

REPORTING

TO A HEAD

EXAMINING THE IMPACTS OF NEW OZONE REGULATIONS ON KEY TRANSPORTATION PROJECTS

WASHINGTON, D.C. REGION





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The mission of the U.S. Chamber of Commerce's Institute for 21st Century Energy is to unify policymakers, regulators, business leaders, and the American public behind a common sense energy strategy to help keep America secure, prosperous, and clean. Through policy development, education, and advocacy, the Institute is building support for meaningful action at the local, state, national, and international levels.

SARAH J. SIWEK & Associates

Transportation & Environmental Consulting



At the request of the Institute for 21st Century Energy, Siwek and Associates undertook detailed analysis of the possible impacts of proposed U.S. Environmental Protection Agency (EPA) ozone regulations on transportation funding and projects. The conclusions in this report are those of the Institute for 21st Century Energy.

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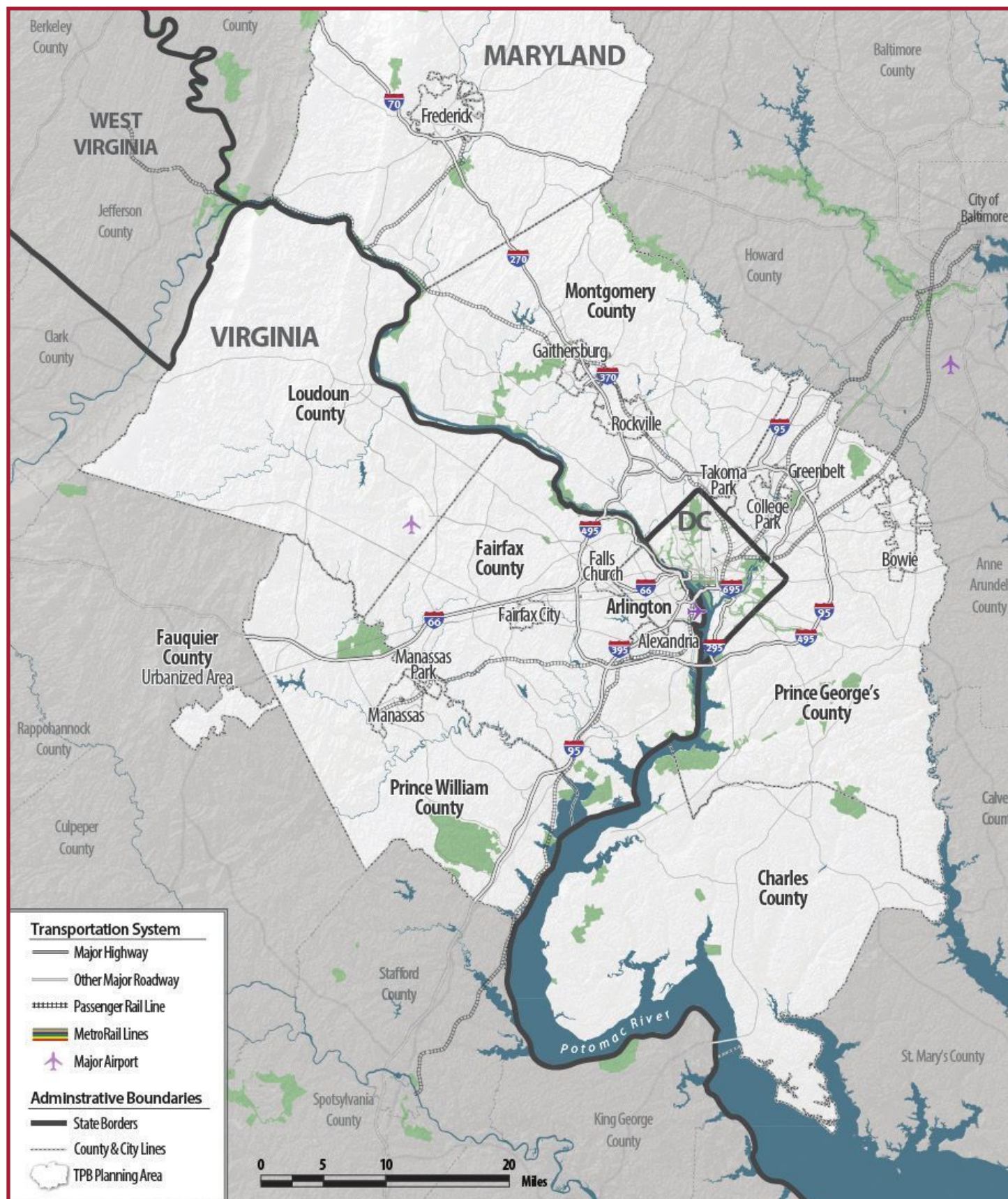
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INTRODUCTION AND EXECUTIVE SUMMARY

America's transportation system is in dire need of repair. From coast to coast, urban and rural areas alike face deteriorating roads and transit systems, both hobbled by growing congestion and an increasingly limited ability to meet infrastructure needs that are literally the foundation of economic development and job growth.

Nearly 20 percent of America's major roads are in poor condition.¹ Vehicle repairs and extra operating expenses due to inadequate roads cost U.S. motorists \$109 billion per year—equivalent to \$516 per motorist.² Population growth and increased travel have resulted in congestion on 44 percent of major urban highways, costing motorists \$121 billion each year in wasted time and fuel costs. Similarly, many metropolitan areas face growing public transit challenges, from the maintenance and operation of existing systems to the construction of new capacity to accommodate increased ridership and demands for expanded service.

Meanwhile, state and local governments are scrambling to do more with less, as declining funding and Congressional inaction on needed reforms leaves few options beyond transportation triage. For these reasons and more, the U.S. Chamber of Commerce has made securing long-term policy changes and funding certainty necessary to address transportation challenges a top priority.

As Congress gears up to debate reauthorization of surface transportation programs, this report is intended to call attention to a significant emerging threat to addressing the aforementioned transportation challenges: the Environmental Protection Agency's (EPA) forthcoming ozone national ambient air quality

standards (NAAQS). This report analyzes the impact of these regulations on transportation projects.

Expected to be finalized later this year, the rules threaten to hit nearly every sector and region of the economy. The stringent level at which EPA has proposed to tighten the ozone standard will result in unprecedented compliance costs and challenges, and many states and metropolitan areas have said that meeting the proposed standard will be extremely difficult, if not impossible.

State and local governments unable to develop satisfactory compliance plans and demonstrate that their transportation plans meet the transportation conformity regulatory requirements—which, for reasons outlined in this report, will be increasingly difficult—face severe penalties under the Clean Air Act, not least of which is the withholding of federal transportation funding.

This analysis examines these compliance challenges and their associated potential impacts on transportation funding. Specifically, the report details how:

- EPA's proposed ozone regulation will dramatically increase the number of areas of the country in violation, forcing 331 counties that meet the current standard into noncompliance, and "moving the goalposts" on an additional 227 counties that have been working to comply with the agency's 2008 standard.

¹ The Road Information Program (TRIP). Available at http://tripnet.org/docs/Fact_Sheet_National.pdf

² Ibid.

- In many areas of the country, compliance will be difficult if not impossible due to a number of factors, including:
 - Exceedingly limited technological options to reduce emissions. EPA itself admits that 40 percent of necessary reductions must be met by “unknown controls” currently not in existence.
 - A greatly reduced ability to devise practical control strategies due to the tightened standard’s proximity to background ozone levels unaffiliated with local anthropogenic emissions.
 - Growing populations and business expansion—while undoubtedly positive for local economies—exacerbate ozone compliance challenges, particularly those regions with manufacturing and industrial-based economies.
- If EPA moves forward as proposed, these challenges will combine to result in a spike in Clean Air Act noncompliance penalties, including transportation “conformity lapses” that could cause the cutoff of federal transportation. With the exception of certain exemptions, these penalties impact all highway and transit projects that receive federal funding, as well as non-federally funded projects in need of federal approvals or permits.
- Adding insult to injury, construction delays resulting from withheld transportation funding will only worsen traffic congestion, thereby increasing ozone-forming emissions.
- In order to avoid or resolve transportation conformity lapses, states and localities will be forced to make difficult and expensive choices, such as cancelling popular projects, taking vehicles off the road, and offsetting mobile source emissions through increased restrictions on (or shutdowns of) stationary sources such as industrial facilities and power plants.

The direct economic impacts of EPA’s proposed ozone regulations are well documented. According to the National Association of Manufacturers, the rule is expected to be the most expensive regulation in history, and will serve as an economic handcuff on business development in areas unable to comply with more stringent standards. As demonstrated in this report, however, the indirect transportation impacts of this rule could lead to similarly harsh consequences, as penalties for noncompliance result in the withholding of funds for critically important infrastructure improvements.

These cutoffs in funding and other associated impacts will serve not only to worsen the economic costs of the rulemaking, but they will also impose a literal roadblock on efforts to address the stifling congestion and critical state of disrepair of America’s roads, bridges, and transit systems in growing cities such as Washington, D.C.

POTENTIAL TRANSPORTATION CONFORMITY LAPSE IMPACTS IN THE WASHINGTON, D.C. REGION

The Washington, D.C. metropolitan region already suffers from the worst traffic conditions in the country. Over 90 percent of the area's major roads are in poor condition, and the average commuter is stuck in traffic 67 hours each year. The region's public transit system is similarly strained and in need of investment and repairs. Unfortunately, if the D.C. region is unable to demonstrate conformity with EPA's ozone standard by the 2018 transportation conformity deadline, at least 13 projects slated to receive \$511 million in FY2019 and FY2020 would be put at risk.

This includes the following major area highway and transit projects:

- **Union Station-to-Georgetown streetcar project** in D.C.
- **Virginia Railway Express (VRE) RF&P Line capacity expansion** in Virginia
- Construction of a new interchange at **I-270 and Watkins Mill** in Maryland
- Construction of a new interchange at **MD-4 and Suitland Parkway** in Maryland
- Transportation improvements in the **White Flint District** in Maryland

These potential impacts are certain to increase significantly as the deadline nears and more projects receive funding and approval to proceed. For example, Maryland's \$2.5 billion **Purple Line** light rail project would risk a cutoff in funding, as would Virginia's \$2 - \$3 billion project to address extreme congestion on **I-66** outside the Capital Beltway.

These penalties will have a ripple effect on impacted areas, as delays and inflation increase project costs, and state and local governments divert significant resources to avoid and address potential violations. For example, conformity planning burdens will consume between 9 and 18 percent of the Capital Region Transportation Planning Board's budget, and inflation-related cost increases among impacted projects resulting from a one- or two-year conformity lapse could be between \$15 and \$40 million.

