

MARK KNIGHT, President
ART DANIEL, Senior Vice President
B.E. STEWART, JR., Vice President
SCOTT WILLIAMS, Treasurer
STEPHEN E. SANDHERR, Chief Executive Officer
DAVID LUKENS, Chief Operating Officer

AGC of America
THE ASSOCIATED GENERAL CONTRACTORS OF AMERICA
Quality People. Quality Projects.



August 19, 2016

The Honorable Anthony Foxx
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, S.E.
Washington, DC 20590

Re: Docket No. FHWA-2013-0054

Dear Secretary Foxx:

The Associated General Contractors of America (AGC) appreciates the opportunity to comment on Federal Highway Administration's (FHWA) Notice of Proposed Rulemaking on *National Performance Management Measures to Assess Performance of the National Highway System, Freight Movement on the Interstate System, and the Congestion Mitigation and Air Quality Improvement Program*, as published in the *Federal Register* on April 29, 2016 (NPRM or proposed rule).¹

AGC is a national organization representing 26,500 businesses involved in every aspect of construction activity in all 50 states, Puerto Rico and Washington, D.C. AGC members perform construction contracts for FHWA, state and local transportation agencies and other entities that receive funding through the Federal-aid highway program and therefore have a direct interest in the implementation of both the Fixing America's Surface Transportation (FAST) Act and the Moving Ahead for Progress in the 21st Century Act (MAP-21).

A significant policy directive in both MAP-21 and the FAST Act was the creation of national performance goals and measures to improve decision-making and accountability of state departments of transportation (DOTs) and Metropolitan Planning Organizations (MPOs). AGC supported the inclusion of these provisions and continues to believe that they will be helpful in not only guiding the best transportation investment decisions but in making the case with the American public that their user fee and general tax dollars are being used wisely. AGC offers the following feedback and recommendations on FHWA's proposed rule in furtherance of achieving those objectives. For its part, the Association seeks to advance a safer and more efficient transportation system without imposing undue regulatory burdens on industry or states.

¹ See http://www.fhwa.dot.gov/tpm/rule/pm3_nprm.cfm and <https://www.regulations.gov/document?D=FHWA-2013-0054-0092>.

I. Subpart G – Proposed Management Measures Used in Assessing Traffic Congestion Mitigation and Air Quality (CMAQ) Improvement

AGC agrees that traffic congestion is a key factor in determining if a road segment is operating efficiently and reliably. Delay and frequency of delay are national level measures that can be used to track the investment benefits to the economy as well as the improvements for local commuters and movement of commerce. FHWA's NPRM correctly focuses on maintaining traffic flow at reasonable speeds by establishing a travel time reliability measure. The measure compares the longest travel time or slowest speed that occurs during a specified time frame and compares it to a benchmark. Significant deviation from the benchmark will clearly have an impact not only on the reliability of that road segment, but on the overall area road system. The larger the variability of travel time is from day-to-day or hour-to-hour, the more the road user has to account for unexpectedly long travel times when planning a trip. In the case of goods movement, time delays impact costs. FHWA also correctly proposes to focus on urbanized areas with a population over one million. With this performance measurement in place, states and MPOs will prioritize investments to decrease delays and ensure more day to day consistency in traffic movement. AGC supports the time/speed measurement as proposed by FHWA. States, however, should be granted as much flexibility as possible in setting targets and reporting the results.

One of the leading impacts on air quality is not transportation itself, but congestion. Efficient movement of motor vehicles through a road segment has a direct impact on emissions from vehicle engines. Engines that are operated at a steady speed operate more efficiently and therefore produce lower levels of "criteria" air pollutants and their precursors, as well as carbon dioxide (CO₂) emissions. Rush hour congestion can almost double emissions: "Considering the combined effect of driving behavior, vehicle volume and mix, and emission factors, on- and near-road concentrations of CO, HC and NO_x are expected to nearly double during rush hour periods as compared to free-flow periods, given similar dispersion conditions."² Another study shows the value of a consistent, moderate speed of about 45-50 mph in reducing greenhouse gas (GHG) emissions. The researchers found that stop and go congestion, as well as, free flowing faster speeds reduce efficiency and increase emissions. "Overall, the speed changes of 2.5 mph, 5 mph, and 10 mph can provide CO₂ benefits up to 25%, 45%, and 70%, respectively."³ AGC offers additional information and data on the direct correlation between congestion and CO₂ emissions in Section III of this comments letter, which discusses FHWA's consideration of a greenhouse gas emissions measure in the final rule.

