CHESAPEAKE BAY FOUNDATION
Saving a National Treasure

October 26, 2018

Submitted via regulations.gov

Mr. Andrew Wheeler, Acting Administrator
Environmental Protection Agency
1200 Pennsylvania Ave., NW
Washington, DC 20460

**RE: Chesapeake Bay Foundation Comments,
The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks,
Docket Nos. EPA-HQ-OAR-2018-0283; NHTSA 2018-0067**

Dear Acting Administrator Wheeler:

The Chesapeake Bay Foundation, Inc. (CBF) respectfully submits the following comments regarding the proposed rule, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks.*

CBF is a 501(c)(3) non-profit organization, founded in 1967. The organization's mission --carried out from offices in Maryland, Virginia, Pennsylvania and the District of Columbia -- is to restore and protect the ecological health of the Chesapeake Bay, the nation's largest and one of its most vital estuaries. As such, and on behalf of our over 275,000 members across the United States, we are very interested in matters that will impact the health of the Chesapeake Bay and the waters that feed into the watershed.

In their SAFE Vehicles Rule, the National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) propose to "amend certain existing Corporate Average Fuel Economy (CAFE) and tailpipe carbon dioxide emissions standards for passenger cars and light trucks and establish new standards, all covering model years 2021 through 2026."[1] Specifically, the preferred alternative to current CAFE and tailpipe carbon dioxide emissions standards is to retain the Model Year (MY) 2020 standards for both programs through MY 2026.

CBF opposes the SAFE Vehicles Rule for many reasons, most importantly because it will impede the implementation of the Chesapeake Bay Total Maximum Daily Load (TMDL) and because it will worsen the impacts of climate change from which the Bay

[1] 83 FR 42986, August 24, 2018.

is already suffering. We therefore urge EPA and NHTSA (the agencies) to withdraw their proposal.

I. Emissions from Passenger Cars and Light Trucks are Harmful to the Chesapeake Bay.

The Chesapeake Bay suffers from excessive air pollution from stationary, agricultural, natural and mobile sources.[2] These comments focus on the impacts of nitrogen oxides (NOx) and carbon dioxide (CO_2) from mobile sources.

A. Excess Nitrogen and the Chesapeake Bay

The Chesapeake Bay suffers from too much nitrogen with air pollution contributing about one-third of the total nitrogen load delivered to the Bay. At 570,000 square miles, the Bay airshed is roughly nine times the size of the Bay watershed. Sources of NOx in this expansive airshed contribute nitrogen to the Bay and its tributaries, with about half of the deposition loads of nitrogen coming from outside of the watershed.[3] Fossil fuel powered cars and trucks represent one of the principle sources of NOx pollution.[4] Motor vehicles emit NOx very close to the ground, thus much of the nitrogen is deposited onto plants and soils within tens of meters of the highway.[5] In addition, nitrogen from vehicle sources falls on impervious surfaces such as roads and parking lots, where little of the nitrogen is retained and most runs off downstream -- urban and highway drainage systems accelerate the flux of nitrogen downstream. The hot spots of deposition near highways can therefore lead to substantial runoff downstream in places like the Chesapeake Bay.[6] Additionally, a significant portion of NOx emitted from motor vehicles enters the atmosphere and either combines with sunlight to form ozone (O_3) or remains as one or more forms of nitrogen that can be deposited in the wet (via precipitation) or dry forms hundreds of miles away on land or directly into waterbodies. This NOx adds to the Chesapeake Bay's nitrogen loading burden.

All of this nitrogen causes algae blooms that, when they die, consume oxygen. A reduction in or lack of dissolved oxygen harms benthic organisms, oysters as well as fish and blue crabs. These fisheries are immensely important to the economy and culture of the Bay region. In 2010, EPA issued a TMDL for the Chesapeake Bay region.[7] In doing so, it set a cap on NOx from air deposition at 15.7 million pounds and EPA "committed to reducing nitrogen deposition to the Bay and its surrounding waters by a total of 3.7 million pounds between

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[2] https://www.chesapeakebay.net/issues/air_pollution

[3] Linker, L.C., R. Dennis, G.W. Shenk, R.A. Batiuk, J. Grimm, and P. Wang, *Computing atmospheric nutrient loads to the Chesapeake Bay watershed and tidal waters*, Journal of the American Water Resources Association. 1-17, 2013.

[4] *Chesapeake Bay TMDL*, Section 4.6.2, *Atmospheric Deposition*, pp. 4-33, December 29, 2010, https://www.epa.gov/sites/production/files/2014-12/documents/cbay_final_tmdl_section_4_final_0.pdf

[5] Redling, K., E. Elliott, D. Bain, and J. Sherwell, *Highway contributions to reactive nitrogen deposition: tracing the fate of vehicular NO using stable isotopes and plant biomonitors*, Biogeochemistry 116:261-274, 2013.

[6] Groffman, P.L., N.L. Law, K.T. Belt, L.E. Band, and G.T. Fisher, *Nitrogen fluxes and retention in urban watershed ecosystems*, Ecosystems 7:393-403, 2004.

[7] EPA, *Chesapeake Bay Total Maximum Load for Nitrogen, Phosphorous and Sediment,* December 29, 2010, https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document.

2009 and 2025, the year all practices are to be in place to meet the Bay TMDL goals."[8] The TMDL and the state implementation plans to meet the TMDL are collectively known as the Chesapeake Clean Water Blueprint.