BACKGROUND

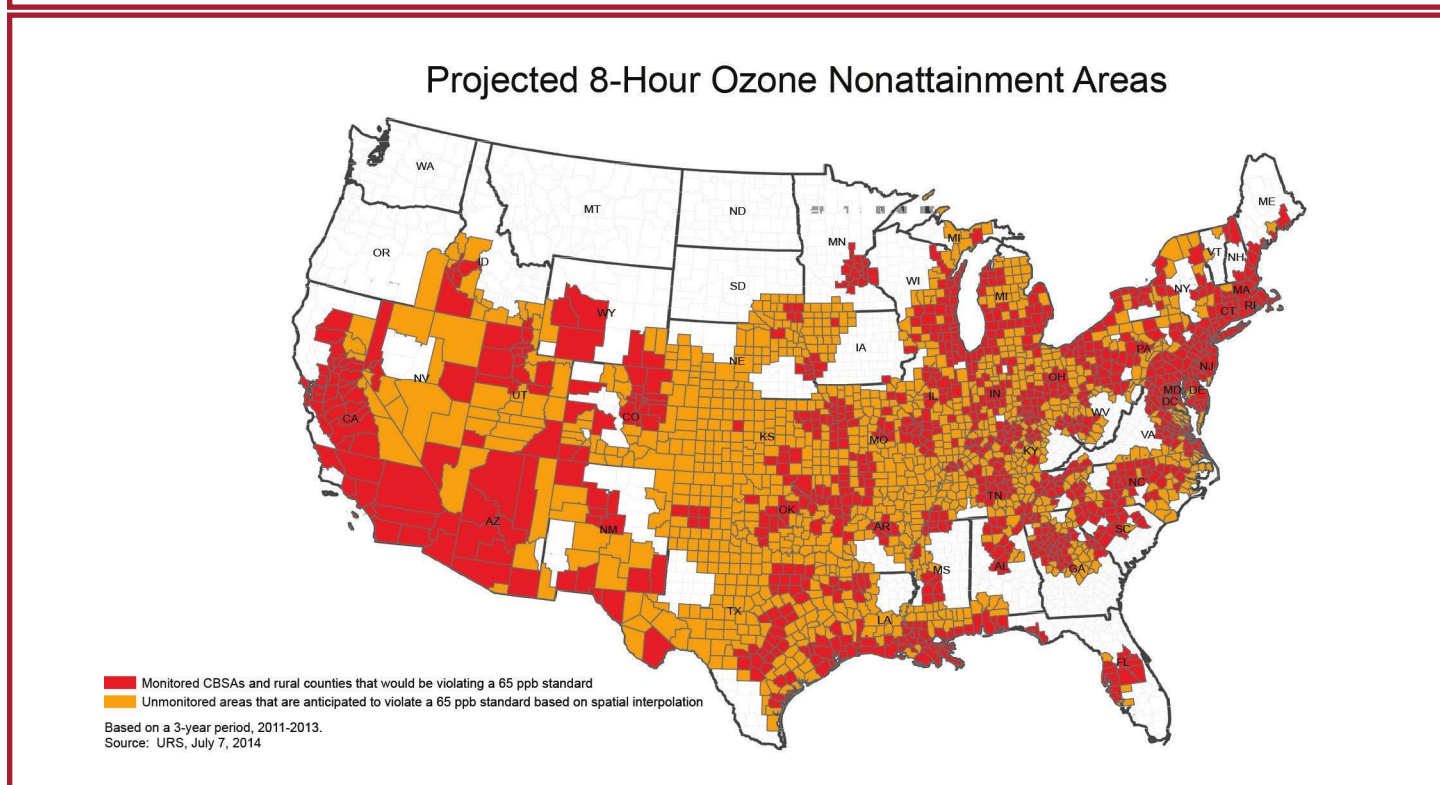
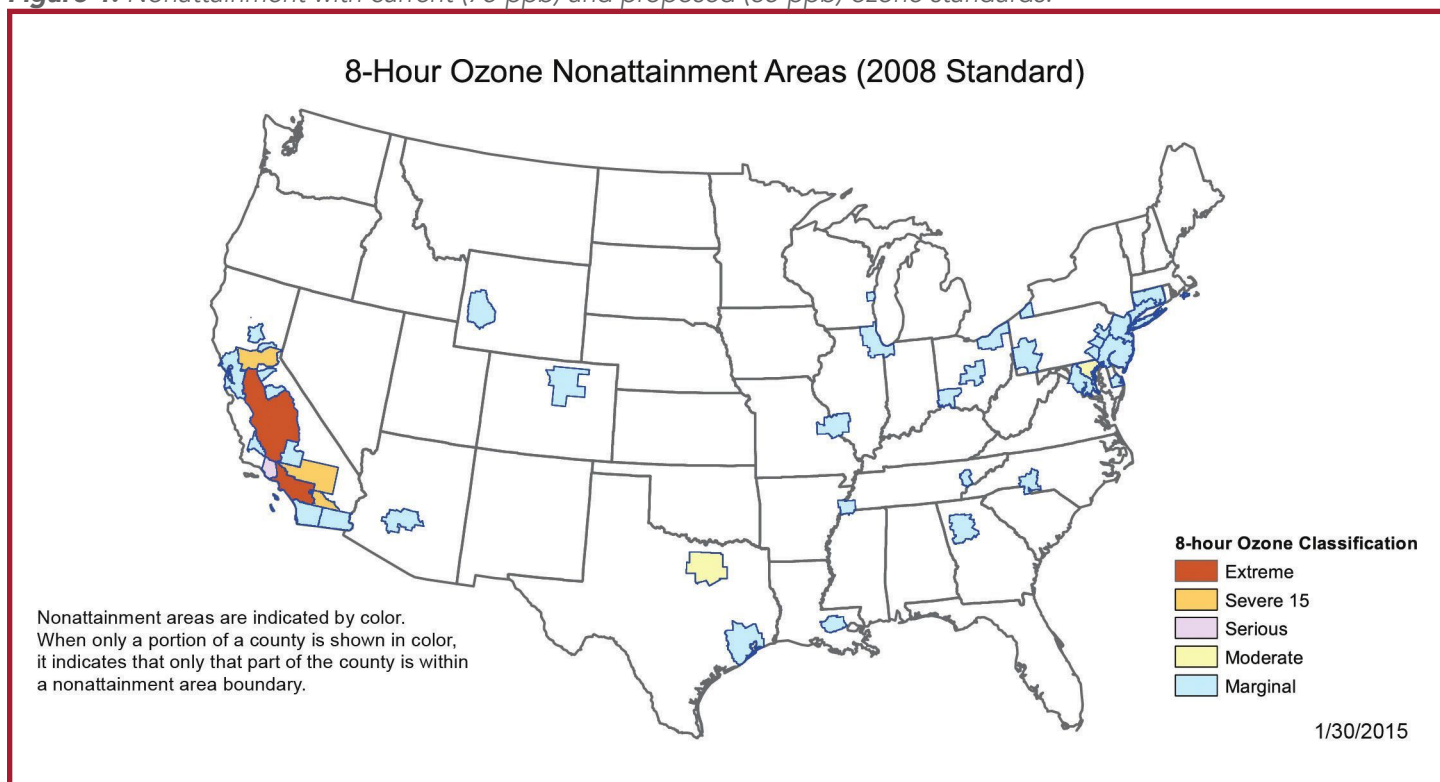
Ozone—or smog—is a gas composed of oxygen molecules that occurs naturally in the atmosphere and also forms as a result of combustion, such as that which takes place in vehicle engines, fires, or at industrial facilities and power plants. Thanks in large part to technological innovation, the United States has made tremendous progress addressing this challenge, cutting ozone-forming emissions in half since 1980.

In 2008, EPA lowered ozone standards from 80 parts per billion (ppb) to 75 ppb. Despite continued improvements, many parts of the county have yet to meet the 2008 standards (figure 1). Nevertheless, EPA is now seeking to lower the standard to a range of between 65 and 70 ppb, and is taking comment on a level as low as 60 ppb. This would dramatically increase the number of “nonattainment areas” throughout the country that violate the standard (figure 1). EPA estimates that, at 65 ppb, 331 new counties nationwide will be thrown into nonattainment, in addition to the 227 counties currently in nonattainment with the 75 ppb standard.

In fact, EPA’s proposed standard is so low that the pristine air of many national parks, including the Grand Canyon, Yellowstone, and Yosemite, will violate a 65 ppb standard. Adding insult to injury, the new requirements effectively “move the goalposts” on states and municipalities that expended significant resources to achieve compliance with the 2008 standard.

The economic impacts of a nonattainment designation are serious and immediate. EPA has estimated that compliance costs of a 65 ppb standard will top \$15 billion annually, making this the most expensive regulation in the agency’s history. The National Association of Manufacturers’ study estimates that the regulation will reduce annual GDP by \$140 billion, result in 1.4 million fewer jobs, and cost the average U.S. household \$830 per year in lost consumption. On a local level, a nonattainment designation results in layers of restrictions that stifle business investment and economic development. Companies that want to build or expand facilities in nonattainment areas are required to reduce ozone-forming emissions regardless of cost, straining economic development and local tax revenues (figure 2).

Figure 1. Nonattainment with current (75 ppb) and proposed (65 ppb) ozone standards.³



³In the map of projected ozone nonattainment, counties in red denote monitored areas; counties in orange represent unmonitored areas anticipated to violate a 65 ppb standard based on spatial interpretation. Currently, regulatory compliance requirements are limited to monitored areas. Nonattainment designations are determined using the fourth-highest annual 8-hour average ozone concentration averaged over the most recent three-year period.

Figure 2. Local economic impacts of an ozone nonattainment designation.

EPA's New Ozone Rules: Coming to Your Community Soon

EPA has proposed new standards for emissions that form ozone. Sounds good, right? Not so fast. Emissions that form ozone have already been cut in half since the 1980s. We're all in favor of a better environment, but EPA's new proposed standards are so unreasonable that much of the country—even some national parks—won't be in compliance.

What happens when communities can't comply? Something EPA calls "nonattainment." Being in nonattainment status places enormous regulatory burdens on business and industry, stifling investment and bringing economic development and job creation to a grinding halt.

That's why this proposed ozone regulation is the most expensive in American history.

