APPENDIX A

DETAILED COMMENTS OF STATES AND CITIES SUPPORTING NHTSA'S PROPOSAL TO STRENGTHEN ITS CORPORATE AVERAGE FUEL ECONOMY STANDARDS FOR NEW LIGHT-DUTY VEHICLES

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INTRODUCTION

Our States and Cities[1] hereby submit these comments in response to the National Highway Traffic Safety Administration's (NHTSA) notice of proposed rulemaking: Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks, 86 Fed. Reg. 49,602 (Sept. 3, 2021) (Proposal). We welcome NHTSA's reconsideration of its Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, 85 Fed. Reg. 24,174 (Apr. 30, 2020) (SAFE 2), and we strongly support increasing the stringency of NHTSA's corporate average fuel economy (CAFE) standards.

The Energy Policy and Conservation Act (EPCA) requires NHTSA to establish "maximum feasible" fuel economy standards and to consider four factors in doing so: "technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy." 49 U.S.C. § 32902(a), (f). Congress's purpose in drafting this language—and specifically, in requiring NHTSA to establish "maximum feasible" standards—is clear. Congress intended the agency to conserve fuel, and thereby save consumers money, insulate the United States from global oil price instabilities, and reduce the impact of oil consumption on the environment.

In SAFE 2, NHTSA abdicated its statutory duty to promote energy efficiency and conservation by interpreting the four statutory factors to permit substantial increases in energy consumption despite the availability of cost-effective technologies to improve fuel economy, thereby producing standards that were not "maximum feasible" under any reasonable understanding of that phrase. NHTSA is now proposing three "action" alternatives, all of which are more stringent than the SAFE 2 standards. 86 Fed. Reg. at 49,744-56. By proposing more stringent fuel economy standards for model years 2024 to 2026, NHTSA is properly correcting course to fulfill its statutory duty. By adopting more stringent standards, NHTSA will save drivers money

[1] The States of California, Colorado, Connecticut, Delaware, Hawaii, Illinois, Maine, Maryland, Michigan, Minnesota, Nevada, New Jersey, New Mexico, New York, North Carolina, Oregon, Rhode Island, Vermont, Washington, and Wisconsin; the Commonwealths of Massachusetts and Pennsylvania; the District of Columbia; the Cities and Counties of Denver and San Francisco; and the Cities of Los Angeles, New York, Oakland, and San Jose.

on gas, promote stable fuel prices, reduce pollution, and help counter the climate crisis that is already wreaking havoc on our States and Cities.

We thus urge NHTSA to expeditiously adopt CAFE standards that are actually "maximum feasible" for model years 2024 to 2026. The preferred alternative standards—Alternative 2—are technologically feasible, economically practicable, and effectuate the purpose of EPCA to conserve energy, particularly relative to the unlawfully weak SAFE 2 standards. However, we urge NHTSA to consider whether more stringent standards—up to and including those in Alternative 3—are, in fact, "*maximum* feasible," based on the full record before the agency, including the updates to NHTSA's analysis recommended herein.

BACKGROUND

A. The Energy Policy and Conservation Act Requires "Maximum Feasible" Fuel Economy Standards

In 1975, in the face of an energy crisis, Congress enacted EPCA and directed NHTSA to set fuel economy standards for automobiles as part of a suite of measures to reduce energy consumption. Pub. L. No. 94-163 § 2(5), 89 Stat. 871, 874, 902 (1975). Congress strengthened and expanded this energy conservation program through the Energy Independence and Security Act of 2007. *See* Pub. L. No. 110-140, 121 Stat. 1492, 1498-1501 (2007). The statute requires NHTSA to prescribe "average fuel economy standards" that reflect "the maximum feasible" level "manufacturers can achieve" in a given model year. 49 U.S.C. § 32902(a), (b)(2)(B). In setting these "maximum feasible" standards, NHTSA "shall consider technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy." *Id.* § 32902(f).

B. In 2012 NHTSA Promulgated Standards for Model Years 2017 through 2021 and Established Augural Standards for Model Years 2022 through 2025

Pursuant to its statutory mandate, in 2012 NHTSA promulgated fuel economy standards for model years 2017-2021. 77 Fed. Reg. 62,624 (Oct. 15, 2012). It did so in a joint rulemaking with EPA, in which EPA promulgated greenhouse gas (GHG) emission standards for model years 2017-2025. *Id.* However, EPCA limits NHTSA to promulgating five years of fuel economy standards at a time. 49 U.S.C. § 32902(b)(3)(B). Thus, for model years 2022-2025, NHTSA announced "augural" standards, harmonized with EPA's GHG standards for those years, finding that those augural standards reflected "NHTSA's current best estimate … of what levels of stringency might be maximum feasible in those model years." 77 Fed. Reg. at 62,627. The standards required approximately 3.7% improvement in average fuel economy in each model year from 2017 through 2021. *Id.* at 63,033. The augural standards would require approximately 4.5% improvement each year from 2022 through 2025, if and when they were finalized. *Id.*

NHTSA and EPA (the Agencies) explained they were responding "to the country's critical need to address global climate change and to reduce oil consumption." *Id.* at 62,626-27. Indeed, NHTSA estimated that its standards would save between 180 and 184 billion gallons of oil over the lifetimes of the vehicles sold in model years 2017 to 2025. *Id.* at 62,656. The Agencies found that "a wide range of technologies" were already available for compliance, with further advancements and deployments anticipated. *Id.* at 62,631; *see also id.* at 62,971. NHTSA concluded that the promulgated standards might add $183 to $287 to the average cost of a new vehicle in model year 2017 and the augural standards might add, on average, "between $1,461 and $1,616 per vehicle in MY 2025." *Id.* at 62,659. However, those costs would be dwarfed by consumers' fuel savings, which NHTSA estimated at "2.5 times the incremental price increase." *Id.* at 62,660. NHTSA projected net benefits to society in the range of $372 billion to $507 billion. *Id.* at 62,657.

Because its emission standards extended to model year 2025, EPA agreed to conduct a "Mid-Term Evaluation" by April 2018 in which EPA would evaluate the appropriateness of its later-year standards. *Id.* at 62,652. That evaluation would be "a collaborative, robust and transparent process, including public notice and comment." *Id.* at 62,784. NHTSA agreed to collaborate with EPA and the California Air Resources Board (CARB) in preparing a joint and rigorous Technical Assessment Report that would form a critical basis for EPA's evaluation. *Id.*

C. In 2016 NHTSA Confirmed that the Standards Announced in 2012 Remained Feasible

In the 2016 Draft Technology Assessment Report (TAR) it jointly authored with EPA and CARB, NHTSA found that "the penetration of … technologies" identified in the 2012 rulemaking "ha[d] proceeded steadily since then" and that "the cost-effectiveness and implementation feasibility of" those technologies were "generally consistent" with findings in the 2012 final rules.[2] NHTSA also found that there had been unanticipated technological developments since 2012, including "[s]everal new technologies" and "unforeseen application[s] of technologies" that had emerged or were "now under active development."[3] When it considered compliance costs (including those for its augural standards), NHTSA found that average, per-vehicle costs would increase in model year 2025 by $1,024,[4] a figure several hundred dollars lower than the Agencies had predicted in the 2012 rulemaking. In other words, technology options had expanded and technology costs had declined since the Agencies' 2012 rulemaking. *See also California v. EPA*, 940 F.3d 1342, 1347 (D.C. Cir. 2019).

[2] U.S. EPA and NHTSA, EPA-420-D-16-900, Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025 at 5-1 (July 2016) (TAR), available at https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF.
[3] *Id.*; *see also id.* at 5-7.
[4] *Id.* at 13-86.

NHTSA also considered the societal costs and benefits of its standards and found that, looking only at the augural standards for model years 2022-2025, net benefits would be approximately $85 billion.[5]

D. In 2020 NHTSA Promulgated Much Weaker Standards for Model Years 2021 through 2026

In 2018, EPA and NHTSA proposed to freeze their respective standards at model year 2020 levels for six years, meaning no increase in stringency would be required in model years 2021-2026. 83 Fed. Reg. 42,986 (Aug. 24, 2018). On April 30, 2020, the Agencies finalized standards—the "SAFE 2" standards—that would increase in stringency by approximately 1.5% each year, 85 Fed. Reg. at 24,174, a rate far lower than the increases required by the pre-existing and augural standards from the 2012 rulemaking, *id.* at 25,106.

NHTSA chose to weaken its standards even while reaffirming that the "majority" of technologies needed to comply with the pre-existing and augural standards "ha[d] already been developed, ha[d] been commercialized, and [were] in-use on vehicles" already in the market. *Id.* at 25,107. In fact, NHTSA predicted automakers would improve fuel economy more than required by its SAFE 2 standards if the agency held the standards constant at model year 2020 levels.[6] In other words, NHTSA disregarded its obligation to push automakers to improve fuel economy, even though the record before the agency indisputably established that such improvements were feasible.

NHTSA estimated that its new standards would "result in 1.9 to 2.0 additional billion barrels of fuel consumed," 85 Fed. Reg. at 24,176, and would cost consumers money overall, because increases in fuel expenditures would exceed estimated decreases in vehicle prices, *id.* at 24,180-81. The Agencies estimated that the net benefits of their final standards "straddle[d] zero." *Id.* at 24,176.

Many of the undersigned (and others) challenged the SAFE 2 final rules in the D.C. Circuit. *Competitive Enterprise Inst. v. NHTSA*, No. 20-1145 (D.C. Cir.) (and consolidated cases). Challengers asserted, among other things, that NHTSA's rolled back standards were nothing like the "maximum feasible" standards Congress required, that NHTSA had disregarded Congress's mandate to conserve energy, and that NHTSA had made numerous errors in its underlying analysis (including in its cost-benefit analysis), rendering its rule arbitrary and capricious. Those

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[5] TAR at 13-103.

[6] U.S. EPA and NHTSA, Final Regulatory Impact Analysis: The Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks (March 2020) at 17-18 (SAFE FRIA) (*compare* third row of Table I-12 *with* first row of Table I-14), available at https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/final_safe_fria_web_version_200701.pdf.

cases were placed into abeyance pending the Agencies' reconsideration of their SAFE 2 action pursuant to President Biden's January 20, 2021 Executive Order.[7]

E. Improved Fuel Economy Provides Numerous Benefits Important to Our States and Cities

NHTSA's Proposal contains three "action" alternatives. *See, e.g.*, 86 Fed. Reg. at 49,745. The different "action" alternatives are defined in terms of percent-increases in CAFE stringency from year to year: whereas the current SAFE 2 standards raise stringency by 1.5% per year for both passenger cars and light trucks through model year 2025, Alternative 1 increases stringency by 9.14% for passenger cars in model year 2024, and 3.26% thereafter; Alternative 2 (the proposal or "preferred alternative") increases stringency by 8% per year; and Alternative 3 increases stringency by 10% per year. 86 Fed. Reg. at 49,744-56. Thus, all of the action alternatives, including the preferred alternative, are more stringent than the SAFE 2 standards. Adopting any of these alternatives would provide numerous crucial benefits to our States and Cities. In fact, from consumer savings on fuel to reductions in multiple forms of harmful pollution, standards considerably more stringent than SAFE 2 will have even greater net benefits than reflected in NHTSA's Proposal.

1. Improved Fuel Economy Benefits Consumers

All three of the alternatives proposed by NHTSA—but especially Alternatives 2 and 3—would have a long-term positive effect on consumers. NHTSA projects that under any of the alternatives in the proposal, fuel savings will exceed the technology costs necessary to comply with the standards. 86 Fed. Reg. at 49,710. Specifically, NHTSA estimates that its preferred alternative could reduce a vehicle's fuel costs by about $1,280, while increasing the average cost of a new vehicle by only about $960. *Id.* at 49,605; *see also* Table II-8. And drivers will not only experience lower costs as a result of new vehicles' decreased fuel consumption, but also will benefit from "fewer refueling stops required because of [the vehicles'] increased driving range," and "mobility benefits" from lowering overall operating costs. *Id.* at 49,721.[8] These are noted improvements from the SAFE 2 standards, which will cost consumers money overall, because increases in fuel expenditures under those standards would *exceed* estimated decreases in vehicle prices. 85 Fed. Reg. at 24,180-81.

Moreover, these proposed improvements in fuel economy benefit consumer welfare beyond reduced fuel expenditures for those buying new vehicles. Oil consumption in the United States is expected to fall as vehicle manufacturers produce more fuel efficient vehicles in response to the more stringent standards. 86 Fed. Reg. at 49,735. Indeed, lower total fuel consumption is

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[7] Executive Order on Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis, 86 Fed. Reg. 7037 § 2(c) (Jan. 25, 2021).

[8] *See also* NHTSA, Preliminary Regulatory Impact Analysis: Proposed Rulemaking for Model Years 2024-2026 Light Duty Vehicle Corporate Average Fuel Economy Standards (2021 CAFE PRIA) at Appendix I, Table A-23-1 (Aug. 2021).

expected even if total miles driven increase slightly. 2021 CAFE PRIA, *supra* note 8, at section 4.6.1. NHTSA estimates that "over the lives of vehicles produced prior to MY 2030, the proposal would save about 50 billion gallons of gasoline" compared to the SAFE 2 standards. 86 Fed. Reg. at 49,615. Decreasing the domestic consumption in the United States will in turn produce "a corresponding[] decrease in the Nation's demand for crude petroleum, a commodity that is traded actively in a worldwide market." *Id.*at 49,735. Because the United States accounts for a significant share of global oil consumption, its decreasing demand will "exert some downward pressure on worldwide prices," thus tending to lower gas prices for all consumers. *Id.*[9]

This decrease in domestic demand for oil will have some important externalities that positively affect consumers directly and our States and Cities more generally.

First, decreasing domestic demand for petroleum would decrease domestic income inequality by reducing oil prices. *See id.* at 49,735-36. Changes in oil prices have important distributional effects between consumers of refined petroleum products and producers of oil. Higher gasoline prices result in significant costs for families in the United States.[10] And while corporate profits in the U.S. petroleum industry would rise with higher prices, potentially resulting in net zero GDP impacts, this transfer of wealth would have detrimental effects on U.S. consumer well-being, the distribution of fossil fuel share holdings across income groups, and differences in the proportion of saving to spending as well as energy burdens across income groups.[11] Importantly to our States and Cities,[12] "the transfer of revenue from U.S. oil producers to U.S. oil consumers could have substantial benefits for the most economically disadvantaged, reducing income inequality…."[13]

Second, decreasing domestic demand for petroleum could reduce consumers' exposure to oil price shocks. *Id.* at 49,736. Since the 1970s, Americans have experienced six significant gas price shocks following spikes in the world oil market.[14] Oil price shocks have been a contributing factor to economic recessions.[15] And with climate change, an increased frequency of extreme weather events that disrupt foreign and domestic energy supplies can be expected,

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[9] *See also* United States Energy Information Administration, Oil and petroleum products explained: Use of oil (last updated May 10, 2021), https://www.eia.gov/energyexplained/oil-and-petroleum-products/use-of-oil.php.
[10] White Paper of Applied Economics Clinic, "An Analysis of NHTSA's Preliminary Regulatory Impact Analysis of 2021 Proposed Rulemaking for Model Years 2024-2026 Light-Duty Vehicle CAFE Standards" (October 2021) (AEC Comment) (submitted with CARB's Comments) at 11.
[11] *Id.* at 10-11.
[12] For example, the Governor of New Jersey recently signed Executive Order 262, establishing the Wealth Disparity Task Force, the purpose of which is to combat long-standing wealth gaps based on race and ethnicity. Governor Philip D. Murphy, New Jersey, Executive Order No. 262 (Sept. 14, 2021).
[13] AEC Comment, *supra* note 10, at 11.
[14] James D. Hamilton, *Historical Oil Shocks* (Dec. 22, 2010), in Parker, R. E.and R. Whaples, *Handbook of Major Events in Economic History* (2013), available at http://econweb.ucsd.edu/~jhamilton/oil_history.pdf.
[15] *See id.* at 26.

causing supply shortages and price spikes.[16] For example, Hurricane Ida caused a temporary disruption of nine-tenths of crude oil production in the Gulf of Mexico, resulting in Gulf Coast gasoline prices rising by 49% over the same time the previous year.[17]

Decreasing United States dependency on global oil markets helps insulate consumers from such global price shocks and supply disruptions. Even when, as in 2020, the United States has positive net oil exports, consumers still feel the effects of price shocks as the price of oil is determined by the global markets. And in any event, the United States is not self-sufficient in petroleum production.[18] Rather, the U.S. Energy Information Administration's 2021 Annual Energy Outlook forecast expects domestic gross crude oil imports to remain between 6.9 and 7.8 million metric barrels per day through 2050 without the proposed CAFE standard revision.[19] Thus, "regardless of whether exports equal or even exceed imports, global supply shocks will still impose costs" on United States consumers, among others.[20] Stricter fuel economy standards and lower fuel consumption can help insulate the United States from these effects. Moreover, more stringent fuel economy standards could further help stabilize oil costs through their effect in preventing more climate warming (discussed in more depth below), which will reduce the frequency and intensity of extreme weather events that disrupt oil production.

