ORAL ARGUMENT NOT YET SCHEDULED

Case No. 18-1114 (and consolidated cases)

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

State of California, et al.,

Petitioners,

v.

United States Environmental Protection Agency, et al.,

Respondents,

Association of Global Automakers, Alliance of Automobile Manufacturers, Inc.,

Intervenors.

On Petition for Review of Final Action of the
United States Environmental Protection Agency

STATE PETITIONERS' ADDENDUM OF LEGAL AUTHORITIES AND STANDING DECLARATIONS

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EXHIBIT A

40 C.F.R. § 86.1818-12(h)

40 C.F.R. § 86.1818-12

Greenhouse gas emission standards for light-duty vehicles, light-duty trucks, and medium-duty passenger vehicles.

…

(h) Mid-term evaluation of standards. No later than April 1, 2018, the Administrator shall determine whether the standards established in paragraph (c) of this section for the 2022 through 2025 model years are appropriate under section 202(a) of the Clean Air Act, in light of the record then before the Administrator. An opportunity for public comment shall be provided before making such determination. If the Administrator determines they are not appropriate, the Administrator shall initiate a rulemaking to revise the standards, to be either more or less stringent as appropriate.

(1) In making the determination required by this paragraph (h), the Administrator shall consider the information available on the factors relevant to setting greenhouse gas emission standards under section 202(a) of the Clean Air Act for model years 2022 through 2025, including but not limited to:

(i) The availability and effectiveness of technology, and the appropriate lead time for introduction of technology;

(ii) The cost on the producers or purchasers of new motor vehicles or new motor vehicle engines;

(iii) The feasibility and practicability of the standards;

(iv) The impact of the standards on reduction of emissions, oil conservation, energy security, and fuel savings by consumers;

(v) The impact of the standards on the automobile industry;

(vi) The impacts of the standards on automobile safety;

(vii) The impact of the greenhouse gas emission standards on the Corporate Average Fuel Economy standards and a national harmonized program; and

(viii) The impact of the standards on other relevant factors.

(2) The Administrator shall make the determination required by this paragraph (h) based upon a record that includes the following:

(i) A draft Technical Assessment Report addressing issues relevant to the standard for the 2022 through 2025 model years;

(ii) Public comment on the draft Technical Assessment Report;

(iii) Public comment on whether the standards established for the 2022 through 2025 model years are appropriate under section 202(a) of the Clean Air Act; and

(iv) Such other materials the Administrator deems appropriate.

(3) No later than November 15, 2017, the Administrator shall issue a draft Technical Assessment Report addressing issues relevant to the standards for the 2022 through 2025 model years.

(4) The Administrator will set forth in detail the bases for the determination required by this paragraph (h), including the Administrator's assessment of each of the factors listed in paragraph (h)(1) of this section.

EXHIBIT B

5 U.S.C. § 706

5 U.S.C. § 706

Scope of Review

To the extent necessary to decision and when presented, the reviewing court shall decide all relevant questions of law, interpret constitutional and statutory provisions, and determine the meaning or applicability of the terms of an agency action. The reviewing court shall--

(1) compel agency action unlawfully withheld or unreasonably delayed; and

(2) hold unlawful and set aside agency action, findings, and conclusions found to be--

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right;

(D) without observance of procedure required by law;

(E) unsupported by substantial evidence in a case subject to sections 556 and 557 of this title or otherwise reviewed on the record of an agency hearing provided by statute; or

(F) unwarranted by the facts to the extent that the facts are subject to trial de novo by the reviewing court.

In making the foregoing determinations, the court shall review the whole record or those parts of it cited by a party, and due account shall be taken of the rule of prejudicial error.

EXHIBIT C

42 U.S.C. § 7507

42 U.S.C. § 7507

New motor vehicle emission standards in nonattainment areas

Notwithstanding section 7543(a) of this title, any State which has plan provisions approved under this part may adopt and enforce for any model year standards relating to control of emissions from new motor vehicles or new motor vehicle engines and take such other actions as are referred to in section 7543(a) of this title respecting such vehicles if--

(1) such standards are identical to the California standards for which a waiver has been granted for such model year, and

(2) California and such State adopt such standards at least two years before commencement of such model year (as determined by regulations of the Administrator).

Nothing in this section or in subchapter II of this chapter shall be construed as authorizing any such State to prohibit or limit, directly or indirectly, the manufacture or sale of a new motor vehicle or motor vehicle engine that is certified in California as meeting California standards, or to take any action of any kind to create, or have the effect of creating, a motor vehicle or motor vehicle engine different than a motor vehicle or engine certified in California under California standards (a “third vehicle”) or otherwise create such a “third vehicle”.

EXHIBIT D

42 U.S.C. § 7521(a)(1)

42 U.S.C. § 7521

Emission standards for new motor vehicles or new motor vehicle engines

(a) Authority of Administrator to prescribe by regulation

Except as otherwise provided in subsection (b) of this section--

(1) The Administrator shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare. Such standards shall be applicable to such vehicles and engines for their useful life (as determined under subsection (d) of this section, relating to useful life of vehicles for purposes of certification), whether such vehicles and engines are designed as complete systems or incorporate devices to prevent or control such pollution.

EXHIBIT E

42 U.S.C. § 7543(a), (b)

42 U.S.C. § 7543

State standards

(a) Prohibition

No State or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part. No State shall require certification, inspection, or any other approval relating to the control of emissions from any new motor vehicle or new motor vehicle engine as condition precedent to the initial retail sale, titling (if any), or registration of such motor vehicle, motor vehicle engine, or equipment.

(b) Waiver

(1) The Administrator shall, after notice and opportunity for public hearing, waive application of this section to any State which has adopted standards (other than crankcase emission standards) for the control of emissions from new motor vehicles or new motor vehicle engines prior to March 30, 1966, if the State determines that the State standards will be, in the aggregate, at least as protective of public health and welfare as applicable Federal standards. No such waiver shall be granted if the Administrator finds that--

(A) the determination of the State is arbitrary and capricious,

(B) such State does not need such State standards to meet compelling and extraordinary conditions, or

(C) such State standards and accompanying enforcement procedures are not consistent with section 7521(a) of this title.

(2) If each State standard is at least as stringent as the comparable applicable Federal standard, such State standard shall be deemed to be at least as protective of health and welfare as such Federal standards for purposes of paragraph (1).

(3) In the case of any new motor vehicle or new motor vehicle engine to which State standards apply pursuant to a waiver granted under

paragraph (1), compliance with such State standards shall be treated as compliance with applicable Federal standards for purposes of this subchapter.

EXHIBIT F

42 U.S.C. § 7607(b)(1)

42 U.S.C. § 7607

Administrative proceedings and judicial review

…

(b) Judicial review

(1) A petition for review of action of the Administrator in promulgating any national primary or secondary ambient air quality standard, any emission standard or requirement under section 7412 of this title, any standard of performance or requirement under section 7411 of this title,,[1] any standard under section 7521 of this title (other than a standard required to be prescribed under section 7521(b)(1) of this title), any determination under section 7521(b)(5) of this title, any control or prohibition under section 7545 of this title, any standard under section 7571 of this title, any rule issued under section 7413, 7419, or under section 7420 of this title, or any other nationally applicable regulations promulgated, or final action taken, by the Administrator under this chapter may be filed only in the United States Court of Appeals for the District of Columbia. A petition for review of the Administrator's action in approving or promulgating any implementation plan under section 7410 of this title or section 7411(d) of this title, any order under section 7411(j) of this title, under section 7412 of this title, under section 7419 of this title, or under section 7420 of this title, or his action under section 1857c-10(c)(2)(A), (B), or (C) of this title (as in effect before August 7, 1977) or under regulations thereunder, or revising regulations for enhanced monitoring and compliance certification programs under section 7414(a)(3) of this title, or any other final action of the Administrator under this chapter (including any denial or disapproval by the Administrator under subchapter I of this chapter) which is locally or regionally applicable may be filed only in the United States Court of Appeals for the appropriate circuit. Notwithstanding the preceding sentence a petition for review of any action referred to in such sentence may be filed only in the United States Court of Appeals for the District of Columbia if such action is based on a determination of nationwide scope or effect and if in taking such action the Administrator finds and publishes that such action is based on such a determination. Any petition

[1] So in original.

for review under this subsection shall be filed within sixty days from the date notice of such promulgation, approval, or action appears in the Federal Register, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review under this subsection shall be filed within sixty days after such grounds arise. The filing of a petition for reconsideration by the Administrator of any otherwise final rule or action shall not affect the finality of such rule or action for purposes of judicial review nor extend the time within which a petition for judicial review of such rule or action under this section may be filed, and shall not postpone the effectiveness of such rule or action.

EXHIBIT G

Declaration of Joshua M. Cunningham
Chief, Advanced Clean Cars Branch
California Air Resources Board

DECLARATION OF JOSHUA M. CUNNINGHAM

I, Joshua M. Cunningham, declare as follows:

1. My name is Joshua M. Cunningham and I am Chief of the Advanced Clean Cars Branch of the California Air Resources Board (CARB). I make this declaration based upon my knowledge and expertise in the matters within, and upon my review of the relevant rulemakings, reports, and other documents discussed below.

2. My resume is attached to this declaration. As Chief of the Advanced Clean Cars Branch since 2015, I am responsible for a broad regulatory program that includes emissions requirements for all new passenger vehicles sold in California. Prior to this work, I have been employed in a range of management and analytic positions at CARB since 2009. I have previously worked as a manager for the University of California at Davis's Institute of Transportation Studies, as a senior systems engineer for the United Technologies Corporations' Transportation Group, and as a product engineer for Delphi Chassis Systems, a subsidiary of General Motors at the time.