B. Climate Change and the Chesapeake Bay

As noted, the Chesapeake Bay is the nation's largest estuary, supporting vibrant commercial fishing and tourism industries. The Bay—and its surrounding states— are not immune to the effects of climate change. EPA has noted that average temperatures have risen between 1895 and 2011 by almost two degrees Fahrenheit and projections indicate warming of 4.5 to 10 degrees by the 2080s.[9] The Chesapeake Bay suffers from the effects of climate change including sea-level rise, warming temperatures, and extreme weather.[10]

Within 20 years, nearly 170 U.S. communities will be chronically inundated with flooding[11] and more than 70% of these communities will be in Louisiana and Maryland: the "canaries in the coal mine" for sea level rise.[12] Sea level rise threatens to inundate small coastal communities and major cities alike in the Chesapeake Bay region. In Maryland alone, it threatens to flood over 61,000 homes by 2100, valued at $19 billion.[13] Entire inhabited islands are now underwater in the Chesapeake Bay, with more likely to follow if greenhouse gas (GHG) emissions do not decrease substantially.[14] In Norfolk, Virginia, sea level rise poses significant risk to military infrastructure and operations.[15] Wetlands are also

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[8] EPA, *The importance of clean air to clean water in the Chesapeake Bay,* https://www.epa.gov/sites/production/files/2015-06/documents/cb_airwater_fact_sheet_jan2015.pdf.

[9] *Id.*

[10] EPA, Chesapeake Bay Program, *Climate Change,* https://www.chesapeakebay.net/issues/climate_change

[11] Erika Spanger-Siegfried, *et. al*, *When Rising Seas Hit Home: Hard Choices Ahead for Hundreds of US Coastal Communities*, Union of Concerned Scientists 2, 2017.

[12] *Id.*

[13] Catherine Rentz, *Rising sea levels threaten $19 billion in real estate across Maryland*, study says, The Baltimore Sun, Oct. 28, 2017, http://www.baltimoresun.com/news/maryland/investigations/bsmd-suninvestigates-sea-level-20171026-story.html.

[14] Erik Ortiz, *How to Save A Sinking Island*, NBC NEWS, November 13, 2017, https://www.nbcnews.com/specials/deal-island; David Fahrenthold*, Last house on sinking Chesapeake Bay island collapses*, Washington Post, October 26, 2010, http://www.washingtonpost.com/wpdyn/content/article/2010/10/24/AR2010102402996.html; Jon Gertner, *Should the United States Save Tangier Island From Oblivion*?, New York Times Magazine, July 6, 2016, https://www.nytimes.com/2016/07/10/magazine/should-the-united-states-save-tangier-island-fromoblivion.html.

[15] "Sea level rise at just one site can have a significant impact on [both military policy and] strategy. Hampton Roads, Virginia, dubbed 'the greatest concentration of military might in the world' for former Secretary of Defense Leon Panetta, is by itself an invaluable operational and strategic hub for both the United States and its alies. It …is the backbone of the U.S. Atlantic Fleet. It is also a low-lying site and very exposed to seal level rise and storm surge. If significant portions of the Hampton Roads infrastructure we regularly inundated, as is projected under a number of scenarios for the years 2023-2100, the impediment to force deployments for critical Atlantic, Mediterranean and Pacific war-fighting and humanitarian operations – many of which are tied to core strategic goals of the United States – would be significant." The Center for Climate and Security,

threatened by sea level rise. These important filters reduce the level of pollutants entering the Bay[16] and protect coastal communities from storm surge and erosion.[17] Wetlands inundated with saltwater from sea level rise, however, cannot provide the same water quality and habitat benefits as healthy wetlands.[18] They are typically some of the first areas to be exposed to chronic flooding and while they can migrate in response to changes in water levels provided they have the space and time to do so,[19] the pace of sea level rise and changes in land use in coastal communities have weakened the ability of wetlands to migrate.[20] In addition, forested buffers along creeks, tidal rivers, and the Bay are also impacted by seal level rise as saltwater seeps into the soil, killing trees and creating "ghost forests."[21]

Warming waters - that have already been recorded in 92 percent of the Bay's waters - deplete the level of available oxygen in the Bay.[22] This will have major repercussions as the Bay already struggles with dead zones of hypoxic water from nitrogen and phosphorus pollution (these nutrients fuel algal blooms, creating hypoxic and anoxic areas in the Bay).[23] Warming ocean temperatures will only exacerbate the dead zone in the Bay, because warmer water molecules hold less oxygen than colder water molecules.[24]

Average U.S. precipitation has increased since the 1990s, and the frequency and intensity of heavy precipitation events is increasing due to climate change.[25] Increased scouring and runoff from more intense rain events carry significantly higher loads of nitrogen, phosphorous, and sediment into the Bay's tributaries.

Finally, GHG emissions cause ocean waters to acidify. Our oceans are a sink for atmospheric carbon, absorbing about a quarter of the carbon dioxide released into the atmosphere each

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Military Expert Panel Report: *Sea Level Rise and the U.S. Military's Missions, 23-24, 2016,* https://climateandsecurity.files.wordpress.comen/2016/09-center-for-climate-and-security-military-expert-panel-report2.pdf.

[16] Chesapeake Bay Program, *Wetlands,* https://www.chesapeakebay.net/issues/wetlands

[17] *Id.*

[18] Joseph Kurt and Victor Unnone, *Climate Change and the Chesapeake Bay Total Maximum Daily Load: Policy Priorities and Options*, Virginia Coastal Policy Center 4, 2016.

[19] Erika Spanger-Siegfried, *et. al*, *When Rising Seas Hit Home: Hard Choices Ahead for Hundreds of US Coastal Communities*, Union of Concerned Scientists, 10, 2017.

[20] *Id.*

[21] *Id*. *See also* John Upton, '*Ghost Forests' Appear as Rising Seas Kill Trees, Climate Central*, Sept. 15, 2016, http://www.climatecentral.org/news/ghost-forests-appear-as-rising-tides-kill-trees-20701.

[22] *See Army Corps of Engineers and City of Norfolk Draft Integrated City of Norfolk Coastal Storm Risk Management Feasibility Study/Environmental Impact Statement*, October 2017, http://www.nao.usace.army.mil/NCSRM/

[23] EPA, Chesapeake Bay Program, *The Dead Zone,* https://www.chesapeakebay.net/state/dead_zone

[24] Chris Mooney, *Global warming could deplete the oceans' oxygen – with severe consequences*, Washington Post, April 28, 2016, https://www.washingtonpost.com/news/energyenvironment/wp/2016/04/28/global-warming-could-deplete-the-oceans-oxygen-levels-with-severeconsequences/?utm_term=.9c3333011616.