Auto manufacturers have not significantly improved fuel economy without increasingly stringent standards in the past, and thus our States and Cities conclude that implementing standards more stringent than the SAFE 2 standards is important in order to promote the consumer benefits described above.

2. Reduced Fuel Use Improves Our National Security

Our States and Cities also recognize that reduction in fuel use can benefit our national security. Experts have noted numerous foreign policy costs that arise from the domestic consumption of foreign oil, including: (1) disruptions in oil supply, (2) political realignment from dependence on imported oil that limits United States alliances and partnerships, (3) increasing the power of oil-exporting countries to enact policies that are contrary to United States interests, and (4) the maintenance of United States military presence in the Middle East arising from interest in protecting oil interests.[21] Reducing dependence on imported oil could "lower U.S. military and foreign policy costs of safeguarding the U.S. oil supply and reduce revenue to regimes that are considered inimical to U.S. interests."[22] These costs could indeed be significant. Since

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16 AEC Comment, *supra* note 10, at 8.
17 *Id.*
18 *Id.* at 7.
19 *Id.* (citing U.S. Energy Information Administration, *Annual Energy Outlook 2021*, Appendix D, Table D.4, available at https://www.eia.gov/outlooks/aeo/pdf/appd.pdf).
20 *Id.* at 7-8.
21 86 Fed. Reg. at 49,796 (citing Council on Foreign Relations, *National Security Consequences of U.S. Oil Dependency*, Independent Task Force Report No. 58, October 2006, available at https://cdn.cfr.org/sites/default/files/report_pdf/0876093659.pdf).
22 AEC Comment, *supra* note 10, at 11.

September 11, the United States has budgeted $5.4 trillion to wars—an average of $284 billion per year between 2001 and 2020.[23]

Moreover, our States and Cities agree with NHTSA "that the environmental costs of oil use are intertwined with the security costs of oil use . . . as climate change destabilizes traditional geopolitical power structures over times." 86 Fed. Reg. at 49,796. Thus, "[o]il conservation is more effective than increased domestic oil production at improving U.S. oil security." *Id.* (citing Stephen Brown, *New Estimates of the security costs of U.S. oil consumption* 113 Energy Policy 172 (Feb. 2018), available at https://www.sciencedirect.com/science/article/abs/pii/S0301421517307413).

3. Improved Fuel Economy Reduces Pollution and Other Environmental Impacts of Drilling and Refining

a. Climate Benefits of Reducing Fossil-Fuel Consumption and Combustion

Gasoline to power light-duty vehicles accounted for around 40% of total petroleum consumption in the United States in 2020.[24] Due to fossil fuel combustion, the transportation sector generates the largest share of total GHG emissions in the United States,[25] and light-duty vehicles account for nearly 60% of transportation sector emissions and 17% of total GHG emissions in the United States.[26] Moreover, the extraction, transport, and refining of crude oil is a significant source of GHG emissions, constituting about 5% of total global GHG emissions.[27]

"Increased fuel efficiency will reduce the amount of petroleum-based fuel consumed and refined domestically, which will decrease the emissions of carbon dioxide and other greenhouse gases that contribute to climate change . . . ." 86 Fed. Reg. at 49,722. These anticipated GHG emissions reductions are necessary to help stave off the worst effects of a climate crisis that is primarily caused by anthropogenic GHG emissions[28] and that is already afflicting our States and

[23] *Id.* at 12.
[24] United States Energy Information Administration, *Gasoline explained: Use of oil* (last updated May 26, 2021), https://www.eia.gov/energyexplained/gasoline/use-of-gasoline.php.
[25] United States Energy Information Administration, *Energy and the environment explained: Where greenhouse gases come from* (last updated May 21, 2021), https://www.eia.gov/energyexplained/energy-and-the-environment/where-greenhouse-gases-come-from.php#:~:text=In%202020%2C%20petroleum%20accounted%20for,total%20annual%20CO2%20emissions ("Over 90 percent of the fuel used for transportation is petroleum based, which includes gasoline and diesel.").
[26] United States Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019* ES-13, 2-30 (April 2021).
[27] Christian Lowhagen, Chalmers, *New study reveals real size of crude oil's carbon footprint* (Sept. 28, 2018), https://www.chalmers.se/en/departments/see/news/Pages/Crude-oil-carbon-footprint.aspx.
[28] *See* Richard P. Allan et al., *Climate Change 2021: The Physical Science Basis, Summary for Policymakers, Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (V. Masson-Delmotte et al., eds. 2021) (IPCC, *Summary for Policymakers*).

Cities. Just this summer, multiple deadly[29] heatwaves with record-breaking high temperatures ravaged the western United States. The West is also experiencing extreme drought conditions that threaten water security and fuel wildfires that have displaced thousands.[30] Meanwhile hurricanes of historic force swept across the southern and eastern United States—testing energy system resilience and producing record-breaking rainfall and fatal flash floods.[31] These types of impacts have been linked to climate change caused by anthropogenic emissions of GHGs,[32] and they are projected to worsen.[33] As average surface temperatures rise and the intensity and frequency of these types of extreme weather events increases,[34] our States and Cities face direct and compounding challenges to protect the health and welfare of our residents, our economies, and our natural resources.

[29] Sergio Olmos and Shawn Hubler, *Heat-Related Deaths Increase as Temperatures Rise in the West*, N.Y. TIMES (July 9, 2021, updated July 28, 2021), https://www.nytimes.com/2021/07/09/us/heat-wave-deaths.html; Thomas Frank, *Heat Wave Death Toll Will Rise with Thorough Count*, E&E News (July 23, 2021), https://www.scientificamerican.com/article/heat-wave-death-toll-will-rise-with-thorough-count/; Victoria Bekiempis, *Record-breaking US Pacific north-west heatwave killed almost 200 people*, THE GUARDIAN (July 8, 2021), https://www.theguardian.com/us-news/2021/jul/08/pacific-northwest-heatwave-deaths.

[30] *See e.g.*, Caroline Vakil, *2,000 people displaced in southern Oregon as wildfires ravage West*, THE HILL (July 15, 2021), https://thehill.com/policy/energy-environment/563312-2000-people-displaced-in-southern-oregon-as-wildfires-ravage-west.

[31] *See e.g.*, Jesse McKinley et al., *Flooding From Ida Kills Dozens of People in Four States*, N.Y. TIMES (Sept. 2, 2021, updated Sept. 15, 2021), https://www.nytimes.com/live/2021/09/02/nyregion/nyc-storm.

[32] *See e.g.*, Tom Di Liberto, *Record-breaking June 2021 heatwave impacts the U.S. West*, Climate.gov (June 23, 2021), https://climate.gov/print/838931; Sarah Kaplan, *How climate change helped make Hurricane Ida one of Louisiana's worst*, WASHINGTON POST (Aug. 30, 2021), https://www.washingtonpost.com/climate-environment/2021/08/29/how-climate-change-helped-make-hurricane-ida-one-louisianas-worst/; Rebecca Lindsey, *Preliminary analysis concludes Pacific Northwest heat wave was a 1,000-year event…hopefully*, Climate.gov (July 20, 2021), https://www.climate.gov/news-features/event-tracker/preliminary-analysis-concludes-pacific-northwest-heat-wave-was-1000-year.

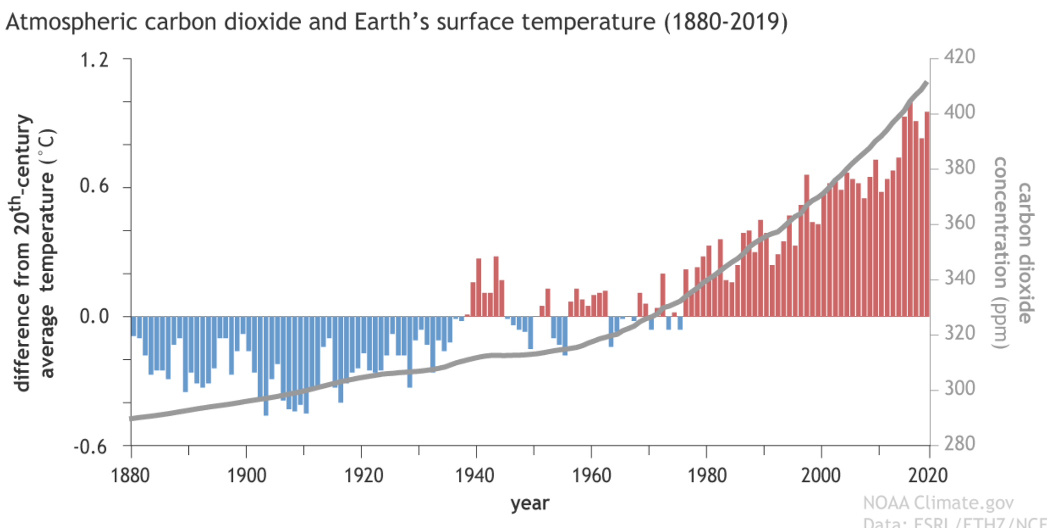
[33] *See* IPCC, Summary for Policymakers, *supra* note 28.

[34] *Id.* at SPM-10-11.

(1) Temperature Increases

"The past six years, including 2020, have been the six warmest years on record," [35] an already concerning reality only amplified by the Intergovernmental Panel on Climate Change's (IPCC) warning that "[g]lobal warming of 1.5°C and 2°C [above pre-industrial averages] will be exceeded during the 21st century unless deep reductions in [carbon dioxide] and other greenhouse gas emissions occur in the coming decades."[36] *See* Figure 1. The IPCC has found that GHG emissions from human activities are already responsible for about 1.1°C of warming since 1850-1900[37] and that "[h]uman influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years."[38] In other words, the world is getting hotter due to increased concentrations of GHGs in the atmosphere that are "unequivocally caused by human activities."[39]

Figure 1 (NOAA Climate.gov)



As temperatures rise, threats to public health and the environment in our States and Cities continue to mount. For example, "[w]ith higher temperatures, [hospital] admissions for acute renal failure, appendicitis, dehydration, ischemic stroke, mental health, noninfectious enteritis, and primary diabetes were significantly increased."[40] And "[m]ortality effects are observed even

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[35] World Meteorological Organization, *State of the Global Climate 2020* 5 (2021).
[36] IPCC, *Summary for Policymakers*, *supra* note 28, at SPM-17.
[37] *Id.* at SPM-5.
[38] *Id.* at SPM-7.
[39] *Id.* at SPM-5.
[40] Toki Sherbakov et al., *Ambient temperature and added heat wave effects on hospitalizations in California from 1999 to 2009*, 160 Environmental Research 83, 83 (2018); *see also* Louise Bedsworth et al., California Governor's Office of Planning and Research, *Statewide Summary Report. California's Fourth Climate Change Assessment* 38 (2018) ("High ambient temperatures have been shown to adversely affect public health via early death (mortality) and illness (morbidity).").

for small differences from seasonal average temperatures."[41] These types of heat-related health and mortality risks are not equally distributed. Socially-vulnerable populations—including children, the elderly, and low income and minority populations—experience greater impacts from higher temperatures.[42] For instance, "the average person of color lives in a census tract with higher summer daytime surface urban heat island (SUHI) intensity than non-Hispanic whites in all but 6 of the 175 largest urbanized areas in the continental United States."[43]

"Warmer temperatures [also] contribute to the severity of drought conditions by leading to more precipitation falling as rain rather than snow, faster melting of winter snowpack, greater rates of evaporation, and drier soils."[44] This can result in, among other impacts, the degradation of water security[45] and ecological vulnerabilities.[46] As shown in Figure 2, a significant portion of the western U.S. is currently experiencing extreme or exceptional drought. Drought conditions are particularly severe in California, where nearly 90% of the State is facing at least extreme drought and about 45% of the State is experiencing exceptional drought.[47] The 2021 year-to-date statewide average temperature in California is almost the warmest on record,[48] and precipitation and snowpack levels in the State are well below average.[49] These conditions are impacting the State's water supply at major reservoirs, nearly all of which have far less water than the historical average as of September 2021.[50] Moreover, "[f]orests are especially vulnerable to drought in a warming world."[51] For example, California's 2012-2015 drought killed more than

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[41] Marcus C. Sarofim et al., U.S. Global Change Research Program, *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment, Chp. 2* 44 (2016).

[42] *See* U.S. Environmental Protection Agency, *Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts* 32-36 (2021), available at www.epa.gov/cira/social-vulnerability-report; U.S. Global Change Research Program, *supra* note 41, at 45; Angel Hsu et al., *Disproportionate exposure to urban heat island intensity across major U.S. cities*, NATURE COMMUNICATIONS 8 (2021), available at https://doi.org/10.1038/s41467-021-22799-5 ("Currently disadvantaged groups suffer more from greater heat exposure that can further exacerbate existing inequities in health outcomes and associated economic burdens, leaving them with fewer resources to adapt to increasing temperature.").

[43] Hsu, et al., *supra* note 42, at 2.

[44] Gabriel Petek, California Legislative Analyst's Office, *What Can We Learn From How the State Responded to the Last Major Drought?* 2 (May 2021).

[45] *Public Health*, Drought.gov, https://www.drought.gov/sectors/public-health (last visited Sept. 19, 2021).

[46] Shelley D. Crausbay et al., American Meteorological Society, *Defining Ecological Drought for the Twenty-First Century* 2545 (Dec. 2017).

[47] David Simeral, Western Regional Climate Center, *U.S. Drought Monitor, California (September 7, 2021)*, (released Sept. 9, 2021), available at https://droughtmonitor.unl.edu/data/png/20210907/20210907_ca_trd.png.

[48] Nat'l Oceanic and Atmospheric Admin., *Climate at a Glance: Statewide Time Series* (Sept. 2021), available at https://www.ncdc.noaa.gov/cag/statewide/rankings/4/tavg/202108.

