Attorneys General of California, Connecticut, Delaware, Hawaii, Iowa, Illinois, Maine, Maryland, Minnesota (by and through its Minnesota Pollution Control Agency), North Carolina, New Jersey, New Mexico, New York, Oregon, Rhode Island, Vermont, and Washington, the Commonwealths of Massachusetts, Pennsylvania, Virginia, and the District of Columbia, and City Attorneys/Corporation Counsel of the Cities of Oakland, Los Angeles, San Francisco, San Jose and New York

December 21, 2018

Submitted via electronic delivery
Letter with copy of report submitted via overnight mail to EPA, NHTSA and OIRA

Docket IDs: NHTSA-2018-0067; NHTSA-2017-0069; EPA-HQ-OAR-2018-0283; RIN: 2127-AL76; RIN 2060-AU09 / Additional Comments re Fourth National Climate Assessment

Subsequent to the close of the comment period on the United States Environmental Protection Agency's ("EPA") and the National Highway Traffic Safety Administration's ("NHTSA") (together, the "Agencies") Proposed "SAFE" Vehicles Rule for Model Year 2021-2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 42,986 (Aug. 24, 2018) (the "Proposed Rollback" or "Proposal"), the federal government published the second volume of a comprehensive climate report. *See* U.S. Global Change Research Program, "Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II," (D.R. Reidmiller et al. eds., 2018), https://nca2018.globalchange.gov/ (the "Assessment"). The undersigned State Attorneys General, City Attorneys and Corporation Counsel wrote Acting Administrator Wheeler on December 11, 2018 requesting withdrawal of the Proposed Rollback in light of the Assessment's findings (letter enclosed). We asked that, at a minimum, the comment period for the proposed rule be reopened so that the implications of the Assessment's findings could be adequately considered.

In our December 11 letter, we further stated our intent to submit a copy of the Assessment to the rulemaking docket for the Proposed Rollback, which we are doing through this letter.[1] This letter also highlights aspects of the Assessment that support or are relevant to points made in our comments dated October 26, 2018 (the "October Comments"). Under the Clean Air Act, the Assessment must be included in the rulemaking docket because it is of "central relevance" to the Proposed Rollback. *See* 42 U.S.C. § 7607(d)(4)(B)(i) ("All documents which become available after the proposed rule has been published and which the Administrator determines are of central relevance

[1] A PDF of the Assessment exceeds the file size limit on regulations.gov. Therefore, we are submitting an electronic copy of the Assessment on DVD, which is being sent via overnight mail to the addresses provided in the above referenced rulemaking dockets.

to the rulemaking shall be placed in the docket as soon as possible after their availability."). The Assessment's findings regarding extensive climate change harms and the need for prompt and significant mitigation measures is of central relevance to the lawfulness of EPA's and NHTSA's proposed approach of requiring no improvement in light-duty vehicles' greenhouse gas ("GHG") emissions or mileage from model years ("MYs") 2020 through 2026.[2] Failure to take the Assessment into account during this rulemaking process would not only be imprudent from a policy making standpoint but would undermine public confidence in EPA's decision-making processes and would add to the grounds for judicial reversal.

As discussed below, the Assessments' findings provide additional support for many of the points raised in the States and Cities' October Comments.[3]

A. The Assessment's Key Findings Must Be Accorded Substantial Weight

The Assessment is not just any paper on climate impacts, but rather is the product of an extraordinarily rigorous process led by experts within EPA, the Department of Transportation and eleven other federal agencies. The Assessment's depth of analysis and extensive expert and stakeholder input demand that EPA and NHTSA accord it substantial weight.

At the direction of Congress, the United States Global Change Research Program ("USGCRP"), comprised of representatives from thirteen United States government agencies, drafted a report that "provide[s] a thorough examination of the effects of climate change on the United States." Assessment at 1. The Assessment represents the work of more than 300 governmental and non-governmental experts, was externally peer-reviewed by a committee of the National Academies of Sciences, Engineering and Medicine, and underwent several rounds of technical and policy review by the thirteen federal member agencies. *Id.* at 1-2. Each chapter of the Assessment includes a section detailing its authorship (*see* Traceable Accounts) as well as an extensive list of published research relied on by the authors (*see* References). The same cannot be said of the Rollback Proposal's models and analysis, which have been roundly criticized for being "at odds with basic economic theory and empirical studies."[4]

The high-level conclusions of the Assessment focus on findings that EPA and NHTSA arbitrarily disregard or minimize, including:

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[2] The Assessment also bears directly on NHTSA's environmental review under the National Environmental Policy Act (NEPA), and thus, the States and Cities are also filing this submission in the docket for NHTSA's Draft Environmental Impact Statement ("DEIS") to support our comments filed October 26, 2018, NHTSA-2017-0069-0625 ("NEPA Comments").

[3] Pin cites to the October Comments are to pages in the "detailed comments" submitted as Attachment A on October 26, 2018.

[4] *See* Science, "Flawed Analysis of U.S. Auto Fuel Economy Standards, An 2018 analysis discarded at least $112 billion in benefits," Vol. 362, Issue 6419, Antonio Bento, et al., Dec. 7, 2018, at 1 (at NHTSA-2018-0067-12326).

- that "[w]ith continued growth in emissions at historic rates, annual losses in some economic sectors are projected to reach hundreds of billions of dollars by the end of the century—more than the current gross domestic product (GDP) of many U.S. states" (Assessment at 26);

- that "[w]hile mitigation and adaptation efforts have expanded substantially in the last four years, they do not yet approach the scale considered necessary to avoid substantial damages to the economy, environment, and human health over the coming decades" (*id.* at 26); and

- that in the absence of more significant global mitigation efforts, "[i]t is very likely that some physical and ecological impacts will be irreversible for thousands of years, while others will be permanent" (*id.* at 1347).

On these facts, the United States cannot afford to rollback the standards regulating greenhouse gas emissions from one of the single largest sources: light-duty vehicles.

