

ASSOCIATION OF CENTRAL OKLAHOMA GOVERNMENTS

COST OF NONATTAINMENT STUDY FOR THE OKLAHOMA CITY AREA

4205 N. Lincoln Blvd. | OKC

EXECUTIVE SUMMARY

MARCH
2022
acog

AQ
AIR QUALITY

ASSOCIATION OF CENTRAL OKLAHOMA GOVERNMENTS

COST OF NONATTAINMENT (CNA) STUDY FOR THE OKLAHOMA CITY AREA EXECUTIVE SUMMARY

SECTION 1:

POTENTIAL ECONOMIC COSTS OF AN OZONE NONATTAINMENT DESIGNATION

Prepared by: ACOG Consultant - Capital Area Council of Governments (CAPCOG), Austin, TX and the Greater Oklahoma City Chamber

SECTION 2:

TRANSPORTATION PLANNING IMPACT

Prepared by: ACOG Consultant - Texas A&M Transportation Institute (TTI)

SECTION 3:

BENEFITS ASSOCIATED WITH CONGESTION MITIGATION & AIR QUALITY (CMAQ) FUNDING

Prepared by: ACOG Consultant - Texas A&M Transportation Institute (TTI)

This study was made possible through a grant from the Federal Transit Administration (FTA) and the financial matching contributions by the following regional stakeholders:

City of Oklahoma City
Environmental Federation of Oklahoma
Greater Oklahoma City Chamber
Oklahoma Department of Commerce
Oklahoma Department of Transportation
OG&E
ONE Gas
Sierra Club - Oklahoma Chapter
Tinker Air Force Base*
*federal funding not used as match

ACOG Staff:

Mark W. Sweeney, AICP - Executive Director
John M. Sharp - Deputy Director
Jennifer Sebesta - Transportation Planning
Services Manager
Eric Pollard - Air Quality & Clean Cities
Coordinator

association of central oklahoma governments

4205 N. Lincoln Boulevard
Oklahoma City, OK 73105
405.234.2264 | www.acogok.org

1

CNA STUDY EXECUTIVE SUMMARY

Due to the near violation of the Ozone Standard in recent years, the Association of Central Oklahoma Governments (ACOG) has undertaken this study to help its regional stakeholders better understand the regulatory and economic risks associated with a nonattainment designation, and the corresponding potential benefits of taking action to avoid an Ozone nonattainment designation.

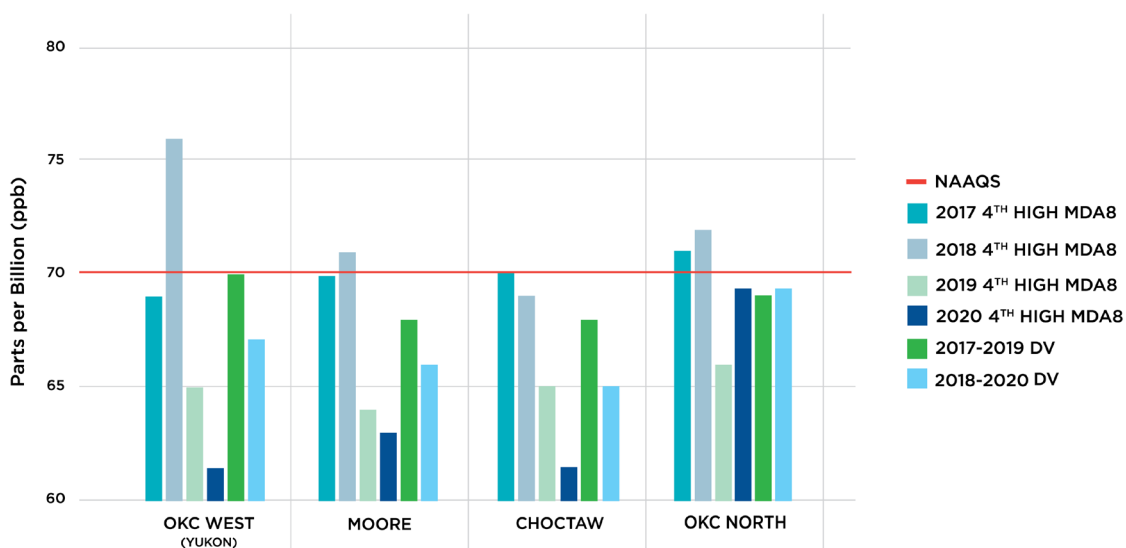
This study shows that a violation of federal air quality standards and ensuing federal regulatory requirements could cost the Oklahoma City–Shawnee Combined Statistical Area (CSA) as much as \$9.6–\$15.2 billion over a 20–30 year period.