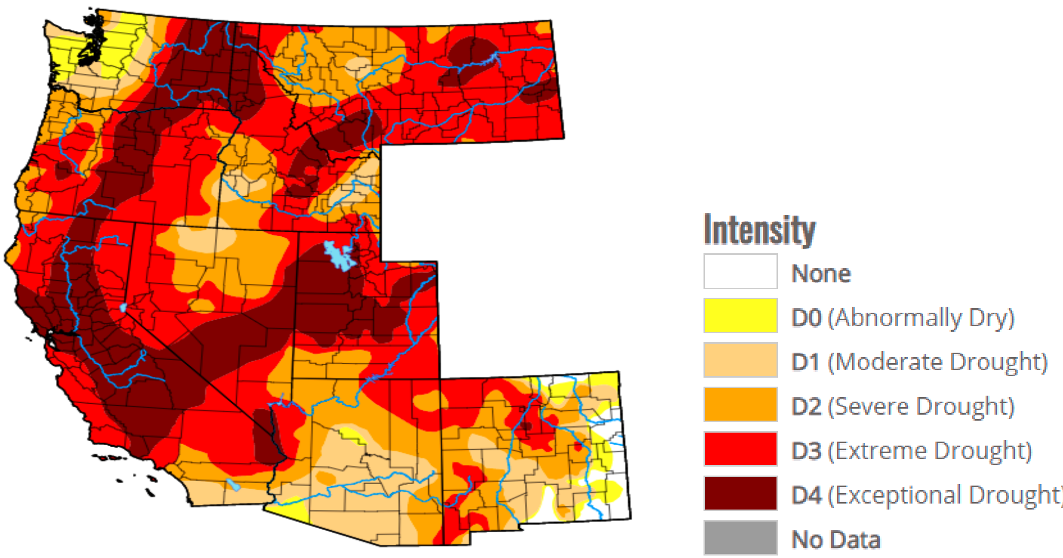
[49] Nat'l Oceanic and Atmospheric Admin., *Percent of Average Precipitation 10/1/2020 – 9/18/2021*, https://wrcc.dri.edu/cgi-bin/anomimage.pl?wrcOctPpct.png (last visited Sept. 9, 2021); Cal. Dept. of Water Resources, *Statewide Snowpack Well Below Normal as Wet Season Winds Down* (Apr. 1, 2021), https://water.ca.gov/News/News-Releases/2021/April-21/Statewide-Snowpack-Well-Below-Normal-as-Wet-Season-Winds-Down.

[50] Cal. Dept. of Water Resources, *Current Reservoir Conditions*, https://cdec.water.ca.gov/cgi-progs/products/rescond.pdf (last visited Sept. 19, 2021).

[51] Gavin D. Madakumbura et al., *Recent California tree mortality portends future increase in drought-driven forest die-off*, 15 ENVIRON. RES. LETT. 1 (2020).

100 million trees, mainly in the Sierra Nevada forest.[52] The forest density and warmer temperatures "compound[ed] die-off by an estimated 55%," and "climate change is expected to . . . increas[e] Sierran tree death during drought by ~15-20%" for each additional degree of warming.[53] And "[w]hen a drought drives changes within ecosystems, there can be a ripple effect through human communities that depend on those ecosystems for critical goods and services."[54]

Figure 2 (U.S. Drought Monitor, map of U.S. West as of August 26, 2021)



(2) Wildfires

Rising temperatures combined with drier conditions are also increasing the risk of wildfires.[55] "[T]he number of hot days is climbing; forests and grasslands are dried out by increased evaporation; the growing season is lengthening (providing available fuel for longer periods); and

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[52] Associated Press, *California drought kills more than 102 million trees, raising risk of wildfires*, WASHINGTON POST (Nov. 18, 2016), available at https://www.washingtonpost.com/national/california-drought-kills-more-than-102-million-trees-raising-risk-of-wildfires/2016/11/18/03a37e68-adaf-11e6-977a-1030f822fc35_story.html.
[53] M.L. Goulden and R.C. Bales, *California forest die-off linked to multi-year deep soil drying in 2012-2015 drought*, 12 NATURE GEOSCIENCE 632, 632 (Aug. 2019).
[54] Crausbay et al., *supra* note 46, at 2543.
[55] IPCC, *Summary for Policymakers*, *supra* note 28, at SPM-33-34; U.S. Global Change Research Program, *Fourth National Climate Assessment, Volume II: Impacts, Risks, and Adaptation in the United States* 241 (D.R. Reidmiller et al. eds., 2018), available at https://nca2018.globalchange.gov/; Zachary A. Holden, et al., *Decreasing fire season precipitation increased recent western US forest wildfire activity*, 115 PNAS E8349, E8349 (Sept. 4, 2018) ("[D]eclines in summer precipitation and wetting rain days have likely been a primary driver of increases in wildfire area burned.").

snowpack is melting earlier."[56] These conditions have significantly enhanced the size of wildfires and length of the wildfire season. "[S]ince 1984, human-induced climate change is responsible for doubling the cumulative area of forest fires across the western United States."[57] "Since the 1970s, the annual average wildfire season in the Western United States has expanded from five months to 8.5 months long."[58] "It now burns six times as many acres and consists of three times as many large fires—those defined as more than 1,000 acres." [59] And "[c]limate models project a continued increase in frequency and intensity of wildfires with rising temperatures."[60]

Consistent with this projection, the 2020 wildfire season was unprecedented. For example, wildfires in Colorado burned more than 665,000 acres—more than in any previous year—and the State's record for largest wildfire was broken twice.[61] Historic wildfires also burned 10.2 million acres across California, Oregon, and Washington.[62] With 4.1 million acres blazed, California more than doubled its previous annual record for area burned.[63] The State also experienced five of the top six largest wildfires on record in 2020[64]—a record already broken in 2021.[65]

These massive wildfires have broad impacts across our States and Cities. The 2020 wildfires—which conservatively cost an estimated $16.5 billion[66]—put 500,000 Oregonians (more than 10% of the state's population) under evacuation warnings or orders,[67] led to the displacement of about 100,000 people in California,[68] and killed 46 people in California, Oregon, and Washington.[69] In the Pacific Northwest, more than 17 million people experienced air quality deemed 'very unhealthy' or 'hazardous' for an average of 4 days,[70] a worrisome statistic given

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[56] Marcy Lowe and Rebecca Marx, Datu Research, *Climate Change-Fueled Weather Disasters: Costs to State and Local Economies* at 53 (July 2020).
[57] *Id*.
[58] *Id*.
[59] *Id*.
[60] *Id*. at 54.
[61] John Ingold, *Five charts that show where 2020 ranks in Colorado wildfire history*, THE COLORADO SUN (Oct. 20, 2020), https://coloradosun.com/2020/10/20/colorado-largest-wildfire-history/.
[62] Adam B. Smith, *2020 U.S. billion-dollar weather and climate disasters in historical context*, Climate.gov (Jan. 8, 2021), https://www.climate.gov/print/837056.
[63] *Id*.
[64] *Id*.
[65] Hayley Smith, *California hit by record-breaking fire destruction: 'Climate change is real, it's bad,'* LOS ANGELES TIMES (July 12, 2021), https://www.latimes.com/california/story/2021-07-12/california-wildfires-outpacing-2020-worst-on-record.
[66] *Billion-Dollar Disasters: Calculating the Costs*, Nat'l Oceanic and Atmospheric Admin., https://www.ncdc.noaa.gov/monitoring-references/dyk/billions-calculations (last visited Sept. 20, 2021).
[67] Associated Press, *Oregon wildfires: 1 million acres burned; 500,000 people under some level of evacuation order*, KPTV (Sept. 11, 2020), https://www.kptv.com/news/oregon-wildfires-1-million-acres-burned-500-000-people-under-some-level-of-evacuation-order/article_e355b7ae-f3cb-11ea-a6ce-93011907052d.html.
[68] World Meteorological Organization, *supra* note 35, at 36.
[69] *Id.* at 25.
[70] Audrey Carlsen et al., *1 in 7 Americans Have Experienced Dangerous Air Quality Due to Wildfires This Year*, NPR (Sept. 23, 2020), https://www.npr.org/2020/09/23/915723316/1-in-7-americans-have-experienced-dangerous-

that "wildfire-specific PM2.5 is up to 10 times more harmful on human health than PM2.5 from other sources."[71,72] This public health concern grows as the frequency and intensity of wildfires increase and is not limited to States where the wildfires are burning. The rising heat from the wildfires takes particulate matter and toxic gases in the smoke into the jet stream, which can carry those hazardous substances thousands of miles and cause harmful air pollution across the country. Indeed, during the 2020 wildfire season and again in July of 2021, smoke from wildfires burning on the West Coast caused New York City to experience some of the worst air quality in the world.[73]

(3) Extreme Weather Events

Extreme weather events pose innumerable threats to our States and Cities—from increased health risks and death, damage to infrastructure, and water scarcity,[74] to economic damage and impacts to the energy system that "threaten[] more frequent and longer-lasting power outages and fuel shortages."[75] And "[w]ith every additional increment of global warming, changes in extremes continue to become larger."[76] "For example, every additional 0.5°C of global warming causes clearly discernible increases in the intensity and frequency of hot extremes, including heat waves (*very likely*), and heavy precipitation (*high confidence*), as well as agricultural and ecological droughts in some regions (*high confidence*)."[77] "The proportion of intense tropical cyclones (categories 4-5) and peak wind speeds of the most intense tropical cyclones are projected to increase at the global scale with increasing global warming (*high confidence*)."[78]

Not only are the frequency and intensity of extreme weather events increasing, but so too are the costs. *See* Figure 3. On average, there were 7 extreme weather events per year in the United States between 1980-2020 that cost over $1 billion, with an average annual cost of $45.7 billion;

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air-quality-due-to-wildfires-this-ye#:~:text=Environment-,1%20In%207%20Americans%20Have%20Experienced%20Dangerous,Due%20To%20Wildfires%20This%20Year&text=Colorado%20State%20University-,A%20satellite%20image%20shows%20smoke%20and%20some%20of%20the,in%20Western%20states%20on%20Sept.

71 Rosana Aguilera et al., *Wildfire smoke impacts respiratory health more than fine particles from other sources: observational evidence from Southern California*, NATURE COMMUNICATIONS 3 (Mar. 5, 2021), available at https://doi.org/10.1038/s41467-021-21708-0.

72 Smoke from wildfires has also been found to exacerbate risks associated with the COVID-19 virus, and one study found that "[t]housands of COVID-19 cases and deaths in California, Oregon, and Washington between March and December 2020 may be attributable to increases in fine particulate air pollution (PM2.5) from wildfire smoke." Karen Feldscher, *Link Between Wildfires and COVID cases established*, THE HARVARD GAZETTE (Aug. 13, 2021), https://news.harvard.edu/gazette/story/2021/08/wildfire-smoke-linked-to-increase-in-covid-19-cases-and-deaths/.

73 Oliver Milman, *New York air quality among worst in world as haze from western wildfires shrouds city*, THE GUARDIAN (Jul. 21, 2021), https://www.theguardian.com/us-news/2021/jul/21/new-york-air-quality-plunges-smoke-west-coast-wildfires.

74 World Meteorological Organization, *supra* note 35, at 31.

75 U.S. Global Change Research Program, *supra* note 41, at 176.

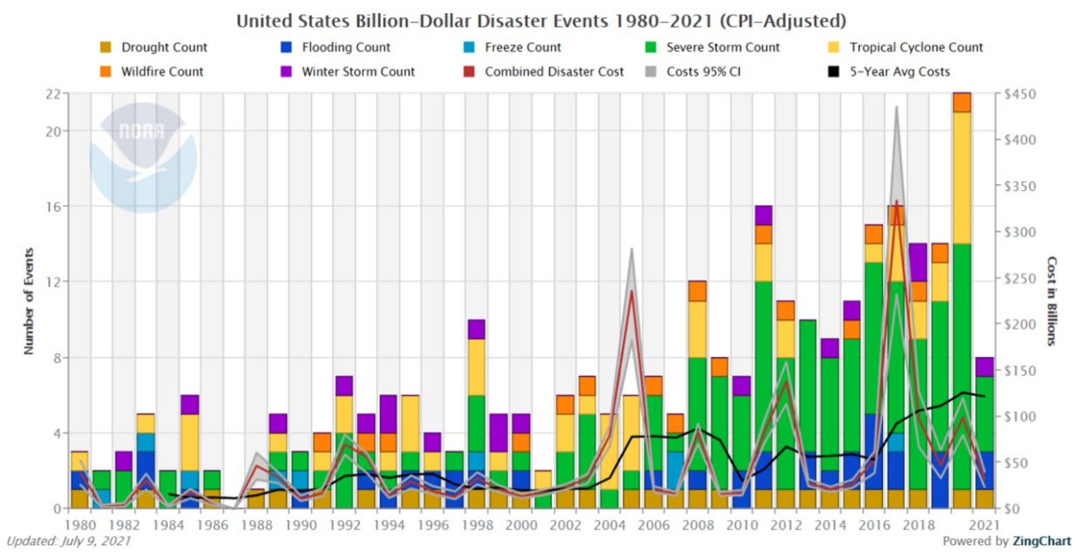
76 IPCC, *Summary for Policymakers*, *supra* note 28, at SPM-19.

77 *Id*. at SPM-19.

78 *Id*. at SPM-20.

however, over the past 5 years, the average number of events per year increased to 16, with an average annual cost of $121 billion.[79] In 2020—“a historic year of extremes”[80]—“[t]here were 22 separate billion-dollar weather and climate disasters across the United States, shattering the previous annual record of 16 events” and “cost[ing] the nation a combined $95 billion in damages.”[81] And these costs “do not take into account losses to natural capital or assets, health care related losses, or values associated with loss of life,”[82] meaning these estimates “should be considered conservative.”[83]

Figure 3 (*NOAA National Centers for Environmental Information, chart updated July 9, 2021 (costs do not include June 2021 Western Drought and Heatwave*).



These costs, which are partially borne by our affected States and Cities, reflect the breadth of impacts and rippling effects of extreme weather events. For example, in 2020, Hurricane Isaias made landfall in North Carolina, producing storm surge inundation levels of 3 to 6 feet above ground level along the southern coast of North Carolina[84] before accelerating up the East Coast. After unleashing 5-8 inches of rainfall across Virginia, Maryland, Delaware, and western New Jersey, causing flooding across those states,[85] the storm’s winds cut power to approximately 3.05 million customers—affecting roughly 1.4 million customers in New Jersey, 512,000 in New

[79] Adam B. Smith, *supra* note 62.
[80] *Id*.
[81] *Id*.
[82] Nat’l Oceanic and Atmospheric Admin., *supra* note 66. The estimated costs include physical damage to residential, commercial, and government or municipal buildings; material assets within a building; time element losses like interruption; vehicles and boats; offshore energy platforms; public infrastructure like roads, bridges, and buildings; agricultural assets like crops, livestock, and timber; and disaster restoration and wildfire suppression costs.
[83] *Id*.
[84] Andy Latto et al., *Hurricane Isaias*, NOAA National Hurricane Center 8 (June 11, 2021), available at https://www.nhc.noaa.gov/data/tcr/AL092020_Isaias.pdf.
[85] *Id*.