3. Additionally, I have broad experience in automotive engineering and policy and in greenhouse gas emissions and air pollutant reduction program design and management. CARB has recognized me with a Sustained Superior Accomplishment Award. My technical work has also been recognized with an Outstanding Technical Paper of 2010 by SAE International, formerly known as the Society of Automotive Engineers, an engineering association for transportation fields. I hold a patent for fuel cell technology controls, and have also received fellowships from the U.S. government for my work. I have a Masters of Science in Transportation Technology and Policy from the University of California at Davis and a Bachelor of Science in Mechanical Engineering from Michigan State

University. I have been directly involved in designing and analyzing greenhouse gas and other air pollution vehicle standards for CARB, and in association with the United States Environmental Protection Agency (EPA) and, with regard to fuel economy standards, the National Highway Traffic Safety Administration (NHTSA).

I. The History of State and Federal Regulation of Vehicle Emissions and the Establishment of the National Program

4. Prior to 1967, California adopted the nation's first vehicle emissions standards. *See* M. L. Brubacher & J. C. Raymond (1969) California Vehicle Exhaust Control, Journal of the Air Pollution Control Association, 19:4, 224-229, DOI: 10.1080/00022470.1969.10466478, available at: https://doi.org/10.1080/00022470.1969.10466478; U.S. Sen. Rep. 89-192, Automotive Air Pollution, January 15, 1965, p. 8 [1965 standards of the California Department of Public Health]. Since 1967, California's emissions standards have been administered by CARB. *See* Cal. stats. 1967, ch. 1545.

5. With Congress's adoption of the 1970 Clean Air Act (Act) amendments and the establishment of the EPA, the federal government began regulating vehicle emissions at the national level. Importantly, Congress preserved California's ability to adopt its own emission standards. In 1977, Congress recognized the success of California's emissions control program by amending the Act to allow other states to adopt California's standards at their discretion. *See* 42 U.S.C. § 7507 (Section 177).

6. In 1975, Congress enacted the Energy Policy and Conservation Act, which established corporate average fuel economy (CAFE) standards for vehicles and charged the Department of Transportation with administering them. Thus, starting with the model year (MY) 1978, vehicle manufacturers have been required to comply with EPA and CARB emission standards that limit air pollutants from

vehicles, and CAFE standards administered by the National Highway Traffic Safety Administration (NHTSA).

7. Greenhouse-gas emissions threaten public health in California in many ways, including by increasing the number of hot days under which smog can form and heat related illnesses expand, increasing wildfire risk, threatening the state's water supply and eroding its coastline. In order to address these impacts, California's Legislature and Governors have made reducing the state's greenhouse gas emissions a priority. Because emissions from vehicles constitute the largest single component of California's greenhouse gas emissions, the California Legislature, Governors Schwarzenegger and Brown, and CARB's Board have determined that strengthening the greenhouse gas emission standards for new motor vehicles are critical to mitigating the effects of climate change in the State, and integral to the State's strategy to achieve the economy-wide reductions that the science and State law require to protect the public health and welfare of California's residents.[1]

8. In 2002, California enacted Assembly Bill 1493, which directed CARB to develop and adopt greenhouse gas emission standards for passenger vehicles and light-duty trucks. In 2004, CARB fulfilled this directive and established the nation's first greenhouse gas emission standards for vehicles. Cal. Code Regs., tit. 13, § 1961.1. Currently, twelve states have adopted California's greenhouse gas emission standards pursuant to Section 177 of the Clean Air Act.

9. In 2009, EPA issued findings (collectively, the "Endangerment Finding") in which it determined that the accumulation of greenhouse gases in the atmosphere threaten the public health and welfare of current and future generations of Americans, and that emissions from new motor vehicles contribute to this threat.

[1] See *California's 2017 Climate Change Scoping Plan*, November 2017, p. 47, available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

The next year, EPA followed California's lead and adopted federal greenhouse gas emission standards for passenger vehicles for the first time. 40 C.F.R. § 86.1818-12.

10. CARB, EPA and NHTSA entered into extensive negotiations to harmonize their respective vehicle standards. As a result of an agreement reached by the three agencies and the vehicle manufacturers, the agencies created a unified "National Program." Pursuant to this agreement, EPA and NHTSA agreed to harmonize EPA's greenhouse gas emission standards and NHTSA's CAFE standards, and CARB agreed to enact a regulation whereby it would accept compliance with EPA's federal greenhouse gas emission standards as compliance with California's (distinct but comparably rigorous) standards. This agreement has given vehicle manufacturers the option of designing to a single, harmonized set of vehicle standards and to undertake a single compliance review process for each model year. Initially, the National Program was established in 2010 for MY 2012-2016 vehicles. In 2012, EPA, NHTSA and CARB completed separate but harmonized rulemakings that extended the standards to MY 2017-2025 vehicles. (NHTSA is statutorily limited to setting five years' worth of CAFE standards at a time, and therefore only established final CAFE standards for MY 2017-2021 vehicles.). I was personally involved in developing CARB's rulemaking proposal and ensuring that the agencies' regulations used a common in-use fleet analysis and environmental impact analysis.

11. An important feature of the National Program was the inclusion of a technically-grounded assessment process to evaluate if the standards were performing appropriately over time. Because the agencies were setting standards through MY 2025, EPA and CARB agreed to conduct a Mid-Term Evaluation of the federal emission standards to identify whether changes would be required for the MY 2022- 2025 standards. This review was to be concluded by no later than

April 1, 2018 so that vehicle manufacturers would have sufficient time to plan fleet design and development for MY 2022-2025 based on the results of the review process. NHTSA agreed to coordinate its rulemaking to establish CAFE standards for MY 2022-2025 vehicles with EPA and CARB's Mid-Term Evaluation. *See* 77 Fed. Reg. 62,624, 62,628, 62,784 (Oct. 15, 2012).

12. At the federal level, the Mid-Term Evaluation is codified at 40 C.F.R. § 86.1818-12(h). This regulation provides that the Mid-Term Evaluation be based upon a draft Technical Assessment Report (Draft TAR) authored by EPA, NHTSA and CARB, and which was completed in July 2016.[2] CARB staff, including myself and staff I supervise, collaborated on this report, which is over a thousand pages long, took several years to research and complete, and reflects the state of knowledge regarding the technological feasibility of meeting the MY 2022-2025 federal greenhouse gas emission standards, the costs for meeting the standards, and various other factors. The analyses and conclusions in the Draft TAR remain robust today.

13. EPA's commitment to a rigorous technical assessment as part of the Mid-Term Evaluation process, and which would be used to inform its determination regarding the ongoing appropriateness of the federal standards, was a key consideration in California's parallel commitment as part of the National Program framework to accept compliance with the federal emission standards in lieu of compliance with California's distinct emission standards. CARB agreed to accept compliance with the federal emission standards based on the following terms in the National Program agreement: (1) the federal standards that EPA established for MY

[2] EPA, NHTSA, CARB. July 2016. 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 (footnotes omitted). See https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF

2017-2025 vehicles were comparable to California's standards in terms of how effectively they regulated greenhouse gas emissions; and (2) EPA agreed that its Mid-Term Evaluation would be based on an extensive fact-based, technical assessment of the state of the National Program, *i.e.*, the Draft TAR, and CARB would participate in developing and preparing the Draft TAR.

14. Therefore, under the harmonized National Program for vehicle standards, California's greenhouse gas regulations for MY 2017-2025 for light-duty vehicles accept compliance with the federal standards as an option for vehicle manufacturers, provided that those standards are equivalently protective as the CARB standards.[3] CARB agreed to this, initially in a letter to EPA and then through CARB's adoption of the so-called "deemed-to-comply" option in California's regulation.[4] In light of California's unique ability under the federal Clean Air Act to regulate vehicle emissions and its decision to accept compliance with the federal standards, EPA and NHTSA agreed to give CARB an important participatory role in the Mid-Term Evaluation process. This was critical to CARB to ensure that the National Program to which it was signing on—and the federal standards to which it was linking its and twelve other states' vehicle emission programs—would remain robust and effective in reducing vehicle greenhouse gas emissions.

15. These decisions affect the country as a whole. The dozen states that have adopted California's vehicle greenhouse gas emission standards, collectively with California, comprise approximately 35% of the United States vehicle market. Therefore, decisions made regarding the California program have sweeping

[3] Cal. Code Regs., tit. 13, § 1961.3(c).

[4] *See* Air Resources Board Resolution 12-35, November 15, 2012, pp. 3-7, available at https://www.arb.ca.gov/regact/2012/leviiidtc12/res12-35.pdf; see also 76 Fed. Reg. 74854, 74863 (Dec. 1, 2011).

implications for the automobile market as a whole and for environmental conditions throughout the country.

II. The 2016 Draft TAR and the Subsequent Determinations

16. The Draft TAR finds that automakers are on track to meet the MY 2022-2025 standards, and that they will be able to do so under a wide range of possible technological paths, including paths that continue to rely substantially on gasoline-powered vehicles. Specifically, the Draft TAR explains:

> The agencies' analyses each project that the MY2022-2025 standards can be met largely through improvements in gasoline vehicle technologies, such as improvements in engines, transmissions, light-weighting, aerodynamics, and accessories. The analyses further indicate that only modest amounts of hybridization, and very little full electrification (plug-in hybrid electric vehicles (PHEV) or electric vehicles (EV)) technology will be needed to meet the standards.[5]

17. A primary function of the Draft TAR was to summarize the state of technologies that are currently in production by automakers, pending near term release, or those that could be feasibly deployed within the timeframe required by the National Program. The Draft TAR and EPA's November 2016 Proposed Determination discussed a suite of advanced engine and other technologies available for manufacturers to comply with the MY 2025 standards (the most stringent of the existing standards). Looking at trends from the previous five years, EPA determined that emerging emission reduction technologies have been able to expand market share rapidly. Examples of these technologies include gasoline direct injection (GDI) engines and turbo-charged, downsized engines. Based on the analysis of these and other technologies, the Draft TAR found that vehicle manufacturers will have various ways in which to meet the current MY 2022-2025

[5] Draft TAR, p. ES-9.

standards, and will be able to do so with similar or reduced costs as originally projected when the standards were set in 2012.

