean Air Alliance
- Missouri Southern State University
- Mercy Hospital
- Liberty Utilities/Empire District
- Carthage Water & Electric Plant
- TAMKO Building Products, Inc.

APPENDIX D: GLOSSARY OF ACRONYMS

CAAP	Clean Air Action Plan
DDI	Diverging Diamond Interchange
EPA	Environmental Protection Agency
ETF	Environmental Task Force of Jasper and Newton Counties
FSCAA	Four States Clean Air Alliance
HAPs	Hazardous Air Pollutants
HSTCC	Harry S Truman Coordinating Council
ITC	Inter-Tribal Council of North Eastern Oklahoma (9 Tribes)
ITS	Intelligent Transportation System
JATSO	Joplin Area Transportation Study Organization
MDNR	Missouri Department of Natural Resources
MoDOT	Missouri Department of Transportation
NAAQS	National Ambient Air Quality Standards
NOx	Nitrous oxides
O3	Ozone
VOC	Volatile Organic Compounds