York, 380,000 in Pennsylvania, 264,000 in Connecticut, 218,000 in Virginia, 134,000 in North Carolina, 76,000 in Maryland, 51,000 in Delaware, 12,000 in Massachusetts, 6,000 in Vermont, and 4,000 in Rhode Island.[86] Hurricane Isaias also spawned 39 confirmed tornadoes from North Carolina to New Jersey[87] and killed a total of 9 people.[88]

More recently, in June 2021, a heat dome described as "virtually impossible without human-caused climate change"[89] descended upon the Pacific Northwest and brought record-shattering temperatures as high as 108°F in Seattle, Washington, 116°F in Portland Oregon, and 118°F in Dallesport, Washington—the highest temperature ever recorded in Washington.[90] The extreme heat not only killed billions of intertidal species along the Pacific Northwest coast,[91] but it also resulted in the confirmed deaths of at least 96 people in Oregon[92] and 112 people in Washington.[93] "Extreme heat is already a leading cause of mortality in the United States, but without adaptation, deaths could increase more than sixfold."[94] And, as with rising average temperatures, the effects of extreme heat are not evenly distributed: "Black and African American individuals are 40% more likely than non-Black and non-African American individuals to live in areas with the highest projected increases in extreme temperature related mortality with 2°C of global warming."[95] "With 4°C of global warming, this estimate increases to 59%."[96]

Our States and Cities face mounting threats from a climate crisis that is primarily caused by anthropogenic emissions of GHGs. As the transportation sector accounts for about 29% of the GHG emissions in the United States and is the largest contributing sector to U.S. GHG

[86] PowerOutage.us (@PowerOutage_us), Twitter (Aug. 4, 2020 1:19 PM), https://twitter.com/PowerOutage_us/status/1290744180956901379.
[87] Latto, *supra* note 84, at 10.
[88] Jason Samenow, *Millions left in the dark and historic floods: Isaias by the numbers*, WASHINGTON POST (Aug. 5, 2020), https://www.washingtonpost.com/weather/2020/08/05/isaias-power-outages/.
[89] *Western North American extreme heat virtually impossible without human-caused climate change*, World Weather Attribution (Jul. 7, 2021), https://www.worldweatherattribution.org/western-north-american-extreme-heat-virtually-impossible-without-human-caused-climate-change/.
[90] Jason Samenow and Ian Livingston, *Canada sets new all-time heat record of 121 degrees amid unprecedented heat wave*, WASHINGTON POST (June 29, 2021), https://www.washingtonpost.com/weather/2021/06/27/heat-records-pacific-northwest/.
[91] Stephen Leahy, *The Billions of Victims of the Heat Dome*, THE ATLANTIC (Jul. 31, 2021), https://www.theatlantic.com/ideas/archive/2021/07/billions-victims-heat-dome/619604/.
[92]Amelia Templeton and Monica Samayoa, *Oregon medical examiner releases names of June heat wave victims*, OPB (Aug. 6, 2021), https://www.opb.org/article/2021/08/06/oregon-june-heat-wave-deaths-names-revealed-medical-examiner/.
[93] John Ryan, *2021 heat wave is now the deadliest weather-related event in Washington history*, NPR (Jul. 19, 2021), https://www.kuow.org/stories/heat-wave-death-toll-in-washington-state-jumps-to-112-people.
[94] Atlantic Council, *Extreme Heat: The Economic and Social Consequences for the United States* 8 (Aug. 2021).
[95] EPA, *supra* note 42, at 35.
[96] *Id*.

emissions,[97] we welcome NHTSA's proposal to tighten fuel economy standards for light-duty vehicles.

b. Improved Fuel Economy Will Improve Air Quality in Our States and Cities

In addition, other forms of air pollution pose a widespread and persistent problem in our States and Cities. Criteria pollutants (including fine particulate matter (PM2.5) and ozone precursors) and air toxics negatively affect the health and welfare of people living in our States and Cities, and some contribute to climate change.[98] In 2020, more than 30.7 million Americans breathed air with elevated[99] levels of PM2.5 pollution for more than 100 days, and an additional 175.4 million Americans breathed air with elevated levels of PM2.5 for at least 31 days.[100] Millions also breathed air with elevated levels of ozone for more than 100 days.[101] Even air containing levels of PM2.5 and ozone below current federal air quality standards is harmful to public health.[102]

NHTSA projects that standards more stringent than SAFE 2 will achieve long-term emissions reductions of criteria pollutants (specifically carbon monoxide, PM2.5, and ozone precursors) and air toxics that adversely affect public health and welfare.[103] Our States and Cities support more stringent standards for this additional reason: reducing these emissions is crucial to improve public health and to assist States in attaining and maintaining the National Ambient Air Quality Standards (NAAQS).[104] Reductions in criteria pollutant emissions will also help mitigate some of the impacts of climate change, including poor air quality and other impacts described above.[105] Moreover, reducing these emissions is critical to meeting our States and

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97 *Sources of Greenhouse Gas Emissions*, U.S. Environmental Protection Agency, (last updated Jul. 27, 2021), https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#:~:text=Transportation%20(29%20percent%20of%202019,ships%2C%20trains%2C%20and%20planes.

98 Bryan Huxley-Reicher, et al., *Trouble In The Air* 6–14 (Fall 2021), accessible at https://environmentamerica.org/sites/environment/files/Trouble-in-the-Air-2021-Revised.pdf.

99 Elevated levels means levels above which EPA considers "good." *Id.* at 9.

100 *Id.* at 3.

101 *Id.*

102 *Id.* at 4, 6–10.

103 NHTSA, Draft Supplemental Environmental Impact Statement for Model Year 2024-2026 Corporate Average Fuel Economy Standards (Draft SEIS) 4-39, 4-40 (2021); 2021 CAFE PRIA, *supra* note 8, at Section 4.1 ("Reducing the volume of fuel refined (or imported), distributed, and consumed throughout the U.S. will lower emissions of GHGs and criteria air pollutants, thus reducing the costs that potential climate-related impacts and adverse health effects from air pollution impose on the general public.").

104 As one example, Washington's recently passed Climate Commitment Act requires actions be taken to reduce criteria pollutants and GHG emissions and seeks "to identify overburdened communities where the highest concentrations of criteria pollutants occur, determine the sources of those emissions and pollutants, and pursue significant reductions of emissions and pollutants in those communities." Wash. Rev. Code Ann. § 70A.002.001(7) (West 2021).

105 Nat'l Research Council, *Advancing the Science of Climate Change* 326 (2010), accessible at http://nap.edu/12782 ("In a warmer future world, stagnant air, coupled with higher temperatures and absolute humidity, will lead to worse air quality even if air pollution emissions remain the same."); Bryan Huxley-Reicher, et al., *supra* note 98, at 4, 11–12, 14–17.

Cities' environmental justice goals. 86 Fed. Reg. 49,461, 49,717, 49,722 (Sept. 3, 2021). But we need federal help to reduce emissions that are outside our control and to meet those goals.[106]

(1) Reducing criteria pollutant emissions will benefit public health

NHTSA anticipates significant emissions reductions of carbon monoxide, PM2.5, volatile organic compounds (VOCs) and nitrogen oxide (NOx) (ozone precursors) under all action alternatives.[107] The health benefits associated with a reduction in PM2.5 and ozone pollution are well-documented.[108] Short- and long-term PM2.5 exposures both result in mortality risk, cardiovascular effects, and respiratory effects.[109] In California alone, over 5,000 premature deaths and hundreds of illnesses and emergency room visits for respiratory and cardiovascular disease are linked to PM2.5 pollution annually.[110] Recent studies also show that persons exposed to air pollution may be more vulnerable to contracting COVID-19 and more likely to

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[106] California's South Coast Air Basin's ability to attain the ozone standard in 2023 will require reductions from federal measures. CARB, *Revised Draft 2020 Mobile Source Strategy* 14, 68 (Apr. 23, 2021), available at https://ww2.arb.ca.gov/sites/default/files/2021-04/Revised_Draft_2020_Mobile_Source_Strategy.pdf. *See* Tianyang Wang, et al., *Mortality burdens in California due to air pollution attributable to local and nonlocal emissions*, 133 ENV'T INTERNATIONAL 105232 (2019).

[107] 86 Fed. Reg. at 49,780; Draft SEIS, *supra* note 103, at 4-39, 4-40.

[108] Ozone Transport Commission, OTC Modeling Committee, *Analysis of the Potential Health Impacts of Reducing Ozone Levels in the OTR Using BenMAP – 2019 Edition* (Sept. 16, 2019); Office of Massachusetts Attorney General Maura Healey, *COVID-19's Unequal Effects in Massachusetts* 6 (2020) (explaining that eliminating human-generated emissions from the City of Boston would reduce PM2.5 and ozone concentrations throughout the region, leading to a decrease in morbidity and mortality and saving the region billions of dollars); Leah Burrows, *Deaths from fossil fuel emissions higher than previously thought*, Harvard John A. Paulson School of Engineering and Applied Sciences (Feb. 9, 2021), https://www.seas.harvard.edu/news/2021/02/deaths-fossil-fuel-emissions-higher-previously-thought (reporting on recent study finding that more than 8 million people died in 2018 from fossil fuel pollution); Erika Garcia, et al., *Association of Changes in Air Quality with Incident Asthma in Children in California, 1993-2014*, 312 JAMA 19:1906-1915 (2019) (decreases in PM2.5 emissions are significantly associated with lower asthma incidence); Yaron Ogen, *Assessing Nitrogen Dioxide (NO2) Levels As A Contributing Factor To Coronavirus (COVID-19) Fatality* 726 Sci. Total Environ. (Jul. 2020), accessed at https://pubmed.ncbi.nlm.nih.gov/32302812/ (finding that long-term exposure to NO2 may be an important contributor to the high COVID-19 fatality rates observed in five European regions).

[109] EPA, *Policy Assessment for the Review of the National Ambient Air Quality Standards for Particulate Matter* 3-18 – 3-19, 3-101, 3-104 (discussing studies finding statistically significant associations between harm to health and annual exposures below 12 µg/m3, 3-113).

[110] CARB, *Revised Mobile Source Strategy*, supra note 106, at 18.

experience the severe and fatal outcomes from infection.[111] Ozone pollution leads to similar negative health effects, especially for respiratory health.[112]

The mobile source sector is a major contributor to these health impacts because it is one of the largest emitters of PM2.5 and ozone precursors in the United States.[113] NHTSA has long acknowledged that people living, working, and attending school near major roadways face greater air pollution exposure.[114] 77 Fed. Reg. 62,624, 62,907 (Oct. 15, 2012); 75 Fed. Reg. 25,324, 25,504 (May 7, 2010). In some urban areas, mobile sources, which include gasoline-powered highway vehicles, diesel-powered highway vehicles, and other engine-driven sources (e.g., ships, aircraft, construction, and agricultural equipment), account for 13% to 30% of the total primary PM2.5 emissions.[115] In California, more than half of the PM2.5 pollution is produced by mobile sources.[116] These emissions contribute to and exacerbate asthma, impair lung function, and increase cardiovascular mortality.[117] Traffic-related air pollution is especially harmful because it not only exacerbates asthma but may also cause more people to become asthmatic.[118] In Philadelphia, for example, some of the most polluted areas are along major highways or zones with heavy traffic, and the most polluted zip codes also have the largest

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[111] Michael Petroni, et al., *Hazardous air pollutant exposure as a contributing factor to COVID-19 mortality in the United States* ENVIRON. RES. LETT. 15 0940a9 (2020) (analysis indicating that chronic, cumulative exposure to hazardous air pollutants at below reference concentration levels may increase vulnerability to COVID-19 mortality); Donghai Liang, et al., *Urban Air Pollution May Enhance COVID-19 Case-Fatality and Mortality Rates in the United States* (2020) (finding significant associations between NO2 and COVID-19 case-fatality and mortality rates); X. Wu, et al., *Air pollution and COVID-19 mortality in the United States: Strengths and limitations of an ecological regression analysis* 6 SCI. ADV. eabd4049 (2020) (investigating the impact of long-term PM2.5 exposure on COVID-19 mortality rates).
[112] EPA, *Integrated Science Assessment for Ozone and Related Photochemical Oxidants, Executive Summary* ES-6–ES-8, ES-17 (Apr. 2020).
[113] Calvin A. Arter, et al., *Mortality-based damages per ton due to the on-road mobile sector in the Northeastern and Mid-Atlantic U.S. by region, vehicle class and precursor*, 16 ENVIRON. RES. LETT. 2–3 (2021), available at https://doi.org/10.1088/1748-9326/abf60b. Mobile sources emit primary particulate matter and particulate matter precursors that contribute to secondary formation of particulate matter in the atmosphere. EPA, *Policy Assessment*, *supra* note 109, at 2-3; EPA, *Policy Assessment for the Review of the Ozone National Ambient Air Quality Standards* at 2-5 (May 2020), https://www.epa.gov/sites/default/files/2020-05/documents/o3-final_pa-05-29-20compressed.pdf.
[114] Draft SEIS, *supra* note 103, at 4-34.
[115] EPA, *Policy Assessment*, *supra* note 109, at 2-5.
[116] CARB, *Revised Mobile Source Strategy*, supra note 106, at 18.
[117] *Id.* at 24–26 (citing multiple studies); California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, *Update to the California Communities Environmental Health Screening Tool: CalEnviroScreen 4.0 Public Review Draft* 93 (Feb. 2021) ("[C]hildren who live or attend schools near busy roads are more likely to suffer from asthma and bronchitis than children in areas with lower traffic density.").
[118] Bryan Huxley-Reicher, et al., *supra* note 98, at 6.

number of lung cancer patients.[119] Mobile sources are also the number one contributor to high ozone levels in the Ozone Transport Region.[120]

More stringent standards will also help support NAAQS attainment and maintenance, which in turn will advance local, state, and federal public health goals.[121] Various locations throughout our States and Cities have been unable to attain, or face difficulty maintaining, the NAAQS for ozone and PM2.5.[122] For example, multiple counties in California are registering severe, serious, or extreme nonattainment with the 8-Hour Ozone NAAQS. Nonattainment areas outside of California will also benefit from more stringent standards that may result in a reduction of ozone precursors, for example, Colorado's Denver Metro/North Front Range, which includes a major transportation corridor and a refinery and, based on 2018–2020 ozone monitoring data, is expected to shift from serious to severe nonattainment for the 2008 8-Hour Ozone NAAQS.

Likewise, counties in Connecticut and New York are in serious nonattainment with the 2008 8-Hour Ozone NAAQS and are in moderate nonattainment with the 2015 8-Hour Ozone NAAQS. Their challenges in attaining the NAAQS are due in part to ozone-forming pollution from out-of-state upwind sources, which NHTSA's standards could help reduce.[123] New Jersey has taken action to reduce NOX and VOC emissions from mobile sources and from stationary sources, including power plants and refineries, in an attempt to attain the NAAQS.[124] But New Jersey and other States cannot attain or maintain the NAAQS alone,[125] and NHTSA's standards may provide important emissions reductions in upwind states and across the country.[126] Even in areas presently attaining the NAAQS, long-term PM2.5 exposures are associated annually with up to 45,000 deaths, and 14,600 ischemic heart disease deaths, and thus, even a modest reduction of PM2.5 pollution has beneficial impact.[127] No safe level of PM2.5 has been identified, and so

[119] Thomas P. McKeon, et al., *Environmental exposomics and lung cancer risk assessment in the Philadelphia metropolitan area using ZIP code–level hazard indices* Environ. Sci. Pollut. Res. 28:31758–31769, 31764 (2021); Stephanie Stahl, *Earth Week: New Research Links Lung Cancer to Air Pollution in Philadelphia*, CBS Philly (Apr. 20, 2021), https://philadelphia.cbslocal.com/2021/04/20/earth-new-research-links-lung-cancer-to-air-pollution-in-philadelphia/.

[120] Ozone Transport Commission, *Mobile Sources Committee Annual Report 2020* 2 (2020). The Ozone Transport Region includes Connecticut, Delaware, the District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, and Virginia.

[121] Draft SEIS, *supra* note 103, at § 4.2.1.2.

[122] EPA, Current Nonattainment Counties for Criteria Pollutants (data current as of Aug. 31, 2021), https://www3.epa.gov/airquality/greenbook/ancl.html (providing NAAQS compliance status of all counties); CARB, *Criteria Pollutant Emission Reductions from California's Zero-Emission Vehicle Standards for Model Years 2017-2025* 5 (Jul. 6, 2021), App. A to Comments of States and Cities in Support of EPA Reversing Its SAFE 1 Actions.