Ground-level ozone (O₃) concentrations in and around the Oklahoma City area have been high enough in recent years that the region runs a significant risk of violating federal air quality standards known as National Ambient Air Quality Standards (NAAQS) or Ozone Standards. Areas that violate the Ozone Standards can be designated as a “nonattainment” area by the UJ Environmental Protection Agency (EPA) under certain circumstances, and this designation comes with significant new regulatory requirements.

Under the Clean Air Act (CAA), the EPA sets “primary” and “secondary” Ozone Standards for various chemicals, including ozone. Primary Ozone Standards are pollution limits that are considered necessary to protect human health, while secondary Ozone Standards are pollution limits that are considered necessary to protect public welfare (i.e., vegetation, ecosystems, visibility, physical structures, climate change, or any other public good other than public health) from known or anticipated adverse impacts.

EPA’s Ozone Standards, most recently revised in 2015, limit the three-year average of the annual 4th-highest maximum daily 8-hour average (MDA8) to no more than 70 parts per billion (ppb). The EPA is required to review the Ozone Standards every five years and while EPA’s 2020 review resulted in no

Figure 1. Oklahoma City Area 4th-Highest MDA8 Ozone Concentrations and Design Values



change in the standard, it is reasonable to assume there is some possibility that the standard could be identified in the future.

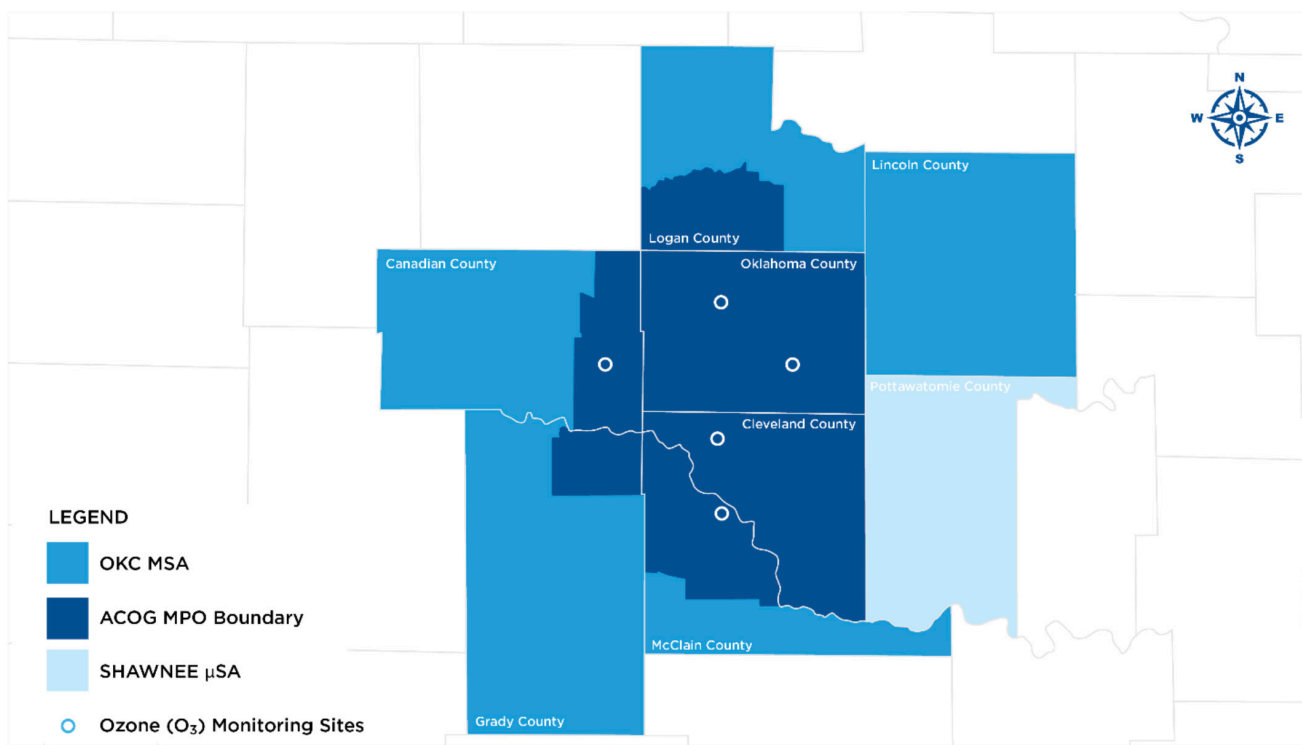
While all counties in Oklahoma are designated “attainment/unclassifiable” for all Ozone Standards, “design values” (statistics used to compare monitoring data to the Ozone Standards) from monitors in and around the Oklahoma City area from 2016-2018 and from 2017-2019 indicate that the area’s ozone concentrations are at the maximum allowable levels. (Refer to Figure 1)