² Kai Zhang, et.al., *Vehicle Emissions in Congestion: Comparison of Work Zone, Rush Hour and Free-flow Conditions*, Atmospheric Environment, 45 (2011) pp 1929-1939. <https://sph.uth.edu/kaizhang/files/2014/02/Zhang-2011-AE.pdf>

³ Matthew Barth and Kanok Boriboonsomsin, "Real-World CO₂ Impacts of Traffic Congestion," Transportation Research Record, Journal of the Transportation Research Board, No. 2058, Transportation Research Board, National Academy of Science, 2008 – online at <http://uctc.net/research/papers/846.pdf> and <https://trid.trb.org/view.aspx?id=924548>.

II. Subpart H – Proposed Management Measures Used in Assessing CMAQ Program Improvements on On-Road Mobile Source Emissions

AGC agrees that evaluating the emissions reductions that result from each CMAQ-funded project, and for each of the applicable criteria pollutants and their precursors, is an important performance measurement to determine if these funds are being invested wisely and are having the most beneficial impact. FHWA has correctly limited the requirement for performance measurements, as outlined in this section, to urbanized areas with a population over one million that are, in all or part, designated as nonattainment or maintenance areas for ozone, carbon monoxide (CO), or particulate matter (PM-10 and PM-2.5) National Ambient Air Quality Standards (NAAQS).

AGC supports the proposed “Total Emissions Reduction” performance measure that FHWA has selected to assess progress in addressing on-road mobile source emissions. As defined in the proposed rule, the Total Emissions Reduction would cover a 2-year and 4-year cumulative reported emission reductions of each applicable criteria pollutant and applicable precursors (ozone, PM-2.5, PM-10, CO, VOC, and NOx) for all projects funded under the CMAQ program located in areas designated as nonattainment or maintenance.

III. Consideration of a Greenhouse Gas Emissions Measure

As referenced above, MAP-21 required the establishment of performance management requirements for on-road mobile source emissions of transportation-related criteria air pollutants to carry out the CMAQ program under 23 U.S.C. § 149. The NPRM addresses this criterion, focusing largely on emissions of criteria pollutants. However, buried in the 423-page NPRM is a six-page section labeled “Consideration of a Greenhouse Gas Emissions Measure.”

Specifically, the preamble to the proposed rule suggests that (in addition to the performance measures included in the text of the proposed rule and discussed in Sections I and II above) a final rule may include a performance measure relating to GHG emissions. FHWA is contemplating brand-new, first-time requirements: (1) for state DOTs to set standards for GHG emissions from on-road mobile sources and possibly even construction equipment, among other sources; and (2) for MPOs to develop implementation strategies to achieve those standards as part of their long-range transportation plans and to report on progress in each update of their transportation improvement programs.⁴

As a threshold matter, AGC is strongly opposed to FHWA’s proposal to expand the CMAQ program’s measurement and management requirements beyond its current focus on the criteria pollutants to encompass greenhouse gas (GHG) emissions. In fact, USDOT/FHWA does not have the statutory authority to set performance measures for GHG emissions. AGC is part of a group submittal to the docket on this point, that details further the lack of authority for FHWA to regulate GHG emissions. AGC seeks to incorporate those comments into this letter by reference.

⁴ The proposal also addresses emissions generated upstream from power plants and petroleum refineries needed to provide electricity and fuel for vehicles, as discussed elsewhere in this letter.

FHWA should not impose new federal mandates that would require states and MPOs to evaluate on-road or off-road GHG emissions as a factor in transportation planning—with or without specific factors as to how GHG emissions should be addressed. As explained in detail in the subsequent pages, AGC offers the following significant reasons for why GHG measurement and management requirements would pose significant obstacles to the transportation planning process, probably adversely impact national air quality, and duplicate other federal agency regulations and initiatives currently underway.

1. Diluting already limited CMAQ funds to mitigate GHG emissions will negatively impact states' efforts to meet federal NAAQS. Nonattainment has severe consequences for construction, including requirements to demonstrate "conformity." What is more, states and MPOs cannot take "credit" for GHG reductions in their conformity determinations. Any *required* GHG emission reduction measures would run counter to the core intent of the CMAQ program.
2. Integrating GHG performance management requirements into an already complex process of uniting air quality planning and critically important transportation infrastructure decisions will bog down highway planners. As NAAQS become more stringent, the likelihood of MPOs confronting "conformity lapses" will increase. Construction bans will thwart many efforts to reduce traffic congestion: a key strategy to controlling on-road GHG emissions. Construction bans will also prevent the construction industry from building energy efficiency into existing and future infrastructure
3. Other federal agencies already have set new nationwide standards and guidelines for GHG emission reductions that are focused on the most significant sources.
4. Non-road sources used in construction and maintenance of Title 23 projects are not a significant source of GHG emissions. Moreover, the federal CAA preemption provisions prohibit government mandates to lower engine emissions from existing fleets of off-road diesel equipment.
5. More technical assistance and incentive-based strategies are needed to facilitate state/local efforts to reduce GHG emissions without jeopardizing the competitiveness of U.S. companies in the global marketplace and without stopping construction activities, which are vital to meet the needs of growing communities, to sustain a strong economy, and ultimately to achieve the nation's goals of energy efficiency and energy independence/security.