[123] EPA, Current Nonattainment Counties for Criteria Pollutants, *supra* note 122.

[124] State of New Jersey Department of Environmental Protection, *New Jersey SIP Revision for the Attainment and Maintenance of the Ozone NAAQS* x, 4-14 (Dec. 2017).

[125] *Id*. at xii.

[126] EPA, Current Nonattainment Counties for Criteria Pollutants, supra note 122.

[127] Indeed, because PM2.5 exposure below the current NAAQS is clearly harmful, a multi-state coalition, which includes many of the signatories to this comment, petitioned EPA to reconsider its 2020 decision not to strengthen the current NAAQS for Particulate Matter. On June 10, 2021, EPA acknowledged that the current standards may not be adequate to protect public health and welfare, and announced its decision to reconsider its prior decision. EPA, *EPA to Reexamine Health Standards for Harmful Soot that Previous Administration Left Unchanged* (June

reductions in PM2.5 emissions will bring public health benefits to our States and Cities regardless of NAAQS attainment status.[128]

For these reasons, the undersigned support NHTSA's proposal, which will benefit public health as a consequence of reduced criteria pollutant emissions.[129]

(2) Reducing Air Toxics Emissions Also Benefits Public Health

The action alternatives considered in NHTSA's proposal would further reduce emissions of most air toxics in the long term from vehicles and from the extraction, transport, distribution, and refining of petroleum fuels.[130] Reductions in air toxics emissions will benefit public health and welfare, in part because these emissions are known to cause cancer and other serious health effects.[131]

New Jersey, for example, will benefit from the reduction of air toxics emissions anticipated by NHTSA because mobile sources are the largest contributors of air toxics emissions in the state.[132] In Allegheny County in Pennsylvania, mobile sources account for over 9% of the estimated cancer risk from air toxics emissions, mostly due to gasoline cars.[133] The City of Richmond in California, with five petroleum refineries nearby and residents facing disproportionately high rates of cancer and other health impacts from air pollution, serves as another example of an area that will benefit from a reduction in air toxics emissions.[134]

(3) Improving Air Quality Serves Important Environmental Justice Goals

The projected impacts of NHTSA's proposed standards are likely to be magnified in communities with higher percentages of Black, Asian American, and Latinx residents because

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10, 2021), https://www.epa.gov/newsreleases/epa-reexamine-health-standards-harmful-soot-previousadministration-left-unchanged.

[128] EPA, *Policy Assessment*, *supra* note 109*,* at 3-103 ("Studies that examine the shapes of concentration-response functions over the full distribution of ambient PM2.5 concentrations have not identified a threshold concentration[ ] below which associations no longer exist").

[129] Draft SEIS, *supra* note 103, at § 4.2.3; 86 Fed. Reg. at 49,800–01.

[130] *Id.* at § 4.2.2.

[131] *Id.* at § 4.1.1.2; USEPA, *Air Toxics Emissions*, Report on the Environment (updated Sept. 12, 2019), accessible at https://cfpub.epa.gov/roe/indicator.cfm?i=2; Centers for Disease Control and Prevention, *Indicators and Data, Indicator: Air Toxics*, National Environmental Public Health Tracking (updated March 11, 2019), accessible at https://ephtracking.cdc.gov/showIndicatorPages.action?selectedContentAreaAbbreviation=11&selectedIndicatorId=81&selectedMeasureId=.

[132] New Jersey Department of Environmental Protection, *2019 New Jersey Air Quality Report* 10-1 (Nov. 23, 2020).

[133] Cancer & Environment Network of Southwestern Pennsylvania, *National Air Toxics Assessment and Cancer Risk in Allegheny County Pennsylvania* (updated May 2021), https://www.catf.us/wp-content/uploads/2021/07/NATA-Factsheet-Final-May-2021.pdf.

[134] CARB, Analysis in Support of Comments of the California Air Resources Board on Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks at 38 (Oct. 26, 2021), submitted separately in this docket.

refineries and major roadways are disproportionately located in those communities.[135] 86 Fed. Reg. at 49,795. For instance, nearly 700,000 people live within three miles of the seventeen refineries that reported actual annual benzene fenceline concentrations in 2020 above the level set by EPA that requires the refinery to take action to clean up emissions. Of these 700,000 people, 62% are African-American, Hispanic, Asian/Pacific Islander, or American Indian residents, and nearly 45% have incomes below the poverty level.[136] As another example, the community of Wilmington, Carson, and West Long Beach in Los Angeles, California is affected by pollution from major freeway junctions, as well as freight, port, and rail operations, oil and gas production, and five petroleum refineries.[137] A majority of this community is considered disadvantaged under California law, scoring higher than the state average on key indicators of vulnerability, including criteria pollutant exposure, health status, and socio-economic criteria.[138] In the Northeast and Mid-Atlantic Region, average concentrations of exposures to PM2.5 are 75%, 73%, and 61% higher for Latinx residents, Asian American residents, and Black residents, respectively, than they are for white residents.[139] PM2.5 and NO2 concentrations are also highest for Black and Latinx communities in Massachusetts, in part because of their proximity to industrial facilities and highways, and these concentrations have increased even though overall exposure to those pollutants has decreased in the Commonwealth.[140] Improvements in air quality anticipated by the proposal will serve our States and Cities' environmental justice goals, by improving air quality in communities historically impacted by greater pollution.

NHTSA SHOULD REPLACE ITS SAFE 2 STANDARDS WITH MORE STRINGENT ONES AS PROPOSED

I. UNLIKE THE SAFE 2 STANDARDS, THE PROPOSED STANDARDS RETURN TO A REASONABLE INTERPRETATION OF EPCA'S "MAXIMUM FEASIBLE" REQUIREMENT

Congress created the national fuel economy program under EPCA for the express purpose of "conserv[ing] energy" and "provid[ing] for [the] improved energy efficiency of motor vehicles." Pub. L. No. 94-163 § 2(5), 89 Stat. 871, 874 (1975). Congress delegated authority to NHTSA to set fuel standards in order to achieve this overarching purpose. This purpose is manifest in the title of the statute and reaffirmed through its text, which, among other things, requires NHTSA to set fuel economy standards at the "maximum feasible" level. 49 U.S.C. § 32902(a). Congress

[135] CARB, *Benefits of California's Zero-Emission Vehicle Standards on Community-Scale Emission Impacts* (Jul. 6, 2021), App. B to Comments of States and Cities in Support of EPA Reversing Its SAFE 1 Actions.
[136] Environmental Integrity Project, *Environmental Justice and Refinery Pollution: Benzene Monitoring Around Oil Refineries Showed More Communities at Risk in 2020* 7, n.6 (Apr. 28, 2021), available at https://environmentalintegrity.org/wp-content/uploads/2021/04/Benzene-report-4.28.21.pdf.
[137] CARB, *supra* note 134, at 31-32.
[138] *Id*. at 31–39.
[139] Union of Concerned Scientists, *Inequitable Exposure to Air Pollution from Vehicles in the Northeast and Mid-Atlantic* (June 2019), https://www.ucsusa.org/sites/default/files/attach/2019/06/Inequitable-Exposure-to-Vehicle-Pollution-Northeast-Mid-Atlantic-Region.pdf.
[140] Office of Massachusetts Attorney General Maura Healey, *supra* note 108, at 5.

underscored this objective when EPCA was amended by the Energy Independence and Security Act of 2007, the stated purpose of which was to "move the United States toward greater independence and security, . . . to protect consumers, [and] to increase the efficiency of . . . vehicles." Pub. L. No. 110-140, 121 Stat. 1492 (2007).

In recognition of the fact that "'market forces . . . may not be strong enough to bring about the necessary fuel conservation which a national energy policy demands,'" *Ctr. for Auto Safety v. NHTSA*, 793 F.2d 1322, 1339 (D.C. Cir. 1986) (quoting S. Rep. No. 179, at 9 (1975)), Congress requires NHTSA to set fuel economy standards at the "maximum feasible average fuel economy level" that manufacturers can achieve in each model year, 49 U.S.C. § 32902(a). The statute requires NHTSA to consider four factors in making its determination regarding the "maximum feasible" standards: "technological feasibility, economic practicability, the effect of other motor vehicle standards of the Government on fuel economy, and the need of the United States to conserve energy." 49 U.S.C. § 32902(f).[141]

In SAFE 2, NHTSA abdicated its statutory duty to promote energy efficiency and conservation by interpreting the four statutory factors to permit *increased* energy consumption and promulgating standards that were not "maximum feasible" under any reasonable understanding of that phrase. Adopting more stringent fuel economy standards for model years 2024 to 2026 will help get NHTSA back on course towards fulfilling its statutory mandate.

A. The Proposed Standards Are Consistent with Congress's Conclusion that the Nation "Need[s] to Conserve" Fuel

One of the four factors NHTSA is required to consider in determining the "maximum feasible" average fuel economy level is "the need of the United States to conserve energy." 49 U.S.C. § 32902(f). Indeed, the purpose behind EPCA—which was enacted in response to an energy crisis—was to "establish aggressive and effective programs for energy conservation designed to encourage the maximum efficient utilization of domestic energy resources." H.R. Rep. No. 94-700, at 118 (1975). Traditionally, NHTSA has evaluated "the need of the United States to conserve energy" through the examination of four factors: "the consumer cost, national balance of payments, environmental, and foreign policy implications of our need for large quantities of petroleum, especially imported petroleum." 86 Fed. Reg. at 49,793 (citing 42 Fed. Reg. 63,184, 63,188 (Dec. 15, 1977)).

In SAFE 2, NHTSA proposed standards that its own analysis showed would increase fuel consumption, a direct abdication of the agency's affirmative duty to *save* energy. *See Webster's New World Dictionary* (2d college ed. 1972) (showing the definition of "conserve" at the time of EPCA's enactment meant "to save"). In doing so, NHTSA ignored Congress's instruction to encourage "the maximum efficient utilization of domestic energy resources," and rather claimed

[141] This section focuses on the first three factors. As described in more detail below in Section III, the consideration of "other motor vehicle standards of the Government" does not materially affect NHTSA's analysis here.

that the Nation's need to save energy is not "infinite." 85 Fed. Reg. at 25,144. However, the absence of an energy crisis does not impact the meaning of the statute—NHTSA has an ongoing duty to conserve energy by setting the "maximum feasible" fuel economy levels. *See, e.g., Ctr. for Auto Safety v. Nat'l Highway Traffic Safety Admin.*, 793 F.2d 1322, 1340 (D.C. Cir. 1986) ("It is axiomatic that Congress intended energy conservation to be a long term effort that would continue through temporary improvements in energy availability.").

In contrast, the present proposal "acknowledges the priority of energy conservation," consistent both with EPCA's language and congressional intent. 86 Fed. Reg. at 49,621.

1. Consumer Cost

NHTSA concludes in the proposal that "[c]ontinuing to reduce the amount of money consumers spend on vehicle fuel . . . remains an important consideration for the need of the U.S. to conserve energy." *Id.* at 49,794. As discussed in Section E1 above, increasing the fuel efficiency of light-duty vehicles as proposed not only will save consumers considerable money in fuel expenditures over time, but also is expected to decrease total oil consumption in the United States—ultimately serving EPCA's conservation goals. In fact, NHTSA estimates that "over the lives of vehicles produced prior to MY 2030, the proposal would save about 50 billion gallons of gasoline," *id.* at 49,615, which will "exert some downward pressure on worldwide prices," *id.* at 49,735, help to insulate American consumers from price shocks, and serve to redistribute revenue from oil producers to oil consumers, thereby reducing income inequality. AEC Comment at 11. Thus, NHTSA's consideration of consumer costs supports the underlying goal of conserving fuel.

This is a marked improvement from the SAFE 2 standards, which NHTSA's own analysis indicated would result in the consumption of more fuel. *See* 85 Fed. Reg. at 24,176 (explaining new standards would "result in 1.9 to 2.0 additional billion barrels of fuel consumed"). In the SAFE 2 proceeding, NHTSA also failed to fully consider the adverse impacts to consumers from increases in fuel prices, including those caused directly by the weakening of the standards. *See id.* at 25,170. Moreover, the SAFE 2 rulemaking ignored the fact that even moderate increases in fuel costs reduce consumers' disposable income, a harm with magnified effects on low-income consumers who spend a disproportionate amount of their incomes on fuel expenses. Indeed, NHTSA effectively ignored the purpose of EPCA to conserve energy.

In contrast, more stringent fuel economy standards can play an important role in "lead[ing] manufacturers to adopt improvements in fuel economy that improve consumer welfare," and decrease domestic petroleum demand. 86 Fed. Reg. at 49,710.

2. National Balance of Payments

Historically, NHTSA has considered the national balance of payments in evaluating the need to conserve energy because importing large amounts of oil can create a significant wealth transfer to oil-exporting countries and leave the United States economically vulnerable. *See* 86 Fed. Reg.

at 49,794. In SAFE 2, NHTSA claimed that this factor was "fallow," and no longer supported the need to conserve. 85 Fed. Reg. at 24,215. Specifically, it asserted that exports equal or slightly exceed imports, and that any increase in demand resulting from the SAFE 2 standards would be fulfilled by domestic production rather than imports (a claim later contradicted in other aspects of the rule's underlying analysis). *See id.*

NHTSA has partially corrected its analysis in the present proposal. While the agency notes that petroleum imports currently do not drive the United States' trade deficit with other nations, as they did as recently as 2009, it nevertheless acknowledges that the United States continues to rely on oil imports and that there is considerable "uncertainty in the Nation's long-term import-export balance." 86 Fed. Reg. at 49,795. As NHTSA acknowledges, its proposal "aims to improve fleet-wide fuel efficiency and [] helps reduce the amount of petroleum consumed in the U.S., and therefore aims to improve this part of the U.S. balance of payments." *Id.* at 49,794. Moreover, NHTSA could improve its analysis by noting that even as a net exporter last year, the United States is still not self-sufficient in petroleum production. Rather, the United States' domestic gross crude oil imports are expected to remain between 6.9 and 7.8 million metric barrels per day through 2050 without the proposed CAFE standard revision.[142] Incremental reduction in expenditures on foreign oil would thus serve to improve the national balance of payments and fulfill the statutory purpose.

3. Environmental Impacts

As NHTSA acknowledges in the present proposal, the agency has long considered environmental impacts as part of "the need of the United States to conserve energy," and this interpretation has been approved by both the D.C. Circuit and Ninth Circuit. 86 Fed. Reg. at 49,794 (citing *Ctr. for Auto Safety v. NHTSA*, 793 F.2d 1322, 1325 n.12 (D.C. Cir. 1986); *Public Citizen v. NHTSA*, 848 F.2d 256, 262-63 n.27 (D.C. Cir. 1988); *Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172 (9th Cir. 2007)). In SAFE 2, however, NHTSA failed to consider environmental impacts under this factor. Instead, it adopted standards that substantially increase emissions of multiple pollutants that harm public health and that would increase GHG emissions by 923 million metric tons, and it did so without mentioning these environmental impacts as part of its consideration of the need to conserve. *See* 85 Fed. Reg. at 25,049, 25,054, 25,057, 24,176, 25,144.

The present proposal returns to NHTSA's long-standing approach, and properly examines the environmental impact of the proposal as part of the agency's overall assessment of the need to conserve energy.[143] It concludes that "[a]ll of the action alternatives considered in this proposal

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[142] U.S. Energy Information Administration, *Annual Energy Outlook 2021*, tbl. D.1, https://www.eia.gov/outlooks/aeo/pdf/appd.pdf.