18. The Draft TAR also re-affirms that these technological changes will result in substantial consumer savings. EPA projected net lifetime vehicle consumer savings of $1,620 and a payback of about 5 years; NHTSA projected somewhat smaller—but still substantial—savings.[6] These net lifetime savings reflect that consumers are expected to receive benefits that more than offset the moderate average incremental new vehicle cost that will occur as a result of the MY 2022-2025 standards. EPA estimated this incremental cost in its compliance analysis in the Draft TAR at $894 (slightly lower than the cost increase forecast in the 2012 rulemaking) and notes that, for the vast majority of consumers who finance their new vehicle purchases, they would see net savings within the first year after purchase.

19. The Draft TAR (at p. 12-1) explains that the MY 2022-2025 standards "will significantly reduce harmful GHG emissions" and "achieve a significant reduction in projected fuel consumption."

> EPA estimates that under the GHG standards, GHG emissions would be reduced by about 540 million metric tons (MMT) and oil consumption would be reduced by 1.2 billion barrels. . . . NHTSA estimates that under the augural MY2022-2025 CAFE standards, GHG emissions would be reduced by about 748 MMT and oil consumption would be reduced by about 1.6 billion barrels.[7]

To put this differently, EPA subsequently estimated that the MY 2022-2025 standards will result in a reduction in greenhouse gas emissions of 102 MMT in 2030, 185 MMT in 2040, and 234 MMT in 2050. (Proposed Determination, Table IV.7) EPA estimates that the transportation sector contributed 1,823 MMT in

[6] Draft TAR, p. ES-10.
[7] Draft TAR, ES-11.

greenhouse gas emissions in 2016.[8] Thus, based on 2016 levels, the MY 2022-2025 standards are expected to reduce transportation-based greenhouse gas emissions in the U.S. by 5.6% in 2030, 10.2% in 2040, and 12.8% in 2050.

20. Taking these and other benefits into account, and considering compliance costs, EPA estimates that the current MY 2022-2025 standards will produce between $58 and $98 billion in net benefits to the country (Proposed Determination, Table IV.13).

21. In my professional judgment, the conclusions in the Draft TAR remain robust and well-supported.

22. Consistent with, and based on, the findings and analyses in the Draft TAR, EPA issued a final determination in January 2017 (2017 Determination) that the federal emission standards for MY 2022-2025 remain appropriate and do not need to be changed.

23. CARB's Governing Board also weighed this evidence. CARB's professional and technical staff concluded that the automakers were well on track to meet the standards, writing that "[m]anufacturers have successfully employed a variety of technologies that reduce GHG emissions and increase fuel efficiency many at a faster rate of deployment than was originally projected, notably, large penetration rates of advanced engine and transmissions across the industry in the last five years."[9]

24. CARB's Governing Board concurred, in Resolution 17-3 (March 24, 2017).[10] The Board further directed staff to begin developing proposals for post-

[8] https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks

[9] CARB, California's Advanced Clean Cars Midterm Review Summary Report for the Technical Analysis of the Light Duty Vehicle Standards (2017), available at: https://www.arb.ca.gov/msprog/acc/mtr/acc_mtr_finalreport_full.pdf.

[10] Available at: https://www.arb.ca.gov/msprog/acc/mtr/res17-3.pdf

2025 vehicle standards that would be consistent with California's need to continue to reduce motor vehicle pollution, including greenhouse gas pollution.

25. My staff are now beginning development of these more rigorous, post-2025 model year standards, which will extend from the National Program's existing MY 2025 standards.

III. EPA's Reversal of the 2017 Determination and Issuance of a Revised Determination Undermines the National Program and Has Forced CARB to Act to Preserve Its Ability to Meet Its Policy Objectives

26. In 2006, the California Legislature enacted Assembly Bill 32, which requires California to reduce its greenhouse gas emission to 1990 levels by the year 2020. California achieved this milestone in 2016, four years ahead of schedule.[11]

27. In 2016, California enacted Senate Bill 32, which requires the State to reduce its greenhouse gas emissions to 40% below 1990 levels by the year 2030.

28. The largest source of greenhouse gas emissions in California is, by far, the transportation sector. In 2016, this sector was responsible for approximately 41% of total statewide emissions, and over 50% of statewide emissions when including emissions from oil production and petroleum refining.[12] For comparison, the next largest contributor, the industrial sector, was responsible for 23% of the State's greenhouse gas emissions in 2016. Notably, while emissions from the electricity and industrial sectors have decreased in recent years, emissions from the transportation sector increased by 2% in 2016.[13]

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[11] CARB, Climate Pollutants Fall Below 1990 Levels for First Time, https://ww2.arb.ca.gov/news/climate-pollutants-fall-below-1990-levels-first-time

[12] CARB, Greenhouse Gas Emissions Inventory, https://www.arb.ca.gov/cc/inventory/data/data.htm

[13] CARB, California Greenhouse Gas Emissions for 2000 to 2016: Trends of Emissions and Other Indicators, p. 1, https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf

29. In order for California to achieve the environmental goals mandated by SB 32, mobile source emissions—*i.e.*, emissions from vehicles—must be reduced dramatically.[14] For this reason, the current National Program MY 2022-2025 standards for vehicle greenhouse gas emissions are essential to meeting California's mandated climate goals.[15]

30. Unfortunately, on April 13, 2018, EPA announced that it was withdrawing its 2017 Determination that the existing federal MY 2022-2025 standards remain appropriate. 83 Fed. Reg. 16,077. EPA simultaneously issued a revised final determination (Revised Determination) concluding, contrary to the findings and analysis in the Draft TAR and its prior determination, that the current federal standards are "not appropriate" and must be revised.

31. EPA's Revised Determination destabilized the National Program, disrupted California's vehicle emission programs, and threatens public health in multiple regards. EPA's actions are also entirely contrary to the agreement with CARB that formed the basis of the National Program and that led CARB to agree to tie its vehicle emissions program to the federal standards and accept compliance with the federal standards as compliance with California's standards.

32. EPA's Revised Determination has forced CARB to take action in order to provide the public and regulated entities certainty as to the status of California's program, mitigate the increased climate harms that will result from a weakening of the federal standards, and ensure that California can meet its emissions reduction goals.

33. EPA's announcement that the current federal standards are no longer appropriate and will be revised also introduces substantial uncertainty into the auto market and threatens to slow the progress of research, development and

[14] CARB, California's 2017 Climate Change Scoping Plan at ES-1, available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

[15] *See id.* at 25, 28.

implementation of technology to reduce vehicle emissions, with effects even before a final federal decision on new standards is made, given the long lead-times inherent in vehicle production.

34. Based upon my extensive experience working in, and regulating, the industry, I know that vehicle development cycles run 3-5 years from product design decisions, through engineering, testing, and manufacturing readiness development. These cycles can be shorter if the new vehicle is largely based on an existing platform, but longer where a new engine and base platform are being developed, and must incorporate systems and designs that have completed a company's basic research phase. New drivetrains and vehicle platforms take time to develop given the complexity of many vehicle systems (e.g. electrical, engine, exhaust after-treatment, body, suspension, etc.). Every element of the vehicle must be individually designed and tested, commonly leveraging contracts with suppliers to do so. Systems, and then full vehicles, need to be built and tested for durability and performance, followed by crash testing, all of which can lead to design changes along the way. Finally, manufacturing processes and test assembly lines need to be developed, followed by sample cars off the assembly lines to identify errors in the process.[16] I have been a participant in these cycles in the course of my professional career.

35. Based on the observed past practice described above, I believe that at the time the Revised Determination was published, the automakers were in the midst of planning and developing their MY 2020 through 2024 vehicles, and are considering design decisions for vehicles in subsequent model years. Thus, the planning decisions that automakers are making right now and during the coming

[16] Edwards, M. et al "How Automakers Plan Their Products: A Primer for Policymakers on Automotive Industry Business Planning," Center for Automotive Research (CAR), July 2007. http://www.cargroup.org/publication/how-automakers-plan-their-products-a-primer-for-policymakers-on-automotive-industry-business-planning/

months will determine the amount of greenhouse gas emissions those vehicles will produce.

36. As discussed above, it is crucially important to California's goals concerning climate change, and the well-being of its residents, that the State continue to effectively regulate greenhouse gas emissions from vehicles. Thus, California must ensure that, if EPA—as indicated in its Revised Determination and its subsequent Notice of Proposed Rulemaking (NPRM)[17]—weakens its standards, California's comparably rigorous standards will still apply in our State. The Revised Determination has forced CARB to consider, and then take, regulatory steps to ensure this is the case.

37. Specifically, CARB has clarified that the "deemed to comply" option—by which CARB currently accepts compliance with the federal program—would not apply to unsupported, weakened federal standards. Although CARB believes that it was never the provision's intent to incorporate such standards, the automakers filed comments stating a contrary view.

38. Based on EPA' Revised Determination that the federal standards are not appropriate, and subsequent NPRM, CARB considered and ultimately concluded it had to take action now because of the planning and development cycles described above, because of the length of time required to complete California rulemakings, and because the 177 States that have adopted California standards also require lead time to institute their own administrative and/or regulatory actions.