[25] U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment,* 19, 20, 2017.

year.[26] This absorption is not without consequence: excess carbon dioxide is changing the saltwater chemistry.[27] A chemical reaction occurs between carbon dioxide, water, and carbonate ions that reduces seawater pH depleting the concentration of carbonate ions and calcium carbonate minerals.[28] This negatively affects calcifying species by impairing their shell making ability. Ocean acidification threatens the growth and reproduction of oysters, clams, and other creatures with calcium shells.[29] The Chesapeake Bay blue crab population may be particularly susceptible to acidification because larval crabs spend a portion of their life offshore in the ocean.
Blue crabs are a particularly important commercial species in the region's multi-billion-dollar seafood industry.[30]

Taken together, the effects of GHG emissions will impact the complex structure – including water quality and habitat - needed for species survival in the Bay region. Indeed, these impacts are identified and reflected through various sections of the Chesapeake Bay Watershed Agreement, an Interstate Compact,[31] to which the United States is a signatory.[32] The Agreement recognizes that climate change will have an impact on Bay ecosystems. One of its goals is to identify climate resiliency, with an outcome of monitoring and assessing "the trends and likely impact of changing climate and sea level conditions on the Chesapeake Bay ecosystem, including the effectiveness of restoration and protection policies, programs and projects.[33] The agencies' proposed rule, if finalized and implemented, will only exacerbate this ever-increasing problem.

II. The SAFE Vehicles Rule Will Lead to Increased Fuel Consumption and Increased Emissions of NOx and CO_2 .

[26] NOAA Pacific Marine Environmental Laboratory Carbon Program, *Ocean Acidification: the Other Carbon Dioxide Problem*, https://www.pmel.noaa.gov/co2/story/Ocean+Acidification
[27] NOAA Pacific Marine Environmental Laboratory Carbon Program, *What is Ocean Acidification?,* https://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F
[28] *Id.*
[29] Sarah M. Giltz and Caz M. Taylor, *Reduced Growth and Survival in the Larval Blue Crab Callinectes sapidus Under Predicted Ocean Acidification*, 36 J. OF SHELLFISH RESEARCH 481, 2017.
[30] Chesapeake Bay Foundation, *The Economic Importance of the Bay*, http://www.cbf.org/issues/whatwe-have-to-lose/economic-importance-of-the-bay/
[31] One of the purposes of the Chesapeake Bay Restoration Act of 2000 was to "expand and strengthen cooperative efforts to restore and protect the Chesapeake Bay; and to achieve the goals established in the Chesapeake Bay Agreement." 33 U.S.C. § 1267. The Chesapeake Bay Agreement is an interstate compact as Congress developed and authorized the joint state action *See Cuyler v. Adams*, 449 U.S. 433; 101 S. Ct. 703 (1981); *Seattle Master Builders Assoc. v. Pacific Northwest Electric Power & Conservation Planning Council*, 786 F.2d 1359 (9th Cir. 1986).
[32] *Chesapeake Bay Watershed Agreement,* 2014, https://www.chesapeakebay.net/documents/FINAL_Ches_Bay_Watershed_Agreement.withsignatures-HIres.pdf
[33] *Id.* at p. 14.

As stated above, the agencies SAFE Vehicles Rule will set CAFE and carbon dioxide emissions standards for passenger cars and light trucks manufactured for sale in the United States for model years (MYs) 2021 through 2026.[34] CAFE standards are set by NHTSA under the Energy Policy Conservation Act of 1975 (EPCA), as amended by the Energy Independence and Security Act of 2007 and EPA sets CO_2 standards under the Clean Air Act (CAA).[35] EPA is required to set emission standards for light vehicles because it has properly made an "endangerment finding" that CO_2 "cause[s] or contribute[s] to air pollution which may be reasonably be anticipated to endanger public health or welfare."[36]

Under the 2012 Program, EPA, NHTSA, and the California Air Resources Board developed coordinated fuel economy and GHG standards that apply to MY 2012 through MY 2025 vehicles. These standards (the National Program) were expected to provide continuous increases in fuel economy and reductions in GHG emissions, while ensuring consumer choice and allowing manufacturers to meet all regulatory requirements simultaneously.[37]

The National Program established standards that increase in stringency year-over-year from MY 2012 through the final years of the program. In the 2012 final rule, the agencies projected that the National Program would reach a level by 2025 that nearly doubles fuel economy and cuts GHG emissions in half as compared to MY 2008 and would reduce CO_2 pollution by 6 billion metric tons and oil consumption by 12 billion barrels over the lifetime of MY 2012-2025 vehicles. In addition, the standards were projected to provide significant savings for consumers due to reduced fuel use, and thus reduced expenditures on fuel.[38]

The preferred approach under the SAFE Vehicles Rule is to freeze CAFE and tailpipe carbon dioxide emissions standards at the MY 2020 levels for both programs through MY 2026. This will result in increased fuel consumption and increased emissions of CO_2. Regardless of the agencies rather flippant view that this difference is miniscule in the overall picture of global climate change,[39] according to the SAFE Vehicles Rule notice, using its favored approach,

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[34] 83 FR 42986, 42987, August 24, 2018.
[35] *Id.*
[36] *Id.*, *citing* 42 U.S.C. § 7521, 74 FR 66495, Dec. 15, 2009, ("Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act.").
[37] EPA, *Light-Duty Automobile Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2017, Regulatory Context,* EPA-420-R-001, p. 118, January 2018, https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100TGDW.pdf
[38] *Notice of Availability of Midterm Evaluation Draft Technical Assessment Report for Model Year 2022-2025 Light Duty Vehicle GHG Emissions and CAFE Standards,* 81 FR 49127, 49219, July 27, 2016.
[39] "The estimated effects of this proposal in terms of fuel savings and CO_2 emissions, again perhaps somewhat counter-intuitively, is relatively small as compared to the 2012 final rule. (Footnote omitted) NHTSA's Environmental Impact Statement performed for this rulemaking shows that the preferred alternative would result in 3/1,000ths of a degree Celsius increase in global average temperatures by 2100, relative to the standards finalized in 2012. On a net CO_2 basis, the results are similarly minimal. The following graph compares the estimated atmospheric CO_2 concentration (789.76 ppm) in 2100 under the proposed standards to the estimated level (789.11 ppm) under the standards set forth in 2012—or an 8/100ths of a percentage increase." 83 FR 42986, 42996-42997, August 24, 2018.