The Oklahoma City area’s ground-level ozone levels are narrowly in compliance with the current Ozone

Standards, but they can vary significantly year to year. While this study does not make any predictions or assumptions on EPA adjustments to Ozone Standards, the continued uncertainty reinforces the need to plan for possible nonattainment scenarios.

The following map (Figure 2) shows locations of the ozone monitors located in the Oklahoma City area that collected data in 2019, along with the boundaries of the ACOG Metropolitan Planning Organization (MPO), the Oklahoma City Metropolitan Statistical Area (MSA), and the Shawnee Micropolitan Statistical Area (μSA). The Oklahoma City-Shawnee CSA includes all of the counties highlighted on the map.

Figure 2: Ozone Monitors and Geographic Census/Service Boundaries in the Oklahoma City Area in 2019



OZONE & PUBLIC HEALTH

Public health ozone impacts (particularly for individuals with asthma, younger and older age groups, individuals with certain dietary deficiencies, and outdoor workers):

- Respiratory effects
- Cardiovascular effects
- Mortality

Public welfare ozone impacts:

- Damage to vegetation
- Damage to ecosystems
- Contribution to climate change

Voluntary reduction of emissions provides direct public health and economic benefits to Central Oklahoma communities.

Measures that reduce nitrogen oxides (NO_x) and volatile organic compounds (VOCs) emission rates, ambient concentrations of multiple pollutants, and emissions-forming activity lessen all manner of emissions which lead to positive health outcomes are key to reducing ambient ozone. Ambient air that complies with the Ozone Standard provides direct public health and economic benefits to Central Oklahoma communities.

REGIONAL IMPACTS OF A NONATTAINMENT STATUS

The Clean Air Act requires that EPA designate areas as “nonattainment” if they are violating the Standards or contributing to a violation nearby. The EPA imposes a number of regulatory requirements on these areas in order to ensure that the area attains the Standards as expeditiously as practicable and thereafter is able to maintain the Ozone Standards.

While these regulatory requirements provide a public benefit insofar as they reduce or control air pollution levels, they also come with a cost to the community’s economy and its competitive ability in attracting new industries. For example, a business evaluating where to build a new manufacturing facility may rule out a nonattainment area due to the added regulatory requirements. A violation of the Ozone Standards puts the Oklahoma City-Shawnee CSA (eight total counties) at risk of being designated a “nonattainment” area by EPA. Many of the estimated costs in this study would still be applicable in the event the nonattainment area was smaller.

Communities in the Oklahoma City area that are close to violating the Ozone Standards can both protect public health and welfare, and protect the regional economy by taking action now to reduce ozone-forming emissions in order to remain in compliance with the Ozone Standards, rather than being forced to do so under a nonattainment designation.

STUDY STAKEHOLDERS

As mentioned previously, this study was developed by the Association of Central Oklahoma Governments (ACOG). The preparation of this report was financed through grants from the Federal Transit Administration (FTA) with financial contributions provided by the following regional stakeholders: City of Oklahoma City, Environmental Federation of Oklahoma, Greater

Oklahoma City Chamber of Commerce, Oklahoma Department of Commerce, Oklahoma Department of Transportation (ODOT), Oklahoma Gas & Electric Company, ONE Gas, Sierra Club – Oklahoma Chapter, and Tinker Air Force Base.