[143] The adoption of more stringent standards, as proposed here, would also be consistent with Section 176 of the Clean Air Act, which requires NHTSA to analyze whether the proposed standards "conform" to EPA-approved State Implementation Plans demonstrating how States will reduce (or maintain) criteria-pollutant levels. 42 U.S.C. § 7506(c)(1); *see also* 40 C.F.R. § 93.150(a). In SAFE 2, NHTSA blatantly disregarded this requirement, asserting a conformity determination was not required, 85 Fed. Reg. at 25,250, while at the same time admitting that the SAFE

reduce carbon dioxide emissions and, thus, the effects of climate change, as compared to the baseline." 86 Fed. Reg. at 49,795. And NHTSA finds that "over the lifetimes of the vehicles that would be subject to this proposal," emissions of criteria pollutants and air toxics "are currently forecast to fall significantly." *Id.* The examination of these environmental impacts—along with the impacts on "minority and low-income communities who would be most likely to be exposed to the environmental and health effects of oil production, distribution, and consumption, or the impacts of climate change," *id.*—is a necessary part of the agency's analysis regarding the need to conserve energy. Moreover, consideration of these impacts supports most stringent standards.

4. Foreign Policy Implications

Finally, NHTSA has traditionally considered the foreign policy implications of its standards in evaluating "the need of the United States to conserve energy." 49 U.S.C. § 32902(f). As discussed in Section E2 above, experts have noted a range of foreign policy costs that arise from the domestic consumption of foreign oil, including: (1) disruptions in oil supply, (2) political realignment from dependence on imported oil that limits United States alliances and partnerships, (3) increasing the power of oil-exporting countries to enact policies that are contrary to United States interests, and (4) the maintenance of United States military presence in oil-producing regions arising from interest in protecting oil interests. In general, reducing dependence on imported oil could "lower U.S. military and foreign policy costs of safeguarding the U.S. oil supply and reduce revenue to regimes that are considered inimical to U.S. interests." AEC Comment at 11.

In SAFE 2, NHTSA claimed that there is less of a need to conserve today, because of decreased foreign policy concerns with respect to disruptions in international oil markets. *See* 85 Fed. Reg. at 25,169. While the proposal continues to undervalue the foreign policy concerns from consuming foreign oil, it properly concludes that weaker fuel economy standards increase the Nation's dependence on oil, including imported oil, which necessarily impairs energy and national security. AEC Comment at 12-13. For example, NHTSA notes in the proposed standards that: "[r]educing U.S. consumption of crude oil or refined petroleum products (by reducing motor fuel use) can reduce … external costs," associated with (1) monopsony effects, (2) price shocks, and (3) expenses for maintaining the strategic petroleum reserve (SPR). 86 Fed. Reg. at 49,795-96. It also rightly recognizes that "the environmental costs of oil use are intertwined with the security costs of oil use . . . as climate change destabilizes traditional

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2 standards would cause increased criteria-pollutant emissions. In contrast, the proposed standards correct course, reducing harmful air pollution and therefore advancing the Clean Air Act's foundational objective. Although NHTSA unfortunately persists, in this proposal, in claiming a conformity analysis is not required because emissions will be caused by the decisions of automakers and consumers beyond its control, 86 Fed. Reg. at 49,841, that improper interpretation has no prejudicial effect here because the proposal would reduce criteria pollution.

geopolitical power structures over times." 86 Fed. Reg. at 49,796. And thus, "[o]il conservation is more effective than increased domestic oil production at improving U.S. oil security." *Id.*

Accordingly, we support NHTSA's recognition, absent from the SAFE 2 standards, of the need for the United States to conserve energy in relation to the foreign policy concerns associated with the consumption of foreign oil, along with the positive impacts on consumers, the national balance of payments, and the environment. This analysis correctly concludes that more stringent standards are appropriate.

B. The Proposed Standards Are Technologically Feasible

When deciding what fuel economy standards are "maximum feasible," NHTSA must consider what is technologically feasible. 49 U.S.C. § 32902(f). Traditionally, NHTSA understood this to mean the standards must be achievable. 77 Fed. Reg. at 63,015 ("'Technological feasibility' refers to whether a particular technology . . . is available or can become available. . . ."). This understanding comports with the statutory language, as the definition of "feasible" means "capable of being carried out." H.R. Rep. No. 94-700 at 172 (1975); *see also Ctr. for Biological Diversity v. NHTSA*, 538 F.3d 1172, 1194 (D.C. Cir. 2008). Thus, NHTSA must consider whether a particular technology exists or can become available for commercial application in the model year for which a standard is being established. *Ctr. for Auto Safety*, 793 F.2d at 1325 n.12. Fuel economy standards are "intended to be technology forcing" because Congress recognized "that 'market forces . . . may not be strong enough to bring about the necessary fuel conservation which a national energy policy demands.'" *Id.* at 1339.

In SAFE 2, NHTSA broke with its historical definition of "technological feasibility" and reinterpreted it to mean the standards should be easy and cheap for manufacturers to achieve. *See* 85 Fed. Reg. at 25,130-31. Although NHTSA agreed that automakers could meet the pre-existing and augural standards using existing technologies, 85 Fed. Reg. at 25,131, the weaker SAFE 2 standards did not even track the current course of technology. NHTSA's projections showed that automakers would exceed the SAFE 2 standards every year, even if standards were held at model-year 2020 levels.[144]

In contrast, the proposal represents a return to NHTSA's traditional understanding that the standards must be "achievable." 86 Fed. Reg. at 49,791 ("'Technological feasibility' refers to whether a particular method of improving fuel economy is available for deployment in commercial application in the model year for which a standard is being established. Thus, NHTSA is not limited in determining the level of new standards to technology that is already being applied commercially at the time of the rulemaking.").

[144] Final Regulatory Impact Analysis (SAFE 2), *supra* note 6, at 1370.

Applying this standard, NHTSA has concluded that the proposed standards are technologically feasible. We agree. The technology needed to meet the Proposed Standards already exists, and those standards are therefore achievable. *See* 86 Fed. Reg. at 49,792, 49,804, 49,810.

C. The Proposed Standards Are Economically Practicable

NHTSA must also consider "economic practicability." 49 U.S.C. § 32902(f). NHTSA has long interpreted this factor to mean that the standards should fall within the financial capability of the industry, but not be so stringent as to lead to significant loss of jobs or unreasonable elimination of consumer choice. *See* 86 Fed. Reg. at 49,792, 49,797; *see also* 83 Fed. Reg. at 43,208. In assessing what is economically practicable, NHTSA has considered substantial impacts of the standards on both the automotive industry and the national economy. There is no bright-line test for determining whether a regulatory alternative is economically practicable, but there are several metrics NHTSA considers, including application rate of technology, other technology-related considerations, cost of meeting the standards, sales and employment responses, and uncertainty and consumer acceptance. *See* 86 Fed. Reg. at 49,792. NHTSA considers "economic practicability" in terms of effects on per-vehicle costs and the ability of both the industry and individual manufacturers to comply, as well as effects on vehicle sales, industry employment and consumer demand. *Id.* at 49,787.

In SAFE 2, NHTSA placed undue emphasis on consumer preference as a constraint on stricter standards. *See, e.g.,* 85 Fed. Reg. at 25,131-133, 15,174-175. SAFE 2 also relied heavily on flawed analyses of consumer behavioral responses, i.e., rebound driving and reduced turnover fatalities, *see, e.g.*, *id.* at 25,132, despite the absence of any evidence that Congress intended NHTSA to consider consumer behavioral responses as part of its "economic practicability" analysis.

With the proposal, NHTSA has returned to a more traditional understanding of "economic practicability," focusing again on whether the Proposed Standards fall within the financial capacity of the industry. 86 Fed. Reg. at 49,802 (reasoning that "manufacturers (who are all for-profit companies) would not be announcing plans to offer these types of vehicles if they did not expect to be able to sell them"). While NHTSA asserts that the vehicles that sold in MY 2020 tended to be, on average, larger, heavier, and more powerful, *id.* at 49,611, it does not rely on consumer preference as a basis for concluding stricter standards are not "economically practicable." NHTSA looks to the actions of the automobile industry as evidence that improving fuel economy is a growth market and that the market rewards investment in advanced technology. *See* 86 Fed. Reg. at 49,604. "These companies are sophisticated, for-profit enterprises," and nearly all have announced new higher fuel economy and electric vehicle models … which will result in their achieving fuel economy levels well above the standards set forth in the 2020 final rule." *Id.* NHTSA also recognizes that more stringent standards will help to encourage industry to continue improving the fuel economy of all vehicles, rather than simply producing a few electric vehicles, such that all Americans can benefit from higher fuel economy and save money on fuel." *Id.* at 49,604; *see also id.* at 49,611.

NHTSA also now properly recognizes that it cannot "rely on consumer demand to such an extent that it ignore[s] the overarching goal of fuel conservation," bringing the focus back into line with the main goal of EPCA. *See id.* at 49,611; *Ctr. For Auto Safety*, 793 F.2d at 1340.

Applying the correct interpretation of "economic practicability," NHTSA correctly concludes that the Proposed Standards are economically practicable. The costs associated with the Proposed Standards are both reasonable and lower than past estimates for similar standards. With respect to compliance costs, the average price increase for a MY 2029 vehicle under the preferred alternative is under $1,000. 86 Fed. Reg. at 49,620, tbl.II-8. Differences in technology application rates are modest between the preferred and no-action alternatives. 2021 CAFE PRIA, *supra* note 8, at 140-144. Where differences do exist, such as in the degree of mass reduction and aerodynamic improvements applied, these differences represent a minimal additional burden for manufacturers. *Id.* at 144, fig.6-10. And while the preferred alternative standards also include slightly more mild hybridization than the no-action alternative, this is a limited technology change that does not make the standards economically impracticable. *Id.* at 143, fig. 6-9. In fact, mild hybrid passenger cars are already common in Europe and Japan, and mild hybrid passenger cars, as well as trucks and sport utility vehicles, can be anticipated in the U.S. market within the first model year (MY 2024) covered by this proposal. *See* Comments of Gary Rogers, Vice President, Advanced Technology, Roush Industries, *Comments on EPA Proposed Rule Revised 2023 and Later Model Year Light-Duty Vehicle GHG Emissions Stanards*, EPA-HQ-OAR-2021-0208-0643 (Sept. 24, 2021) ("Roush Report") at 7.

Moreover, the preferred alternative would have minimal impact on overall industry employment. NHTSA projects changes in employment would range from a decrease of 2,871 jobs (MY 2023) to an increase of 2,228 jobs (MY 2029). 2021 CAFE PRIA, *supra* note 8, at 153, tbl.6-1. This equates to a 0.24% decline in industry employment in MY 2023 and a 0.20% increase in industry employment in MY 2029. *Id.* These estimates are also biased against the preferred alternative due to an inappropriately large (in absolute value terms) sales elasticity assumption. *See infra*, at Section II.2. With a better-supported sales elasticity assumption, the decrease in jobs due to lower vehicle sales under the preferred alternative would be even smaller. *See* 2021 CAFE PRIA, *supra* note 8, at 152.

Finally, the proposal promotes greater consumer choice, as consumers will have a greater array of vehicles with particularly high fuel economy, such as plug-in hybrids and mild hybrids. *Id.* at 143 fig.6-9 (showing greater levels of electrification). Vehicle safety will not change with the increase in stringency. *Id.* at 109 tbl 5-1 (showing no statistically significant fatality impacts from mass reduction). Performance has improved despite increasingly stringent fuel economy standards, NPRM at 49,727 fig.III-21, and indeed, some hybrid vehicles offer advantages over combustion vehicles, such as faster acceleration, more torque, and lower maintenance costs. Roush Report at 11-12.

Thus, the analysis supporting the proposal clearly establishes that the proposed standards are well within the financial capability of the industry, and the proposed standards are therefore "economically practicable."

D. The Proposed Standards Properly Balance the Statutory Factors

As discussed in Sections IA-C above, the statutory factors required by section 32902(f) of EPCA support standards more stringent than SAFE 2. In determining which standards to finalize, NHTSA must determine which is "maximum feasible." 49 U.S.C. § 32902(a). Consistent with that direction, we urge NHTSA to adopt the most stringent standards it reasonably deems technologically feasible and economically practicable. NHTSA has properly recognized that it is departing and should depart from the conclusion reached one year ago in SAFE 2. The SAFE 2 standards were never justified: they rested on an error-ridden analysis and unlawful interpretations of Congress's commands. Our States and Cities find that a rebalancing—based on a return to a proper understanding of the statute—is appropriate.

Most significantly, NHTSA concludes in the present proposal that the need of the United States to conserve energy should be given more weight than it was given in SAFE 2. The agency notes that "[i]n the 2020 final rule, NHTSA interpreted the need of the U.S. to conserve energy as less important than in previous rulemakings," in large part on the basis of its strained interpretation in the context of environmental effects that the word "conserve" means "to avoid waste." 86 Fed. Reg. 49,802. NHTSA now rejects this interpretation, explaining:

> [] NHTSA no longer believes that it is reasonable or appropriate to focus only on "avoiding waste" in evaluating the need of the U.S. to conserve energy. EPCA's overarching purpose is energy conservation. The need of the U.S. to conserve energy may be reasonably interpreted as continuing to push the balancing toward greater stringency.

Id. These States and Cities agree with the agency's decision to revisit this analysis and its renewed emphasis on pushing the balancing toward greater stringency. *Id.* at 49,810 ("[I]f the purpose of EPCA is energy conservation, and NHTSA is interpreting the need to conserve energy to be largely driven by fuel savings, energy security, and environmental concerns, then it makes sense to interpret EPCA's factors as asking the agency to push stringency as far as possible before benefits become negative.").

Applying these interpretive principles, NHTSA has reasonably determined that the preferred alternative could be "maximum feasible" based on the agency's calculations in the proposal. We urge NHTSA to consider, based on the full record before it, whether the more stringent alternative—Alternative 3—ultimately is "maximum feasible." As NHTSA observes, that set of standards, "best meets the need of the U.S. to conserve energy," because it would save consumers the most in fuel costs, achieve the greatest reductions in climate change-causing CO2 emissions, maximize fuel consumption reductions, and better improve our national balance of payments and energy security. *Id.* at 49,803. While NHTSA found that Alternative 3 would produce "negative net benefits … under both discount rates," *id.* at 49,811, NHTSA's analysis could be improved, for many of the reasons laid out in Section II below. It may be, therefore, that Alternative 3—or standards between the preferred alternative and Alternative 3—are "maximum feasible." NHTSA should reach this determination, rooted as it is in a balancing of the correct statutory factors, with an emphasis on pushing stringency as far as feasibly possible.

II. NHTSA's Analysis Supports More Stringent Standards

As demonstrated above, NHTSA's analysis firmly supports the statutory basis for standards more stringent than SAFE 2. Based on the agency's calculations in the NPRM, NHTSA has reasonably determined that the preferred alternative could be "maximum feasible." But the full record may well support finalization of standards more stringent than the preferred alternative. The NPRM finds that the preferred alternative delivers significant societal benefits when benefits and costs are measured using a calendar year-based approach, and that the preferred alternative is substantially in equipoise with the no action alternative under a model year-based approach. NPRM at 49,608 Table I-8 ($37.1 billion to $100 billion in net benefits), Table I-5 (-$15.1 billion to $0.3 billion in net benefits). This analysis, however, is overly conservative, as it relies on several inputs that, if adjusted to reflect the best available evidence, would unambiguously demonstrate the fact that increasing stringency strongly benefits society. The most significant of these inputs are outlined below. We urge NHTSA to adopt improved inputs that follow the best available science.