B. Human Activities Are the Primary Cause of Climate Change

Our October Comments reviewed the already overwhelming evidence that has led EPA and the USGCRP to conclude that human-caused GHG emissions are responsible for the lion's share of the 1.8°F in observed warming from 1901 to 2016. October Comments at 12-14. The Assessment confirms the same, finding that "observational evidence does not support any credible natural explanations for this amount of warming; instead, the evidence consistently points to human activities, especially emissions of greenhouse or heat-trapping gases, as the dominant cause." Assessment at 73. The Assessment also describes the link between GHG emissions and fossil-fuel combustion, concluding that: "Many lines of evidence demonstrate that human activities, especially emissions of greenhouse gases from fossil fuel combustion, deforestation, and land-use change, are primarily responsible for the climate changes observed in the industrial era, especially over the last six decades." *Id.* at 76. The report also acknowledges that "in 2016, the transportation sector became the top contributor to U.S. greenhouse gas emissions." *Id.* at 483. Knowing this, it is obvious what is called for: namely, the significant reduction of human-caused GHG emissions, including a significant reduction from the transportation sector. Indeed, according to the Assessment, "[b]y the end of this century, thousands of American lives could be saved and hundreds of billions of dollars in health-related economic benefits gained each year under a pathway of lower greenhouse gas emissions." *Id.* at 541.

C. The Impacts of Climate Change Are Substantial and Will Get Far Worse Absent Concerted Action

In the October Comments, we described the impacts and future risks of climate change, including submitting a state and city-level climate impacts appendix. *See* October Comments at 15-26 and Appendix A. The more than 1500-page Assessment, however, does even more. EPA, having barely acknowledged the impacts and future risks of climate change in the Proposed Rule, must fully consider the findings in its own Assessment. Failure to do so would constitute an arbitrary and capricious disregard of

the Clean Air Act's goals, EPA's own statutory mandate, EPA's participation in the development of the Assessment, and the factors Congress required EPA to consider under section 202(a) of the Clean Air Act. *See id.* at 48-49, 55-57.

This comment letter is intended only to highlight several key findings but it remains EPA's and NHTSA's responsibility to take into account the full Assessment.

Hawaii

Harms from ocean acidification and sea level rise. "Sea level rise is now beginning to threaten critical assets such as ecosystems, cultural sites and practices, economies, housing and energy, transportation, and other forms of infrastructure. By 2100, increases of 1–4 feet in global sea level are very likely, with even higher levels than the global average in the U.S.-Affiliated Pacific Islands. This would threaten the food and freshwater supply of Pacific island populations and jeopardize their continued sustainability and resilience. . . . Widespread coral reef bleaching and mortality have been occurring more frequently, and by mid-century these events are projected to occur annually, especially if current trends in emissions continue. Bleaching and acidification will result in loss of reef structure, leading to lower fisheries yields and loss of coastal protection and habitat. Declines in oceanic fishery productivity of up to 15% and 50% of current levels are projected by mid-century and 2100, respectively, under the higher scenario (RCP8.5)." Assessment at 1243-44.

Midwest

Reduced agricultural productivity due to increased temperatures and extreme precipitation. "[A]gricultural productivity (the ratio of outputs to inputs) is projected to decline by 2050 to the levels of the 1980s (that is, yields may increase but at the cost of substantial increases in inputs)." Assessment at 879. "[I]ncreases in warm-season absolute humidity and precipitation have eroded soils, created favorable conditions for pests and pathogens, and degraded the quality of stored grain. . . . Projected changes in precipitation, coupled with rising extreme temperatures before mid-century, will reduce Midwest agricultural productivity to the levels of the 1980s without major technological advances." *Id.* at 907. A 2017 study projects that increased growing-season temperature in the Midwest will be the largest contributing factor to declines in the productivity of U.S. agriculture. *Id.* at 875.

Harms to public health from extreme weather (increased flooding and high temperatures) and increased air pollution, allergens, and diseases. "Climate change is expected to worsen existing health conditions and introduce new health threats by increasing . . . poor air quality days, extreme high temperature events, and heavy rainfalls; extending pollen seasons; and modifying the distribution of disease-carrying pests and insects." *Id.* at 896. "[T]he Midwest is projected to have the largest increase in extreme temperature-related premature deaths under the higher scenario (RCP8.5): by 2090, 2,000 additional premature deaths per year . . . are projected" according to EPA analysis from 2017. *Id.* at 898.

Harms to transportation and infrastructure from extreme weather, especially flooding. "A [2015] study of six Iowa bridges deemed to be critical infrastructure found

that under all emission scenarios . . . each location was projected to have increased vulnerability from more frequent episodes of overtopping and potential scour [damage from erosion of bridge bases]. The EPA estimates that the annual cost of maintaining current levels of service on Midwestern bridges in the face of increased scour damage from climate change could reach approximately $400 million in the year 2050 under either the lower or higher scenario." *Id.* at 900. "[In a 2017 analysis,] EPA has estimated that the Midwest is among the regions with the largest expected damages to infrastructure, including the highest estimated damages to roads, rising from $3.3 billion per year in 2050 to $6 billion per year in 2090 (in 2015 dollars) under a higher [emissions] scenario." *Id.* at 905.

Northeast

Adverse impacts from higher temperatures. By 2035, the Northeast region is projected to be, on average, more than 3.6° F warmer than it was in the preindustrial era—the largest such increase in the contiguous United States. "The seasonality of the Northeast is central to the region's sense of place and is an important driver of rural economies," and "decreasing seasonality" is "already altering ecosystems and environments in ways that adversely impact tourism, farming, and forestry." "Shorter, more moderate winters will present new challenges for rural industries," and trends towards increased rainfall intensity will pose significant challenges for agriculture. Assessment at 675.