Through an interlocal agreement procured by ACOG, with the Capital Area Council of Governments (CAPCOG) in Austin, Texas, and the Greater OKC Chamber (GOKC), stakeholders were assisted in the development of this report. CAPCOG conducted a similar study in 2015; the only other study comparable to this was conducted in 2017 by the Alamo Area Council of Governments (AACOG) in San Antonio, and this study was also modeled using CAPCOG’s methodology. In 2020, CAPCOG prepared an initial “scoping report.” This report provides useful context and information on the regulatory situation that the region would face and can be reviewed in order to understand some of these basic assumptions for this study. Following the completion of the scoping report, ACOG retained CAPCOG and GOKC to complete the project, and also contracted with Texas A&M Transportation Institute (TTI) through an interlocal agreement to analyze the costs associated with transportation conformity due to the specialized nature of that component of this study. TTI also provided the *Potential Off-Setting Benefits Associated with Congestion Mitigation and Air Quality (CMAQ) Fundings* report.

ECONOMIC COSTS TO THE OKLAHOMA CITY AREA

This section of the study identifies potential economic costs to the Oklahoma City area if it is designated nonattainment for the Ozone Standards. The Clean Air Act requires the EPA to establish Standards to protect public health and welfare, and to designate areas as “nonattainment” if they are violating the Standards or contributing to a nearby violation. Once designated nonattainment, an area is subject to a variety of new regulations intended to bring the area into compliance and remain in compliance for at least twenty years after the area is redesignated to “attainment.” These regulations can have important implications for regional economic development and transportation planning. Staying in compliance with the Standards has important economic benefits in addition to the public health and welfare benefits of good air quality. The purpose of this study is to characterize the potential economic costs of a nonattainment designation

that the Oklahoma City area can avoid by remaining in compliance with the Ozone Standards, and to provide information for decision-makers to weigh the conceivable benefits of taking action to avoid or mitigate these possible economic impacts.

This study considers the likely economic costs of a nonattainment status over a 28-year period: from 2022 to 2050. While it is possible for an area to be designated nonattainment one year and be redesignated to attainment as soon as the following year, it will continue to be subject to regulations associated with that designation for at least another 20 years. Since being designated nonattainment even for a short amount of time can be a significant factor in a business' decision to locate in or expand within the region, even a brief period of nonattainment can carry a significant opportunity cost for the region for a long period of time.

The hypothetical scenario this report considers would be one in which the eight-county Oklahoma City-Shawnee CSA is designated "nonattainment" for the Ozone Standards in late 2022 under a "Marginal" classification, subsequently misses the attainment date, and is reclassified to "Moderate." While this specific scenario is not very likely, especially in light of EPA's decision in 2020 to retain the current Ozone Standards, the scenario illustrates the likely scale and scope of the economic costs the region could face from a nonattainment designation, and these economic costs would be similar even if a nonattainment designation occurred several years in the future. A situation in which an area is initially classified as "Marginal" but misses its attainment date is not unrealistic: the San Antonio area was the only new nonattainment area designated by EPA following the 2015 Ozone Standards, and it is facing this exact situation right now. The following table (Table 1) summarizes the total potential economic costs identified in this study for the full 28-year period.

This analysis is primarily concerned with characterizing the possible economic costs of a nonattainment designation, rather than speculating as to the probability of each of the various components of this analysis occurring. Decision-makers can use this study and assign their own probabilities to each situation in order to develop "expected fiscal costs" of a nonattainment designation to weigh those against the costs of taking various actions to reduce emissions

or otherwise diminishes the economic risks associated with a nonattainment designation. These actions include coming into attainment of the Ozone Standards as expeditiously as possible, working towards limiting the geographic scope of a nonattainment area, and using what flexibilities exist under the Clean Air Act to minimize the economic scope of a nonattainment designation while still taking the action that may be needed to come into compliance with the Ozone Standards.

The analysis includes a reasonably foreseeable scenario in which an automotive manufacturing company decides not to build a plant in the Oklahoma City area as a result of a nonattainment designation. This industry sector was selected in large part due to increased automotive recruitment and expansion efforts led by Oklahoma Governor Kevin Stitt, the Oklahoma Department of Commerce, the Greater Oklahoma City Chamber and others.

Recent announcements of intentions to build manufacturing facilities in Oklahoma and Texas from electric car companies Canoo and Tesla have demonstrated the potential for additional electric car and battery manufacturing companies to locate in the Oklahoma City-Shawnee CSA.