39. Accordingly, on August 7, 2018, CARB released a proposed regulatory change for California's GHG regulations, and a notice that the proposal would be considered by our Board on September 27 and 28, 2018, available at:

[17] Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 53,204 (Oct. 22, 2018).

https://www.arb.ca.gov/regact/2018/leviii2018/leviiinotice.pdf. A true and correct copy is attached hereto. This proposal focused on clarifying the conditions under which the "deemed-to-comply" option can be used by automakers.

40. On September 28, 2018, CARB's Board adopted the proposed regulatory change.[18] The amendments became effective December 12, 2018.[19]

41. As a result, CARB has and continues to incur costs, and those costs will continue to increase. A number of CARB staff who otherwise would be focused on other projects have been required to focus on taking the actions described above. Beginning in early 2018, this staffing resource impact so far has included, at least, the equivalent of a manager and five staff experts from the vehicle regulatory development and analysis support programs, along with the equivalent of at least four legal staff experts. This is in addition to time commitments from our executive officers and Chair of the Board. Those impacts continued through December 2018 when CARB completed the rulemaking under California law. These amendments, if the federal standards change, may require additional staff resources. EPA's Revised Determination thus has caused, and continues to cause, direct and concrete resource impacts to CARB.

42. CARB had no choice but to take these actions in the face of EPA's April 13, 2018 Revised Determination. If CARB did not act promptly to clarify its rules, but instead had waited for a proposed rule from EPA, this would mean that EPA's revised federal emission standards could be determined to apply to MY 2022-2025 vehicles sold in California, and any relaxation in those federal standards

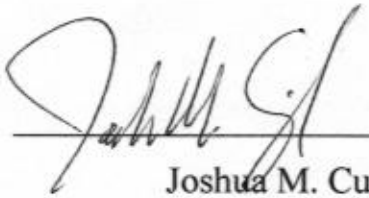
[18] CARB, Reso. 18-35, September 28, 2018.

[19] California Office of Administrative Law, Notice of Approval of Regulatory Action, OAL Matter No. 2018-1114-03, December 12, 2018.

would result in an increase in vehicle emissions, thereby undercutting California's progress toward its greenhouse gas emissions goals.[20] The same would be true for the Section 177 States that have adopted the deemed-to-comply provision.

43. CARB estimates that if federal vehicle standards were held constant in model years 2022 through 2025, and California's standards were not applied, California's light duty sector in-use greenhouse gas emissions would be 10-15% higher in 2030. *See* CARB, Proposed Amendments to the Low-Emission Vehicle III Greenhouse Gas Emission Regulation, Standardized Regulatory Impact Assessment (SRIA) Equivalent Document (August 7, 2018), p. 13. When also including increased greenhouse gas emissions from fuel production facilities, the combined vehicle and fuel production emission benefits lost represent 7% of the total reductions needed for California to meet the 2030 target required by law. If the light duty vehicle regulations cannot achieve the planned emission benefits, either regulations on other sectors will need to be strengthened to make up for the shortfall, or costly state financial incentives will be needed to accelerate deployment of clean technology faster than vehicle regulations.

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed on February 6, 2019 at Sacramento, California.



Joshua M. Cunningham

[20] CARB 2017 Scoping Plan Update, https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

joshua m. **cunningham**

PROFILE

Manager and policy analyst with 17 years of engineering and environmental policy experience in automotive advanced technologies and fuels. Broad experience that includes work in both the private and public sectors. Strong background in collaborative programs, bringing multiple stakeholders together to tackle complex challenges.

EXPERIENCE

California Air Resources Board (CARB), Sacramento, CA (3/2009 – present)

Chief, Advanced Clean Cars Branch (4/2015 – present)

- Managing a broad program that includes the clean vehicle emission standards and electric vehicle requirements of all new cars sold in California
- Program also includes engineering and planning support for hydrogen and electric vehicle charging infrastructure, as well as partnerships to address EV market barriers

Manager, Transportation Systems Planning Section (4/2013 – 3/2015)

- Managing a team focused on analyzing multi-sector strategies to achieve long-term (2030-2050) air quality and greenhouse gas emission reductions
- Developing analytical tools (Vision emission projection model) to evaluate specific strategies, including vehicle technologies, alternative fuels, and travel behavior

Director of Programs, Plug-in Electric Vehicle Collaborative (1/2011 – 3/2013)

- Launched public-private-partnership and developed annual work-plan, managing topic working groups for this multi-stakeholder program focused on fostering the EV market
- Lead coordinator and technical writer for a multi-stakeholder Strategic Plan for California on plug-in electric vehicles: The PEV Collaborative's "Taking Charge"

Air Resources Engineer, ZEV Implementation Section *(3/2009 – 12/2010)*

- Conducted economic and emissions impact analyses of the automotive industry from the Zero Emission Vehicle (ZEV) Regulation (regulation change, January 2012)
- Contributed to the Governor's 2012 Zero Emission Vehicle Executive Order, and subsequent ZEV Action Plan, working on the Governor's Office inter-agency team

Institute of Transportation Studies (UC Davis), Davis, CA (4/2005 – 02/2009)

Program Manager, Sustainable Transportation Energy Pathways (STEPS)

- Coordinated research priorities, developed sponsor relationships, formed research collaborations, led major proposals, and organized program events
- Program budget of $1.3M/yr; 20 public & private sponsors; 40 researchers
- Successfully led the effort to secure a $1M seed grant from the California Clean Energy Fund (CalCEF) to launch the UC Davis Energy Efficiency Center (EEC)

United Technologies Corp (UTC), Fuel Cells Div., South Windsor, CT (9/2002 - 3/2005)

Senior Systems Engineer, Transportation Group

- Analyzed and designed fuel and air systems, and power controls, for the Hyundai Tucson fuel cell vehicle & California Bay Area AC Transit fuel cell bus
- Project team leader, BMW fuel cell system designed for freezing conditions
- Special assignments on Advanced Systems and Intellectual Property Teams

Delphi Chassis Systems (General Motors), Dayton, OH (9/1996 - 8/1998)

Product Engineer, Advanced Suspension Development

- Lead engineer for air compressor in automatic leveling system for production vehicles
- Extensive project management experience leading cross-functional product teams
- Developed component technical specifications and design validation test plans

EDUCATION

Masters of Science (MS) - Transportation Technology and Policy (TTP)
University of California, Davis (Davis, California); Graduated 2001

Bachelor of Science (BS) – Mechanical Engineering
Michigan State University (East Lansing, Michigan); Graduated 1996

National Science Foundation Overseas Study Program
Rheinisch-Westfaelische Technische Hochschule (Aachen, Germany); Completed 1995

AWARDS

- CARB Sustained Superior Accomplishment Award, Long-term emission planning (2016)
- CARB Gold Superior Accomplishment Award, Advanced Clean Cars rulemaking (2011)
- SAE Outstanding Technical Paper of 2010; selected for publication in an SAE international journal for passenger vehicles. Paper 2010-01-2306 (2010)
- Patent award (#8, 124, 290) for fuel cell operation with cryogenic hydrogen storage (developed 2004, final patent awarded in 2012)
- UTC FuelCells Senior Management Achievement Award (2004)
- ENO Transportation Fellow, Center for Transportation Leadership Development (2000)
- U.S. Department of Energy GATE Fellowship for graduate studies (1999-2000)

PUBLICATIONS

- PEV Collaborative, "Taking Charge: Establishing California Leadership in the Plug-in Electric Vehicle Marketplace", UC Davis, December 2010
- Cunningham, J.M., "Achieving an 80% GHG Reduction by 2050 in California's Passenger Vehicle Fleet: Implications for the ZEV Regulation", SAE paper # 2010-01-2306, October 2010
- Cunningham, J.M., et al, "Why Hydrogen and Fuel Cells are Needed to Support California Climate Policy", ITS-Davis, UCD-ITS-RR-08-06, Davis CA (2008)
- Cunningham, J.M., et al, "A Comparison of High Pressure and Low Pressure Operation of PEM Fuel Cell Systems", SAE paper #2001-01-0538 (2001)
- Cunningham, J.M., et al, "Requirements for a Flexible and Realistic Air Supply Model for Incorporation into a Fuel Cell Vehicle System Simulation", SAE paper #1999-01-2912 (1999)

VOLUNTEER SERVICE & ACTIVITIES

- Board member, Valley Climate Action Center: A non-profit corporation in partnership with the City of Davis to develop low-carbon strategies in the community
- Board member, Air & Waste Management Association (AWMA), Sacramento Chapter (2015-2016)
- Habitat for Humanity, Dayton Ohio chapter (1996-1998)
- Operation Crossroads Africa: Volunteer service in Ghana assisting local non-profit organizations with community development (1996)
- Musician (percussion) in competitive Drum and Bugle Corps, as well as Michigan State University marching band drumline (1992-1994)

TITLE 13. CALIFORNIA AIR RESOURCES BOARD

NOTICE OF PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE LOW-EMISSION VEHICLE III GREENHOUSE GAS EMISSION REGULATION

The California Air Resources Board (CARB or Board) will conduct a public hearing at the time and place noted below to consider approving for adoption the Proposed Amendments to the Low-Emission Vehicle III Greenhouse Gas Emission Regulation.

DATE: September 27, 2018

TIME: 9:00 A.M.

LOCATION: California Environmental Protection Agency
California Air Resources Board
Byron Sher Auditorium
1001 I Street
Sacramento, California 95814

This item will be considered at a meeting of the Board, which will commence at 9:00 a.m., September 27, 2018, and may continue at 8:30 a.m., on September 28, 2018. Please consult the agenda for the hearing, which will be available at least ten days before September 27, 2018, to determine the day on which this item will be considered.