1. We encourage NHTSA to adjust its measure of rebound driving from fifteen percent to ten percent. As explained in more detail by CARB and its expert, Professor Gillingham, the best evidence available—recent data from the United States using odometer readings or safety inspections—supports a rebound estimate of ten percent or lower. CARB Comments at 19-20; Comment of Kenneth Gillingham, "The Rebound Effect of Fuel Economy Standards: Comment on the Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks" (October 2021) (Gillingham Rebound Comment) (submitted with CARB's Comments). Additionally, the relevant literature has also established that rebound tends to decline to zero as incomes increase. Gillingham Rebound Comment; Brief for Economists as Amicus Curiae In Support of Coordinating Petitioners, *Competitive Enterprise Institute et al. v. National Highway Traffic Safety Administration et al.*, No. 20-1145 (D.C. Cir., January 21, 2021), Docket No. 1881059 (Economists' Amicus Br.) at 13-17. Estimates of rebound for forward-looking analyses should therefore err toward the lowest values supported by the literature.

2. We encourage NHTSA to revise its use of -1.0 for new vehicle demand elasticity. As we have previously explained, the -1.0 value is not supported by the current state of the literature. *See* Proof Brief of State and Local Government Petitioners, *Competitive Enterprise Institute et al. v. National Highway Traffic Safety Administration et al.*, No. 20-1145 (D.C. Cir., January 14, 2021), Docket No. 1880213 (States' SAFE Br.) at 55-57. Rather, the -1.0 value is derived from decades-old studies based on even older data, and several studies simply assumed a -1.0 elasticity instead of estimating it themselves. More recent and rigorous estimates of new vehicle demand elasticity provide a value much closer to zero. Comment of Kenneth Gillingham, "The New Vehicle Demand Elasticity: Comment on the Corporate Average Fuel Economy Standards for Model Years 2024-2026 Passenger Cars and Light Trucks" (October 2021) (Gillingham Elasticity Comment) (submitted with CARB's comments); Economists' Amicus Br. at 25-27. We urge NHTSA to adopt the -0.34 value from the Leard (2021) study as its base case and to consider values closer to zero as sensitivity cases. CARB Comment at 20-21; Gillingham Elasticity Comment.

3. NHTSA should reconsider its approach to tabulating congestion costs. NHTSA retains its flawed methodology from the SAFE 2 rule. Specifically, NHTSA purports to "update" a per-mile marginal cost of congestion from a 1997 Highway Cost Allocation Study by the Federal Highway Administration (1997 Study) by revising three components of that congestion cost estimate based on newer data. However, the SAFE 2 analysis contained numerous errors. *See* Proof Brief Public Interest Organization Petitioners, *Competitive Enterprise Institute et al. v. National Highway Traffic Safety Administration et al.*, No. 20-1145 (D.C. Cir., January 14, 2021), Docket No. 1880214 (NGO SAFE Br.) at 28-32. NHTSA retains at least one of those plain errors here in its "update" of the traffic volume metric. *See* CARB Comment at 22-24. NHTSA does not attempt to defend its methodology here against intervening criticism, instead copy-pasting the same footnote into its Technical Support Document here. *Compare* 85 Fed. Reg. at 24,737 n.1939, *with* NHTSA, *Technical Support Document: Proposed Rulemaking for Model Years 2024-2026 Light-Duty Vehicle Corporate Average Fuel Economy Standards* (August 2021) (TSD) at 552 n.753. Rather than recycle misguided attempts to "update" the per-mile marginal cost of congestion from the 1997 Study, NHTSA should instead use the most recent evidence available of the per-mile marginal cost of congestion—the 1997 Study—and adjust that study's estimate for inflation. Fixing this error would increase the net benefits of more stringent standards.

4. NHTSA should consider the fatality impacts of the proposal primarily using a per-mile fatality rate, rather than total fatalities. The NPRM measures three different causes of safety impacts from fuel economy standards: mass reduction, fleet turnover, and the rebound effect of the lower cost of driving. NPRM at 49,737. Only the first two causes affect fatality rate—additional fatalities associated with the rebound effect are based purely on the projection that consumers will choose to drive additional miles when driving costs them less. *Id*. The proposed

rule does not coerce additional driving, so the change in fatality rate properly measures the rule's impact on the safety of driving. The fatality rate per mile is the best measure of the safety of driving because it accounts for the total amount of driving done. We recommend that NHTSA report and rely upon the change in fatality rate as the primary measure of the rule's effect on safety.

5. NHTSA should remove restrictions on the availability of high compression ratio (HCR) technology in compliance modeling so that HCR technology availability in the modeling best reflects reality. For the proposal, NHTSA intended for its compliance modeling to allow automakers to adopt three levels of HCR technology: HCR0 (a basic engine with variable valve timing and port fuel injection), HCR1 (an engine with variable valve timing and direct injection), and HCR1D (an HCR1 engine with advanced cylinder deactivation). TSD at 171. NHTSA's modeling blocked automakers from using HCR2 technology, which primarily adds cooled exhaust gas recirculation to an HCR1D engine. *Id.* at 171, 188 n.201. NHTSA's modeling also barred all HCR technologies from all pickups and vehicles that share an engine with a pickup (which in practice excludes HCR from most six-cylinder engines), vehicles with 405 or more horsepower, and certain performance-oriented manufacturers. *Id.* at 188. As we have previously explained in detail, and as CARB discusses in its comment, these unwarranted restrictions on HCR technology do not accurately reflect reality. States' SAFE Br. at 65-70; CARB Comment at 7-13. There are abundant examples of pickups and other vehicles with six- and eight-cylinder engines using HCR technologies, such as the Toyota Tacoma, Dodge Ram, and various Lexus luxury sedans and SUVs. Moreover, manufacturers are continuously improving on HCR technology, such that HCR technology packages that produce efficiency equivalent to HCR2 exist and are available for adoption. We urge NHTSA to remove its restrictions on HCR technologies in its compliance modeling. NHTSA should also correct model coding errors that inadvertently disallowed HCR1D in the central analysis and HCR1D and HCR2 in the "no HCR skip" sensitivity case. CARB Comment at 13. Removing restrictions on HCR technologies and fixing the model errors would add billions of dollars to the proposal's projected net benefits by correctly estimating lower compliance costs.

6. As to the social cost of greenhouse gases (SC-GHG) analysis in NHTSA's proposal, we: (1) applaud the use of a global rather than domestic analysis; (2) suggest the use of a discount rate lower than 2.5%; (3) recommend NHTSA use the same SC-GHG discount rate for its main analysis and sensitivity analyses, as NHTSA and EPA have done in prior rulemakings; (4) urge NHTSA to include updates to the IWG's analysis, as EPA has done in its recent proposal concerning GHG standards for light-duty vehicles; and (5) recommend NHTSA explain that its analysis is based on its independent conclusions using the best available science, including any additional updates that may further improve upon the interim SC-GHG values offered by the Interagency Working Group on Social Cost of Greenhouse Gases (IWG).

We are encouraged that NHTSA's SC-GHG analysis, by accounting for global climate harms, has corrected serious errors in SAFE 2's social cost of carbon (SCC) analysis that used a scientifically and legally indefensible domestic number. As CARB and the multi-state coalition have explained,[145] SAFE 2's domestic SCC ignored the best available science and failed to consider an important aspect of the problem. Indeed, agency reliance on an interim *domestic* SCC in lieu of the global SCC has been held arbitrary and capricious,[146] whereas agency reliance on the *global* SCC has been upheld.[147] We recommend NHTSA identify these errors in SAFE 2's SCC analysis and explain why NHTSA needed to correct them and return to its longstanding recognition—dating as far back as 2008, under the Administration of President George W. Bush—that "GHGs are global pollutants" that require a global analysis.[148]

While we applaud improvement over SAFE 2, we urge NHTSA to use a lower discount rate in its SC-GHG analysis than the 2.5% discount rate in NHTSA's proposed reference case. As explained in both the SAFE 2 litigation and rulemaking,[149] as well as multi-state comments[150] regarding the interim SC-GHG values offered by the IWG, state experience and recent economic evidence shows a lower discount rate better accounts for the long-term, intergenerational impacts of climate change.

In addition, we urge NHTSA to use the same SC-GHG discount rates for its main analysis and sensitivity analyses—as NHTSA and EPA did in 2012 and 2016. Here, NHTSA mixes and matches the SC-GHG and non-SC-GHG discount rates in order to estimate that "discounted benefits attributable to the proposal vary from" \$121 billion (applying discount rates of 2.5% for SC-GHG and 3% for non-SC-GHG) to \$76 billion (applying discount rates of 3% for SC-GHG and 7% for non-SC-GHG).[151] In contrast, in 2012, NHTSA—jointly with EPA—used a single social cost of carbon discount rate in both its main analysis and sensitivity studies, which

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[145] These SAFE 2 SCC errors are detailed in the States' SAFE Br. at 89-90 and Brief of Professor Michael Greenstone as Amicus Curiae in Support of Petitioners, *Competitive Enterprise Institute et al. v. National Highway Traffic Safety Administration et al.*, No. 20-1145 (D.C. Cir. January 21, 2021), Docket No. 1881059, as well as in Detailed Comments of the States of California, et al. on EPA's and NHTSA's Joint Proposed "SAFE" Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (Oct. 26, 2018), Docket Nos. EPA-HQ-OAR-2018-0283, NHTSA-2018-0067 at 104-106, and CARB, Analysis in Support of Comments of CARB on the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (Oct. 26, 2018), Docket Nos. EPA-HQ-OAR-2018-0283, NHTSA-2018-0067, NHTSA-2017-0069 at 309-315 and attached Expert Report of Maximilian Auffhammer, *et al.*

[146] *California v. Bernhardt*, 472 F.Supp.3d 573, 611-613 (N.D. Cal. 2020).

[147] *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 678-80 (7th Cir. 2016) (agency "acted reasonably" in using global estimates of the social cost of carbon, which were not arbitrary or capricious).

[148] See *Regulating Greenhouse Gas Emissions Under the Clean Air Act*, 73 Fed. Reg. 44,354, 44,415-16 (July 30, 2008).

[149] *See supra* note 145.

[150] Comments of the Attorneys General of the States of New York, et al. on the Office of Management and Budget's "Notice of Availability and Request for Comment on 'Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates Under Executive Order 13990,'" 86 Fed. Reg. 24,669 (June 21, 2021).

[151] 2021 CAFE PRIA, *supra* note 8, at 4-5 & n.8, PRIA tbl. 1-1 p. 235 [Chapter 7.2.3.1].

spanned non-SC-GHG discount rates of 3% and 7%.[152] Similarly, in its 2016 draft technical assessment report, NHTSA—again, jointly with EPA—used the "same discount rate" for social cost of carbon in various analyses "for internal consistency."[153] While the 3% social cost of carbon discount rates used in 2012 and 2016 were too high, this prior practice of using of a single SC-GHG discount rate across multiple analyses using different non-SC-GHG discount rates would be helpful to tease out the impacts of using those different non-SC-GHG discount rates.

We also urge NHTSA to include updates to the IWG's analysis, as EPA did in its SC-GHG analysis included in in its recent GHG-standards proposal.[154] Moreover, to the extent possible, NHTSA should update its SC-GHG models to include any significant climate change-related impacts that have become quantifiable since NHTSA released its proposal.[155] We also encourage NHTSA to identify some of the significant impacts it was unable to quantify in its SCC—including some impacts our States are experiencing this year, such as the combined effects of storm surges and rising sea levels and the human health costs of increased wildfires. While we recognize that NHTSA cannot quantify all climate impacts, and that NHTSA need not do so, we nonetheless believe it is important to acknowledge that the SCC figure used is almost certainly understated due to this constraint.

Finally, we encourage NHTSA to explain that, while its SC-GHG analysis is consistent with the interim values offered by the IWG, NHTSA has reached its independent conclusions using the best available science. Doing so would not diminish the SC-GHG analysis offered by the IWG, whose analysis is based on peer-reviewed literature and economic models.[156] Rather, any updates by NHTSA based on agency expertise merely recognizes that federal agencies must use the best available science—which includes SC-GHG—when setting vehicle standards.[157]

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Despite room for improvement in NHTSA's input assumptions, NHTSA's analysis still shows that the proposed rule would further NHTSA's statutory mandate to conserve fuel. The proposed

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[152] U.S. EPA and NHTSA, Final Regulatory Impact Analysis: Corporate Average Fuel Economy for MY2017 – MY 2025 Passenger Cars and Light Trucks (August 2012) at 10 ("all of the tables in the Executive Summary and in the analysis as a whole use the central value for the Social Cost of Carbon (SCC)"), available at https://www.nhtsa.gov/sites/nhtsa.gov/files/fria_2017-2025.pdf.

[153] TAR at 1089.

[154] *See, e.g.*, EPA, *Revised 2023 and Later Model Year Light-Duty Vehicle GHG Emissions Standards, Regulatory Impact Analysis* 3-31 (Table 3-8) (Aug. 2021).

[155] *See Regulatory Planning and Review*, Exec. Order No. 12,866 §§ 1, 6(a)(3)(C), 58 Fed. Reg. 51,735 (Oct. 4, 1993) (requiring agencies to assess "all costs and benefits" of regulatory actions and alternatives, including "quantifiable measures []to the fullest extent that [they] can be usefully estimated").

[156] Interagency Working Group on Social Cost of Greenhouse Gases, *Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimate Under Executive Order 13,990* 1, 10-12 (Feb. 2021).

[157] *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 538 F.3d 1172, 1198-1203 (9th Cir. 2008); *High County Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1189-92 (D. Col. 2014); *Montana Envt'l Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d. 1074, 1095-99 (D. Mt. 2017).

alternative would save 50 billion to 205 billion gallons of gasoline and $44.9 billion to $73.0 billion in discounted fuel costs. 86 Fed. Reg. at 49,607 tbl. I-3 (gasoline), 49,770-71 tbl. V-28, V-29 (fuel costs). NHTSA should revise the input assumptions described above to further strengthen the record and better elucidate the proposed alternative's true net benefits, but NHTSA's analysis—and the record as a whole—strongly supports the adoption of fuel economy standards more stringent than those in place now.

III. NHTSA Must Consider California Waiver Standards, But Doing So Does Not Materially Affect the Proposed Standards

In its proposal, NHTSA seeks comment on whether to include California's Zero Emission Vehicle (ZEV) and GHG standards in NHTSA's No Action baseline, assuming EPA reinstates the waiver for these standards before NHTSA takes final action on this proposal. 86 Fed. Reg. at 49,793. We agree that the inclusion of both the ZEV and GHG standards in the baseline case would be reasonable. It is plainly reasonable for an agency to include the preexisting legal obligations of regulated parties in No Action baselines, since these baselines aim to capture, as accurately as possible, how regulated parties would behave but for the proposals under consideration.[158] Indeed, California's ZEV and GHG standards have been adopted in thirteen other States and thus apply to a significant portion of the vehicle market that NHTSA's No Action case models. And, specifically, here this inclusion is a reasonable way to effectuate Congress's directive that NHTSA consider "other motor vehicle standards of the Government" in setting maximum feasible CAFE standards. As discussed below, EPCA's reference to "other motor vehicle standards of the Government" in 49 U.S.C. section 32902(f) unambiguously includes California vehicle emission standards for which EPA has granted a Clean Air Act preemption waiver. However, the particular factual context of this rulemaking and the other three factors in section 32902(f) indicate that, in this instance, NHTSA's incorporation of these California standards into its baseline does not materially affect its determination of maximum feasible CAFE standards.