U.S. fuel consumption will "increase by about half a million barrels per day (2-3 percent of total daily consumption)."[40] Compared to baseline standards or the National Program, this approach will result in increased vehicle CO_2 emissions by ***713 million metric tons*** (MMT) over the lifetime of the vehicles produced from MY 1979 through MY 2029,[41] nearly 40 percent of the entire U.S. transportation sector in 2016.[42]

These are significant numbers.

The agencies acknowledge that NOx is emitted during vehicle storage and use, as well as through the fuel production and distribution system, and that increases in domestic fuel refining, storage and distribution that result from higher fuel consumption and use will increase NOx as follows:

> The change in criteria pollutant emissions the result from changes in vehicle usage and fuel consumption is estimated as part of this analysis. Criteria air pollutants include carbon monoxide [CO], hydrocarbon compounds [usually referred to as 'volatile organic compounds,' or VOC], nitrogen oxides [NOx], fine particulate matter [PM2.5], and sulfur oxides [SOx]. These pollutants are emitted during vehicle storage and use, as well as through the fuel production and distribution system.[43]

They argue, however, that the "net effect of less stringent CAFE standards on total emissions of each criteria pollutant depends on the relative magnitudes of increases in its emissions during fuel refining and distribution and decreases in its emissions resulting from additional vehicle use."[44] They go on to suggest that there will be a decrease in NOx because their proposal will result in consumers purchasing more new vehicles which will get older vehicles off the road.[45] We question this analysis and also question whether the agencies calculations regarding the amount of emissions that will result if the SAFE Vehicles Rule is implemented. The Rhodium Group, for example, estimates that the cumulative increases of carbon dioxide between 2022 and 2035 could surpass the total annual emissions of 82 percent of countries today and would account for *up to 931 million metric tons* of additional emissions from

[40] *Id.* at 42986.
[41] *Id.* at 43230.
[42] Sabin Center for Climate Change Law, State of the Planet, *Five Important Points About the EPA's "SAFE Vehicle Rule,"* August 7, 2018, https://blogs.ei.columbia.edu/2018/08/07/five-points-epa-safe-vehicle-rule/
[43] 83 FR 42985, 43016, August 24, 2018.
[44] *Id.*
[45] *Id.* at 42993-42996.

freezing the standards at 2020 levels.[46] Others have suggested that the agencies' analysis doesn't consider the potential knock-off effects, such a stunting innovation, of its proposal.[47]

In short, the agencies' analysis regarding emissions, and particularly NOx emissions, is insufficient and we are extremely concerned that these impacts are being marginalized. There are other issues with the analyses conducted by the agencies. For example, they suggest that the "rebound effect" associated with the National Program is 20 percent. The rebound effect refers to the notion that that increasing fuel efficiency will decrease consumer costs and therefore increase miles traveled (increasing highway fatalities).[48] The agencies estimated that the rebound effect was ten percent when issuing the National Program, now the agencies are estimating this effect at a rate closer to 20 percent while citing a variety of studies with varying estimates.[49] In addition, there were some internal disagreements about the safety claims being made in the SAFE Vehicles Rule proposal,[50] and it is difficult to understand how there can be such drastic differences between the agencies' cost and benefits analysis in 2012 versus those prepared for the SAFE Vehicles Rule.[51]

As the agencies state, improving "fuel economy means getting the vehicle to go farther on a gallon of gas; a vehicle that goes farther on a gallon of gas produces less CO_2 per unit of distance; therefore, improving fuel economy necessarily reduces tailpipe CO_2 emissions, and

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[46] Kate Larsen, John Larsen, Peter Marsters, Hannah Pitt, The Rhodium Group, *The Biggest Climate Rollback Yet*, August 2, 2018, https://www.rhg.com/research/the-biggest-climate-rollback-yet/; The Rhodium Group, Kate Larsen, Trevor Houser, Shashank Mohan, *Sizing up a Potential Fuel Economy Standards Freeze, May 3, 2018,* https://rhg.com/research/sizing-up-a-potential-fuel-economy-standards-freeze/

[47] *See*, comment from Zeke Hausfather, climate scientist and data expert at the University of California, Berkley, Zack Colman, *Trump makes his biggest move on climate with car rules*, E&E News, August 4, 2018.

[48] 83 FR 42985, 43106, August 24, 2018.

[49] *See* EPA, *Regulatory Impact Analysis: Final Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, EPA-420-R-016, pp. 4-119 – 4-140, August 2012; Sabin Center for Climate Change Law, State of the Planet, *Five Important Points About the EPA's "SAFE Vehicle Rule,"* August 7, 2018, https://blogs.ei.columbia.edu/2018/08/07/five-points-epa-safe-vehicle-rule/

[50] The interagency review documents between the agencies reveal that at one point EPA wanted to remove its name from the title of the Preliminary RIA and questions whether NHTSA considered several of EPA's recommendations regarding safety and economics. *See* e-mail from William Charmley to Chandana L. Achanta, *EPA Comments on the first version of the draft Preliminary RIA from NHTSA for the joint CAFE/GHG NPRM on light-duty vehicles,* July 12, 2018, Docket No. EPA-HQ-OAR-2018-0283.

[51] In 2012, EPA estimated that the rules would result in climate benefits between $106 billion and $126 billion because of reduced air pollution and that automakers would need to spend less than $800 to meet the standards. EPA, *Regulatory Impact Analysis: Final Rulemaking for 2017-2025 Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards,* EPA-420-R-12-016, Executive Summary, ii, August 2012. The agencies' 2018 Preliminary Regulatory Impact Analysis, however, suggests that the National Program is too costly for automakers and that the implications for weakening the standards would have a negligible impact on air quality. *See* EPA, DOT, *Preliminary Regulatory Impact Analysis, The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2020-2026 Passenger Cars and Light Trucks,* July 2018.

reducing CO_2 emissions necessarily improves fuel economy."[52] The same is true for NOx emissions.