A. CMAQ PROGRAMMING MUST REMAIN FOCUSED ON CRITERIA POLLUTANTS OR AIR QUALITY WILL SUFFER

The performance measurement mandates that were first introduced in MAP-21 are each tied to a specific federal-aid highway program. In the case of congestion and emissions, the measures are tied to the CMAQ program.⁵ CMAQ was established the year after Congress enacted amendments to strengthen the Clean Air Act (CAA) to help states and metropolitan regions meet (and maintain compliance with) NAAQS for ozone, PM and CO. Under the FAST Act, the CMAQ program has continued to provide a funding source to state and local governments—at an estimated average annual funding

⁵ The CMAQ program, established in 1991, is part of the Intermodal Surface Transportation Efficiency Act (ISTEA) – summary available online at <http://ntl.bts.gov/DOCS/ste.html> (last accessed August 2016).

level of \$2.4 billion through 2020—to reduce congestion and improve air quality in areas that do not meet the currently applicable NAAQS (i.e., nonattainment areas).

CMAQ funds may be used for a project or program that has a high level of effectiveness in reducing air pollution from these pollutants, and that is included in the MPO's current transportation plan and transportation improvement program (TIP) or the current state transportation improvement program (STIP) in areas without an MPO. All CMAQ projects must demonstrate the three primary elements of eligibility: transportation identity, emissions reduction, and location in or benefitting a nonattainment or maintenance area.

Notable, neither MAP-21 nor the FAST Act changed the structure of federal transportation spending to prioritize GHG reductions. In fact, the FAST Act specifically limited performance measures only to those described in the Act which does not include GHGs. When Congress provided the statutory source of authority to establish performance management requirements, it specifically limited USDOT from developing performance measures beyond those which are described in the Act. The reduction of transportation-related GHG emissions is not one of the listed performance measures.

Conversely, the FAST Act *did* place increased emphasis on diesel engine retrofits as eligible projects to mitigate PM-2.5 emissions; a state with PM2.5 (fine particulate matter) nonattainment or maintenance areas must use a portion of its funds to address PM2.5 emissions in such areas.⁶

As NAAQS for ozone and PM continue to get tighter, more and more states will have nonattainment areas and CMAQ funding will become an even more-needed resource to help transportation planning officials bring their regions into compliance with federal air quality standards.⁷

AGC maintains that diverting CMAQ funds from the core intent of the program will not benefit nonattainment or maintenance areas. Areas designated as such face significant consequences that generally include a threat of losing highway and transit funding. Yet, forcing states and MPOs to manage GHG emissions as part of the highway program will not help achieve compliance with NAAQS. What is more, states and MPOs cannot take "credit" for GHG reductions in the already complex process of uniting air quality planning and critically important transportation infrastructure. In fact, the additional costs and burdens associated with a new GHG performance management and measurement requirement would increase the likelihood of MPOs confronting "conformity lapses," which would thwart key strategies to control GHG emissions, as further discussed directly below.

⁶ See [FHWA's FAST Act CMAQ](http://www.fhwa.dot.gov/fastact/factsheets/cmaqfs.cfm) website at <http://www.fhwa.dot.gov/fastact/factsheets/cmaqfs.cfm>.

⁷ In late 2017, USEPA plans to "officially" designate areas as meeting the new 70 ppb standard (attainment areas) or exceeding it (nonattainment areas). USEPA is currently projecting that 241 counties will be designated as nonattainment (based on 2012-2014 air quality data). Significantly, 10 states that currently have no 8-hour ozone nonattainment areas will have counties in violation of the 70 ppb limit. These states include Alabama, Kansas, Maine, Michigan, Nevada, New Mexico, North Carolina, Oklahoma, Rhode Island and Utah. Furthermore, the new 70 ppb standard will increase the number of nonattainment counties in current nonattainment states such as Ohio, Arizona, Colorado, Indiana, Wisconsin, and Missouri. (Because USEPA expects to use 2014-2016 data when it makes its final designations, these estimates may change.)