\$140 Billion

Annual loss in GDP as a result of nonattainment restrictions

1.4 Million

Jobs eliminated as a result of nonattainment restrictions

\$830 Per Year

Cost to the average US household

* Source: National Association of Manufacturers: nam.org/Issues/Ozone-Regulations/

Let's take a closer look at what it means for our communities:

Agriculture \$\$\$

"Reducing the standard for ozone...would negatively impact agricultural producers around the country...The practical ramification of this is that the costs associated with agricultural production would increase."

-National Association of State Departments of Agriculture

Small Businesses \$\$\$

Costly controls on small business equipment and operations will strain investment and harm consumers.

Cars and Trucks \$\$\$

Expensive restrictions on fuels and vehicles.

Government Revenue

Ozone regulations will restrict economic growth and development, resulting in lower state and local tax revenues and straining government services.

Highway Funding

Federal highway funding in nonattainment areas may be delayed indefinitely until a state commits to expensive offsets or demonstrates that a proposed project will not increase ozone.

Construction \$\$\$

Costly restrictions will halt business expansion by requiring major modifications for new facilities, leading to delayed or canceled construction projects.

Power Plants \$\$\$

Coal-fired power plants will be forced to shut down; construction of gas plants to replace lost electricity will take time, and be difficult and expensive.

Manufacturing \$\$\$

Manufacturing and industrial facilities may not get permits they need to build or expand.



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TRANSPORTATION FUNDING AND THE CLEAN AIR ACT

The Clean Air Act (CAA) operates on the principle of cooperative federalism, under which EPA sets attainable emissions standards that individual states are responsible for meeting in the manner that best fits their circumstances. However, to encourage state cooperation, the Act's programs governing ozone (and other regulated emissions) authorize EPA to impose two types of penalties for noncompliance: (1) offset sanctions (requiring new or expanded facilities to reduce emissions up to two tons for every ton of emission growth); and (2) withholding of transportation funding.

Transportation funding penalties come in two forms: automatic sanctions and funding cutoffs stemming from conformity lapses. Automatic sanctions prohibit release of federal transportation funds, except for certain safety, transit, or air quality-improving projects. They occur after expiration of a two-year "sanctions clock" that EPA initiates after disapproving a state implementation plan (SIP) or finding that an approved SIP is not being implemented. Conformity lapses are triggered when a metropolitan planning organization (MPO) fails to demonstrate that its transportation plan, transportation improvement program (TIP), or specific projects meet emissions analysis requirements in the conformity regulation.

Specifically, the CAA requires that MPOs show that the emissions resulting from their 20-year Regional Transportation Plan (RTP) and four-year Regional Transportation Improvement Program (RTIP) investments do not: (1) cause or contribute to any violations of NAAQS; (2) increase the frequency or severity of NAAQS violations; or (3) delay timely attainment of the NAAQS or any required interim milestone.

The Transportation Conformity Process

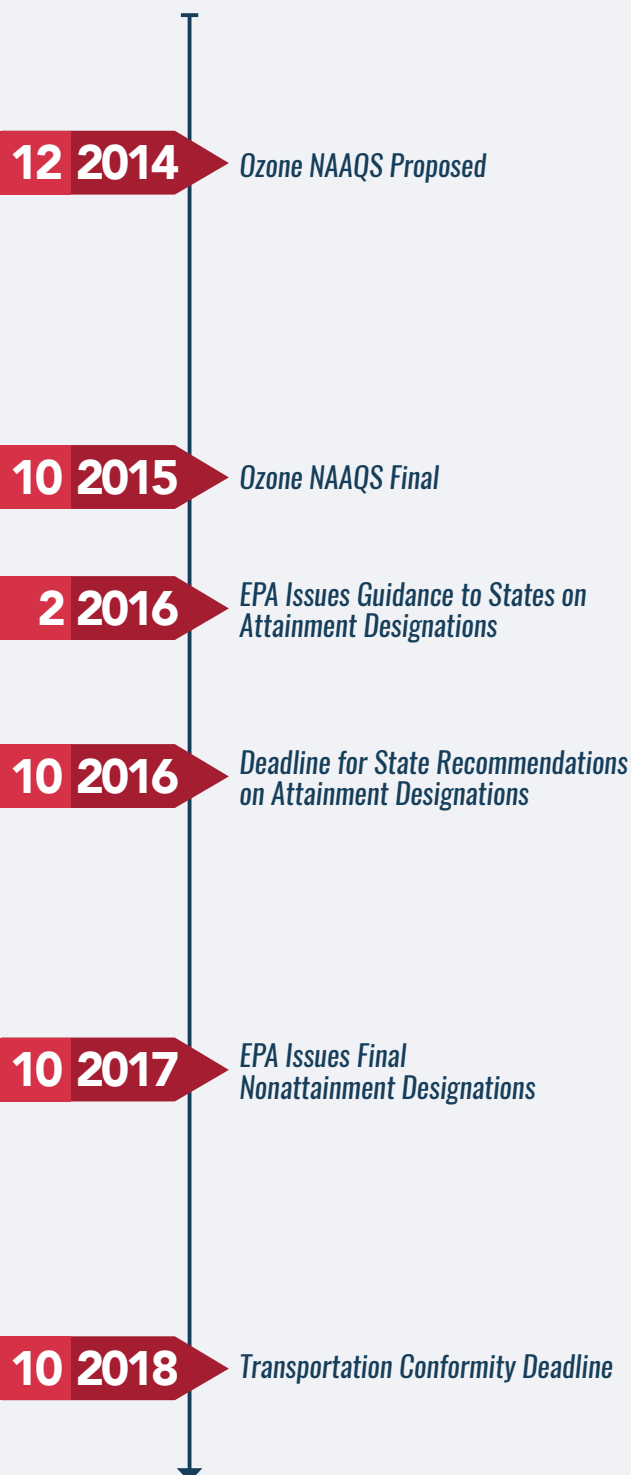
Demonstrating transportation conformity is an elaborate and time-consuming process that uses travel demand and emissions modeling to forecast motor vehicle emissions at various intervals out to at least 20 years. These projections are then compared to "budgets" that act as a ceiling on mobile emissions. Historically, the vast majority of emissions reductions from transportation sources have been from improved vehicle and fuel technologies. Additionally, measures such as HOV lanes, public transportation investments, bicycle lanes, retrofitting or scrapping older vehicles, and restrictions on the use of certain fuels have contributed modest reductions in motor vehicle emissions over the past twenty years. A conformity lapse occurs when a nonattainment area, for one or more of EPA's criteria pollutants (i.e., ozone, carbon monoxide, particulate matter, etc.) cannot show that the transportation-related emissions, from their investment plans, programs, and projects fall below certain upward limits (i.e., "budgets").

Unlike automatic sanctions, a conformity lapse⁴ occurs immediately after a determination that an MPO's transportation plan is insufficient. By statute, areas must demonstrate transportation conformity within one year of an EPA nonattainment designation (see ozone rule timeline in table 1). In some cases—specifically, areas previously designated as in nonattainment—localities may get an additional one-year grace period prior to entering a conformity lapse.⁴ Conformity lapses can affect both highway and transit projects, and federally-funded as well as non-federally funded projects in need of federal approvals or permits from

⁴ Areas that miss the transportation conformity deadline and enter the one-year grace period still have to meet certain requirements, which may have consequences on projects.



TRANSPORTATION CONFORMITY COMPLIANCE TIMELINE



a host of federal agencies to proceed.⁵ It is important to note that projects slated to receive any federal funding, no matter how small the amount, can be put at risk by a conformity lapse.

When an area enters a conformity lapse, only certain projects can proceed. These projects are:

- Projects that are exempt from conformity⁶
- Transportation control measures (TCMs) in an approved SIP⁷
- Projects or project phases already authorized by Federal Highway Administration/Federal Transportation Administration
- Non-regionally significant, non-federal projects
- Regionally-significant, non-Federal projects with all approvals secured prior to the lapse

Resolving A Conformity Lapse

Resolving a conformity lapse is just as complicated and burdensome as avoiding one. Typically, a nonattainment area addresses the lapse through two primary means. It reduces projected mobile emissions through programs to take certain vehicles off the road, (i.e., diesel trucks) or by modifying the mix of projects in its transportation plan. Additionally, in order to resolve a conformity lapse, in most cases an MPO must also work with state air regulators to revise the SIP by offsetting mobile source emissions with increased restrictions on stationary sources such as industrial facilities or power plants.

Both of these options—modifying the transportation plan and revising the SIP—are difficult, costly, time-consuming, and often unpopular undertakings, particularly in light of local expectations regarding transportation project development and the inevitable tradeoffs that must be made between various mobile and stationary sources. These challenges are further exacerbated by EPA's requirement that mobile source emissions budgets must be met at least 20 years into the future (i.e., in 2018, areas will have to demonstrate that emissions will remain under limits through at least 2038). For all of these reasons, a conformity lapse—and even entering a conformity lapse grace period—is a very severe penalty that localities must work hard to avoid.

⁵ These include the Federal Highway Administration, Federal Transportation Administration, EPA, Fish and Wildlife Service, and U.S. Army Corps of Engineers, among others.

⁶ Exempt projects include many categories of projects including safety, some intelligent transportation system (ITS) projects, some transit projects, seismic retrofits, street improvements, freeway service patrol, etc. (See 40 CFR §§93.126, 93.127, 93.128)

⁷ TCMs are listed in section 108(f) (1) (a) of the CAA and are programs designed to reduce vehicle use or change traffic flow or congested conditions. TCMs also include travel demand management (TDM) strategies. In some states TCMs may be included in an EPA - approved State Implementation Plan (SIP).

IN THEIR OWN WORDS:

Impacts of EPA's New Ozone Standard on Transportation Infrastructure and the Economy

"For non-attainment areas, the federal government can withhold federal highway funds for projects and plans. Withholding these funds can negatively affect job creation and critical economic development projects for impacted regions, even when these projects and plans could have a measurable positive effect on congestion relief... Given these financial and administrative burdens on local governments, we urge EPA to delay issuing a new NAAQS for ozone until the 2008 ozone standard is fully implemented."

- U.S. Conference of Mayors, League of Cities, National Association of Counties, and National Association of Regional Councils

"President Obama has pleaded with Congress to help provide the funding to get major roads and bridges improved. Standing under major bridges in Ohio and New York, the President demanded action from Congress to get major projects done. But under a 60 ppb, 65 ppb, or even 70 ppb standard, highway and transit funding for projects like these could be withheld or confiscated in many areas where local planning officials are under the thumb of federal regulators to make their safety and mobility plans conform."