Table 1. Summary of Potential Economic Costs of a Nonattainment Designation, 2022-2050

Classification	Requirement	Low (Cost)	High (Cost)
Marginal	Nonattainment New Source Revenue	\$7,209,372,404	\$10,141,843,457
Marginal	Transportation Conformity	\$306,413,810	\$565,441,517
Marginal	General Conformity	\$0	\$1,230,724,801
Marginal	Subtotal for Classification	\$7,515,786,214	\$11,938,009,775
Moderate	Nonattainment New Source Review	\$0	\$0
Moderate	15% VOC Reduction	\$1,823,456,374	\$2,808,066,244
Moderate	NO _x Reasonable Available Control Technology (RACT)-Electric Generating Units (EGUs)	\$129,524,608	\$172,699,477
Moderate	NO _x RACT-Non-EGUs	\$0	\$174,235,769
Moderate	Inspection and Maintenance Program	\$82,952,287	\$100,958,177
Moderate	Subtotal for Classification	\$2,035,933,269	\$3,255,959,667
	TOTAL	\$9,551,719,483	\$15,193,969,442

TRANSPORTATION CONFORMITY COSTS

This section of the study presents the findings of probable impacts of a nonattainment designation on transportation planning as a result of conformity requirements and sanction provisions of the Clean Air Act.

Transportation conformity will have a significant impact on the transportation planning process and could hinder ACOG and the ODOT's ability to conduct efficient transportation planning for the whole region. Conformity requirements remain in effect long after an area comes into compliance with the Ozone Standards.

The estimated likely impacts need to be readily translatable into regional economic effects. This study developed the potential transportation conformity costs arising from the following four cost categories with respect to the Oklahoma City-Shawnee CSA.

1. Costs to the Metropolitan Planning Organization (MPO) and other stakeholders to perform conformity
2. Increased costs of project delays in building new roads due to new requirements
3. Increased costs of building roads due to conformity lapse
4. The potential loss of federal revenue from long term conformity lapse


The transportation conformity process is a way to ensure that state and regional plans with federal funding meet air quality goals in order to be eligible for federal funding and approval.

Project delays due to conformity requirements generally tend to be less than 12 months based on similar regions around the country. It can take one to two years for the state and the MPO staff to effectively comprehend the conformity process and the emissions analysis component. This will entail additional staffing costs of approximately \$200,000 per year.

This study estimated that a nonattainment re-designation for the EPA's proposed Ozone Standards could potentially cost the ACOG MPO and ODOT in the range of \$135 million to \$145 million between 2023 and 2050 for routine conformity analysis and project delays associated with it.

POTENTIAL OFF-SETTING BENEFITS ASSOCIATED WITH CONGESTION MITIGATION AND AIR QUALITY (CMAQ) FUNDING

This section of the study focuses on Federal Highway Administration (FHWA) CMAQ funding. Currently, ODOT retains full flexibility in distributing their state-wide CMAQ funding (\$12.8 million for FY 2022). A nonattainment designation for Central Oklahoma will bring a larger portion of CMAQ funding to the ACOG MPO from ODOT. The increase in funds provides an opportunity to advance certain projects or programs,



but it also brings challenges associated with meeting the greater local match requirement and ensuring that the region has the projects to support the use of the additional funds.

CONCLUSION

The \$9.5-\$15.2 billion in economic costs identified in this study reinforce the urgent need for the Oklahoma City area to remain in-attainment of the Ozone Standard. Failure to do so will result in the saddling of businesses, government agencies, and individuals with increased construction costs, delayed road projects, and new regulatory requirements.

This study only assumes the loss of an opportunity to attract one manufacturing plant, but it is reasonable to assume that additional recruitments and expansions could be lost in the event of a nonattainment designation, generating additional negative ripple effects across the regional and state economy.

And while this study is focused only on the Oklahoma City area, it is reasonable to assume that costs identified here could be transferrable to costs impacting the Tulsa and Lawton areas in the event one or both were to go out of attainment.

Clean air is essential to the quality of life for all Central Oklahomans, and the region's air quality attainment status is an economic strength that supports prosperity, opportunity, and economic development advantages over other regions. In ACOG's role as the regional planning organization, this study was undertaken to help plan for the consequences of a nonattainment designation that carries decades of additional federal regulations that can be avoided through continued local actions to reduce ozone emissions.



acog

association of central oklahoma governments
4205 N. Lincoln Blvd. | OKC



AQ
AIR QUALITY