B. TRANSPORTATION CONFORMITY LAPSES AMOUNT TO CONSTRUCTION BANS WHICH THWART KEY STRATEGIES TO CONTROL GHG EMISSIONS

The CAA requires metropolitan areas that are not in compliance with transportation-related criteria pollutants (and precursor pollutants) to demonstrate that their transportation system choices are consistent with achieving and maintaining the national air quality standards. The “transportation conformity” process applies to transportation plans (TIPs) and projects funded or approved by FHWA or the Federal Transit Administration (FTA) in areas that do not meet or previously have not met air quality standards for ozone, CO, PM or nitrogen dioxide.⁸

For metropolitan plan or TIP conformity, the demonstration must show that the total emissions projected for that metropolitan plan or TIP are within the on-road mobile source emissions limits (“budgets”) established by the SIP to ensure that transportation activities will not:

- Cause or contribute to any new violations of NAAQS;
- Increase the frequency or severity of NAAQS violations; or
- Delay timely attainment of the NAAQS.

A conformity lapse results from the failure to demonstrate conformity within required time frames or the failure to meet emissions budgets or to pass one of the conformity tests.

The current process of monitoring and measuring NAAQS (emission modeling) is already very difficult and many more states may need to do it in the near term. AGC recognizes that the transportation community stands to face additional challenges as USEPA fully implements new (more stringent) standards for ozone and many regions face nonattainment for the first time. The transportation conformity process is equally, if not more, time-consuming.⁹

States already burdened with excessive paperwork are likely to find it extremely difficult to add GHG measurement, modeling and performance evaluation into the current planning process. It would subject highway planners and engineers to new and burdensome requirements that would slow down projects at a time when the public wants to get the greatest possible benefit out of each transportation dollar. Notably, states and MPOs (for the most part) cannot take credit in their transportation conformity determinations for GHG reductions achieved using CMAQ-funded measures.

⁸ Regulations governing transportation conformity are found at [40 C.F.R. Parts 51 and 93](#).

⁹ Conformity determinations must be made at least every four years, but may occur more often if metropolitan transportation plans or TIPs are updated more frequently or amended with non-exempt projects. In addition, certain SIP actions relating to motor vehicle emissions budgets may also require an updated conformity determination within 24 months. Also, conformity must be demonstrated within 12 months of USEPA's designation of an area as nonattainment for any transportation-related criteria pollutant. Project-level conformity must be determined prior to the first time a non-exempt Federal project is adopted, accepted, approved or funded.

During a conformity lapse, only limited types of projects can proceed until the situation is resolved.¹⁰ Conformity lapses affect transit capacity projects and regionally significant non-Federal projects – amounting to a construction ban.

AGC maintains that a GHG performance management requirement as part of the highway program would thwart construction as well as efforts to reduce CO2 emissions. Instead of making our roads and bridges safer, state officials will be spending their time, and FHWA's money, preparing even more regulatory paperwork. That translates into more taxpayer dollars being wasted in fuel lost due to poor road conditions. Without the necessary funding to support road projects, on-road vehicles will idle in more traffic congestion and waste fuel that contributes to poor air quality, particularly on hot, sunny summer days. In addition, contractors will not have the opportunity to work with owners, designers and other members of the project team to upgrade buildings and facilities, losing potential efficiency improvements and reductions in energy use and emissions.

C. ALLEVIATING TRAFFIC CONGESTION MUST BE A PRIORITY

The American Society of Civil Engineers has given our highway infrastructure a grade of D in their 2013 infrastructure report card. Failure to maintain our nation's transportation system may well increase GHG emissions. Congestion and rough pavement will reduce travel speeds (increasing emissions) as the condition of roads gets less usable and arguably less safe. The 2013 ASCE report card also mentions that "current estimates show that 42 percent of America's major urban highways are congested ...".¹¹

- "According to the 2015 Urban Mobility Scorecard, travel delays due to traffic congestion caused drivers to waste more than 3 billion gallons of fuel and kept travelers stuck in their cars for nearly 7 billion extra hours – 42 hours per rush-hour commuter. The total nationwide price tag: \$160 billion, or \$960 per commuter."¹²
- In 2004, a study identified that improvement projects to unclog traffic flow at 233 severe bottlenecks on the nation's highways would conserve more than 40 billion gallons of fuel over a 20-year period and the CO2 emissions at those locations would drop by 77 percent.¹³
- Fixing only thirty of the worst bottlenecks in the United States could save 830 million gallons of fuel and reduce greenhouse gas emissions by over 17 billion pounds.¹⁴
- Researchers also found that, "in 2011, 56 billion pounds of additional CO2 were produced in all 498 urban areas during congestion only; this amount equated to 2.9 billion gallons of wasted

¹⁰ The transportation conformity regulations allow a 1-year grace period before the consequences of a conformity lapse apply to MPOs that miss an applicable transportation conformity deadline.