- American Highway Users Alliance

*"Tightening ozone standards could result in the withholding of federal highway funds in areas forced out of compliance with the new standards. This, in turn, would have **negative effects on both employment and development** for impacted counties where transportation improvements are delayed or cancelled. In many instances, these federal-aid projects are intended to improve demonstrated public safety threats. Further, once completed, transportation improvements can reduce congestion and improve air quality. **Such improvements will not be realized if projects cannot go forward.**"*

- American Road Builders and Transportation Association

"Delays on the Interstate Highway System increased operational costs for the trucking industry by \$9.2 billion in 2013. State highway projects that are located in nonattainment areas are subject to additional analyses and review requirements to demonstrate conformity with air quality plans in order to be eligible for federal funding. An increase in the number of nonattainment areas will subject more areas to conformity analyses requirements, likely increasing the costs of highway projects and potentially leading to delays in the construction of important congestion mitigation projects."

- American Trucking Association

TRANSPORTATION FUNDING IS RARELY WITHHELD – WHY WILL THIS TIME BE DIFFERENT?

Historically, harsh highway sanctions and conformity lapses are relatively rare events under the Clean Air Act. This is primarily because targets were set at levels that were initially very challenging but, in conjunction with steady technological advances, allowed for development of SIPs and associated transportation plans that put states on a path to compliance (table 1).

Table 1. Ozone standard revisions, 1979 – 2015

Year	Ozone Standard (parts per billion)
1979	120 ⁸
1997	80
2008	75
2015 (proposed)	65 – 70

Under EPA’s proposed revised standard, however, noncompliance and related transportation funding penalties are likely to rise dramatically. These penalties will be driven by four primary factors that will make compliance especially difficult: (1) technological achievability, (2) background ozone, (3) economic and population growth, and (4) transportation planning burdens and strains on limited government resources.

Technological Achievability

To avoid transportation funding penalties, the Clean Air Act requires states with nonattainment areas to specify how they will achieve compliance with a more stringent ozone standard. For example, compliance with prior ozone standards has been achieved in large part through strict requirements on vehicles and motor fuels such as gasoline and diesel. With these avenues largely exhausted, states and localities are left with extremely limited options to comply through implementation of new technologies.

EPA itself explicitly acknowledges this in the proposed rule, noting that current emissions control technologies will not be sufficient to achieve compliance and estimating that, with a 65 ppb standard, over 40 percent of necessary reductions must be met by “unknown controls” currently not in existence. A recent industry report from NERA Consulting estimates that such unknown controls present even greater compliance burdens, comprising more than 60 percent of required reductions.

Because these controls are not known, their technological feasibility, costs, and whether they even could come into existence are unknown—and, by definition, unknowable. Absent a path to compliance, states would quickly exhaust (if they have not already) cost-effective technological control options, leaving them with no choice but to shut down existing industrial facilities or prematurely scrap older vehicles and equipment to avoid penalties.

⁸ The 1979 ozone standard was a “1-hour standard,” meaning that 120 ppb was the maximum allowable average concentration over one hour to remain in attainment. In 1997, EPA transitioned to an 8-hour standard, setting minimum attainment at the fourth-highest 8-hour average concentration over a rolling three-year period.

EPA itself explicitly acknowledges in the proposed rule that current emissions control technologies will not be sufficient to achieve compliance, estimating that over 40 percent of necessary reductions must be met by “unknown controls” currently not in existence.

Background Ozone

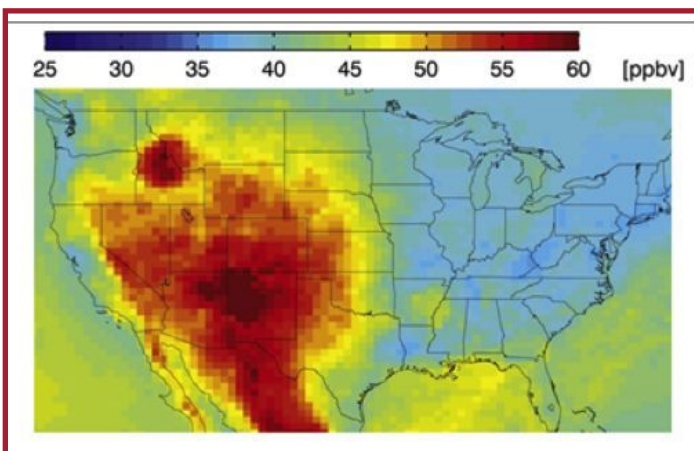
A second and equally significant factor threatening states’ ability to comply with more stringent ozone standards is the issue of background ozone. A significant and sometimes predominant fraction of ambient ozone levels are in fact not due to local anthropogenic emissions but to natural-occurring background ozone and ozone transported from locations as far away as Asia and deposited from the stratospheric layer of the atmosphere (where ozone blocks the sun’s ultraviolet rays). In the vast majority of the country, background

ozone levels exceed 35 parts per billion (figure 2). Background ozone concentrations in much of the intermountain West exceed 50 ppb or more, which is why even many remote and desolate areas of the country (including national parks such as Yellowstone and the Grand Canyon, Fig.2) exceed EPA’s proposed standard. Because EPA’s tightened standard brings so many areas closer to background levels, states and localities have greatly reduced ability to devise practical control strategies to achieve compliance. While this is a less of a problem in the Eastern U.S.—background ozone in the Washington, D.C. region is about 40 ppb—transportation agencies must take these background levels into account as part of conformity emissions modeling. A recent survey of states by the Association of Air Pollution Control Agencies found that 24 states (including 10 states in the Eastern U.S.) raised concerns with EPA regarding the impact of background ozone levels on their ability to comply with the new standard.⁹

Economic Growth and Population Growth

Many areas of the United States—particularly urban areas—have witnessed steady economic

Figure 3. Modeled Estimates of Ozone Background Levels, 2006-2008.¹⁰



⁹ Annual 4th highest policy relevant background ozone, 2006 – 2008. From Zhang et al, 2011. Available at http://dash.harvard.edu/bitstream/handle/1/12712894/Zhang_ImprovedEstimate.pdf?sequence=1

¹⁰ http://www.csg.org/aapca_site/documents/AAPCASurvey-StateEnvironmentalAgencyPerspectivesonBackgroundOzoneandRegulatoryRelief-June201.pdf

growth and population growth over the last 25 years. Since 1990, U.S. economic output has grown by more than 80 percent, and the nation's population has grown by 28 percent. Vehicle travel on U.S. highways has increased 39 percent during this same time period. Similarly, annual

transit ridership has grown by nearly 40 percent since 1995. These trends of increased population and business expansion—while undoubtedly positive for local economies—exacerbate ozone standard compliance challenges in areas of rapid and steady growth, particularly those regions with manufacturing and industrial-based economies.

IN THEIR OWN WORDS:

Achievability of EPA's Proposed Ozone Standard

"Unfortunately, the Proposed Rule seeks to impose new regulatory standards at or below background ozone levels for many western air quality control regions, meaning that no amount of technological innovation (or costs expended) will allow those regions to reach attainment status."

- States of ND, AL, IN, WY, MS, and WV

"A major concern for CRPC's transportation planning responsibilities related to a lower ozone standard is the almost certain inability to meet new conformity requirements for planned transportation projects. It is expected that, given further emissions reductions necessary to meet a new, lower ozone standard, it will be impossible to make a new conformity determination without transportation control measures that the public will not accept. If unable to demonstrate conformity under the new standard, our existing conformity status will lapse and the availability of federal highway funds for our transportation projects will be placed in jeopardy."

- Baton Rouge, Louisiana Capital Region Planning Commission

"Local contributions are so minor that, if areas within Nevada's jurisdiction are in nonattainment with the new proposed standard, the NDEP will be in the untenable position of having no meaningful control strategies to achieve attainment with the new standard."

- Nevada Department of Environmental Protection

Transportation Conformity Costs and Planning Burdens

A final factor adding to state and local government compliance challenges with EPA's proposed ozone regulations is the substantial and costly regulatory process burdens imposed by the rule and other similar air regulations. As discussed earlier, state departments of transportation and metropolitan planning organizations must undertake extensive analyses and paperwork processes in order to demonstrate conformity. As detailed in Appendix I, these activities include development of planning assumptions (trends in land use, travel, demographics, employment, vehicle fleet mix, etc.), sophisticated modeling of travel demand, emissions forecasting, project-level analyses and modeling, and more. These process requirements must be met each time an MPO revises a transportation plan or Transportation Improvement Program (TIP)—the U.S. Department of Transportation cannot allow an area to obligate funds to a project until and unless an acceptable conformity plan and TIP are in place.

In its proposed rule, EPA dramatically underestimates the cost of these burdens. EPA estimates that the cost annual conformity demonstrations averages about \$30,000 per MPO, and that the entire nationwide cost of meeting the requirements is just \$3.8 million annually.

As explained in Appendix I, the public record details the problems with EPA's assumptions. First, EPA assumes that localities undertake

conformity analyses only once every four years. In reality, this exercise is done at least once each year in most areas. EPA also underestimates the burden hours and associated costs of these assessments. As a result, the agency has likely underestimated actual conformity process costs by roughly an order of magnitude, and much more in many cases.

For example, the Louisiana DOT estimates annual conformity assessment costs of about \$400,000 per MPO. Louisiana may have as many as eleven nonattainment areas under a new ozone standard which would cost the state about \$1.25 million annually for compliance. The cost of a conformity assessment for two large MPOs in Texas (Houston and Dallas-Fort Worth) averages about \$450,000 annually, which does not include many ongoing planning costs required in addition to the assessment. In the Washington, D.C., region, we estimate that, based on public documents, reasonable assumptions, and past experience, annual conformity determination costs are between \$1.3 million and \$2.7 million (appendix I). This represents between 9 and 18 percent of the regional transportation planning board's entire budget—a severe burden for an entity that must undertake planning efforts for all transportation issues (roads, transit, airports, etc.).

It should be noted that the costs of failing to meet these requirements (principally, transportation project delays and the withholding of federal funding) greatly exceed the costs of carrying them out. However, under EPA's proposed lowered standard these requirements are certain to place incredible and potentially insurmountable pressure on many state and local governments. This pressure will be particularly burdensome on the hundreds of generally smaller and less well-funded counties that will be forced to undertake conformity assessments as a result of being pushed into nonattainment status. In those places where counties do not have the resources to conduct required analyses, the state DOTs will bear this additional burden.