Harms from ocean acidification and sea level rise. A warmer, higher, and more acidified ocean will adversely impact the Northeast region in a variety of ways. For example, warming and acidification are expected to substantially reduce populations of fish and other marine species, including those that are economically and ecologically significant. Sea levels are expected to rise as much as 11 feet, threatening marshes, beaches, and other features of the Northeastern coastal environment. *Id.* at 692.

Adverse effects from extreme weather. The effects of climate change, including increased coastal flooding and higher storm surges, will strain and damage the Northeast region's already-aging infrastructure. Areas of vulnerability include electrical systems, water supply, telecommunications, and transportation, just to name a few. Extreme weather will adversely affect human health in significant ways. For instance, increased temperatures, including increases in extreme heat events, are likely to result in more hospital admissions and premature deaths. Increases in ground-level ozone—a consequence of higher temperatures, and a particular problem in the Northeast—will substantially increase premature deaths. *Id.* at 698.

Northwest

Adverse impacts from hotter temperatures. In 2015, the Northwest experienced its warmest year on record, and the impacts are a prelude to what will become the norm by the mid-to-late 2000s. The warm winter led to record low mountain snowpack as precipitation fell largely as rain instead of snow. The 2015 "snow drought" caused irrigation shortages, agricultural losses, hydropower shortages, and fish die-offs (Assessment at 1066), including hundreds of thousands of sockeye salmon in the Columbia and Snake River Basins. *Id.* at 1067. The Washington State Department of

Ecology allocated $7 million in drought relief funds for water supplies for irrigation or human consumption. *Id.* at 1054. Lack of snowpack and the dry spring led to the most severe wildfire season in the Northwest's recorded history, causing damage to infrastructure in Washington and Idaho and air quality and health concerns. *Id.* at 1067.

Harms to marine resources. Also in 2015, the largest harmful algal bloom recorded on the West Coast closed commercial, recreational, and tribal fisheries, including salmon, shellfish, and Dungeness crab along the entire Northwest coast. *Id.* at 1067.

Southeast

Increased flooding. Due to increasing extreme rainfall events and sea level rise, low lying regions in the Southeast are projected to experience "daily high tide flooding by the end of the century." Assessment at 744. The Southeast has experienced "increases in the number of days with more than 3 inches of precipitation and a 16% increase in observed 5-year maximum daily precipitation (the amount falling in an event expected to occur only once every 5 years)." *Id.* at 762.

More incidences of diseases. Many southeastern cities are increasingly at risk due to vector-borne disease brought about by a changing climate. *Id.* at 744. Summer increases in dengue cases are expected across every state in the Southeast. *Id.* at 754. "The Southeast is also the region with the greatest projected increase in cases of West Nile neuro-invasive disease." *Id.* at 755.

More heat waves. Increases in heat waves due to climate change are likely to occur particularly in southeastern cities. *Id.* at 752-53. For example, of the five large cities that have increasing trends exceeding the national average for all aspects of heat waves (timing, frequency, intensity, and duration), three of those cities are in the Southeast region—Birmingham, New Orleans, and Raleigh. *Id.* at 752. Sixty-one percent of major Southeast cities are exhibiting some aspects of worsening heat waves, a higher percentage than any other region. *Id.*

More wildfires. As explained in our Comments, rising temperatures and longer droughts will increase the frequency and intensity of wildfires. October Comments at 19; App. A at A-41 (impacts of wildfires in North Carolina). The Assessment confirms these findings. For example, it also links the 2016 wildfires in the Southern Appalachians—the worst the region had seen in a century—to a combination of invasive insects and high temperatures linked to climate change. Assessment at 768, 773.

Loss of coral reefs. "Coral elevation and volume in the Florida Keys have been declining in recent decades, and present-day temperatures in the region are already close to bleaching thresholds; hence, it is likely that many of the remaining coral reefs in the Southeast region will be lost in the coming decades." *Id.* at 776.

Southwest

Increased flooding. "Climate models project an increase in the frequency of heavy downpours, especially through atmospheric rivers, which are narrow bands of highly concentrated storms that move in from the Pacific Ocean." Assessment at 1110.

"Atmospheric rivers, which have caused many large floods in California, may increase in severity and frequency under climate change. In the winter of 2016–2017, a series of strong atmospheric rivers generated high runoff in northern California and filled reservoirs." *Id.* at 1111-12. *See also, infra*, at 12.

Harms from invasive species. "The forests and other ecosystems of the Southwest region that provide natural habitat and essential resources for people have declined in fundamental ways due in part to climate change. Vast numbers of trees have died across Southwest forests and woodlands, disproportionately affecting larger trees. Tree death in mid-elevation conifer forests doubled from 1955 to 2007 due in part to climate change." Assessment at 1115. "Climate change has also contributed to increased forest pest infestations, another major cause of tree death in Southwest forests and woodlands. Bark beetle infestations killed 7% of western U.S. forest area from 1979 to 2012, driven by winter warming due to climate change and by drought. Tree death from bark beetles in Colorado increased organic matter in local streams, elevating precursors of cancer-causing trihalomethane in local water treatment plants to levels that exceed the maximum contaminant levels for drinking water specified by the U.S. Environmental Protection Agency. Without greenhouse gas emissions reductions, further increases in heat and drought could kill many more trees, especially affecting piñon pine, white-bark pine, and tall old-growth trees." *Id.* at 1116-17

Decreased agricultural productivity. Drought-related agricultural changes, stricter drilling regulations, and rapid aquifer depletion have already led to a decline in irrigation in parts of the region. The 2011-2016 California drought led to losses of more than 10,000 jobs and the fallowing of 540,000 acres (220,000 hectares), at a cost of $900 million in gross crop revenue in 2015. *Id.* at 1127. *See also, infra*, at 11-12.

More heat waves. Parts of the Southwest region experienced record-breaking heat in five of the six years from 2012 to 2017. Assessment at 1129. *See also, infra*, at 10-11.