¹¹ See www.infrastructurereportcard.org/a/#p/roads/conditions-and-capacity, accessed August 18, 2016.

¹² Texas A&M Transportation Institute and INRIX, 2015 Urban Mobility Scorecard – online at <http://mobility.tamu.edu/ums/media-information/press-release/> (last accessed July 2016).

¹³ *Effective Relief for Highway Bottlenecks*, American Highway Users Alliance, February 2004.

¹⁴ *Unclogging America's Arteries 2015, Prescriptions for Healthier Highways*, American Highway Users Alliance, 2015 – online at <http://www.highways.org/wp-content/uploads/2015/11/unclogging-study2015-hi-res.pdf>.

fuel. The amount of CO₂ produced under free-flow conditions (i.e., absent congestion) was 1.8 trillion pounds in 2011 in all 498 urban areas.”¹⁵

D. THE CONSTRUCTION INDUSTRY CAN REDUCE GHG EMISSIONS FROM OTHER SOURCES

While not a significant contributor to overall GHG emissions, contractors are an essential partner in the nation’s efforts to reduce national CO₂ emissions attributable to many sources. AGC contractor members work with owners, designers, and other members of the project team to build energy efficiency into existing and future infrastructure. Some contractors may be involved in the design process; however, the contractor’s role in the implementation of a project is determined by the project delivery system and the specifications already outlined in the contract that may:

- Improve energy efficiency of existing and new buildings
- Reduce transportation congestion through expansion and improvements to vital infrastructure – roadways, airports, railways, and waterway systems – and the construction of mass transit options
- Increase availability and efficiency of energy production through upgrades to existing power plants and the construction of new sources of energy (cleaner coal-burning plants, nuclear, and alternative energy)

E. NATIONAL GHG EMISSION RULES ALREADY ADDRESS MOST SIGNIFICANT ON-ROAD SOURCES

At the federal level, USEPA regulates transportation greenhouse gas emissions both through fleet-wide emission standards for new motor vehicles—which are primarily satisfied by improvements in fuel economy—and through annual quotas for renewable fuel use (the “renewable fuel standard” or “RFS”). According to USEPA, more than 60 percent of transportation emissions come from light duty cars and trucks.¹⁶

USEPA and the National Highway Traffic Safety Administration (NHTSA) jointly developed the national program for GHG emissions and fuel economy standards for light duty cars and trucks in model years 2012–2016 (first phase) and 2017–2025 (second phase).¹⁷ On July 18, 2016, USEPA, the U.S. Department of Transportation’s National Highway Transportation Safety Administration and the California Air Resources Board issued a joint [Draft Technical Assessment Report](#), a midterm evaluation of

¹⁵ William Eisele, *et.al.*, *Greenhouse Gas and Urban Congestion: Incorporating Carbon Dioxide (CO₂) Emissions and Associated Fuel Consumption into TTI’s Urban Mobility Report*, Abstract and paper for presentation and publication at the Transportation Research Board’s 93rd Annual Meeting, January 2014 – online at <http://docs.trb.org/prp/14-3217.pdf>.

¹⁶ See U.S. Environmental Protection Agency, Office of Transportation and Air Quality, *Fast Facts: U.S. Transportation Sector Greenhouse Gas Emissions, 1990-2014*, USEPA-420-F-16-032, June 2016 – online at <http://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100ONBL.pdf>.

¹⁷ See, e.g., 2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards, 77 *Fed. Reg.* 62,624, 62,624 (Oct. 15, 2012) (codified at 40 C.F.R. Parts 85, 86, 600).

the national program for GHG emissions and fuel economy standards for light-duty cars and trucks.¹⁸ The government's draft technical assessment report predicts the 2025 standards are attainable with a wide range of technologies

In addition, the nation's fleet of medium- and heavy-duty trucks are required to meet fuel efficiency and GHG emissions standards for three categories as follows:¹⁹

- Certain combination tractors, commonly known as big rigs or semi-trucks, are required to achieve an approximately 20 percent reduction in fuel consumption and GHG emissions by model year 2018, saving up to 4 gallons of fuel for every 100 miles traveled.
- For heavy-duty pickup trucks and vans, separate standards are required for gasoline-powered and diesel trucks. These vehicles are required to achieve up to about a 15 percent reduction in fuel consumption and GHG emissions by model year 2018. Under the finalized standards, a typical gasoline or diesel powered heavy-duty pickup truck or van could save 1 gallon of fuel for every 100-miles traveled.
- Vocational vehicles, including delivery trucks, buses, and garbage trucks, are required to reduce fuel consumption and GHG emissions by approximately 10 percent by model year 2018. These trucks could save an average of 1 gallon of fuel for every 100-miles traveled.