IN THEIR OWN WORDS:

Transportation Conformity Burdens

"The transportation conformity process will impose a difficult – if not impossible – task in places where background levels are so high that there is little that can be done through transportation planning to reduce ozone."

- Texas Department of Transportation

"In marginal nonattainment areas, the quantitative analyses performed to meet regional transportation conformity requirements are quite costly, in the neighborhood of tens of thousands of dollars per analysis. These costs are disproportional to the minimal (if any) environmental benefit such analyses provide."

- Virginia Department of Environmental Quality

A Closer Look

Washington, D.C.: DC Streetcar

A top District of Columbia transportation priority is to construct a streetcar transitway connecting Union Station to Georgetown. Nearly \$230 million has been secured in the fiscal year 2015 to 2020 Transportation Improvement Program to devote dedicated streetcar lanes for the 3.6 mile project that will travel primarily along K Street. If the region enters a conformity lapse in FY2019, timely completion of the project and \$75 million in funding could be at risk.



★★★
dcstreetcar

TRANSPORTATION CONFORMITY CHALLENGES IN THE WASHINGTON, D.C. METROPOLITAN REGION

This following analysis is intended to estimate transportation funding (federal, state, local and/or private funds) and associated projects that would potentially be at risk in the Washington, D.C. region if the National Capital Region Transportation Planning Board (TPB) is unable to meet Clean Air Act transportation requirements related to EPA's proposed new ozone standard. Based upon EPA's proposed implementation schedule, impacted areas, including the Washington, D.C. region, would need to meet the related Clean Air Act transportation conformity requirements beginning in October 2018. If the region misses this deadline, it may be granted a conformity lapse grace period of

12 months, which brings its own potential project delays and associated costs. For the purposes of this analysis, we assume that any impact to projects and funding would begin in FY2019.

Regional Overview

The metropolitan Washington region is approximately 3,500 square miles in size and is currently home to more than 5.3 million people and 3.2 million jobs. It is the seventh largest metro area in the country, and is likely to experience continued steady growth for the foreseeable future. Between now and 2040, the area's population is expected to increase 24 percent to 6.4 million people, accompanied by 36 percent growth in jobs to a total of 4.4 million.

According to Federal Highway Administration data analyzed by The Road Information Program (TRIP), 92 percent of major roadways in Washington, D.C. are considered to be in poor condition.¹¹ These poor conditions translate to an additional \$1,042 in annual maintenance costs for the average D.C. driver. In Virginia and Maryland, respectively, drivers pay an additional \$475 and \$491 in annual operational costs and maintenance.

A recent report by the Texas A&M Transportation Institute rated the Washington, D.C. metropolitan region as the most congested in the nation.¹² The report found that average D.C.-area highway commuters encounter 67 hours of traffic delays annually. For each commuter, this

BY THE NUMBERS

92	Percent of major roadways in the D.C. region in poor condition
67	Average commuter hours lost each year due to traffic delays
32	Average gallons of fuel wasted in traffic delays per consumer
1st	D.C. highways rank as the nation's most congested
3rd	D.C. transit system rank in use per capita
\$243 billion	Cost of region's identified transportation needs through 2040

¹¹ <http://www.washingtonpost.com/blogs/wonkblog/wp/2015/06/25/why-driving-on-americas-roads-can-be-more-expensive-than-you-think/>

¹² <http://mobility.tamu.edu/ums/national-congestion-tables/>

translates to nearly \$1,400 in additional costs and 32 gallons of wasted fuel. This congestion and wasted fuel significantly increase ozone-forming emissions.

The D.C. region's public transit system faces similar capacity challenges and repair demands. Among metropolitan regions, it ranks fourth in total ridership at nearly 500 million trips per year, and third in usage rates, with 99 annual trips per capita.¹³ Billions of dollars of investments are needed in order to bring the system up to a state of good repair.

As the D.C. region grows to accommodate more people and jobs, the strains on the area's transportation system will only increase. The region must address these challenges and work to secure adequate funding for proper maintenance and rehabilitation of existing facilities and systems, as well as much-needed expanded capacity within the region.

IN THEIR OWN WORDS:

Transportation Conformity Burdens

"For states and MPOs, the change in the NAAQS will have significant practical implications, including administrative burdens and slowdown in project delivery. The administrative burdens result from the need to make transportation conformity findings for ozone in hundreds of counties where those findings are not currently required. Especially in rural areas and small metropolitan areas, these burdens will be significant in comparison to existing budgets for transportation planning. The effect on project delivery results from the additional time required for transportation conformity determinations. While it is difficult to quantify these administrative burdens and delay impacts, we expect that they will be significant."

- American Association of State Highway
Transportation Officials

¹³ FiveThirtyEight.com analysis of National Transit Database. Available at <http://fivethirtyeight.com/datalab/how-your-citys-public-transit-stacks-up/>

A Closer Look

Virginia: I-66 Outside the Beltway Improvements

As the primary highway transportation option connecting Northern Virginia and Washington, addressing extreme congestion on I-66 has long been a top priority for the Virginia Department of Transportation. At an estimated cost of \$2 – \$3 billion, VDOT is proposing to reconfigure 25 miles of the I-66 outside of the Capital Beltway between 2017 and 2022. The project extends from U.S. 15 in Haymarket to the Capital Beltway/I-495.

The project will include three general purpose lanes in each direction, two managed lanes in each direction that employ congestion-based tolling, and implementation of expanded bus service and commuter park and ride options.

The undertaking is expected to be funded through a variety of sources, including federal and state funding as well as private and public equity and third party debt. If, as expected, the

I-66 improvements are incorporated into forthcoming transportation plans (CLRP and TIP) this fall, there is a high risk that badly needed I-66 improvements would be impacted by a conformity lapse in the D.C. region.



OVERVIEW OF WASHINGTON, D.C. REGION TRANSPORTATION PRIORITIES & PLANNING PROCESS

The Metropolitan Washington Council of Governments is the designated metropolitan planning organization (MPO) for the Washington, D.C. region. The Council of Government's Transportation Planning Board (TPB) is responsible for transportation planning functions. The TPB's planning area covers the District of Columbia and surrounding counties in suburban Maryland and Virginia (Figure . Membership on the TPB includes representatives of local governments, the Virginia, Maryland and D.C., Departments of Transportation, members of the Maryland and Virginia General Assemblies, the Washington Metropolitan Area Transit Authority and the Metropolitan Washington Airports Authority.

TPB is responsible for developing and carrying out the federally-required transportation planning process in the area, including the development of the long range transportation plan (CLRP) and the Regional Transportation Improvement Program (RTIP). Once all federal planning and fiscal constraint requirements are met, all projects identified by Maryland, Virginia and D.C., are included in the RTIP, whereupon they can become vulnerable to conformity lapse penalties.

Status of Transportation Plans in the Washington D.C. Region

The D.C., region's 2015-2020 Regional Transportation Improvement Program (RTIP) was most recently adopted in October 2014. It calls for funding a total of 460 different line item projects at a total of nearly \$18 billion, including the addition of 650 lane miles and 44 miles of new rail transit by 2020, including the Purple Line (2020), Silver Line – Phase 2 (2020), and D.C. Streetcars (2020). The RTIP provides a detailed

listing of projects to be implemented in the next four-year period, and funds must be identified and available for all projects in the RTIP.

The analysis presented within reflects the most recent version of the RTIP. However, the TPB region is currently in the process of updating the CLRP and the 2015 - 2020 RTIP and is scheduled to adopt these updates in October 2015. Reportedly, draft updates to the plan will be available to the public in August or September of 2015, and will include revised schedules, new funding information, and project additions and modifications that will provide additional insight into potentially impacted projects.

The D.C., region's Constrained Long Range Plan (CLRP), which identifies regional needs and priorities through 2040, was adopted in October 2014. This plan includes more than 500 regionally significant projects totaling more than \$243 billion. Nearly 80 percent of the funds over the CLRP period will be spent on operating and maintaining the existing transportation system. All projects in the CLRP are subject to transportation conformity requirements.

Further, because many of the projects in this plan are ultimately incorporated into the RTIP, the CLRP can be used as an indicator of longer-term projects that could be impacted in the event of a conformity lapse. Among the many major notable projects in this category are a \$2 to \$3 billion project to reconfigure 25 miles of I-66 outside the Capital Beltway between 2017 and 2022, and \$5.5 billion for I-270/US 15 Corridor improvements in Maryland, scheduled to be completed by 2030.

Current Ozone Attainment Status

In May 2012, EPA designated the Metropolitan Washington region as a marginal ozone nonattainment area exceeding EPA's 2008 maximum ozone standard of 75 ppb. During the most recent three-year period for which data are available (2012 - 2014), ozone levels in the region averaged 76 ppb.¹⁴ Despite this nonattainment status, however, the region has avoided transportation and other Clean Air Act penalties through development of implementation plans and accompanying mobile source emissions budgets that chart a path toward compliance.¹⁵ In fact, the Metropolitan Washington Council of Governments reports that the region expects to achieve attainment with EPA's 75 ppb standard sometime in 2016.

Accordingly, the region received an approved conformity determination in October 2014. The region is currently in the process of updating its RTIP and will be doing a new conformity determination later this year. Unfortunately, EPA's proposed tightened standard effectively "moves the goalposts" on regional governments and transportation planners, and compliance with and attainment of a tightened standard is certain to be extremely difficult.

To determine which projects would be impacted in the event that the TPB could not make a conformity determination on the CLRP or the RTIP, an initial screening process was conducted. The screening process entailed the following steps:

- First, the current CLRP and RTIP were reviewed for consistency. The CLRP covers 2014 - 2040 investments and the RTIP includes 2015 - 2020 investments.
- Next, all projects in the RTIP were reviewed to eliminate those projects slated for funding prior to FY2019. This is because under a new ozone standard, the first conformity determinations for all areas designated as nonattainment would be due in 2018. The analysis assumes that all projects slated to be funded prior to and including 2018 would not be impacted by a conformity lapse. In the Washington, D.C., region, we identified all projects in the RTIP that are slated for funding in FY2019 and FY2020 that could be impacted by a conformity lapse.
- Third, all remaining projects in the RTIP were reviewed and all projects that may proceed even in the event of a conformity lapse were eliminated.

¹⁴ The Metropolitan Washington Council of Governments, MWAQC Meeting held on July 29, 2015, Ozone Season Summary, Slide 11: 8-hour Ozone Design Value for the DC-MD-VA Ozone Non-Attainment Area (1999-2014). Accessed at <https://www.mwcog.org/uploads/committee-documents/IFxXVtd20150727130535.pdf>

¹⁵ Note: the TPB must also undertake conformity demonstrations on other regulated pollutants (i.e., particulate matter, carbon monoxide, etc.). While beyond the focus of this report, these pollutants have their own emissions budgets and analysis years, and further add to localities' conformity burdens.