WRITTEN COMMENT PERIOD AND SUBMITTAL OF COMMENTS

Interested members of the public may present comments orally or in writing at the hearing and may provide comments by postal mail or by electronic submittal before the hearing. The public comment period for this regulatory action will begin on August 10, 2018. Written comments not physically submitted at the hearing must be submitted on or after August 10, 2018, and received **no later than 5:00 p.m. on** September 24, 2018. CARB requests that when possible written and email statements be filed at least ten days before the hearing to give CARB staff and Board members additional time to consider each comment. The Board also encourages members of the public to bring to the attention of staff in advance of the hearing any suggestions for modification of the proposed regulatory action. Comments submitted in advance of the hearing must be addressed to one of the following:

Postal mail: Clerk of the Board, California Air Resources Board
1001 I Street, Sacramento, California 95814

Electronic submittal: http://www.arb.ca.gov/lispub/comm/bclist.php

Please note that under the California Public Records Act (Gov. Code, § 6250 et seq.), your written and oral comments, attachments, and associated contact information (e.g., your address, phone, email, etc.) become part of the public record and can be released to the public upon request.

Additionally, the Board requests but does not require that persons who submit written comments to the Board reference the title of the proposal in their comments to facilitate review.

AUTHORITY AND REFERENCE

This regulatory action is proposed under the authority granted in California Health and Safety Code, sections 38550, 38566, 39500, 39600, 39601, 43013, 43018, 43018.5, 43101, 43104, and 43105. This action is proposed to implement, interpret, and make specific California Health and Safety Code, sections 39002, 39003, 39667, 43000, 43009.5, 43013, 43018, 43018.5, 43100, 43101, 43101.5, 43102, 43104, 43105, 43106, and 43211.

INFORMATIVE DIGEST OF PROPOSED ACTION AND POLICY STATEMENT OVERVIEW (GOV. CODE, § 11346.5, subd. (a)(3))

Sections Affected:

Proposed amendment to California Code of Regulations, title 13, sections 1961.2 and 1961.3 and to the "California 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles," as last amended September 2, 2015, incorporated by reference in Title 13, CCR, section 1961.2.

Background and Effect of the Proposed Regulatory Action:

Overview

In order to address the need to further reduce vehicle emissions and achieve California's goal of reducing climate changing greenhouse gas emissions, in January 2012, CARB adopted its second generation of greenhouse gas emission standards for light-duty vehicles as part of the Low-Emission Vehicle III (or LEV III) program. The LEV III regulations established increasingly stringent greenhouse gas standards for 2017 through 2025 model year light-duty vehicles, and maintained the stringency for subsequent model years. These regulations were adopted by the Board as part of the Advanced Clean Cars rulemaking package that also includes the state's zero-emission vehicle (ZEV) regulation.

California's greenhouse gas emission programs for light-duty vehicles (passenger vehicles) are a fundamental component of the State's strategy to protect the health of its citizens and its natural resources, including from the threats of climate change.[1] California's programs have operated successfully in tandem with complementary standards set by other agencies for many years. Recognizing the value of a national

[1] California Air Resources Board. *California's 2017 Climate Change Scoping Plan*. (November 2017). available at: https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf

program, California has accepted compliance with greenhouse gas emission standards adopted by the United States Environmental Protection Agency (U.S. EPA) for the 2012 through 2025 model years. To do so, CARB adopted the so-called "deemed to comply" option, which allows compliance with U.S. EPA's regulations as an alternative to complying with California's regulations for these model years, because the U.S. EPA standards, at the time, would deliver equivalent greenhouse gas emission reductions as California's standards.[2,3]

One important element of the originally adopted federal greenhouse gas emission standards was a requirement that U.S. EPA later conduct a midterm evaluation (MTE) to re-assess the appropriateness of the greenhouse gas emission standards for the 2022 through 2025 model years. This report was required by law to be based upon a comprehensive joint Technical Assessment Report,[4,5] consisting of hundreds of pages of analysis and documentation, which was prepared jointly by U.S. EPA, CARB, and National Highway Traffic Safety Administration (NHTSA) staff. The purposes of the MTE was to evaluate updated information to determine if the standards should be strengthened, maintained at their current level of stringency, or weakened. On January 13, 2017, U.S. EPA released its Final Determination[6] to maintain the current National Program of greenhouse gas emission standards for 2022 through 2025 model year vehicles, finding that automakers are well positioned to meet the standards at lower costs than previously estimated.

CARB also conducted a California-specific Midterm Review[7] of the appropriateness of these standards, which also examined a number of other issues relating to the LEV III regulations and ZEV regulation, and issued a report on the findings. Based on the CARB Midterm Review, the Board concluded (in Resolution 17-3[8]) that:

> Given U.S. EPA has issued a Final Determination affirming the 2022 through 2025 model year federal greenhouse gas standards will remain as adopted, it is appropriate to continue California's participation in the 2017 through 2025 model year National Program by maintaining the "deemed to comply" provision allowing for compliance with the adopted U.S. EPA greenhouse gas standards for the 2022 through 2025 model years.

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[2] All manufacturers are currently exercising the option of complying with the federal greenhouse gas emission standards.

[3] Although California's light-duty greenhouse gas regulations also apply to model years beyond 2025, the "deemed to comply" option is not available for the 2026 and subsequent model years. Consequently, the 2026 and subsequent model years are not addressed in this rulemaking.

[4] *See* 40 C.F.R. § 86.1818-12(h)(2).

[5] U.S. EPA, NHTSA, CARB, *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* (July 2016), available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF

[6] 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* (January 2017, EPA-420-R-17-001), available at: https://www.regulations.gov/contentStreamer?documentId=EPA-HQ-OAR-2015-0827-6270&attachmentNumber=1&contentType=pdf.

[7] California Air Resources Board. *California's Advanced Clean Cars Midterm Review*, (January 18, 2017), available at: https://www.arb.ca.gov/msprog/acc/mtr/acc_mtr_finalreport_full.pdf.

[8] State of California, Air Resources Board, Resolution 17-3. March 24, 2017. Agenda Item No.: 17-3-8. Advanced Clean Cars Midterm Review. available at: https://www.arb.ca.gov/msprog/acc/mtr/res17-3.pdf.

On April 13, 2018, the U.S. EPA issued a notice withdrawing its previous Final Determination for the MTE of the federal passenger vehicle greenhouse gas regulations and issuing a revised 11-page Final Determination that the federal greenhouse gas standards are not appropriate, "may be too stringent," and should be changed.[9] The U.S. EPA did this without properly explaining why it was departing from the extensive evidence within the Technical Assessment Report, and without sharing any data or analysis with CARB or adequately explaining the reasons for reaching a different conclusion than had been reached by the previous well-reasoned Final Determination.

On August 1, 2018, as a consequence of the U.S. EPA's new Final Determination, the Acting Administrator for the U.S. EPA and the Deputy Administrator for NHTSA signed a joint Notice of Proposed Rulemaking (NPRM) that would, if finalized, significantly weaken the U.S. EPA's standards and which purports to attack California's long-standing authority in this area. The NPRM stated it would provide a 60-day comment period, commencing from the time of publication in the Federal Register.

The NPRM proposes to arrest U.S. EPA's carbon dioxide (CO_2) emissions targets at the levels set for model year 2020. The proposal would also limit the standards to CO_2 tailpipe emissions and would fail to address other, more potent greenhouse gas emissions from vehicles. The agencies also proposed to find CARB's greenhouse gas and ZEV standards preempted by federal law, and to withdraw the waiver of federal preemption that the U.S. EPA granted to California in 2013 for the greenhouse gas and ZEV requirements of its Advanced Clean Cars program, at 78 Federal Register 2,112 (Jan. 9, 2013).

This proposal is contrary to the facts and the law. It is belied by the comprehensive, multi-year analysis of the initial Final Determination that found the standards cost-effective and achievable. It frustrates Congressional intent, upheld by the Supreme Court and lower federal courts, in the Clean Air Act and the Energy Policy and Conservation Act to conserve energy and protect the environment by setting maximum feasible standards. It jeopardizes the successful coordinated National Program for reducing these emissions that has helped position the auto industry for continued innovation and competitiveness in an international market.

This threat of weakening the standards of the unified National Program, left unaddressed, could substantially slow progress towards the emission reductions needed to address the serious threat climate change poses to California, the country, and the world. Thus, U.S. EPA has now stated both that the current rigorous standards are inappropriate - necessitating this rulemaking - and doubled down by stating that it intends to abandon the rigorous federal standards that the record supports. This will force upon regulated entities and the public considerable uncertainty as to the fate of the unified National Program. And it will obscure the clear path that it laid through the coming years to save money and resources and achieve the pollution reductions necessary to protect our health and environment. Issuance of this federal NPRM affirms the importance of CARB taking this proposed action to be clear California is maintaining the current standards.

[9] 83 Fed.Reg. 16,077 (April 13, 2018).

Current Proposal

CARB is proposing amendments to the LEV III greenhouse gas emission regulation to clarify that the "deemed to comply" option is available only for the currently adopted federal greenhouse gas regulations (incorporated in the Code of Federal Regulations and last amended on October 25, 2016). These clarifying amendments will ensure that the effects of any federal weakening for model years 2021 through 2025 are not felt in California during those model years. Weakening the standards, as U.S. EPA has proposed, would be unfounded and contrary to the intent of the Clean Air Act. Such an unfounded weakening removes a material predicate of California's decision to accept compliance with U.S. EPA standards. This clarification is thus consistent with the fundamental understandings underlying the current unified National Program for light-duty emission control.

CARB may also consider other changes to the sections affected, as listed on page 2 of this notice, during the course of this rulemaking process. Specifically, CARB requests comments on potential flexibilities that might allow for continued compliance with the federal standards, or reward national actions to promote cleaner vehicles.