D. Timing of Greenhouse Gas Emission Reductions Is Critical

Our October Comments and NEPA Comments discuss the overwhelming scientific consensus that immediate and continual progress toward a near-zero GHG-emission economy by mid-century is necessary to avoid truly catastrophic climate change impacts. October Comments at 10-12, 29-32; NEPA Comments at 23-27. The Assessment reaches a similar conclusion. For example, in response to the question "**Is timing important for climate mitigation?**" the Assessment answers:

> "Yes. The choices made today largely determine what impacts may occur in the future . . . . The sooner greenhouse gas emissions are reduced, the easier it may be to limit the long-term costs and damages due to climate change. Waiting to begin reducing emissions is likely to increase the damages from climate-related extreme events (such as heat waves, droughts, wildfires, flash floods, and stronger storm surges due to higher sea levels and more powerful hurricanes)."

Assessment at 1488.

Directly to the point, the Assessment describes "**The Risks of Inaction**" as follows:

> In the absence of more significant global mitigation efforts, climate change is projected to impose substantial damages on the U.S. economy, human health, and the environment. Under scenarios with high emissions and limited or no adaptation, annual losses in some sectors are estimated to grow to hundreds of billions of dollars by the end of the century. It is very likely that some physical and ecological impacts will be irreversible for thousands of years, while others will be permanent.

Id. at 1347.

In the face of such evidence, the Agencies cannot simply throw up their hands or, worse, take steps to *increase* emissions. And, given the level of contribution that vehicles make to over GHG emissions, there is no way to achieve the necessary economy wide- reductions without abandoning EPA's and NHTSA's proposed rollbacks.

E. National Action on Vehicle Emissions is Needed

In our October Comments and NEPA Comments we described in detail the many important actions that our States and Cities are taking to reduce GHG emissions from the vehicle fleet (*see, e.g.*, October Comments at 2-4 and Appendix B), but we also stressed the need for national action (*id.* at 27-35; NEPA Comments at 23-27). The Assessment echoes our conclusions and our concerns. It shows how 44 of 50 states are engaged in at least five or more mitigation related activities, and notes that 455 cities support emissions reductions in the context of global efforts, including 110 that have established their own emission reduction targets. Assessment at 1353-54 (Fig. 29.1). Nonetheless, the Assessment finds that: "these efforts do not yet approach the scale needed to avoid substantial damages to the economy, environment, and human health over the coming decades." *Id.* at 60; *see also id.* at 9. The Assessment, thus, leave no doubt that *more* reductions are imperative.

Indeed, in responding to the question "**[c]an we slow climate change?**" the Assessment points to the exact types of regulation that the Proposed Rollback seeks to undo. It states that:

> The most direct way to significantly reduce the magnitude of future climate change is to reduce the global emissions of GHGs. Emissions can be reduced in many ways, and increasing the efficiency of energy use is an important component of many potential strategies (Ch. 29: Mitigation). **For example, because the transportation sector accounts for about 29% of the energy used in the United States, developing and driving more efficient vehicles and changing to fuels that do not contribute significantly to GHG emissions over their lifetimes would result in fewer emissions per mile driven.**

Assessment at 1493 (emphasis added).

As noted in our October Comments and NEPA Comments, there is no question that slamming the brakes on cleaner technologies in the nation's light-duty vehicles that will be on the road for years to come would deal a substantial blow to the fight against climate change.

F. The Proposed Rollback Erroneously Failed to Consider International Costs of Climate Change in Calculating the Social Cost of Carbon

In the October Comments and NEPA Comments, we explained how the Agencies' Proposed Regulatory Impact Analysis ("PRIA") for the Proposed Rollback underestimated the foregone benefits of reducing carbon pollution by taking an unduly narrow view of the Social Cost of Carbon. October Comments at 104-06; NEPA Comments at 9-11. The Assessment further bolsters that argument, including:

- The Assessment identifies numerous public health impacts of climate change—including extreme weather events, elevated heat, droughts, vector borne diseases, water related illnesses, food availability and nutrition, and mental health—that the Agencies should have separately considered in evaluating the Social Cost of Carbon. Assessment at 485. The PRIA for the Proposed Rollback merely states that the Agencies considered "net changes in agricultural productivity and human health" in the Social Cost of Carbon, without specifically defining what human health impacts were included and how EPA ensured it properly accounted for them. PRIA at 1067.

- The Assessment's key message that climate change impacts will have widespread, often unpredictable but costly downstream effects on many sectors and systems exposed to climate change further refutes the Agencies' outdated and very low Social Cost of Carbon range of $1 to $7 per ton. *See* Assessment at 636. Even if the Agencies could lawfully limit their analysis to domestic costs only, their cost range fails to consider up-to-date, peer-reviewed findings that recent multi-sector research into the domestic costs of climate change on the agricultural and energy sectors, and on domestic economic output generally, are much higher than estimated by the Agencies.

- The Assessment supports our point that the Agencies ignored the Department of Defense's finding that climate change is an urgent and growing threat to our national security. *See* October Comments at 105 (citing Auffhammmer Report at 11). Specifically, the Assessment explains that "[c]limate change and extremes increase risks to national security through direct impacts on U.S. military infrastructure and by affecting factors, including food and water availability, that can exacerbate conflict outside U.S. borders." Assessment at 612.

- In our October Comments, we noted that in adopting a 'domestic-only' estimate of the cost of carbon, EPA "implicitly assumes that U.S. citizens and residents derive no utility from the welfare of citizens of other countries." October Comments at 129. The Assessment directly contradicts that assumption, stating that "U.S. citizens have long been concerned about the welfare of those living beyond U.S. borders and their vulnerability to the global impacts of climate." *See* Assessment at 608; *see also* Assessment at 610 ("The impacts of climate change … [can] undermin[e] international aid

and investments made by the United States and increas[e] the need for humanitarian assistance and disaster relief.").