A. EPCA's Reference to "Other Motor Vehicle Standards of the Government" Includes California's Emissions Standards Enforceable under Clean Air Act Section 209(b)

As NHTSA's proposal discusses, 86 Fed. Reg. at 49,793, in determining "maximum feasible" average fuel economy standards, NHTSA is required by EPCA to consider "the effect of other motor vehicle standards of the Government on fuel economy." 49 U.S.C. § 32902(f). As used in

[158] Courts have upheld the inclusion of such obligations in regulatory baselines in a variety of contexts. *E.g.*, *NRDC v. Thomas*, 838 F.2d 1224, 1238 (D.C. Cir. 1988) (holding, in part, that using "[State-Implementation-Plan]-required emissions rates as the baseline" was "a quite reasonable interpretation" of relevant provision of Clean Air Act); *Cooling Water Intake Structure Coal. v. EPA*, 905 F.3d 49, 81 (2d Cir. 2018) (quoting "environmental baseline" requirements for Endangered Species Act consultations as including "the past and present impacts of all Federal, State, or private actions" and distinguishing those from impacts resulting from agencies exercising discretion); *Am. Rivers v. F.E.R.C.*, 201 F.3d 1186, 1192 (9th Cir. 1999) (upholding agency use of facility's operations pursuant to terms and conditions of existing license as no action baseline).

EPCA, the term "other motor vehicle standards of the Government" includes new motor vehicle emission standards established by EPA and by California where those state standards have been granted waivers under Clean Air Act section 209(b) (hereafter "California 209(b) standards"). The provision's structure and context further affirm that California 209(b) standards must be considered in determining maximum feasible CAFE standards.

When Congress defines a term in statute, that definition controls. *Tanzin v. Tanvir*, 141 S.Ct. 486, 490 (2020) (finding statute defined "government" to include government officials in their personal capacities). Here, Congress enacted two explicit interpretive commands relevant to "other motor vehicle standards of the Government." First, when Congress consolidated transportation statutes in 1994 into the present Title 49 of the U.S. Code, it substituted "other motor vehicle standards of the Government" for EPCA's original language in the same provision, "other Federal motor vehicle standards." Pub. L. 103-272, 108 Stat. at 1060 (Jul. 5, 1994); *see* 15 U.S.C. § 2002(e)(3) (1976). In that same law, Congress expressly stated that this revision and others "restate, without substantive change, laws enacted before July 1, 1993" and "may not be construed as making a substantive change in the laws replaced." Pub. L. 103-272, §6(a), 108 Stat. at 1378. "Other motor vehicle standards of the Government" thus by law means the same thing that "other Federal motor vehicle standards" did in the original statute.

Second, in the original statute, Congress explicitly defined "Federal standards" to include California emission standards that had received an EPA waiver:

> Each of the following is a category of Federal standards; … (i) Emissions standards under section 202 of the Clean Air Act *and emissions standards applicable by reason of section 209(b) of such Act*.

15 U.S.C. § 2002(d)(3)(D)(i) (1976) (emphasis added). Because EPCA specifically includes California 209(b) standards as "Federal standards," California 209(b) standards are included in "other Federal motor vehicle standards" in the original section 2002(e) and thus "other motor vehicle standards of the Government" in the present-day section 32902(f).

A review of the structure and operation of the original section 2002 confirms that "Federal standards," in subsection (d)(3), and "other Federal motor vehicle standards," in subsection (e) meant the same thing. *Food & Drug Admin. v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120, 133 (2000) (statutory terms "must be read in their context and with a view to their place in the overall statutory scheme" and courts must "fit, if possible, all parts into an harmonious whole") (quotations omitted).

When Congress adopted EPCA in 1975, it specified the numeric average fuel economy standards for passenger vehicles, model years 1978-80, but it allowed NHTSA to adjust these standards for qualifying manufacturers. 15 U.S.C. §§ 2002(a)(1), (d)(1) (1976). For model years after 1980, Congress directed NHTSA to set standards at what it determined to be the "maximum feasible fuel economy level." *Id.*, § 2002(a)(3), (4). In the original section 2002, subsection (d) governed the first task—how NHTSA may adjust the 1978-80 standards—while subsection (e) governed the second—how NHTSA decides the "maximum feasible fuel economy level" for post-1980 standards. In subsection (d), NHTSA's duty to consider "Federal standards" expressly follows from the premise that manufacturers' compliance with other standards on vehicle safety, emissions, and noise might cause a significant "reduction" in manufacturers' ability to achieve the level of fuel economy Congress had required, and allows NHTSA to adjust down the manufacturer's fuel economy standard accordingly. *Id.* § 2002(d)(2)(A), (3)(B)-(C). (Indeed, Congress itself considered that California's vehicle emission limits would affect fuel economy when setting the original model year 1978-80 standards.[159])

To qualify for the adjustment, a manufacturer had to demonstrate that other "Federal standards," including California 209(b) standards, likely caused a "fuel economy reduction," and that the manufacturer had applied a "reasonably selected technology," i.e., a vehicle or engine design appropriate to "the Nation's need to improve [] fuel economy" and "the energy savings, economic costs, and lead-time requirements" of available technological alternatives. 15 U.S.C. § 2002(d)(2)(A), 3(A). The plain function of subsection (d), then, was to hold manufacturers to as high a fuel economy as feasible in model years 1978-80 given the constraints to which manufacturers were otherwise subject and the constraints and policy considerations Congress imposed on NHTSA in the provision. In turn, subsection (e) reapplied these same principles for post-1980 models: manufacturers must achieve "maximum feasible fuel economy" given available technology, economic practicability, the effect of other vehicle standards on fuel economy, and "the need of the Nation to conserve energy." *Id.*, § 2002(e).

Given these symmetrical functions of subsections (d) and (e), the only permissible reading of them together is to construe "Federal standards" and "Federal motor vehicle standards" as identical in scope.[160] Indeed, it would make no logical sense to require NHTSA to consider California 209(b) standards as "Federal standards" relevant to model years 1978-80, but not as "Federal motor vehicle standards" relevant to later model years, particularly since California 209(b) standards can have the same or greater impact on fuel economy as EPA's emissions standards.

Further, construing "other Federal motor vehicle standards" in subsection (e) to exclude California 209(b) standards would create other asymmetries that are contrary to the intent of Congress. For example, under such an interpretation, if NHTSA found that compliance with

[159] H.R. Rep. 94-340, at 86-87 (1975) (committee report discussing positive and negative effects on fuel economy of automakers' compliance with California emission limits for carbon monoxide and hydrocarbons).

[160] This contextual reading of subsections (d) and (e) also confirms that the additional words "motor vehicle" do not intend any distinction between "Federal standards" and "Federal motor vehicle standards"; notably, all the "Federal standards" defined in subsection (d) were in fact motor vehicle standards. 15 U.S.C. § 2002(d)(3)(D). Similarly, while subsection (d) defined "Federal standards" and other terms "for purposes of this subsection," the provision does not *restrict* the definition of "Federal standards" to that subsection exclusively, and reading subsections (d) and (e) together as a whole confirms that this language was not intended to generate a different, unspecified meaning for "other Federal motor vehicle standards" in subsection (e).

California 209(b) standards would significantly reduce fuel economy below the levels Congress set, it could have accommodated that reduction with adjusted standards for model year 1978-80 passenger vehicles (subsection (d)), but not for model year 1978-80 light trucks (subsection (b)). Similarly, it could not have granted exemptions to small manufacturers and issued alternative fuel economy standards based on such a reduction (subsection (c)). There is no policy rationale to justify these anomalies; the plain purpose of subsection (c) is to accommodate the special obstacles that small manufacturers face in improving fuel economy, which could certainly include California 209(b) standards. 15 U.S.C. §§ 2002(b), (c), (d); *cf. Wisc. Cent. Ltd. v. United States*, 138 S. Ct. 2067, 2074 (2018) (a statute's "meaning is fixed at the time of enactment"). Unsurprisingly, then, across multiple administrations, NHTSA has consistently interpreted both "other Federal motor vehicle standards" in subsection (e) and "other motor vehicle standards of the Government" in the present section 32902(f) to include California 209(b) standards. *See, e.g.*, 43 Fed. Reg. 11,995, 12,009-10 (Mar. 23, 1978); 53 Fed. Reg. 11,074, 11,077-78 (Apr. 5, 1988); 56 Fed. Reg. 13,773, 13,777-79 (Apr. 4, 1991); 68 Fed. Reg. 16,868, 16,893-96 (Apr. 7, 2003); 71 Fed. Reg. 17,566, 17,639-43 (Apr. 6, 2006). NHTSA, thus, must consider California 209(b) standards in this rulemaking, and, if EPA reinstates California's waiver for its GHG and ZEV standards as proposed, those standards would be among those NHTSA must consider here. However, as discussed in more detail below, consideration of these standards likely does not materially change NHTSA's analysis in this proceeding.

B. NHTSA's Inclusion of California 209(b) Standards in the Modeling Analysis Baseline Is Appropriate

NHTSA's reflection of California 209(b) standards in the No-Action baseline incorporates the eminently reasonable assumption, consistent with reasoned decision-making, that regulated parties will comply with preexisting legal obligations outside the proposed regulatory action. *See* TSD at 43, 49 ("Rulemaking analysis attempts to isolate the impact of the action being considered, which means that [the baseline] need[s] to capture accurately what else is happening *besides* the action."). Incorporating California 209(b) standards into the baseline also serves as one reasonable way to consider these standards' possible effects on fuel economy, as EPCA requires. Before NHTSA's CAFE Model simulates manufacturers' response to different proposed standards, it first constructs a baseline vehicle fleet that manufacturers will likely produce (here, through MY 2026), based on, among other things, currently applicable regulatory standards. The model then simulates how manufacturers would iteratively apply a menu of fuel-economy-improving technologies to that baseline fleet until each manufacturer's fleet is brought into compliance with the new CAFE standard under consideration (or until manufacturers would choose to pay penalties instead of complying). 86 Fed. Reg. at 49,623-27. The CAFE Model can then estimate several economic, environmental, and public health effects of manufacturers' simulated compliance strategies to inform NHTSA's evaluation of what standards are maximum feasible. *Id.* NHTSA has used increasingly detailed versions of this CAFE Model since 2001. *Id.* at 49,623.

NHTSA's incorporation of California 209(b) standards—along with other applicable standards with which automakers must comply—into the CAFE Model baseline is a reasonable way to "consider … [their] effect … on fuel economy." 49 U.S.C. § 32902(f). This language directs NHTSA to ask whether manufacturers can comply with other motor vehicle standards and the new CAFE standard at the same time; essentially, a fuel economy level is not the "maximum feasible" if it is achievable only through noncompliance with "other motor vehicle standards of the Government." By reflecting California's 209(b) standards in the baseline case, NHTSA ensures, consistent with Congress's direction that any compliance pathway modeled for proposed fuel economy standards continues to comply with California 209(b) standards as well. Thus, any fuel economy improvements the new CAFE standard may require will neither interfere with California's 209(b) standards nor be infeasible for regulated automakers. As discussed below, we believe that California's ZEV and GHG standards here do not actually have any "effect … on fuel economy" that would change NHTSA's analysis. But generally, where a California 209(b) standard has any such effect, reflecting these standards in the CAFE Model baseline fleet is a reasonable way to account for, and accommodate, such effect and satisfy section 32902(f).

At the same time, by excluding full-vehicle electrification technologies from the menu of available technology pathways that automakers may use to improve fuel economy above the No-Action baseline and thereby comply with new CAFE standards, NHTSA satisfies the prohibition in section 32902(h)(1) against considering the fuel economy of ZEVs or other alternative fuel vehicles when it determines what fuel economy level is "maximum feasible." 86 Fed. Reg. at 49,626, 49,655. The function of section 32902(h) is to preserve the compliance flexibilities that Congress built into the CAFE program—i.e., the special statutory measures of fuel economy for alternative- and dual-fueled vehicles, and the credit trading program—as optional, while still requiring maximum feasible fuel economy levels. *See* 86 Fed. Reg. at 49,797-98. By excluding increased adoption of ZEV technology (and credit trading) from its modeling of fuel economy improvements, NHTSA ensures that these potential compliance strategies are not essential to achieving such improvements in the fleet average. *Id.* Thus, NHTSA's regulatory analysis of the proposed action alternatives remains focused exclusively on the fuel economy improvements automakers could make to their internal combustion engine (ICE) vehicles and without trading in the relevant compliance period.

Baseline fleets will, of course, include some ZEVs because automakers are selling increasing numbers of them. Accordingly, there are ZEVs in the real-world 2020 fleet, which is NHTSA's starting point in constructing the baseline fleet for this proposal. Likewise, automakers must, and may otherwise choose to, sell ZEVs to meet consumer demand and to comply with legal obligations (including California's ZEV standards, in the event the waiver for those standards is restored). The presence of ZEVs in the baseline is, thus, separate and apart from any changes to the CAFE standards that NHTSA is considering. And in determining whether improvements to average fuel economy are "technologically feasible" or "economically practicable," NHTSA has only considered what fuel economy improvements are possible for the ICE vehicles in the fleet.

Thus, NHTSA's determination of "maximum feasible" improvements only considers the vehicles it is permitted to consider, and any resulting change to the fuel economy standards would not require automakers to sell ZEVs.

Finally, we do not believe that NHTSA's mandatory consideration of California's 209(b) standards will materially affect NHTSA's determination of maximum feasible CAFE standards here, whether or not NHTSA includes them in the baseline. As the NPRM shows, and as discussed above, the technologies necessary to achieve the proposed standards in the ICE fleet already exist and have been widely commercialized. The costs to incorporate these technologies are reasonable—in many instances, they have declined significantly over time—and more than pay for themselves in consumer fuel savings. *See supra* Parts I.B-I.C. The benefits of reduced fuel consumption to consumers, national security, air quality, and the climate are likewise compelling. *Supra* Part I.A. The technological feasibility, economic practicability, and energy conservation factors thus strongly favor NHTSA's proposed standards, and consideration of California's 209(b) standards does not change that. Notably, by including California's ZEV standards in the NPRM "No Action" baseline, NHTSA has already demonstrated that the proposed changes to the CAFE standards and the California ZEV standards will not interfere with each other and that it is entirely feasible for automakers to comply with both.

Indeed, reflecting California's 209(b) standards in the baseline fleet does not materially affect that fleet's average fuel economy and thus the average fuel economy automakers would achieve if NHTSA simply left the MY 2026 SAFE 2 standards in place. Generally, it is reasonable to assume in a No-Action case that manufacturers will achieve the fuel economy standards already in place (the SAFE 2 standards) as economically efficiently as possible. And, although NHTSA's baseline fleet for this proposal shows overcompliance with the SAFE 2 standards, NHTSA's detailed assessment of that overcompliance does not attribute it to California 209(b) standards. TSD at 50-57 (documenting three different causes of modeled overcompliance in the baseline fleet). Thus, whether California ZEV and GHG standards are included in or excluded from the baseline modeling, the baseline fleet's average fuel economy will likely be equivalent in either case, and the overall costs and benefits of improvements to that baseline fuel economy would likewise be very similar. In other words, whether or not NHTSA assumes manufacturers will comply with their legal obligations under California's 209(b) standards likely has little impact on NHTSA's consideration of whether changes to the SAFE 2 standards are warranted to produce "maximum feasible" average fuel economy standards. There is no reason to think NHTSA would favor a different CAFE standard without California's ZEV and GHG standards in the baseline or without considering those standards as "other motor vehicle standards of the Government."

CONCLUSION

For all of the reasons discussed above, we urge NHTSA to expeditiously strengthen CAFE standards for model years 2024 to 2026. The preferred alternative standards are technologically feasible, economically practicable, and effectuate the purpose of EPCA to conserve energy. We urge NHTSA to make the necessary updates to its analysis discussed above and consider, on the basis of the full record before it, whether standards more stringent than the preferred alternative—including those in Alternative 3—might better satisfy the statutory factors and the "maximum feasible" mandate.

Respectfully submitted,

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