As this comment letter is being written, USEPA and NHTSA finalized a comprehensive Phase 2 Heavy Duty National Program that will reduce GHG emissions and fuel consumption for new on-road medium- and heavy-duty trucks. This program will be phased in beginning with the 2018 model year and culminating in standards for model year 2027. USEPA says the "Phase 2 rules" will build on the gains in the above-referenced Phase 1 rules, which cover MY2014-2018, and will reduce GHGs by about 1.1 billion metric tons. The new Phase 2 efficiency standards take effect in MY2021 and then get stricter for MY2024 and again in MY2027.

AGC finds it significant that Congress enacted the FAST Act transportation reauthorization bill, amid virtually no public debate about its climate impacts, at virtually the same moment that President Obama and other world leaders were setting bold new targets for greenhouse gas emission reductions at the Paris climate talks. AGC urges FHWA to defer to the good work of other federal agencies in establishing nationwide standards and guidelines for GHG emission reductions that are focused on the most significant sources.

¹⁸ <https://www3.epa.gov/otaq/climate/mte.htm>

¹⁹ See U.S. Environmental Protection Agency, Office of Transportation and Air Quality, *Paving the Way toward Cleaner, More Efficient Trucks*, USEPA-420-F-11-032, August 2011, <https://www3.epa.gov/otaq/climate/documents/420f11032.pdf>; U.S. Environmental Protection Agency, *Cutting Carbon Pollution, Improving Fuel Efficiency, Saving Money, and Supporting Innovation for Trucks*, USEPA-420-F-15-900, June 2015, <https://www3.epa.gov/otaq/climate/documents/420f15900.pdf>.

F. PROJECTS THAT INCREASE MOTOR VEHICLE CAPACITY WILL UNDERGO GHG REVIEW UNDER NEW NEPA GUIDANCE

On Aug. 2, 2016, the White House Council on Environmental Quality (CEQ) released final guidance to federal agencies on incorporating GHGs and climate change into agency actions where the National Environmental Policy Act (NEPA) currently applies. And, DOT guidance on NEPA will need to be consistent with CEQ guidance. Similarly, some states have requirements to conduct GHG analysis for projects subject to state environmental review requirements. In either case, such documents will summarize information regarding regional-level analysis of transportation-related GHG emissions and reduction strategies from transportation plans and associated studies.

G. NON-ROAD SOURCES USED IN CONSTRUCTION, MAINTENANCE ARE NOT SIGNIFICANT GHG CONTRIBUTORS

FHWA is soliciting feedback on the concept of establishing performance measures for GHG emissions specific to non-road sources, such as construction and maintenance activities associated with Title 23 projects. EPA data show that the construction industry itself has a limited direct impact on GHG emissions.²⁰ Moreover, AGC points out that the federal CAA preempts state and local emission standards for any off-road equipment, including state and local requirements for diesel retrofit, or the purchase or use of certain equipment -- except for certain stricter standards that California may adopt, and any other state standards that strictly follow California's lead. Whereas retrofit mandates -- including restrictions on the use or operations of construction equipment -- are unlawful, voluntary diesel retrofit efforts have been very successful.

Across all sectors, including building, transportation and so forth—construction accounts for slightly over one percent of all U.S. manmade GHG emissions according to the latest analysis of federal environmental data from USEPA. The data show the relative efficiency of today's more than 650,000 construction firms that currently employ more than 6 million workers and create nearly \$1 trillion worth of structures each year.

The construction phase of a roadway project represents a small portion, approximately three to five percent, of the overall GHG emissions associated with the life cycle of the pavement system.²¹ The bulk of a pavement system's emissions are attributable its use. Thereby, design and maintenance strategies

²⁰ The U.S. Environmental Protection Agency's *Inventory of Greenhouse Gas Emissions and Sinks* provides historic data on GHG emissions from transportation and other sectors.

²¹ See U.S. Department of Transportation, Federal Highway Administration, *Towards Sustainable Pavement Systems: A Reference Document*, FHWA-HIF-15-002, Jan. 2015, at pgs. 5-3 and 5-38. With respect to the total life cycle of a pavement system, the construction stage constitutes approximately 5 percent of the total pavement production cycle, including plant production, transportation, and construction activities. In an overall roadway life cycle, which commonly may be 40 to 50 years, the total energy consumed can be 18 to 20 times that for pavement production, which includes plant production, transportation, and construction (Muench 2010). The total energy and associated emissions during the life cycle of a pavement include pavement production, use phase related to the operation of roadway (e.g., fuel consumption by vehicles, lighting, traffic signals, urban heat island), maintenance, and end-of-life strategies.

to improve traffic flow and efficiency and reduce congestion are an important factor to reduce emissions associated with the life cycle of a roadway project.