Potential Conformity Lapse Impacts in the Washington, D.C. Region

Exhibit 1 shows the projects in the RTIP that may be impacted by a conformity lapse. Once the region goes into a lapse some of these projects or phases could be immediately delayed until conformity issues are resolved. Our analysis shows that, under a conformity lapse in the Washington, D.C. region, projects totaling \$511 million would risk a cutoff in funding for the FY2019 and FY2020 period (\$308 million in FY 2019 and \$203 million in FY2020).

These potential impacts are certain to increase significantly as the deadline nears and more projects receive funding and approval to proceed. For example, the average annual cost of projects in the D.C. region's current 2015–2020 Transportation Improvement Plan potentially at risk is \$556 million, and if the D.C., area were to enter a conformity lapse in 2015, 26 projects totaling \$884 million would be at risk. Potentially impacted projects that are not yet part of the region's TIP include \$2-3 billion improvements to address major congestion problems on I-66, as well as full funding for the \$2.45 billion Purple Line light rail system in suburban Maryland.

In addition, delays in funded projects can have a negative ripple effect on longer-range projects in earlier stages of planning, development and implementation. Directly, project delays tend to increase project costs, thereby reducing the region's fiscal capacity on the whole. Among identified projects in the D.C. region, inflation alone would add between \$15 and \$40 million in costs for a one- and two-year lapse, respectively. Significant project delays also carry indirect effects that complicate planning and have the potential to undermine public confidence in its transportation leaders and agencies, thereby reducing the chances that voters will choose to increase the region's investment in its transportation systems.



Potentially impacted projects in the Washington, D.C. region. Construction of new interchange at Suitland Parkway and MD-4 (Pennsylvania Avenue) in Maryland (top photo). Total project cost: \$157 million. Construction of third track to expand capacity on the Virginia Railway Express (VRE) RF&P Line (bottom photo). Total project cost for this phase: \$31 million.

A Closer Look

Maryland: Purple Line Light Rail System

As the primary highway transportation option connecting Long a priority of the state of Maryland, the 16.2-mile Purple Line light rail system would extend from Bethesda to New Carrollton, with 21 stations connecting areas such as Silver Spring, Takoma Park, Langley Park, College Park, the University of Maryland, and Riverdale. The total project cost is expected to be \$2.45 billion, split among federal (\$900 million), state, and other funding sources (potentially including a private partner). The original project called for construction to begin in 2015 and the line opening to service in 2020.

While the Purple Line has yet to secure full funding, it enjoys bipartisan support among elected officials, and Maryland Gov. Larry Hogan recently indicated his support for the project. The RTIP includes \$600 million for the project (FY2015 -

FY2018), and if the project proceeds as anticipated, it would be highly likely to receive federal funding in FY2019 and FY2020, and thus could be impacted by a conformity lapse.



Key Findings

- If the Washington, D.C. region were unable to demonstrate conformity with EPA's proposed ozone standard by the 2018 transportation conformity deadline, at least 13 projects totaling \$511 million in funding in FY2019 and FY2020 would risk a cutoff in funding.
- These potential impacts are certain to increase significantly as the deadline nears and more projects receive funding and approval to proceed. For example, the average annual cost of projects in the D.C. region's current 2015 - 2020 Transportation Improvement Plan potentially at risk is \$556 million, and if, for example, the D.C. area were to enter a conformity lapse in 2016, 26 projects totaling \$884 million would be at risk.
- The following major area projects could be impacted:
 - Union Station-to-Georgetown streetcar project in D.C.
 - Virginia Railway Express (VRE) RF&P Line capacity expansion in Virginia
 - Construction of a new interchange at I-270 and Watkins Mill in Maryland
 - Construction of a new interchange at MD-4 and Suitland Parkway in Maryland
 - Transportation improvements in White Flint District in Maryland
 - I-66 improvements outside the Beltway
- Additional impacts and concerns include:
 - Purple Line light rail development is likely to be impacted if its financing and construction schedule proceeds as expected.
 - Federal approvals and permits for projects in planning and early development stages may not go forward.
 - Transit agencies may not purchase expansion buses or rail cars during a conformity lapse (though replacement purchases are permitted).
 - Conformity planning burdens will consume between 9 and 18 percent of the Capital Region Transportation Planning Board's budget.
 - A one-year delay in funding for the 13 identified projects would result in an additional \$6-\$15 million in construction costs, which would increase to \$15-\$40 million under a two-year delay due to a conformity lapse.

CONCLUSION

The severity of EPA's proposed ozone standard and the associated lack of compliance options greatly increases the likelihood that federal transportation funds will be withheld from localities around the country due to conformity lapses. Numerous states and localities are simply not going to have the resources and tools

conformity requirements at levels set by EPA, the impacts on critical area projects could be very large. These noncompliance penalties would not only directly affect highway and transit projects already funded and under construction, but could also delay permitting and approvals for longer-term projects. Such delays would reverberate across the region's entire planning and investment program and undermine public confidence in the government's ability to deliver badly needed transportation solutions.

These circumstances would serve not only to exacerbate the economic consequences of EPA's proposed rulemaking, they would also impose a literal roadblock on efforts to address the stifling congestion and critical state of disrepair of America's roads bridges and public transit in growing cities such as Washington, D.C.

Accordingly, the Chamber strongly urges EPA to take a more reasonable approach and allow appropriate time for states and localities, such as Washington, D.C. to continue steady progress toward compliance with the current standard.



Potentially impacted project in Maryland: Construction of new interchange to reduce congestion on Interstate 270 at Watkins Mill Road. Total project cost: \$161 million.

necessary to reduce ozone-forming emissions to meet the new more stringent standard. Because of its growing population and economy, compliance in the Washington, D.C. region will be particularly challenging. Local officials could be forced to choose between competing transportation priorities and business and industrial expansion critical to jobs and economic development. If the region fails to meet transportation

Exhibit 1: National Capital Region Transportation Projects Potentially At Risk



Location	Project	Funding Sources	FY18	FY19	FY20	TOTAL COST*
MARYLAND						
Montgomery County	I-270 at Watkins Mill Road. Construction of a new interchange, including two-lane collector-distributor roads on I-270 in the northbound and southbound directions.	NHPP/State/Local	\$34,373,000	\$41,078,000	\$-	\$160,800,000
Prince George's County	MD 210 at Kerby Hill Road and Livingston Road. Construct new interchange to relieve traffic congestion and improve intersections from I-95 and I-495 to MD 228. Scheduled to be completed in 2019.	HPP/NHPP/STP/State	\$27,215,000	\$10,696,000	\$-	\$97,900,000
Prince George's County	MD 4 Corridor at Suitland Parkway. Construction of a grade-separated interchange and lane expansion at Suitland Parkway and MD-4 (Pennsylvania Avenue). Scheduled to be completed in 2019.	NHPP/HPP/STP/State	\$29,654,000	\$20,587,000	\$-	\$157,000,000
Prince George's County	US 1 Corridor Reconstruction of US 1 between College Avenue and I-95 and I-495. Will provide 4 lane divided roadway with turn lanes at major intersections. Scheduled completion in 2020.	NHPP/STP/State	\$2,051,000	\$-	\$-	\$59,100,000
Frederick County	US 15 at Monocacy Blvd. Construct grade separated interchange. Scheduled completion in 2018.	NHPP/State/Local	\$15,101,000	\$-	\$-	\$66,700,000
Montgomery County	US 29 at Musgrove and Fairland Rds Interchange. Construct of interchanges to reduce traffic congestion at Musgrove/Fairland Road; Stewart Lane, Tech and Industrial Road, Greencastle Road, and Blackburn Road. Scheduled completion in 2025.	NHPP/State	\$1,825,000	\$5,024,000	\$-	\$125,500,000
Montgomery County	MD 97. This project provides for the replacement of the Gold Mine Road Bridge over the Hawlings River, and the construction of an 8' wide bikepath from James Creek Court to New Hampshire Avenue.	NHPP/Local/State	\$10,002,000	\$9,160,000	\$-	\$36,800,000
Montgomery and Prince George's Counties	Purple Line. Begin construction of 16 mile light rail transit, extending from Bethesda to New Carrollton with 21 stations.	FTA	\$200,000,000	\$-	\$-	\$236,892,000
Montgomery County	Goshen Road South. Project will widen 3.5 mile stretch of Goshen Road in Montgomery Village from 2 to 4 lane divided roadway with retaining wall and bike path.	Local ¹	\$745,000	\$17,528,000	\$34,484,000	\$128,630,000
Montgomery County	Montrose Parkway East. Construction of a new four-lane divided parkway and bike path from MD 355 to Viers Mill Road. Scheduled to be completed in 2022.	Local ¹	\$1,000,000	\$24,305,000	\$16,256,000	\$119,890,000
Montgomery County	White Flint District East. Construction of three new roads and one bridge to include a walkable street grid, sidewalks, bikeways, trails, paths, public use space, parks and recreational facilities, mixed-use development, and enhanced streetscape.	Local ¹	\$3,700,000	\$-	\$-	\$29,690,000
Montgomery County	White Flint District West Project acquisition for one new road, one relocated road, improvements to three existing roads, and one new bikeway. Improvements to the roads will include new traffic lanes, shared-use paths, the undergrounding of overhead, utility lines and streetscaping.	Local ¹	\$22,909,000	\$9,014,000	\$4,028,000	\$133,784,000
Prince George's County	Old Gunpowder Rd. Two phase project that includes construction of a four-lane divided urban collector from Greencastle Road to Denim Road, and construction of an additional bridge over I-95.	Local/Developer ¹	\$5,100,000	\$-	\$-	\$17,764,000
SUBTOTAL POTENTIAL IMPACTS ON MD			\$353,675,000	\$137,392,000	\$54,768,000	\$1,623,884,000

Location

Project

Funding Sources

FY18

FY19

FY20

TOTAL COST*

VIRGINIA

Loudoun County

Sycolin Road. Widen Sycolin Road from 2 lanes to 4 lanes near the VA-7 and US-15 Bypass.

ACRSTP/St/Local

\$-

\$-

\$4,235,000

Alexandria-South

CSX RF & P Rail Corridor. Construction of third track and second platforms to support VRE capacity expansion.