- The Assessment also observes that "[t]he impacts of climate change, variability, and extreme events outside the United States are affecting and are virtually certain to increasingly affect U.S. trade and economy, including import and export prices and businesses with overseas operations and supply chains." Assessment at 608.[5]

As discussed in our October Comments, the Proposed Rollback's Social Cost of Carbon figures are far too low, and the use of an appropriate measure of the Social Cost of Carbon—even the federal government's prior conservative estimates—completely changes the cost-benefit analysis of the Proposed Rollback, and reaffirms the conclusion of EPA's January 2017 Mid-Term Evaluation: the current standards should be kept in place or made more stringent.

G. The Assessment Clearly Identifies Compelling and Extraordinary Conditions California Faces from Climate Change

In our October Comments, we described the many grounds on which EPA's proposal to revoke California's waiver for its GHG and Zero Emission Vehicle ("ZEV") standards for model years 2021-2025 is unlawful and should be withdrawn, including EPA's lack of legal authority to revoke a waiver and, even assuming EPA had such authority, the lack of support for its changed interpretations and proposed findings. October Comments, at 117-30. The Assessment underscores the point, contradicting EPA's proposed findings. The facts compiled by EPA, twelve other government agencies, and more than 300 experts in the Assessment provide ample evidence that California faces "compelling and extraordinary conditions" from climate change, including those highlighted below.

Heat Wave Risk and Associated Health Impacts

The most immediate threat to health from climate change is from heat waves. The Assessment finds that "[e]xposure to hotter temperatures and heat waves already leads to heat-associated deaths in Arizona and California. Mortality risk during a heat wave is amplified on days with high levels of ground-level ozone or particulate air pollution." Assessment at 1104. "In the unprecedented 2006 California heat wave, which affected much of the state and part of Nevada, extremely high temperatures occurred day and night for more than two weeks. Compared to non-heat wave summer days, it is estimated that the event led to an additional 600 deaths, 16,000 emergency room visits, 1,100 hospitalizations in California, and economic costs of $5.4 billion (in 2008 dollars)." *Id.* at 1129.

[5] For example, the Assessment notes that in 2010-11, "drought in Russia, Ukraine and the United States and damaging precipitation in Australia" resulted in "reduction in wheat production," which "contributed to a spike in global wheat prices … increasing the cost of flour and bread in the United States." *Id.*

Wildfire and Infestations

The Assessment's review of the impact of wildfire, while extensive, is already outdated, because it does not include the tragic November 2018 Camp, Woolsey and Hill fires. California's Department of Insurance estimated that these fires have caused nearly 90 deaths, destroyed or damaged over 20,000 structures, and resulted in $9 billion in insured losses to date.[6] Still, the Assessment's review of wildfire data from 2017 is sobering. The Assessment notes that "[t]he costliest wildfires occurred in California, where more than 2,500 structures were destroyed by the Valley and Butte Fires; insured losses alone exceeded $1 billion. In October 2017, a historic firestorm damaged or destroyed more than 15,000 homes, businesses, and other structures across California (see Figure 1.5). The Tubbs, Atlas, Nuns, and Redwood Valley Fires caused a total of 44 deaths, and their combined destruction represents the costliest wildfire event on record." Assessment at 68.

The Assessment finds that "[t]he duration of the season during which wildfires occur has increased throughout the western United States as a result of increased temperatures and earlier snowmelt." *Id.* at 241. As to the future, the Assessment concludes that action or inaction on GHG emissions will have a huge impact: "under a higher emissions scenario (SRES A2), climate change could triple the burned area (in a 30-year period) in the Sierra Nevada by 2100, while under a lower emissions scenario (SRES B1174), fire would only slightly increase." *Id.* at 1116.

In addition, the Assessment finds that climate change carries a second significant threat to forests. In California specifically, the five-year drought "weakened trees and enabled extensive bark beetle outbreaks, which killed 40 million trees across 7.7 million acres of Sierra Nevada forests through 2015 . . . . An additional 62 million trees died in 2016, and 27 million trees died in 2017, bringing the total to at least 129 million trees since 2010. This level of tree mortality in the Sierra Nevada is unprecedented in recorded history. In some of the most heavily impacted areas, 70% of trees died in a single year." *Id.* at 238.

Intensified Drought

The Assessment finds that higher temperatures from climate change "intensified the 2011-2016 drought" in California. *Id.* at 1111. The effects of that drought included "losses of more than 10,000 jobs and the fallowing of 540,000 acres (220,000 hectares), at a cost of $900 million in gross crop revenue in 2015." *Id.* at 1127. In addition, "the severe drought in California, intensified by climate change, reduced hydroelectric generation two-thirds from 2011 to 2015." *Id.* at 1105. The effects of drought are not simply economic; as the Assessment finds, there are health impacts as well. "Households in two drought-stricken counties (Tulare and Mariposa) reported a range of drought-related health impacts, including increased dust leading to allergies, asthma, and other respiratory issues and acute stress and diminished peace of mind. These health effects were not evenly distributed, with more negative physical and mental health impacts

[6] *See* Press Release from California Insurance Commissioner Dave Jones, dated December 12, 2018, https://www.insurance.ca.gov/0400-news/0100-press-releases/2018/release142-18.cfm (last visited, Dec. 13, 2018).

reported when drought negatively affected household property and finances." *Id.*, at 544. In addition, "[d]rier conditions can increase reproduction of a fungus found in soils, potentially leading to the disease coccidioidomycosis, or Valley fever. Coccidioidomycosis can cause persistent flu-like symptoms, with over 40% of cases hospitalized and 75% of patients unable to perform their normal daily activities for weeks, months, or longer." *Id.* As to the future, the Assessment projects that "much of the mountain area in California with winters currently dominated by snow would begin to receive more precipitation as rain and then only rain by 2050." *Id.* at 1105.