The agencies' estimated increase of fuel consumption of about half a million barrels per day and increased CO_2 emissions by 713 million metric tons (over the lifetime of the vehicles produced from MY 1979 through MY 2029) will lead to significant increases in NOx emissions (as compared to the reductions required under the 2012 National Program).[53] This is bad for the Bay and undercuts EPA's agreement to reduce NOx emissions in the Bay airshed – at the least, it will make it more difficult to achieve the requirements of the Chesapeake Clean Water Blueprint and will worsen the impacts of climate change which will also harm the Bay.

III. CBF Opposes the SAFE Vehicles Rule as it Will Not Achieve the Reductions Neede for the Restoration and Protection of the Chesapeake Bay and Those Living Within the Watershed

The reduced fuel consumption and reduction in air deposition that would have been realized under the National Program, had it been implemented, are necessary for the restoration of the Chesapeake Bay and the health of residents in the watershed.

A. The restoration of the Chesapeake Bay is dependent upon EPA and NHTSA's proper regulation of fuel consumption and emissions from passenger cars and light trucks.

As mentioned above, EPA issued a TMDL for the Bay and set a cap on NOx from air deposition to 15.7 million pounds. EPA committed to reducing nitrogen deposition to the Bay and its surrounding waters by 3.7 million pounds annually between 2009 and 2025, the year all practices are to be in place to meet the Bay TMDL goals."[54] These reductions were to be met by federal regulations designed to reduce NOx or by providing an associated benefit of reducing NOx.[55] As EPA states,

> Clean Air Act regulations and programs provide the greatest reduction of NO_x in ambient air, resulting in decreased atmospheric deposition. Most of these regulations are national in scope but provide significant reductions of NO_x within the Bay watershed. Many regulations were fully implemented since

[52] 83 FR 42985, 42999, August 24, 2018.
[53] We note that this is even with the agencies' numbers that we believe are low. *See* Kate Larsen, John Larsen, Peter Marsters, Hannah Pitt, The Rhodium Group, *The Biggest Climate Rollback Yet,* August 2, 2018, https://www.rhg.com/research/the-biggest-climate-rollback-yet/; The Rhodium Group, Kate Larsen, Trevor Houser, Shashank Mohan, *Sizing up a Potential Fuel Economy Standards Freeze, May 3, 2018,* https://rhg.com/research/sizing-up-a-potential-fuel-economy-standards-freeze/
[54] https://www.epa.gov/sites/production/files/2015-06/documents/cb_airwater_fact_sheet_jan2015.pdf.
[55] *Id*.

> the inception of the Chesapeake Bay Program (1985), *while some are proposed or currently being implemented*.[56]

Because NOx from motor vehicles is a major source of nitrogen deposition to the Bay,[57] the analysis upon which the Bay TMDL was based included the expected reductions from mobile sources and from the full implementation of other federal programs.[58] The implementation of the Bay TMDL and the development of the Bay jurisdiction's Watershed Implementation Plans (WIPs) are ongoing[59] and EPA is still relying on the implementation of various federal regulations to achieve these reductions.[60] In a presentation to the public on atmospheric deposition in October of 2017, EPA referenced a number of "New rules in Place or About to be in Play Along with Other Elements That Influence Atmospheric Deposition of Nitrogen in the Chesapeake Watershed" and specifically mentions the "CAFE Rule."[61] Indeed, when promulgated, the 2017 and later CAFE standards were anticipated to reduce annual light-duty highway emissions of NOx by 904 tons in 2020 and 6,509 tons in 2030.[62]

In addition, in a presentation to the Water Quality Goal Implementation Team on February 12, 2018,[63] EPA referenced an additional 1.6 million pounds of nitrogen reductions (almost entirely from NOx reductions) that are projected to be available by 2030. These modeled reductions are based on expected benefits from the implementation of state and federal CAA regulatory programs for both mobile and stationary sources.[64]

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[56] *Emphasis added*, Chesapeake Bay Program, *Cleaner Air, Cleaner Bay, Changes in Nitrogen Deposition Over Time*, http://gis.chesapeakebay.net/air/

[57] *See Chesapeake Bay TMDL, Appendix L, Setting the Chesapeake Bay Atmospheric Nitrogen Deposition Allocations*, December 29, 2010, https://www.epa.gov/sites/production/files/2015-02/documents/appendix_l_atmos_n_deposition_allocations_final.pdf.

[58] *See Id.* at pp. L-13-14, Linker, L.C., R. Dennis, G.W. Shenk, R.A. Batiuk, J. Grimm, and P. Wang. 2013. Computing atmospheric nutrient loads to the Chesapeake Bay watershed and tidal waters. Journal of the American Water Resources Association, pp. 11-17.

[59] EPA, *Chesapeake Bay TMDL,* December 29, 2010, https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document.

[60] *See* EPA, *The Importance of Clean Air to Clean Water in the Chesapeake Bay*, https://www.epa.gov/sites/production/files/2015-06/documents/cb_airwater_fact_sheet_jan2015.pdf

[61] Lew Linker and Jesse Bash, Chesapeake Bay Program, Chesapeake Bay TMDL 2017 Midpoint Assessment Webinar Series, *Atmospheric Deposition of Nitrogen in the Chesapeake: Integrating Air & Water Environmental Management,* October 31, 2017, https://www.chesapeakebay.net/what/event/webinar_atmospheric_deposition_modeling_in_the_chesapeake_bay

[62] 77 FR 62624, 62899, October 15, 2012.

[63] Rich Batiuk, Chesapeake Bay Program, *Adjustments to the Bay's Assimilative Capacity and Determination of Additional Nitrogen and Phosphorous Loads,* March 2, 2018*,* https://www.chesapeakebay.net/channel_files/25896/sources_of_additional_loads_provided_to_ny_and_wv_presentation-march_2_2018_psc_mtg_presentation_2.pdf.