State/Local

\$10,800,000

\$10,000,000

\$30,890,000

Loudoun County

Dulles Corridor Metrorail Extension Phase II. Construction of 5 new Metro stations extending the Silver Line from Wiehle Ave to Route 772.

TIFIA/State/Local

\$13,175,000

\$-

\$2,937,421,000

SUBTOTAL POTENTIAL IMPACTS ON VA

\$24,975,000

\$10,000,000

\$2,972,546,000

WASHINGTON, D.C.

Northwest D.C.

Union Station to Georgetown Premium Transit. East-West Streetcar project along K Street NW corridor.

CMAQ/NHPP/State

\$71,000,000

\$74,500,000

\$8,750,000

Northeast D.C.

Reconstruction of Kenilworth Avenue, E Capitol St. to Penn Rail Bridge. Project will widen MD 201 to 6 lanes and improve intersections. Scheduled completion in 2030.

NHPP/NHS

\$13,050,000

\$-

\$13,050,000

Southwest D.C.

Repay GARVEE Bond Debt Service**
South Capitol Street Corridor. Rehabilitation or replacement of subject bridges to eliminate all structural deficiencies and to make the facilities safe for the traveling public, to be finished by 2016.

NHPP

\$18,030,000

\$18,030,000

\$84,440,000

Northwest and Southwest D.C.

North-South Streetcar Study. Study, plan, and build 9 miles of fixed guideway transit that will comprise three segments of larger streetcar network.***

State

\$-

\$24,750,000

\$110,250,000

Southeast and Southwest D.C.

M Street SE and SW Corridor Streetcar. Construction of streetcar line from Good Hope Road SE to Maine Avenue SW.

State

\$20,750,000

\$43,750,000

\$128,250,000

Northeast D.C.

Benning Rd NE Streetcar Extension. Construction of streetcar line to connect Benning Rd and Minnesota Ave Metro.

CMAQ/State

\$29,250,000

\$-

\$82,750,000

SUBTOTAL POTENTIAL IMPACTS ON DC

\$291,380,000

\$161,030,000

\$1,342,642,000

Bus Expansion - during a conformity lapse expansion buses may not be purchased
 Rail Car Expansion - during a conformity lapse expansion trains may not be purchased
 [We do not know how much of the above two projects are expansion funds]

Fed/PRIIA/Local
Fed/PRIIA/Local

FY18

FY19

FY20

TOTAL COST*

GRAND TOTAL FUNDING FOR DC-MD-VA REGION FOR FY 2018 - FY 2020 **\$670,030,000** **\$308,422,000** **\$202,548,000** **\$1,944,137,000**
TOTAL PROJECT COSTS FOR ALL PROJECTS SHOWN **\$5,939,072,000**
TOTAL POTENTIAL IMPACTS FOR FY 2019 and FY 2020 **\$510,970,000**

*Total Costs may not add across due to funding in earlier or later years and projects completed before FY2018, which are not shown.

**Uncertain how repayment of GARVEE debt service would be treated during a conformity lapse.

***Final funding amount uncertain

1 Non-federally funded projects in need of federal approvals or permits to proceed are also subject to transportation conformity requirements and penalties.

APPENDIX I: DETAILED REVIEW OF TRANSPORTATION CONFORMITY COMPLIANCE COSTS

The costs and burdens of meeting transportation conformity requirements might best be categorized in two ways: (1) compliance costs, those costs associated with ensuring that all nonattainment and maintenance areas meet conformity requirements at all times; and (2) other costs that could be defined as those costs a nonattainment or maintenance area would incur if it were to fail to comply with the conformity requirements. This analysis addresses compliance costs.

It should be noted that the costs and burdens of failing to comply far outweigh the costs of meeting the regulatory requirements. This is because transportation projects totaling hundreds of millions, even billions, of dollars could be impacted during a conformity lapse.

The compliance costs are significant however, especially given demands on state departments of transportation (DOTs) and metropolitan planning organizations (MPOs) limited planning funds which pay for costs of compliance. The costs of the conformity requirements have been the subject of disagreement between EPA, DOTs, and MPOs since at least 2004.

What is Included in Compliance Costs?

The transportation conformity regulation requires that detailed systems-level technical analyses be conducted to assess emissions from transportation investments included in transportation plans and transportation improvement programs (TIPs). In some cases project-level emissions modeling must also be conducted. MPOs and state DOTs (in rural areas) must demonstrate and document that emission levels are consistent with State Air

Quality Implementation Plans (SIPs) for that pollutant. The procedures and definitions for the analyses are included in the Transportation Conformity Regulation¹⁶ and various additional Federal guidance documents from EPA, FHWA, and FTA. MPOs are responsible for meeting the conformity requirements in nonattainment and maintenance areas that include MPO boundaries and state DOTs are responsible for meeting conformity requirements for rural nonattainment and maintenance areas.

The conformity requirements encompass many MPO activities, including those related to the development of, and any revisions to, the long range Regional Transportation Plan (RTP), Transportation Improvement Program (TIP), and project development and implementation.

Each time an MPO revises a TIP or transportation plan, the conformity process requirements must be met. In some cases a full regional emissions analysis may not be required to revise the TIP or Plan but in all cases, the conformity requirements must be addressed and documented. The FHWA and FTA cannot allow an area to obligate funds unless a conforming plan and TIP are in place.

¹⁶ <http://www.epa.gov/otaq/stateresources/transconf/regs/420b12013.pdf>.



Conformity requirements that impact MPOs' resource allocation and work activities include but are not limited to:

- Planning assumptions: including demographic, land use, travel, employment and census data.
- Vehicle fleet data: age, type of vehicle, engine model, fuel-type, etc.
- Travel demand modeling: six specific modeling requirements in the conformity rule, sophisticated travel demand modeling requirements, updating protocols, etc.
- Identification of Regionally Significant Projects: specific requirements and definitions.
- Travel Forecasting: cooperative forecasting with local jurisdictions and others.
- Emissions modeling: using EPA's latest approved emission model. There have been at least five different EPA approved models required for use in conformity since 1993.
- Interagency Consultation: extensive interagency and public involvement required of staff, management and elected officials.
- Project level analysis: all projects must meet basic requirements, certain projects require quantitative modeling on a project-level scale, also using EPA's approved emissions model. This is a new requirement since 2012.
- Public Outreach and Communications: public comment, review, feedback requirements.

U.S. EPA Estimates of Compliance Costs

In accordance with the Paperwork Reduction Act¹⁷ requirements, EPA periodically submits an information collection request (ICR) to the Office of Management and Budget (OMB) for review and approval. EPA's most recent estimates of compliance costs associated with the transportation conformity regulation were included in EPA's ICR posted on February 23, 2015 in the Federal Register¹⁸ with comments due to the docket on April 24, 2015.

Overview of EPA's Proposed Updates to Cost Estimates

EPA has updated its previous cost and burden estimates and has concluded that the total estimated burden of the conformity process for 2015 - 2017 will decrease compared with the existing ICR. EPA's new estimated annual total nationwide cost of meeting the conformity requirements is \$3,768,668. This assumes an estimated burden¹⁹ of 63,237 hours per year, a reduction of 136,200 hours over the existing ICR. EPA assumes efficiencies in several areas will lead to reduced costs including: reduced costs for areas making a conformity determination for more than one NAAQS and reduced costs associated with using the MOVES model. Finally, EPA assumes 126 MPOs nationwide will be subject to the conformity requirements in the 2015 - 2017 period covered by the ICR at an estimated annual cost of \$29,910 per MPO.²⁰

¹⁷ 44 U.S. C. 3501 et seq.

¹⁸ <https://s3.amazonaws.com/public-inspection.federalregister.gov/2015-03577.pdf>. Transportation Conformity Determinations for Federally Funded and Approved Transportation Plans, Programs and Projects," ICR number 2130.05.

¹⁹ Burden is defined at 5 CFR 1320.03(b)

²⁰ The full record of supporting documents can be found at: <http://www.regulations.gov/#!documentDetail;D=E-PA-HQ-OAR-2007-0269-0018>.

Comments from Practitioners

This is the third EPA issuance of an ICR (2004, 2011, and 2015), and as in the past, the American Association of State Highway Transportation Officials (AASHTO) and Association of Metropolitan Planning Organizations (AMPO) submitted joint comments to the docket. Texas DOT submitted the only other comments. AASHTO and AMPO reiterated a concern expressed with previous ICRs that EPA failed to consult with them and their members (state DOTs and MPOs) on the most recent conformity cost estimates.²¹ AASHTO and AMPO provided substantial detail (including previous comments and analyses from 2004 and 2011) on several fundamental flaws in EPA's assumptions and cost estimates and requested that EPA consult with state DOTs and MPO prior to finalizing their current ICR cost estimates.

- AASHTO and AMPO noted that: "it is vital for EPA to consult with state DOTs and MPOs on conformity cost estimates. As the agencies that fund and implement the conformity requirements, they are uniquely qualified to assist EPA in more accurately estimating burden hours and annual costs."
- The AASHTO/AMPO Comment letter concluded: "As such EPA is using fundamentally flawed assumptions that result in significantly underestimated national conformity costs."

EPA Underestimates Compliance Costs of the Transportation Conformity Regulation

Frequency, Burden Hours, and Costs

Stakeholders have repeatedly asked that the EPA estimates of frequency for making conformity determinations and the associated

costs be increased. EPA grossly understates the frequency of needed conformity analysis by assuming it occurs only once every four years. This assumption should be changed; in most areas conformity analysis is done at least once a year. As noted earlier, each time that a TIP or Plan is changed, in any way, a determination must be made that all conformity requirements are met. The need to meet the frequency requirements and associated triggers in the conformity regulation are not voluntary activities as EPA assumes. As a result, EPA's estimates of the frequency, burden, hours, and associated costs of each conformity determination are all underestimated.

Interagency Consultation Process Costs

The conformity process requires an extensive and legally binding interagency consultation process. It includes, at a minimum, no fewer than three Federal agencies (EPA, FHWA, and FTA), two state agencies (state DOT, state environmental agency) and one MPO. In addition, it includes major transit operators, operators of major facilities, and others. In multi-state or multi-MPO nonattainment or maintenance areas (multi-jurisdictional nonattainment and maintenance areas²²) the costs of meeting the interagency consultation process are substantially higher.

Each time a conformity determination is needed (usually at least once a year) the interagency consultation process requirements must be followed and each of the participating agencies must review and participate in the process. The level of officials (staff, management, elected) in the organizations that must be involved in reviewing and commenting on the conformity determination varies. In all cases, the MPO Policy Board must review and approve the conformity determination in MPO areas.