Objectives and Benefits of the Proposed Regulatory Action:

The proposed amendments will ensure that appropriate and necessary greenhouse gas emission reductions and public health protections[10] are achieved by California's standards. They are also important for maintaining the pace of greenhouse gas emission reductions that are necessary to achieve our statutory targets, and to address extraordinary and compelling conditions in California.[11] Achieving these targets is critical for helping to combat the effects of climate change, including raging wildfires, coastal erosion, disruption of water supply, threats to agriculture, spread of insect-borne diseases, and continuing health threats from air pollution. The proposed amendments are also consistent with the extensive technical determinations from the 2017 Final Determination and CARB's MTR, showing that the standards are appropriate. These proposed amendments will provide predictability for manufacturers to make the necessary investments in cleaner vehicles for Californians that have reduced climate, public health and welfare impacts, promote innovation, and are less costly to operate.

CARB remains committed to a national program that is based on a robust technical foundation and sound economic analysis, such that it fulfills CARB's statutory mandates to protect public health and welfare and the environment. CARB has been, and remains, willing to consider well-founded and necessary changes to the program,

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[10] Although the vehicle standards in question directly regulate greenhouse gas emissions, and the LEV III criteria pollutant emission fleet average standards are not being changed, reducing greenhouse gases is critically important to protect public health in California. Greenhouse gases worsen climate change; in turn, climate change results in hotter weather conditions that are already eroding California's ability to attain and maintain compliance with ambient air quality standards. Moreover, criteria pollutant emissions in California from the production and delivery of petroleum and gasoline could change as a result of the federal action, thus increasing public health risks.

[11] Senate Bill 32 (Chapter 249, Statutes 2016, Pavley) requires that the state reach 40 percent emission reductions below 1990 levels by 2030 Executive Order S-3-05 sets a goal of 80 percent emission reductions below 1990 levels by 2050.

including flexibilities that reduce compliance costs, so long as they continue to provide the necessary greenhouse gas emission reductions. Federal action that is consistent with these principles could render this CARB rulemaking unnecessary.

There are no expected benefits to public safety or worker safety as a result of this rulemaking.

Comparable Federal Regulations:

As mentioned, although the current California and federal greenhouse gas regulations for 2021 through 2025 model year light-duty vehicles are equivalent in stringency, U.S. EPA has stated that the federal standards "are inappropriate and may need to be weakened."[12] The proposed amendments are necessary to preserve the emission benefits of the current California LEV III greenhouse gas regulation by safeguarding against the unwarranted relaxation of the standards and resulting loss of California emission reductions for model years 2021 through 2025 due to the linkage of the California regulation and federal passenger vehicle greenhouse gas regulation.

An Evaluation of Inconsistency or Incompatibility with Existing State Regulations (Gov. Code, § 11346.5, subd. (a)(3)(D)):

During the process of developing the proposed regulatory action, CARB conducted a search of any similar regulations on this topic and concluded these regulations are neither inconsistent nor incompatible with existing state regulations.

MANDATED BY FEDERAL LAW OR REGULATIONS (Gov. Code, §§ 11346.2, subd. (c), 11346.9)

The proposed regulatory action is not mandated by federal law or regulations.

DISCLOSURE REGARDING THE PROPOSED REGULATION

Fiscal Impact/Local Mandate Determination Regarding the Proposed Action (Gov. Code, § 11346.5, subds. (a)(5)&(6)):

The determinations of the Board's Executive Officer concerning the costs or savings incurred by public agencies and private persons and businesses in reasonable compliance with the proposed regulatory action are presented below.

Under Government Code sections 11346.5, subdivision (a)(5) and 11346.5, subdivision (a)(6), the Executive Officer has determined that the proposed regulatory action would not create costs or savings to any State agency or in federal funding to the State, costs or mandate to any local agency or school district, whether or not reimbursable by the State under Government Code, title 2, division 4, part 7 (commencing with section 17500), or other nondiscretionary cost or savings to State or local agencies.

[12] 83 Fed.Reg. 16,077 (April 13, 2018).

Housing Costs (Gov. Code, § 11346.5, subd. (a)(12)):

The Executive Officer has also made the initial determination that the proposed regulatory action will not have a significant effect on housing costs.

Significant Statewide Adverse Economic Impact Directly Affecting Business, Including Ability to Compete (Gov. Code, §§ 11346.3, subd. (a), 11346.5, subd. (a)(7), 11346.5, subd. (a)(8)):

The Executive Officer has made an initial determination that the proposed regulatory action would not have a significant statewide adverse economic impact directly affecting businesses, including the ability of California businesses to compete with businesses in other states, or on representative private persons.

Results of The Economic Impact Analysis/Assessment (Gov. Code, § 11346.5, subd. (a)(10)):

The proposed amendments do not qualify as major regulations, because they would leave current regulatory conditions intact. Accordingly, the proposed amendments will not have an economic impact on California businesses and individuals compared to a baseline of current conditions, and formal requirements for major regulations do not apply. However, in the interest of transparency, staff have prepared a thorough economic analysis of these proposed amendments, commensurate with analyses done for major regulations, and it is available as Appendix D to the Initial Statement of Reasons (ISOR). This Standard Regulatory Impact Assessment (SRIA) Equivalent Document was submitted to the California Department of Finance on June 7, 2018. Comments received from the California Department of Finance are in Appendix E to the ISOR and are summarized below.

Effect on Jobs/Businesses:

The Executive Officer has determined that the proposed regulatory action would not affect the creation or elimination of jobs within the State of California, the creation of new businesses or elimination of existing businesses within the State of California, or the expansion of businesses currently doing business within the State of California. A detailed assessment of the economic impacts of the proposed regulatory action can be found in the Economic Impact Analysis in the ISOR.

Benefits of the Proposed Regulation:

The objective of the proposed regulatory action is to preserve the California greenhouse gas emission reductions anticipated from the LEV III light-duty vehicle greenhouse gas emission regulation.

A summary of these benefits is provided, please refer to "Objectives and Benefits," under the Informative Digest of Proposed Action and Policy Statement Overview Pursuant to Government Code 11346.5(a)(3) discussion beginning on page 4.

California Department of Finance Comments on the SRIA Equivalent Document and CARB Responses:

Comment from the California Department of Finance:

> Finance generally concurs with the methodology used to estimate impacts of proposed regulations. If the federal standards were to change, the timing and details would be important to model in order to assess any impacts to California. However, if the sensitivity analysis captures most of the components, only the magnitudes of estimates may change.

CARB Response:

> Thank you for your review. We will update the analysis in the Standard Form 399 and other documents, as appropriate, if there are any developments at the federal level.

Business Report (Gov. Code, §§ 11346.5, subd. (a)(11); 11346.3, subd. (d)):

In accordance with Government Code sections 11346.5, subdivisions (a)(11) and 11346.3, subdivision (d), the Executive Officer finds the reporting requirements of the proposed regulatory action which apply to businesses are necessary for the health, safety, and welfare of the people of the State of California. The proposed amendments do not include new reporting requirements or modify existing reporting requirements.

Cost Impacts on Representative Private Persons or Businesses (Gov. Code, § 11346.5, subd. (a)(9)):

In developing this regulatory proposal, CARB staff evaluated the potential economic impacts on representative private persons or businesses. CARB is not aware of any cost impacts that a representative private person or business would necessarily incur in reasonable compliance with the proposed action.

Effect on Small Business (Cal. Code Regs., tit. 1, § 4, subds. (a) and (b)):

The Executive Officer has also determined under California Code of Regulations, title 1, section 4, that the proposed regulatory action would not affect small businesses, because they would not change the stringency of the current regulations. Because the stringency would not change in California, the regulations will continue to result in net cost savings for small business through more efficient motor vehicles, which will be more cost-effective to own and operate than in the absence of the standards, as previously estimated when the regulations were initially adopted.

Consideration of Alternatives (Gov. Code, § 11346.5, subd. (a)(13)):

Before taking final action on the proposed regulatory action, the Board must determine that no reasonable alternative considered by the Board, or that has otherwise been identified and brought to the attention of the Board, would be more effective in carrying out the purpose for which the action is proposed, would be as effective and less burdensome to affected private persons than the proposed action, or would be more cost-effective to affected private persons and equally effective in implementing the statutory policy or other provisions of law.

ENVIRONMENTAL ANALYSIS

When the Advanced Clean Cars Program was proposed in 2012, CARB prepared an environmental analysis (EA) under its certified regulatory program (California Code of Regulations, title 17, sections 60000 through 60008) to comply with the requirements of the California Environmental Quality Act (CEQA; Public Resources Code section 21080.5). The EA, included in Appendix B of the ISOR entitled Appendix B: Draft Environmental Analysis for the Advanced Clean Cars Program, dated December 7, 2011, determined the Advanced Clean Cars Program could result in adverse impacts to aesthetics, air quality, and noise, biological resources, cultural resources, geology/soils, hazards/hazardous materials, hydrology/water quality, traffic and utilities, however the portion of the program specific to the LEV III regulation did not find any adverse environmental impacts. Staff has determined that no additional environmental review is required for the current proposed amendments because there are no changes that involve new significant environmental effects or a substantial increase in severity of previously identified significant effects in the prior 2011 EA. The basis for reaching this conclusion is provided in Chapter VI of the ISOR.

SPECIAL ACCOMMODATION REQUEST

Consistent with California Government Code Section 7296.2, special accommodation or language needs may be provided for any of the following:

- An interpreter to be available at the hearing;
- Documents made available in an alternate format or another language; and
- A disability-related reasonable accommodation.

To request these special accommodations or language needs, please contact the Clerk of the Board at (916) 322-5594 or by facsimile at (916) 322-3928 as soon as possible, but no later than 10 business days before the scheduled Board hearing. TTY/TDD/Speech to Speech users may dial 711 for the California Relay Service.