[64] *Id., See also,* EPA., *Midpoint Assessment of the Chesapeake Bay Total Maximum Daily Load,* stating*: "*In the Bay TMDL, EPA committed to reducing nitrogen deposition to the Bay and its surrounding waters by a total of 3.7 million pounds by 2025. As of 2017, EPA and its partners have achieved an estimated 3.2 million pounds of

The agencies' preferred alternative in its SAFE Vehicles Rule to abandon the National Program will mean that reductions of a substantial amount of NOx will not be achieved in the Watershed. Instead, fuel consumption will be increased by half a million barrels per day – and that will lead to significant increases in NOx emissions in the watershed and consequentially increased nitrogen deposition to the Bay, a result contrary to EPA's Bay TMDL - and Watershed Implementation Plans or Chesapeake Clean Water Blueprint - and the Chesapeake Bay Watershed Agreement. EPA is required by law under Section 117(g) of the Clean Water Act to ensure that implementation of plans, such as the Chesapeake Bay Blueprint, are developed and implemented to achieve and maintain, among other things, the nutrient goals of the Chesapeake Bay Agreement.[65] EPA has been a signatory to the 1987, 1992, 2000 and 2014 Bay Agreements. The most recent agreement provides that the signatories will achieve the goals of the Bay TMDL. Thus, Congress requires that EPA reduce nitrogen inputs to the Bay - the proposed SAFE Vehicles Rule does not comply with Congress' mandate.

In addition to the SAFE Vehicles Rule – and the increases in NOx emissions that will occur if it is finalized and implemented – there are numerous other EPA proposals currently under consideration that will also increase NOx emissions if they are finalized and implemented.[66] Adding to the problem is the fact that while NOx reductions have been realized through changes to federal regulations implemented to date, the overall nitrogen reductions from air have been offset, in part, by increases in ammonia emissions from animal production, and will end up being less than anticipated.[67] These variables cannot be viewed in isolation. In order to achieve its commitments under the Chesapeake Clean Water Blueprint by 2025, as well as the Chesapeake Bay Watershed Agreement, EPA must keep the current CAFE and emissions standards in place, not promulgate regulations that allow significantly under-controlled emissions of NOx.

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reductions through actions under the Clean Air Act. This puts EPA on track to meet its commitment. Clean Air Act regulations have also led to sharp reductions in nitrogen that washes into the Bay after falling on watershed lands and upstream waters. EPA and the jurisdictions will need to continue implementing Clean Air Act regulations for both stationary and mobile source pollution to ensure that the air deposition reduction goals will be achieved." https://www.epa.gov/sites/production/files/2018-07/documents/factsheet-epa-midpoint-assessment-chesapeake-bay-tmdl.pdf

[65] 33 U.S.C. § 1267(g)(1).

[66] *See* EPA, *Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units,* 82 FR 48035, Oct. 16, 2017; EPA, *Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guideline Implementing Regulations; Revisions to New Source Review Program,* 83 FR 44746, August 31, 2018; EPA, *Repeal of Emission Requirements for Glider Vehicles, Glider Engines, and Glider Kits,* 82 FR 53442, November 16, 2017; EPA, *Determination Regarding Good Neighbor Obligations for the 2008 Ozone National Ambient Air Quality* Standard, 83 FR 31915, July 10, 2018.

[67] Jiang, Z. *et al*., Unexpected Slowdown of US Pollutant Emission Reduction in the Past Decade, Proceedings of the National Academy of Sciences, Apr. 30, 2018, http://www.pnas.org/content/early/2018/04/1801191115.

B. The SAFE Vehicles Rule will increase CO_2 emissions and contribute to climate change.

In 2016, CO_2 accounted for about 81.6% of all U.S. GHG emissions from human activities. While CO_2 emissions come from a variety of natural sources, human-related emissions are responsible for the increase that has occurred in the atmosphere since the industrial revolution.[68] As mentioned, the Bay is already suffering from the effects of climate change and the SAFE Vehicles Rule will increase CO_2 emissions. Based on everything that has been documented about the environmental and health consequences of increased CO_2 emissions and fuel consumption, it is difficult to understand how the agencies are choosing to abandon the National Program and propose this rulemaking. This is especially true given the recent report by the Intergovernmental Panel on Climate Change (IPCC)[69] 2018 report, *Global Warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty,* (IPCC Report).[70] The report was compiled with input from ninety-one authors and review editors from 40 countries and was prepared in response to an invitation from the United Nations Framework Convention on Climate Change when it adopted the Paris Agreement in 2015.[71]

The Report strongly confirms that, "we are already seeing the consequences of 1°C of global warming through more extreme weather, rising sea levels and diminishing Arctic sea ice, among other changes."[72] As one of the Co-Chairs of the IPCC Working Group II states, "***Every extra bit of warming matters***, especially since warming of 1.5ºC or higher increases the risk associated with long-lasting or irreversible changes, such as the loss of some ecosystems."[73]

As noted above, the Bay is already suffering from the effects of climate change. Here again, as with NOx emissions, the additional CO_2 emissions – estimated at 713 million metric tons (over the lifetime of the vehicles produced from MY 1979 through MY 2029) -- must not be

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[68] EPA, Overview of Greenhouse Gases, Carbon Dioxide, https://www.epa.gov/ghgemissions/overview-greenhouse-gases*, citing*, NRC (2010), *Advancing the Science of Climate Change.*

[69] The IPCC is the United Nations body for assessing the science related to climate change. *Summary for Policymakers of IPCC Special Report on Global Warming of 1.5 C approved by governments*, October 8, 2018, p. 3, http://www.ipcc.ch/pdf/session48/pr_181008_P48_spm_en.pdf

[70] The Report highlights a number of climate change impacts that could be avoided by limiting global warming to 1.5ºC compared to 2ºC, or more. For instance, by 2100, global sea level rise would be 10 cm lower with global warming of 1.5°C compared with 2°C. The likelihood of an Arctic Ocean free of sea ice in summer would be once per century with global warming of 1.5°C, compared with at least once per decade with 2°C. Coral reefs would decline by 70-90 percent with global warming of 1.5°C, whereas virtually all (> 99 percent) would be lost with 2ºC. http://www.ipcc.ch/report/sr15/

[71] *Summary for Policymakers of IPCC Special Report on Global Warming of 1.5 C approved by governments*, October 8, 2018, http://www.ipcc.ch/pdf/session48/pr_181008_P48_spm_en.pdf

[72] *Id.,* as stated by Panmao Zhai, Co-Chair of IPCC Working Group I.