Flood Risk

While increased temperatures intensify droughts and extend fire seasons, they also increase the risks of floods, as seen in California in 2016 and 2017. *Id.* at 1100. "Atmospheric rivers, which have caused many large floods in California, may increase in severity and frequency under climate change. In the winter of 2016–2017, a series of strong atmospheric rivers generated high runoff in northern California and filled reservoirs. At Oroville Dam, high flows eroded the structurally flawed emergency spillway, caused costly damage, and led to the preventive evacuation of people living downstream. In addition to the immediate threat to human life and property, this incident revealed two water supply risks. First, summer water supplies are reduced when protective flood control releases of water from reservoirs are necessary in the spring. Second, several studies have concluded that deteriorating dams, spillways, and other infrastructure require substantial maintenance and repair." *Id.* at 1112-1113.

Sea Level Rise and Ocean Warming and Acidification

The effects of climate change on the Pacific Ocean present multiple significant threats to California, including warming, acidification, and deoxygenation that harm the ocean life that supports a vibrant ocean-based economy, and sea level rise along the State's 3,400 miles of coastline that threatens homes and infrastructure.

To start, "California has the most valuable ocean-based economy in the country, employing over half a million people and generating $20 billion in wages and $42 billion in economic production in 2014." *Id.* at 1107. That economy is already being impacted: "[h]armful algal blooms and shellfish contamination in the record warm year of 2015 delayed the commercially important Dungeness crab fishery, which contributed to a substantially reduced catch." *Id.* at 1120. In addition, "one ecosystem modeling study suggests negative effects of projected ocean acidification on California's state-managed crab, shrimp, mussel, clam, and oyster fisheries, but an increase in the urchin fishery." *Id.* at 1121. And, "[r]educed oxygen could decrease rockfish habitat off southern California by 20% to 50%. Further deoxygenation may harm bottom-dwelling marine life, shrink open-water habitat for hake and other economically important species, and increase the number of invasions by squid." *Id.*

The Assessment also recognizes that sea-level rise is well underway, noting that "[a]t the Golden Gate Bridge in San Francisco, sea level rose 9 inches (22 cm) between 1854 and 2016." *Id.* at 1104. As to the future, the Assessment acknowledges California's vulnerability: "The California coast extends 3,400 miles (5,500 km), with 200,000 people living 3 feet (0.9 m) or less above sea level. The seaports of Long Beach

and Oakland, several international airports, many homes, and high-value infrastructure lie along the coast. In addition, much of the Sacramento–San Joaquin River Delta is near sea level." *Id.* at 1107. Among other things, "[s]ea level rise and storm surge could completely erode two-thirds of southern California beaches by 2100…." *Id.* at 1118.

Under any reasonable interpretation of the term, California faces "compelling and extraordinary" circumstances from the threat of climate change caused by GHG emissions.

H. The Assessment Confirms that Climate Change Worsens Existing Air Pollution Levels, Including Ozone and Particulate Matter

Our October Comments also highlighted EPA's failure, particularly in its proposals to revoke California's waiver and to reinterpret Section 177 to block other states from adopting California's GHG standards, to acknowledge the connection between GHG standards, climate change, and the worsening of other air pollution. October Comments, at 127. Likewise, NHTSA failed to evaluate the interaction between GHG emissions and criteria pollutants in the air quality analysis of the DEIS. As we stated: "GHG-reducing standards, such as California's GHG and ZEV standards, are also needed to address ozone-formation—the very kind of 'local' or 'regional' problem EPA asserts California may address . . . . It also underscores that California and the Section 177 States "need" GHG-reducing standards to address 'local' and 'regional' issues." *Id.*

Here too, the Assessment confirms that GHGs and the climate change they cause exacerbate local or regional pollution problems, referred to in the Assessment as the "climate penalty." Assessment at 518. As a general matter, the Assessment finds that "[u]nless counteracting efforts to improve air quality are implemented, climate change will worsen existing air pollution levels. This worsened air pollution would increase the incidence of adverse respiratory and cardiovascular health effects, including premature death. Increased air pollution would also have other environmental consequences, including reduced visibility and damage to agricultural crops and forests." *Id.* at 513.

As to ground level ozone, the Assessment finds: "there is high confidence that climate change will increase ozone levels over most of the United States, particularly over already polluted areas, thereby worsening the detrimental health and environmental effects due to ozone." *Id.* at 519. Among the areas where ozone is often highest are Southern California and the Section 177 States in the Northeast. *Id.* at 518. The "[a]dverse human health impacts associated with exposure to ground-level ozone include premature death, respiratory hospital admissions, cases of aggravated asthma, lost days of school, and reduced productivity among outdoor workers. Ozone pollution can also damage crops and plant communities, including forests, by reducing photosynthesis." *Id.*

The Assessment also links climate change to a second "local" or "regional" pollutant, fine particulate matter. As EPA is well aware, California has multiple non-attainment zones for particulate matter. Here, the Assessment finds that "[t]here is *high confidence* that rising temperatures and earlier spring snowmelt will *very likely* result in lengthening the wildfire season in portions of the United States, leading to an increased frequency of wildfires and associated smoke. There is *very high confidence* that increasing exposure to wildfire smoke, which contains particulate matter, will increase

adverse health impacts." *Id.* at 526, *see also id.* at 513-14, 525. Indeed, for much of November, wide swaths of Northern California recorded the worst air quality in the nation, and for a brief time was reported as having the worst in the world, as a result of smoke from the wildfires.[7]

While the Assessment found significant reason for concern, it also offered hope that we can significantly lessen future harms from climate change, including those related to poor air quality: for instance, it found that achieving a lower concentration of greenhouse gases could avoid "hundreds to thousands of deaths per year from poor air quality." *Id.* at 1359. It highlighted the significant economic benefits of lowering GHG emissions, noting that avoiding these pollution-related harms "represents domestic economic benefits of tens to hundreds of billions of dollars per year." *Id.* In short, confronting the compounding pollution effects of climate change head-on, as we have urged, can have substantial concrete effects.