Consecuente con la sección 7296.2 del Código de Gobierno de California, una acomodación especial o necesidades lingüísticas pueden ser suministradas para cualquiera de los siguientes:

- Un intérprete que esté disponible en la audiencia;

- Documentos disponibles en un formato alterno u otro idioma; y
- Una acomodación razonable relacionados con una incapacidad.

Para solicitar estas comodidades especiales o necesidades de otro idioma, por favor llame a la oficina del Consejo al (916) 322-5594 o envié un fax a (916) 322-3928 lo más pronto posible, pero no menos de 10 días de trabajo antes del día programado para la audiencia del Consejo. TTY/TDD/Personas que necesiten este servicio pueden marcar el 711 para el Servicio de Retransmisión de Mensajes de California.

AGENCY CONTACT PERSONS

Inquiries concerning the substance of the proposed regulatory action may be directed to the agency representative Mike McCarthy, Chief Technology Officer, Emissions Compliance, Automotive Regulations and Science Division at (626) 771-3614 or (designated back-up contact) Sarah Carter, Staff Air Pollution Specialist, Emissions Compliance, Automotive Regulations and Science Division at (626) 575-6845.

AVAILABILITY OF DOCUMENTS

CARB staff has prepared a Staff Report: Initial Statement of Reasons (ISOR) for the proposed regulatory action, which includes a summary of the economic and environmental impacts of the proposal. The report is entitled: "Public Hearing to Consider Proposed Amendments to the Low-Emission Vehicle III Greenhouse Gas Emission Regulation."

Copies of the ISOR and the full text of the proposed regulatory language, in underline and strikeout format to allow for comparison with the existing regulations, may be accessed on CARB's website listed below, or may be obtained from the Public Information Office, California Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814, beginning on August 7, 2018.

Further, the agency representative to whom nonsubstantive inquiries concerning the proposed administrative action may be directed is Bradley Bechtold, Regulations Coordinator, at (916) 322-6533. The Board staff has compiled a record for this rulemaking action, which includes all the information upon which the proposal is based. This material is available for inspection upon request to the contact persons.

HEARING PROCEDURES

The public hearing will be conducted in accordance with the California Administrative Procedure Act, Government Code, title 2, division 3, part 1, chapter 3.5 (commencing with section 11340).

Following the public hearing, the Board may take action to approve for adoption the regulatory language as originally proposed, or with non-substantial or grammatical modifications. The Board may also approve for adoption the proposed regulatory

language with other modifications if the text as modified is sufficiently related to the originally proposed text that the public was adequately placed on notice and that the regulatory language as modified could result from the proposed regulatory action. If this occurs, the full regulatory text, with the modifications clearly indicated, will be made available to the public, for written comment, at least 15 days before final adoption.

The public may request a copy of the modified regulatory text from CARB's Public Information Office, California Air Resources Board, 1001 I Street, Visitors and Environmental Services Center, First Floor, Sacramento, California, 95814.

FINAL STATEMENT OF REASONS AVAILABILITY

Upon its completion, the Final Statement of Reasons (FSOR) will be available and copies may be requested from the agency contact persons in this notice, or may be accessed on CARB's website listed below.

INTERNET ACCESS

This notice, the ISOR and all subsequent regulatory documents, including the FSOR, when completed, are available on CARB's website for this rulemaking at http://www.arb.ca.gov/regact/2018/leviii2018/leviii2018.htm

CALIFORNIA AIR RESOURCES BOARD

Richard W. Corey
Executive Officer

Date: August 6, 2018

The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website at www.arb.ca.gov.

EXHIBIT H

Declaration of Michael McCarthy
Chief Technology Officer, ECARS
California Air Resources Board

DECLARATION OF MICHAEL MCCARTHY

I, Michael McCarthy, declare as follows:

1. My name is Michael McCarthy and I am Chief Technology Officer of the Emission Compliance, Automotive Regulations, and Science (ECARS) Division of the California Air Resources Board (CARB). I make this declaration based upon my knowledge and expertise of the matters within, and upon my review of the relevant documents discussed below.

2. My resume is attached to this declaration. I have a degree in Mechanical Engineering from UCLA. I have worked at CARB since 1992, when I began work as an Air Resources Engineer. In that role I focused on technical feasibility demonstrations of prototype emission controls for the low emission vehicle (LEV) I programs and the on-board diagnostics (OBD) program, created and led the OBD enforcement testing program, and was lead staff on OBD regulation. From 2000 to 2013, I was a supervisor, managing all aspects of light- and heavy-duty vehicle OBD requirements including regulation development, certification, and enforcement. I was also a technical advisor on other light-duty vehicle emission control programs including LEV II and LEV III emission standards for criteria pollutants and greenhouse gases.

3. Since 2013, I have been in my current role. In that role, I led CARB's midterm review of the current light-duty vehicle regulations, including the greenhouse gas regulations that CARB and the United States Environmental Protection Agency (EPA) jointly administer. I am also leading the development of future light-duty vehicle emission standards including tailpipe criteria pollutant, evaporative emission, and greenhouse gas standards.

4. I have been a member of several Society of Automotive Engineers (SAE) International Standards and International Standards Organization (ISO) Committees based on my expertise, and received the 2006 Henry Souther Standards Award from SAE International. I have also received a Gold Superior Accomplishment Award and a Sustained Superior Accomplishment Award from CARB, and a Professional Engineers in California Government (PECG) recognition award in 2016 for participation in the VW diesel enforcement case.

5. I have drawn upon this expertise in leading CARB's efforts to design and review light-duty vehicle standards. I led CARB's participation in the Mid-Term Evaluation of the model year (MY) 2022-2025 standards that culminated with a final determination in January 2017 (2017 Determination) that the standards remain both technologically and financially feasibly and otherwise appropriate.

6. The Mid-Term Evaluation was expressly created as part of an agreement by EPA, NHTSA, CARB, and auto manufacturers to establish and then to extend a National Program of light-duty vehicle standards. In 2010, EPA, NHTSA and CARB established the National Program, which established federal greenhouse gas emission and harmonized corporate average fuel economy (CAFE) standards for MY 2012-2016 fleets. This program included three major components: (1) EPA issued its first-ever federal vehicle emission standards for greenhouse gases (GHGs); (2) CARB, which had already established vehicle GHG emission standards, agreed to amend its regulations to accept automaker compliance with the federal standards in lieu of compliance with CARB's standards; and (3) NHTSA implemented CAFE standards that were harmonized with the federal emission standards. The National Program was aimed at creating a set of vehicle standards that would achieve the pollution reduction and fuel economy objectives of the Clean Air Act and the CAFE program, as well as those

set by California law, while giving automakers the option of complying with a single, nationwide set of harmonized standards to follow.

7. Then, in 2012, the agencies extended the National Program to MY 2017-2025. *See* 40 C.F.R. § 86.1818-12; *see also* letter from Mary D. Nichols to Ray LaHood and Lisa Jackson, dated July 28, 2011 (true and correct copy attached hereto). As part of the agreement extending the National Program, EPA agreed to conduct an evidence-based review of the appropriateness of the MY 2022-2025 federal standards and, by April 1, 2018, issue its determination as to whether the standards remained appropriate under the Clean Air Act based on a number of specified factors and the record before the agency. In EPA's final regulations establishing the MY 2017-2025 standards and the Mid-Term Evaluation, EPA stated that the Mid-Term Evaluation would be "as robust and comprehensive as that in the original setting of the [model year] 2017-2025 standards." 77 Fed. Reg. 62,624, 62,784 (Oct. 15, 2012).

8. The review was important to CARB, not only because it had agreed to accept compliance with the existing federal standards as compliance with the State standards, but also because CARB has extensive experience in conducting such reviews and knows they are important opportunities to potentially modify the standards, including strengthening the standards in cases where technological progress has been better, and/or costs have been lower, than originally projected. Accordingly, CARB's Governing Board directed CARB's Executive Officer to "participate in EPA's mid-term review of the 2022 through 2025 model year passenger vehicle greenhouse gas standards being proposed under the 2017 through 2025 MY National Program" and indicated that CARB would conduct a complementary review.[1]

[1] CARB Resolution 12-11 (Jan. 2012) at 20, available at: https://arb.ca.gov/regact/2012/cfo2012/res12-11.pdf

9. Similarly, EPA provided in its final regulations that CARB would play an important role in the Mid-Term Evaluation:

> The agencies [EPA and NHTSA] will conduct a comprehensive mid-term evaluation and agency decision-making process for the MYs 2022–2025 standards as described in the proposal. … NHTSA and EPA fully expect to conduct this mid-term evaluation in coordination with the California Air Resources Board, given our interest in maintaining a National Program to address GHG emissions and fuel economy.

77 Fed. Reg. at 62,628. EPA also affirmed that "any adjustments to the standards will be made with the participation of CARB and in a manner that ensures continued harmonization of state and Federal vehicle standards." *Id.* at 62,784. EPA observed in its rulemaking that CARB's Board had committed to participate in this review. *See id.* at 62,630 n. 10; *see also id.* at 62,652 (observing that "[s]everal organizations and associations stressed the importance of involving CARB and broad public participation in the review process" and committing EPA to do so).

10. CARB was to be involved from the start of this process, helping to prepare the extensive technical assessment report on which EPA's determination was to be based. This document was to be at the core of the review. As the final federal rule explains:

> EPA, NHTSA and CARB will jointly prepare a draft Technical Assessment Report (TAR) to inform EPA's determination on the appropriateness of the GHG standards and to inform NHTSA's rulemaking for the CAFE standards for MY 2022–2025. The TAR will examine the same issues and underlying analyses and projections considered in the original rulemaking, including technical and other analyses and projections relevant to each agency's authority to set standards as well as any relevant new issues that may present themselves. There will be an opportunity for public comment on the draft TAR, and appropriate peer review will be performed of underlying analyses in the TAR. The assumptions and modeling underlying the TAR will be available to the public, to the extent consistent with law.