²¹ See: <http://www.regulations.gov/#!docketDetail;D=EPA-HQ-OAR-2007-0269>.

²² EPA has issued specific guidance on how multi-jurisdictional nonattainment and maintenance areas conduct the conformity process. See: <http://www.epa.gov/otaq/stateresources/transconf/regs/420b12046.pdf>.



EPA's estimated costs for interagency consultation are grossly underestimated, including the failure to recognize the labor hours that management and elected officials need to expend on the conformity process.

Transitioning to a New Emissions (MOVES) Model.

EPA cost estimates for the transition to the new MOVES model from the MOBILE model have been also grossly underestimated. The AASHTO/AMPO comment letter and attachments provide specific examples and supporting data. EPA does not adequately account for the costs that MPOs and state DOTs must absorb, to develop expertise and work with the latest EPA emissions model, MOVES. Additionally, the MOVES model is now in its fourth iteration (e.g., MOVES 2010, MOVES 2010a, 2010b, and MOVES 2014) with MOVES 2014 being the newly required model effective in 2016.

Each time EPA adopts a new emissions model, significant new costs are incurred by state DOTs, MPOs, and hired consultants to prepare each nonattainment and maintenance area to use the newest version of the model. These include labor costs, training costs, hardware and software updates, and time to run new models in order to become proficient enough to run the conformity analysis. None of these costs are adequately addressed in EPA's estimates. EPA also does not take into account costs associated with collecting local data and other model inputs that the area may need to better reflect local conditions vs. using national default data in their modeling. Collecting such local data can be a considerable cost.

Development of Motor Vehicle Emissions Budgets (MVEB)

EPA does not include costs associated with the development of motor vehicle emissions budgets (MVEB) but assumes it is a SIP activity with costs paid by the state environmental agencies. The process of coordinating, developing and/or revising a MVEB initially and as potential conformity issues arise (i.e., whenever a new emission model is adopted) or as new air quality standards are implemented, is an essential part of the conformity process. EPA should include the full burden hours and costs for the coordination, development and/or revision of MVEBs by MPOs and states.

Travel Demand Modeling: Operating Costs and Non-Recurring Costs

EPA fails to take adequate account for the costs of developing, maintaining, and updating travel demand models and for ensuring the travel demand and EPA's approved emissions models work properly in tandem. These include non-recurring and on-going costs directly associated with meeting the conformity requirements. These costs can be significant, especially in travel demand and emissions modeling areas and have been documented to be in the millions of dollars at larger MPOs, and should be considered in the EPA estimates. Several examples of costs of travel demand and emissions modeling are included in the AASHTO/AMPO comments.

Examples of EPA's Underestimation of Costs

Below are several examples of areas where EPA has underestimated the costs of complying with the transportation conformity requirements. They are taken from the comments made to EPA on the most recent ICR request and attachments submitted in support of those comments.

Frequency, Burden Hours and Costs:

Texas DOT:

"EPA's continued use of the assumption that only one conformity determination is needed in four years and that anything else is "voluntary," suggests a fundamental misunderstanding of the transportation planning and project development processes with the integral regional planning and project-level conformity determinations.²³"

"...EPA estimates [FR February 12, 2015] that the national annual cost for transportation conformity is \$3,768,668. In comparison, the costs for just 2 MPOs in Texas are \$900,000/year (their combined costs) and this excludes another \$800,000 in TxDOT contracting costs to support conformity and metro areas participating in EPA's ozone advance program. In other words, Texas' actual annual costs for two areas are equal to between a third to almost one-half of EPA's total national costs and this doesn't include costs for all [current] nonattainment areas in Texas.²⁴"

Atlanta Regional Commission:

"EPA's frequency rate for making conformity determinations in large MPOs should be increased. A review of data between January 2004 and April 2011 has indicated that ARB has undergone the transportation conformity determination process more than once every four years, as estimated by EPA. In this period of time, ARC has undergone three transportation plan development efforts and made four additional conformity triggering modification to the TIP. ARC, therefore, has undergone on average one conformity analysis per year [emphasis added]."

"The need for a conformity determination is triggered by requirements outside of the control of the MPO and are therefore not voluntary. Changes in fiscal conditions, transportation control measures issues, modifications in project scope and project timing all can trigger the need for a conformity analysis under the conformity regulation. These issues are compounded in large MPOs. ARC recommends a more thorough survey of MPO practices to support an accurate frequency of analysis."²⁵

"ARC estimates that at least 759 hours at a cost of \$81,449 are required [each year] to prepare each conformity analysis." (This compares to EPA's estimate of \$30,875 every four years).²⁶

Travel Demand Model and Emissions Model Costs

New York State DOT and NYMTC:

New York State DOT and New York Metropolitan Transportation Council (NYMTC) (the MPO for the NYC region) reported the following travel and emission model related additional costs in 2011 when transitioning to the new MOVES model.²⁷

- \$3.2 million for model development and enhancement, in conjunction with efforts to implement MOVES into their post-processor;
- \$3.2 million for socio-economic and demographic forecasts that occur about once every 5 years;
- \$8.7 million for census data and travel surveys that occur once every 10 years.

²³ Source: Texas DOT, Comment to Docket ID No. EPA-HQ-2007-0269, EPA ICR No. 2130.05, OMB Control No. 2060-0561, April 23, 2015.

²⁴ Ibid

²⁵ Source: Atlanta Regional Commission, Comment to Docket ID No. EPA-HQ-OAR-2007-0269, April 7, 2011.

²⁶ Ibid.

²⁷ Source: AASHTO/AMPO Comment to Docket No. EPA-HQ-OAQ-2007-0269, page 5.

Atlanta Regional Commission:

"Some share of these costs should be attributed to conformity. ARC estimates an annual cost of maintaining the region's travel demand model, including annualized impacts from large on-board and household surveys conducted once every ten years to be \$1,528,728. This does not include the cost of developing and maintaining land use and population synthesizers for use with the travel demand model, which potentially doubles that number."²⁸

In short, the compliance costs associated with transportation conformity are substantial and dwarf the EPA estimates. For example, the costs of just the two Texas MPOs (Dallas/Ft Worth and Houston) and TxDOT (\$1.7 million) combined with TPB costs in the Washington, D.C. region (see attached) \$1.3 million - \$2.7 million) would approach but likely exceed the \$3,768,668 that EPA estimates as the nationwide annual cost of meeting the conformity requirements. Clearly, if one is to understand the real compliance costs of transportation conformity, a much closer examination of real expenditures at state DOTs, MPOs, and state environmental agencies is needed.

An Example:

Conformity Compliance Costs in the Washington, D.C. Region

Given the disagreements over EPA's estimates of compliance costs with the conformity regulation, we cannot credibly estimate the annual cost of compliance on a national basis without substantial further research and consultation with state DOTs, MPOs, and air agencies. However, we were able to estimate the costs to the MPO in the Washington, D.C. region based upon TPB documentation and reasonable assumptions.

The FY2016 TPB Unified Planning Work Program (UPWP)²⁹ and Budget was adopted on March

18, 2015. This document shows the various work activities to be undertaken at TPB during FY2016 using federal planning funds. The UPWP is a federally-required document and shows how each MPO will spend its federal planning funds (FHWA and FTA) each fiscal year. In addition to this list of work activities and costs, MDOT, VDOT and DDOT each have separate work plans that include their anticipated planning activities in the coming year.

The recently adopted UPWP includes seven categories of activities and associated funding for FY2016. The UPWP specifically notes that under the Forecasting Applications category, the Air Quality Conformity and Mobile Emissions Analysis line items are direct conformity costs. Additionally, under several of the other categories it is reasonable to assume that there are some conformity related activities. For purposes of estimation we have made reasonable assumptions about the conformity related costs in certain categories that were not specifically called out by TPB as direct conformity costs. We believe these assumptions are reasonable based on past experience, extensive work with practitioners, and comments to the docket in 2004, 2011, and 2015 by AASHTO/AMPO and specific state DOTs and MPOs.

In conclusion, the conformity process is, at a minimum, costing \$1.304 million annually in the TPB region. We believe a range of \$1.304 to \$2.73 million per year is more likely to capture the full costs of compliance and have made reasonable assumptions about likely additional conformity related costs. In addition to the TPB costs, VDOT, MDOT, and DDOT have work programs that include their costs to comply with the conformity requirements. These costs are not called out specifically but should also be considered a direct cost of conformity compliance.

²⁸ Ibid.

²⁹ <http://www.mwcog.org/uploads/pub-documents/v15bW1g20150414122929.pdf>.

Table A-1: Estimated Conformity Planning Costs in Washington, D.C.³⁰

WORK ACTIVITY - CATEGORIES- (% conformity)	TOTAL LINE ITEM COST	DIRECT CONFORMITY COST PER TPB	ASSUMED CONFORMITY RELATED COST*
1) PLAN SUPPORT (5%)*	\$2,587,928		\$129,396
2) COORDINATION AND PROGRAMS	\$1,631,150		
3) FORECASTING APPLICATIONS			
Air Quality Conformity (100%) - PER UPWP	\$590,500	\$590,500	\$590,500
Mobile Emissions Analysis (100%) -per UPWP	\$714,500	\$714,500	\$714,500
Regional Studies	\$587,200		
Coordinated Cooperative Fore- casting, etc. (25%)*	\$839,400		\$146,800
4) DEVELOPMENT OF MODELS & NETWORKS			
Network Development (40%)*	\$800,800	\$ -	\$320,320
GIS Technical Support	\$571,000	\$ -	\$ -
Models Development (50%)*	\$1,214,500		\$ 607,250
Software Support (15%)*	\$186,200		\$27,930
5) TRAVEL MODELING	\$2,940,600	\$ -	
6) TECHNICAL ASSISTANCE to MD, VA, DC, WMATA (10%)*	\$1,947,193	\$ -	\$194,719
7) AIRPORT SYSTEM PLANNING	\$450,000	\$ -	
TOTAL COSTS UPWP	\$15,060,971	\$1,305,000	\$2,731,416
*= Our assumptions of % of total cost conformity-related			
LIKELY RANGE OF ANNUAL CONFORMITY COSTS		\$1,305,000	\$2,731,416

³⁰ <http://www.mwcog.org/uploads/pub-documents/v15bW1g20150414122929.pdf>.

Source: TPB FY 2016 work program by funding sources (3/18/15).

Available at http://www.mwcog.org/store/item.asp?PUBLICATION_ID=505







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