I. Conclusion

In sum, the States and Cities commend the work of the staff of the thirteen federal agencies and the more than 300 governmental and non-governmental experts that contributed to the Assessment. We urge EPA and NHTSA to take this work seriously—a step that would, at a minimum, require reconsideration of the Proposed Rollback. The Assessment's peer-reviewed findings and conclusions bear directly on EPA's statutory mandates under the Clean Air Act and NHTSA's mandates under Energy Policy Conservation Act, as well as its environmental review responsibilities under NEPA, and expose deep flaws in the Proposed Rollback.

As the findings of the Assessment demonstrate, without significant GHG emissions reduction efforts, California, the United States, and the world are facing physical and ecological damage of an enormous magnitude and quite possibly of an irreversible nature. Assessment at 1347. The United States simply cannot afford to

[7] *See, e.g.*, http://www.baaqmd.gov/news-and-events/page-resources/2018-news/111218-wsta. Typical wildfire plumes rise to 6-10 km in the atmosphere depending on the intensity of the fire and the local meteorological conditions. *See* Val Martin, M. et al. (2010), Smoke injection heights from fires in North America: Analysis of 5 years of satellite observations, Atmos. Chem. Phys. 2010, 10, 1491–1510. The air pollutants from plumes can travel great distances. Northern California wildfire smoke from the Camp Fire was observed all the way to the East Coast, from Salt Lake City to Philadelphia and New York City. See https://www.sfgate.com/california-wildfires/article/camp-fire-smoke-noaa-maps-nyc-texas-paradise-13408526.php.

roll back the existing standards which require entirely feasible and cost-effective reductions in GHG emissions from cars and other light-duty vehicles.

Respectfully submitted,

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December 11, 2018

Via Electronic Mail and First Class Mail
Andrew K. Wheeler
Acting Administrator
Environmental Protection Agency
Office of the Administrator Code 1101A
1200 Pennsylvania Avenue, NW
Washington, D.C. 20460

Re: Fourth National Climate Assessment and Proposed Rules Weakening Greenhouse Gas Emission Standards for Motor Vehicles and Power Plants

Dear Acting Administrator Wheeler:

The undersigned State Attorneys General and Local Government Attorneys (together "States and Cities") respectfully submit this letter concerning the recent national climate assessment report issued by the Environmental Protection Agency and twelve other U.S. government agencies.[1] The Assessment provides a thorough evaluation of the harmful impacts of climate change that different regions of the country are experiencing and the projected risks climate change poses to our health, environment, economy and national security.

Although the Assessment credits emission reduction strategies the States and Cities and others have already put into action, it concludes that current efforts "do not yet approach the scale considered necessary to avoid substantial damages to the economy, environment, and human health over the coming decades." *Assessment*, ch. 29. The sobering findings of the Assessment should serve as a call to action to EPA and other federal agencies to take prompt measures to require reductions in greenhouse gases. Yet EPA is proposing to move our nation backwards by rolling back current regulations that require greenhouse gas emission reductions from the transportation and electricity generation sectors, the two largest sources of those emissions in the United States. The combined effect of these two rollbacks would harm Americans by making climate change worse: Conservatively, based on EPA's own figures, the

[1] *See* U.S. Global Change Research Program, "Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II," (D.R. Reidmiller et al. eds., 2018), https://nca2018.globalchange.gov/ ("Assessment").

vehicle emissions rollback would result in increased emissions of 540 million metric tons of carbon dioxide equivalent just from model year 2022-25 motor vehicles (*i.e.*, not even counting the 2021 and 2026 model years),[2] and the rollback of the Clean Power Plan would cause an increase of up to 55 million metric tons (61 million short tons) of carbon dioxide equivalent in 2030. 83 Fed. Reg. 44,746, 44,784, tbl. 6 (Aug. 31, 2018). Added together, the emissions increases for those years alone would equal the annual emissions of 147 coal-fired power plants or 127 million gasoline-powered cars.

In light of the Assessment, we renew our request that you immediately withdraw the proposals to weaken the motor vehicle and power plant greenhouse gas emission standards. At a minimum, EPA should reopen the comment periods for each of the rollback proposals to allow for public input on and adequate consideration of the bearing of the Assessment's findings on both proposals.[3]

With respect to the numerous climate change harms documented in the Assessment, two are particularly important to highlight. Regarding human health, the Assessment states that "[i]mpacts from climate change on extreme weather and climate-related events, air quality, and the transmission of disease through insects and pests, food, and water increasingly threaten the health and well-being of the American people, particularly populations that are already vulnerable." *Assessment*, *Summary Findings*, ch. 6. Similarly, regarding infrastructure, the Assessment notes that "[o]ur aging and deteriorating infrastructure is further stressed by increases in heavy precipitation events, coastal flooding, wildfires, and other extreme events, as well as changes to average precipitation and temperature." *Id.*, ch. 10.

Moreover, the Assessment makes clear that we need to act <u>now</u> to reduce greenhouse gas emissions. It cautions that "[i]n the absence of significant global mitigation action and regional adaptation efforts, rising temperatures, sea level rise, and changes in extreme events are expected to increasingly disrupt and damage critical infrastructure and property, labor productivity, and the vitality of our communities." *Assessment*, *Summary Findings*, ch. 2. Furthermore, "[b]y the end of this century, thousands of American lives could be saved and hundreds of billions of dollars in health-related economic benefits gained each year under a pathway of lower greenhouse gas emissions."[4]

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[2] U.S. EPA, *Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards Under the Midterm Evaluation* (Jan. 2017), at 6.

[3] Because we cannot assume that EPA will grant our request to withdraw the proposals or at least reopen the public comment period, the States and Cities intend to submit the Assessment to the dockets of the two rulemakings shortly, along with letters discussing how the Assessment supports our legal and policy concerns previously expressed in our rulemaking comments.