Indeed, the potential impacts of the construction phase (i.e., construction equipment and activities) on overall life cycle assessment for a given roadway may be relatively small, particularly when compared to the impact of the materials phase and the use phase (Santero and Horvath 2009b). For example, Zapata and Gambatese (2005) indicate that the “placement phase” consumes only about 3 percent of the total energy in the pavement life cycle.²²

Additional material related considerations implemented during the construction phase that could reduce life cycle emissions can include the use of recycled materials (including recycled aggregates as well as industrial materials such as fly ash), the durability of those materials, and locally sourced materials.

Historically, those GHG emissions attributable to construction itself, within the purview of the contractor to change, are related to the use and operation of vehicles and equipment. However, AGC points out that the CAA limits government’s authority to regulate emissions from non-road engines to newly manufactured engines used in newly manufactured vehicles.²³ The FAST Act does not expand this authority to cover existing non-road engines.

USEPA has done its part to set stringent emissions standards (Tier IV) to significantly reduce emissions by more than 90 percent emissions from new non-road equipment.²⁴ Construction equipment manufacturers are currently on a tight timeline to produce new engines and vehicles that meet these significantly more stringent emission requirements. The eventual replacement of existing non road engines and vehicles will provide the GHG emission reductions that are being contemplated by FHWA’s proposal. Non-road engines and equipment should not be part of any discussion on measuring GHG emissions.

AGC has worked side-by-side with USEPA in advancing “clean diesel” initiatives intended to improve air quality and simultaneously protect the construction industry from serious disruption. Since 2008, USEPA has funded nearly 60,000 pieces of clean diesel technology through its National Clean Diesel Campaign. USEPA estimates that projects funded through DERA have reduced well over 12,500 tons of PM, 203,900 tons of NOx and 2,300,000 tons of CO2. Increasing funding and expanding programs like these would

²² *Ibid.*

²³ The federal Clean Air Act Section 209(e)(1) preempts all states and political subdivisions from adopting or enforcing any standard *or other requirement* that relates to the control of emissions from new locomotives or new construction or farm equipment of less than 175 horsepower. 42 U.S.C. § 7543(e)(1). Section 209(e)(2) preempts all states (other than California) and political subdivisions from adopting or enforcing any standards or other requirements that relate to the control of emissions from non-road vehicles not covered by Section 209(e)(1). 42 U.S.C. § 7543(e)(2). Significantly for the construction industry, that includes both construction equipment with 175 or more horsepower and *non-new* construction equipment of less than 175 horsepower (*i.e.*, used and in-use equipment). [For the non-road vehicles covered by Section 209(e)(2), California can adopt its own state standards and then seek a waiver of federal preemption, and other states can mirror the California regime. 42 U.S.C. § 7543(e)(2)(A)-(B).] Section 209(e) directs USEPA to issue implementing regulations. 42 U.S.C. § 7543(e).

²⁴ See <https://www3.epa.gov/otaq/nonroad-diesel.htm>.

further help the industry cut emissions, as costs of “retrofitting” or replacing equipment are high and prohibitive, especially for the many small businesses that make up the construction industry.

Although USEPA’s diesel retrofit grant program is mainly focused on reducing emissions of criteria pollutants, such as particulate matter and NOx (which is a precursor for ozone), many eligible project categories can reduce GHGs, along with improving regional air quality; these include the use of alternative low-carbon fuels (such as biodiesel, LNG/CNG – but the infrastructure for the latter is not widespread), emissions and idle-control technologies, and engine and equipment replacements.²⁵

FHWA also asks about emissions generated upstream in the life cycle of the vehicle operations (e.g., emissions from the extraction/refining of petroleum products and the emissions from power plants to provide power for electric vehicles) and whether these should be part of a GHG emission performance standard. It is difficult to see why these emissions would even be considered. They are not the result of CMAQ related projects and they are well beyond the purview of FHWA to impact. It is unclear how transportation decisions can impact petroleum refining or power plant emissions. These sectors are already regulated through separate programs in the CAA. Furthermore, it is difficult to understand how a performance measure would capture the possible number of electronic vehicles that would use a particular roadway and tie that back to a specific power plant.

H. TECHNICAL ASSISTANCE AND INCENTIVE-BASED STRATEGIES ARE A MORE EFFECTIVE

AGC may agree to support efforts to address climate change and still oppose this proposal. Currently, FHWA has a number of resources to help integrate GHG and energy considerations into the transportation planning process.²⁶ In the future, FHWA should endeavor to provide states and MPOs with increased technical assistance on climate change issues. Technical assistance could also be provided to other public and private sector entities responsible for transportation infrastructure services (e.g., procedures for developing GHG inventories, data collection and modeling techniques to analyze GHG emissions, as well as other guidelines and best practices).