[73] *Emphasis added*, *Id., quoting* Hans-Otto Pörtner.

considered in isolation. The cumulative effect of the SAFE Vehicles Rule and other recent federal proposals aimed at weakening Clean Air Act programs will – taken together – worsen climate change and have negative impacts to the Bay watershed.

C. The SAFE Vehicles Rule will have significant health consequences and will disproportionately impact minority and low-income communities in the Chesapeake Bay water and airsheds.

As EPA acknowledges,

> Carbon dioxide and other greenhouse gas pollution leads to more frequent and intense heat waves that increase mortality, especially among the poor and elderly. Other climate change public health concerns raised in the scientific literature include anticipated increases in ground-level ozone pollution, the potential for enhanced spread of some waterborne and pest-related diseases, and evidence for increased production or dispersion of airborne allergens.[74]

In addition, NOx is a precursor to ozone, which is known to cause a variety of health issues as stated by the agencies:

> For short-term exposure to ozone, the Ozone ISA concludes that respiratory effects, including lung function decrements, pulmonary inflammation, exacerbation of asthma, respiratory related hospital admissions, and mortality, are causally associated with ozone exposure. It also concludes that cardiovascular effects, including decreased cardiac function and increased vascular disease, and total mortality are likely to be causally associated with short-term exposure to ozone, and that evidence is suggestive of a causal relationship between central nervous system effects and short-term exposure to ozone. For long-term exposure to ozone, the Ozone ISA concludes that respiratory effects, including new onset asthma, pulmonary

[74] EPA, Clean Air Act Overview, Air Pollution: Current and Future Challenges, https://www.epa.gov/clean-air-act-overview/air-pollution-current-and-future-challenges, *citing*, USGCRP, 2009. Global Climate Change Impacts in the United States, Karl, T.R., J.M. Melillo, and T.C. Peterson (eds.). United States Global Change Research Program. Cambridge University Press, New York, NY, USA. CCSP, 2008. *Analyses of the effects of global change on human health and welfare and human systems,* A Report by the U.S. Climate Change Science Program and the Subcommittee on Global Change Research. Gamble, J.L. (ed.), K.L. Ebi, F.G. Sussman, T.J. Wilbanks, (Authors). U.S. Environmental Protection Agency, Washington, DC, USA; Confalonieri, U., B. Menne, R. Akhatar, K.L. Ebi, M. Hauengue, R.S. Kovats, V. Revich and A. Woodward, 2007. Human Health. In: Climate Change 2007: Impacts, Adaptation and Vulnerability, *Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* Parry, M.L., O.F. Canziani, J.P. Palutikof, P.J. van der Linden and C.E. Hanson, (eds.), Cambridge University Press, Cambridge, United Kingdom.

> inflammation and injury, are likely to be causally related with ozone exposure. The Ozone ISA characterizes the evidence as suggestive of a causal relationship for associations between long-term ozone exposure and cardiovascular effects, reproductive and developmental effects, central nervous system effects and total mortality.[75]

These health impacts are worse for those currently suffering with asthma, children and older adults.[76] In addition to the health impacts from ozone, the agencies note a slew of other emissions from fuel consumption that contribute to very serious health problems. Indeed, the Draft EIS states that in general, "emissions of criteria air pollutants increase across all alternatives" and that the proposals in the SAFE Vehicle Rule would "result in increased incidence of PM2.5-related adverse health impacts due to the emissions increases. Increases in adverse health outcomes include increased incidences of premature mortality, acute bronchitis, respiratory emergency room visits, and work-loss days."[77]

These ill effects will have a greater impact in minority and low-income communities. Studies have consistently found a disproportionate prevalence of minority and low-income populations living near mobile sources of pollutants[78] and that these communities are also more likely to be impacted by the effects of climate change.[79]

These impacts must be more seriously considered and weighed against the supposed improvements in safety touted by the agencies and the implication that the National Program would have negatively affected safety. As a matter of fact, the National Academy of Sciences found the that National Program would have had little impact on vehicle safety and overall safety and would likely maintain overall social safety.[80] CBF challenges the accuracy of the agencies' argument that its proposal will result in fewer vehicles crashes and many of the other bases they are relying upon in the proposed SAFE Vehicles Rule.

D. The Agencies' proposal to withdraw the California waiver is without legal justification and will negatively impact the Chesapeake Bay Watershed.

The agencies' proposed revocation of California's preemption waiver under Clean Air Act Section 209(b) and its current GHG standards and Zero Emissions Vehicle (ZEV) mandate threatens the state's authority to protect its residents from the numerous negative effects of the pollution associated with the mobile sector. This proposal will also impact the Bay as twelve states --

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[75] 83 FR 42986, 43337, August 24, 2018.
[76] *Id.*
[77] *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks*, DRAFT Environmental Impact Statement, July 2018, Docket No. NHTSA-2017-0069, S-7-8.
[78] *Id*. at 7-10.
[79] *Id*. at 7-11.
[80] Nat'l Acad. Of Sci., *Cost Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles* 228, 2015, http://nap.edu/21744, at 226.

including Delaware, Maryland, New York, Pennsylvania, New York and the District of Columbia, all of which fall within Chesapeake Bay airshed[81]-- have elected under Section 177 of the Clean Air Act to adopt California's tailpipe emissions standards.[82] All of these states together with California represent about 40 percent of the country's auto market.[83]

EPA has a long history of granting these waivers to California[84] and the agencies' justification for revoking the waivers is inadequate, arbitrary and capricious. As EPA states, under Section 209 of the Clean Air Act, EPA shall grant a waiver unless the Administrator finds that California:

- was arbitrary and capricious in its finding that its standards are, in the aggregate, at least as protective of public health and welfare as applicable federal standards;
- does not need such standards to meet compelling and extraordinary conditions; or
- such standards and accompanying enforcement procedures are not consistent with Section 202(a) of the Clean Air Act.[85]

The agencies base their proposal to revoke the waiver on the grounds that the California standards are preempted by the EPCA and therefore EPA cannot provide a waiver under the Clean Air Act. They argue that since EPCA governs CAFE standards it preempts state laws or regulations related to fuel economy standards and that California's Advanced Clean Cars Program are preempted because they are related to fuel economy standards. These assertions are flawed. First, EPA has lawfully been providing waivers to California for years since the passage of EPCA.[86] Second, the agencies incorrectly argue that California's Clean Cars Program is preempted because it addresses the same public policy concern as the CAFE statute. The California program addresses CO_2 emissions not fuel economy standards. Indeed, two federal courts have held that EPCA does not preempt the EPA's ability to grant a waiver for California to establish its own emissions standards for motor vehicles. In *Green Mountain Chrysler v. Crombie*,[87] the Court held that the preemption doctrine did not apply to

[81] See https://www.chesapeakebay.net/what/maps/chesapeake_bay_airshed
[82] Green Car Reports, https://www.greencarreports.com/news/1109217_which-states-follow-californias-emission-and-zero-emission-vehicle-rules
[83] *Id.*
[84] For a complete listing, see EPA, *Vehicle Emissions California Waivers and Authorizations*, https://www.epa.gov/state-and-local-transportation/vehicle-emissions-california-waivers-and-authorizations#state
[85] EPA, *Vehicle Emissions, California Waivers and Authorizations,* https://www.epa.gov/state-and-local-transportation/vehicle-emissions-california-waivers-and-authorizations#state
[86] In fact, of more than 100 waivers considered, only one was ever denied and that decision was later reversed. Letter to Governors in support of California's waiver of preemption under the Clean Air Act, signed by United State Senators: Edward J. Markey, Tom Carper, Charles E. Schumer, Dianne Feinstein, Kamala D. Harris, Elizabeth Warren, Kristen Gillibrand, Michael F. Bennet, Benjamin L. Cardin, Richard Blumenthal, Chris Van Hollen, Sheldon Whitehouse, Jack Reed, Tina Smith, Cory A. Booker, Bernard Sanders, Robert Menendez, Richard J. Dubin, Brian Schatz, Jeffrey A. Merkley, Tom Udall, Christopher A. Coons, Ron Wyden, Patrick Leahy, April 27, 2018.
[87] 508 F.Supp.2d 295 (D. Vt 2007).

the interplay between Section 7543(b) of the CAA and EPCA and that EPCA did not expressly preempt Vermont's GHG program because the regulations were not a de facto fuel standard.[88] Similarly, in *Central Valley Chrysler Jeep, Inc. v. Goldstene,*[89] the Court found that EPCA's preemption of state laws to regulate fuel efficiency does not preempt EPA and California, through the CAA waiver process, from promulgating regulations that limit the emissions of GHGs, principally carbon dioxide, from motor vehicles.[90]

Finally, whether EPA even has the authority to withdraw a waiver that has already been granted is questionable.[91]

IV. Conclusion

As noted throughout this comment letter, CBF strongly opposes the agencies' SAFE Vehicle Rule because it will increase fuel consumption, CO_2, and NOx emissions thereby harming human health and the Chesapeake Bay. For EPA to achieve an annual reduction of 3.7 million pounds of nitrogen deposition in the Chesapeake Bay watershed through federal regulations by 2025, EPA must ensure that NOx emissions from motor vehicles are reduced. Failure to do so – and the finalization of the agencies' Safe Vehicles Rule that will increase fuel consumption by half a million barrels per day and increase CO_2 emissions by an estimated 713 million metric tons (over the lifetime of the vehicles produced from MY 1979 through MY 2029) - puts the Bay TMDL, and thereby the Chesapeake Bay, in jeopardy. The SAFE Vehicles Rule will also contribute to the increasingly alarming effects of climate change.

Finally, as stated, we question the agencies' analysis in proposing to revoke the California waiver, as well as the methodologies and analyses relied upon by the agencies in this proposed rulemaking. Taken together, the agencies' approach does not comply with the requirements and intent of the Clean Air Act[92] and the process by which the agencies' have proposed this rule does not meet the requirements of the Administrative Procedure Act[93] in clearly explaining and identifying the basis upon which changes to rulemaking must be made.

CBF urges EPA to withdraw this proposed rule and fully implement the existing National Program.

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[88] *Id.,* Vermont had gone through the appropriate processes under the CAA for adopting California's standards.
[89] 529 F.Supp.2d 1151 (E.D. Cal. 2007), *as corrected* (March 6, 2008).
[90] *Id.* at 1189.
[91] Letter to Governors in support of California's waiver of preemption under the Clean Air Act, signed by United State Senators: Edward J. Markey, Tom Carper, Charles E. Schumer, Dianne Feinstein, Kamala D. Harris, Elizabeth Warren, Kristen Gillibrand, Michael F. Bennet, Benjamin L. Cardin, Richard Blumenthal, Chris Van Hollen, Sheldon Whitehouse, Jack Reed, Tina Smith, Cory A. Booker, Bernard Sanders, Robert Menendez, Richard J. Dubin, Brian Schatz, Jeffrey A. Merkley, Tom Udall, Christopher A. Coons, Ron Wyden, Patrick Leahy, p. 2, April 27, 2018.
[92] 42 U.S.C. § 7401, *et. seq*.
[93] 5 U.S.C. § 551, *et. seq.*

Thank you for the opportunity to comment on the agencies' proposed rule, *The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks*. Please let us know if we can answer any questions or provide additional information.

Sincerely,

Lisa Feldt

Lisa Feldt
Vice President of Environmental Protection and Restoration
Chesapeake Bay Foundation