[4] U.S. Global Change Research Program, "Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II: Report-in-Brief," 102 (D.R. Reidmiller et al. eds., 2018), https://nca2018.globalchange.gov/downloads/NCA4_Report-in-Brief.pdf ("*Report-in-Brief*").

EPA and its sister agencies cannot ignore or downplay their own Assessment. The Assessment represents the federal government's authoritative analysis of climate science and the impacts of climate change on the United States. *See* Global Change Research Act of 1990, Pub. L. No. 101-606. It represents the work of more than 300 governmental and non-governmental experts, was externally peer-reviewed by a committee of the National Academy of Sciences, Engineering and Medicine, and underwent several rounds of technical and policy review by the thirteen federal member agencies of the U.S. Global Change Research Program. *Report-in-Brief* at 1–2. EPA and other federal agencies must give full weight to the scientific facts and findings presented in the Assessment, and consider the implications of the Assessment for its proposed actions.

Many of the States and Cities have already filed extensive comments objecting to the proposals to weaken the motor vehicle and power plant greenhouse gas emission standards and calling for their withdrawal.[5] We today renew our call for their withdrawal in light of the overwhelming evidence the Assessment presents of the need for prompt, meaningful action by the federal government to reduce greenhouse gas emissions.

Sincerely,

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[5] *See, e.g.*, Comments of California Attorney General, et al. on the Proposed Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-26 Passenger Cars and Light Duty Trucks (Oct. 26, 2018), *available at*: https://www.regulations.gov/document?D=NHTSA-2018-0067-11735; Comments of New York Attorney General, et al. on EPA Proposed Rule, Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Emission Guideline Implementing Regulations; New Source Review Program (Oct. 31, 2018), *available at*: https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0355-24817.

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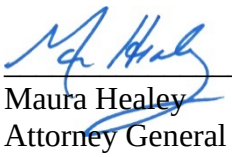

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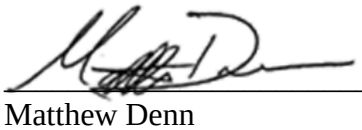

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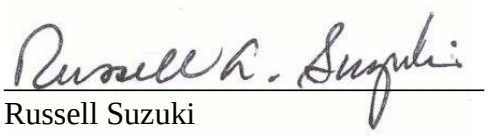

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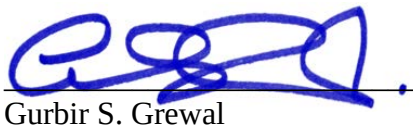

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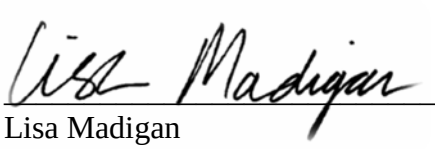

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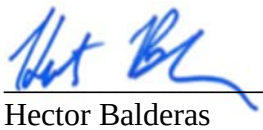

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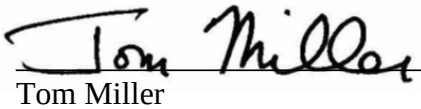

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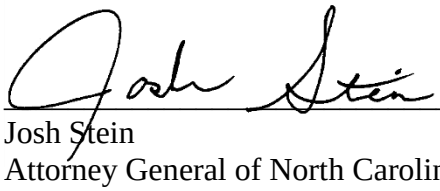

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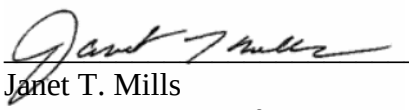

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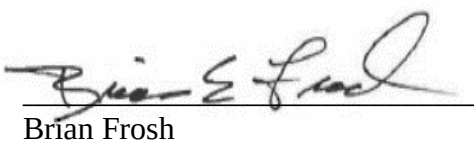

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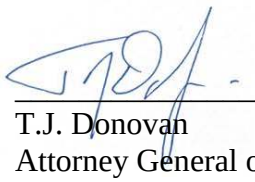

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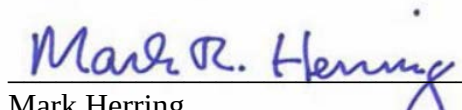

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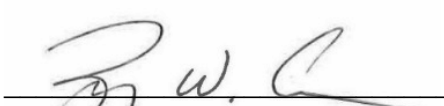

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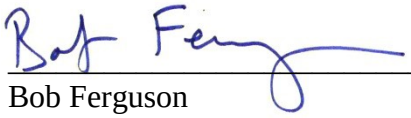

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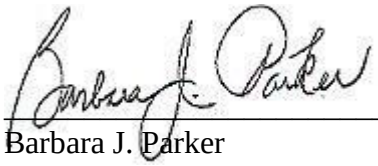

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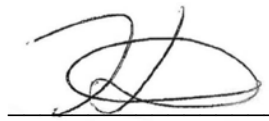
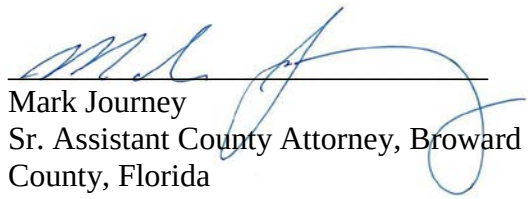
City Attorney, Oakland, California

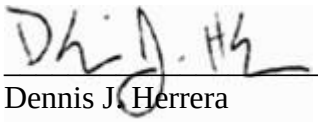


Karl A. Racine
Attorney General for the District of Columbia

/s/
Marcel S. Pratt
City Solicitor, City of Philadelphia, Pennsylvania



Mark Journey
Sr. Assistant County Attorney, Broward County, Florida



Dennis J. Herrera
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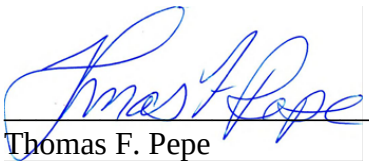
Thomas A. Carr
City Attorney, Boulder, Colorado



Thomas F. Pepe
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Edward N. Siskel
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