For example, further technical assistance and additional outreach to explain how GHG emissions from infrastructure construction and maintenance activities (see section above) can be reduced through the use of less energy-intensive construction materials by state and local highway departments and other transportation agencies.²⁷

²⁵ See U.S. Environmental Protection Agency, *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*, February 2009 – archived online at <https://archive.epa.gov/sectors/web/pdf/construction-sector-report.pdf>.

²⁶ FHWA's Energy and Emissions Reduction Policy Analysis Tool (EERPAT) is a state-level modeling system to evaluate strategies to reduce emissions. In addition, under a pooled fund initiative led by the Oregon DOT, FHWA and eight state DOTs are implementing a series of workshops around the country and developing a web-based alternative fuels toolkit. AGC supports these methods of the federal government working with states and local governments to address GHG emissions.

²⁷ This provision, which has garnered support from groups like NAPA, is online at <http://www.asphaltpavement.org/PDFs/Earmark.pdf>.

The FAST Act at Section 120 of U.S.C. 23 encourages the use of innovative materials, contracting methods and construction practices. To this end, FAST Act makes eligible for a higher federal share a pavement technology that has the following three attributes: a 75-year lifecycle, manufactured in a low greenhouse gas producing manner, and cures rapidly. FHWA has discretion whether to support the technology; FHWA must agree that the method is truly “innovative” and is not bound by the legislation.²⁸

Another currently available strategy to reduce GHG emissions from transportation infrastructure is to use recycled materials, where effective. For example, an estimated 139 million tons/year of asphalt are recycled in the United States, resulting in 4.2 million tons on CO2 emissions avoided.²⁹ In addition, the beneficial use of fly ash can reduce the amount of cement needed in concrete mixes, thereby reducing the need for cement production that can be energy intensive.

AGC is concerned by assertions being made in comments submitted to the docket for this rulemaking that reference “off-the-shelf tools” as support for a performance measure specific to non-road sources *associated with Title 23 projects*. AGC strongly maintains that there are no such tools for quantifying GHG emissions from the current fleet of non-road equipment. In fact, there is an absence of resources and information *across the board* that certainly would be needed to develop baseline GHG inventories to evaluate GHG reduction strategies and to include forecasts in transportation planning documents. Much work must be done to improve data collection and modeling before we even reach a point where it would make sense for FHWA to work with stakeholders to evaluate the most effective and cost-effective GHG reduction strategies.

I. FHWA SHOULD RECIFY APPARENT INCONSISTENCIES WITH THE ADMINISTRATIVE PROCEDURES ACT

Despite not having the authority, should FHWA decide to move forward with a plan to establish performance measurements for GHG emissions the NPRM does not adequately provide specifics about how FHWA intends to set targets and provide measurement. To be in compliance with the notice and comment requirements on the Administrative Procedures Act (APA) specific details are necessary. Should FHWA decide to move forward with an ill-advised attempt to address GHG emissions as part of performance measurement standards, a separate rulemaking with details on how this would be accomplished, if required.

²⁸ According to USEPA, recycling and reuse of construction and demolition debris would decrease the amount of waste sent to landfills, may reduce transportation costs, lower energy use and thereby reduce related greenhouse gas (GHG) emissions. In addition, recycling and reuse practices promote conservation of virgin materials. Energy is expended and GHGs are released during the manufacturing and transportation of construction materials. When materials are reused or recycled, the associated emissions that would have occurred during virgin material manufacturing are avoided. See U.S. Environmental Protection Agency, *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*, Feb. 2009 – online at <https://archive.epa.gov/sectors/web/pdf/construction-sector-report.pdf>.

²⁹ See U.S. Environmental Protection Agency, *Potential for Reducing Greenhouse Gas Emissions in the Construction Sector*, Feb. 2009 – online at <https://archive.epa.gov/sectors/web/pdf/construction-sector-report.pdf>.

J. CONCLUSION

AGC appreciates the opportunity to provide comments on FHWA's NPRM on National Performance Measures. AGC supports the development of performance measurements to assist in making beneficial transportation investment decisions and in being accountable to the public. AGC believes, however, that FHWA would overstep its statutory authority by including performance measures for Greenhouse Gas emissions in the final rule. AGC urges FHWA to not include performance measures on GHG in the final rule.

Sincerely,

A handwritten signature in brown ink that reads "Brian Deery". The signature is written in a cursive style with a large, looping initial "B" and a distinct "D".

Brian Deery
Senior Director
Highway and Transportation Division