77 Fed. Reg. at 62,784.

11. EPA's own regulation expressly required that its determination of the appropriateness of the MY 2022-2025 standards be based upon the TAR. 40 C.F.R. § 86.1818-12(h)(2).

12. Initially, and for many years, EPA and NHTSA honored their commitment to include, and coordinate with, CARB in the development of the Draft TAR and the mid-term review. Joint work began in approximately December 2012 between CARB, EPA, and NHTSA to coordinate efforts on research and analysis for the Mid-Term Evaluation and continued through the release of the 1,217-page Draft TAR in July 2016.

13. Between December 2012 and the publication of the Draft TAR in July 2016, I and other CARB staff collectively spent thousands of hours on meetings, research and analysis, drafting, and other work directly related to the preparation of the Draft TAR. I participated in bi-weekly, joint "three-agency" meetings between the agencies' technical experts during that 3.5-year period. These meetings evolved to become weekly and even daily meetings as deadlines drew near. During the meetings, EPA, NHTSA and CARB staff shared technical analysis and findings, provided feedback and review of each other's analyses, and discussed consensus positions on specific detailed technical findings. These meetings, which collectively exceeded 100 separate meetings, generally included four or more participants (including subject matter experts) from CARB as well as staff from each of the other agencies. Collectively, approximately 15 to 20 different CARB staff contributed to the Mid-Term Evaluation.

14. As part of CARB's participation in the research and development of the Draft TAR, I attended, by conference call or in person, three-agency meetings with numerous important stakeholders, including every automotive manufacturer subject to the standards (including General Motors, Ford, Fiat Chrysler, Honda, Nissan,

Toyota, Volvo, Volkswagen, Daimler, BMW, Hyundai/Kia and Tesla), major automotive component suppliers, trade associations, and non-governmental organizations such as environmental groups. I also travelled to automotive manufacturers' facilities for meetings, many with representatives of all three agencies, in Michigan, Ohio, Tennessee, California, Germany, Japan, and South Korea, as well as additional meetings held at NHTSA's and EPA's offices. Generally, the meetings involved detailed discussions of current and upcoming technologies and confidential product plans related to what manufacturers would likely need to do to comply with the MY 2022-2025 standards.

15. In July 2016, EPA, NHTSA and CARB jointly issued the Draft TAR. The findings and analysis in the Draft TAR reflect the expert judgment of all three agencies based on the extensive evidence gathered during the previous three-and-a-half years. Each agency was responsible for portions of the research and analysis that went into the Draft TAR. I led the CARB team's role, which included authoring the section on alternative fuel infrastructure (including zero emission vehicle (ZEV) infrastructure) to help assess the status, feasibility, and role for alternative fuel technologies in meeting the GHG standards. CARB also took the lead role in determining the number of ZEVs to include in baseline files for EPA's OMEGA modeling to represent compliance with the ZEV regulation for California and the Section 177 states so that compliance with the separate greenhouse gas emission standards could be accurately modeled as the incremental difference to the fleet given all other existing regulations. For other sections and analysis, I led the CARB team that provided input to data, analysis, and proposed findings or results from the other agencies. I believe the Draft TAR accurately and comprehensively reflects the state of the science and technological progress in the automotive industry, and remains robust today. It conclusively shows, with substantial factual

support, that the existing federal standards for MY 2022-2025 vehicles are achievable and will cost the same or less than was projected in 2012, and that the industry is on track to meet them.

16. Based upon the comprehensive analysis in the Draft TAR that confirmed that multiple technologies are available at lower costs than originally projected to meet the existing standards, that vehicle manufacturers were positioned to be able to continue to utilize such technologies, that manufacturers have multiple compliance pathways available to them, and that consumers have been responsive to these technologies, EPA issued a final determination in January 2017 (2017 Determination) that it was appropriate to maintain the federal standards for MY 2022-2025 at their current levels. I concurred, and I continue to concur with this conclusion. Under the regulations establishing the Mid-Term Evaluation, EPA's 2017 Determination that the federal emission standards for MY 2022-2025 remained appropriate meant that the standards would remain in place. 77 Fed. Reg. 62,784.

17. I also led CARB's work in preparation of a parallel CARB mid-term review report that was released in January 2017 summarizing CARB's analysis of the appropriateness of the greenhouse gas standards as well as a re-evaluation of the feasibility of CARB's 1 milligram per mile particulate matter standard and of CARB's ZEV regulation. The part of this work reviewing the greenhouse gas standards drew heavily on the analysis in the Draft TAR.

18. Based on recommendations my team made to the Board in March 2017, the Board concurred that the current CARB Advanced Clean Car program requirements including the greenhouse gas standards remain appropriate and do not warrant change. Further, given EPA's 2017 Determination concluding that the current EPA greenhouse gas standards were appropriate and did not need to be

changed, the Board directed staff to continue to allow compliance with the EPA greenhouse gas standards at their current level of rigor in lieu of compliance with the CARB standards.

19. Beginning in January 2017, EPA and NHTSA suspended their collaboration with CARB on the Mid-Term Evaluation. EPA and NHTSA terminated the regular recurring meetings between the three agencies and stopped sharing technical analyses and any new findings and information concerning the MY 2022-2025 standards, and also did not include CARB in any joint discussion of comments. Even after the announcement by NHTSA that it was initiating a rulemaking and by EPA that it was reconsidering its determination, these agencies have not engaged CARB in any three-agency meetings to share or discuss any new or updated analysis by any of the agencies or submitted by any of the commenters. NHTSA has not shared any new or additional work since the Draft TAR with CARB. Neither I nor, to my knowledge, any other technical staff at CARB have been invited or had any opportunity to participate in three-agency meetings to update each other on newer work or to discuss any factors or new information that may be relevant to the feasibility of the standards or prior analysis done in the draft TAR. To date, neither I nor, to my knowledge, any other technical staff at CARB have seen any new or updated analysis done by NHTSA to support a decision to reopen EPA's 2017 Determination or to support a future proposed CAFE or GHG rulemaking change. While CARB staff had a few sporadic interactions with EPA after January 2017 concerning the standards, those interactions bore no resemblance to the interactions before that point in time and, as far as I have been able to tell, these were not incorporated into EPA's April 13, 2018 revised final determination (Revised Determination).

20. I have reviewed EPA's Revised Determination withdrawing the 2017 Determination and concluding that the existing MY 2022-2025 standards are not appropriate. EPA purports to base its decision on "more recent information" that it claims "suggests that the current standards may be too stringent" and cites generally to a "significant record that has been developed since the January 2017 Determination." 83 Fed. Reg. 16,077, 16,077-78 (Apr. 13, 2018). EPA further states that it "has also both developed and received additional data and assessments since the January 2017 Determination regarding technology effectiveness and technology costs which warrant additional consideration." *Id.* at 16,078.

21. To my knowledge, and as reflected in the preceding paragraph, EPA never identified this "significant" post-2017 Determination record, including the additional data and assessments EPA alleges it developed, prior to its issuance of the Revised Determination. Had it made this record available for public comment before issuing its Revised Determination, as envisioned by the regulations governing the Mid-Term Evaluation process and as EPA did before issuing its 2017 Determination, CARB and other stakeholders would have been able to review the new portions of the record and provide meaningful responses and information and analyses that would have been directly relevant to EPA in undertaking its reconsideration. Instead, because of EPA's failure to identify the complete record on which it intended to rely in issuing its Revised Determination, CARB was deprived of the opportunity to meaningfully participate in the process that led to the Revised Determination.

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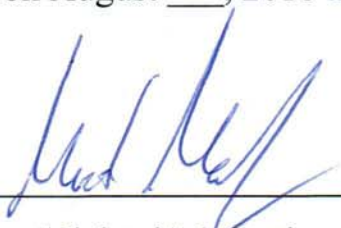
22. Furthermore, based on my review of the Revised Determination and my extensive involvement in preparing, and my knowledge of, the Draft TAR, I have concluded that the Revised Determination is not based on the Draft TAR. Although the Revised Determination references the Draft TAR a handful of times, it does not utilize the findings and analysis in the Draft TAR in any substantive or meaningful way. The Revised Determination purports to consider the comments received by EPA on the Draft TAR but, unlike the review and analysis used by EPA to respond to and address those same comments in the November 2016 proposed determination and the 2017 Determination, the Revised Determination does not analyze in a meaningful way or otherwise substantiate why the analyses and conclusions should be different. The Revised Determination does not offer any new evidence or analysis that would justify departing from the conclusions in the Draft TAR.

I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct. Executed on August ___, 2018 at El Monte, California.



Michael McCarthy

MICHAEL McCARTHY

Los Angeles, CA · 626-771-3614
michael.mccarthy@arb.ca.gov

EXPERIENCE

10/1992 TO 06/1999

AIR RESOURCES ENGINEER, CALIFORNIA AIR RESOURCES BOARD

Support development of the Low Emission Vehicle tailpipe standards and On-board Diagnostic requirements including: implement and test prototype emission controls, analyze resultant data, technical writing for rulemakings

06/1999 TO 06/2013

AIR RESOURCES SUPERVISOR, CALIFORNIA AIR RESOURCES BOARD

Manager of the Advanced Engineering Section, overseeing the On-board Diagnostics (OBD) program including: regulatory development work, rulemaking adoption, annual vehicle certification, and development of an enforcement program for light-duty vehicle OBD systems and heavy-duty vehicle OBD systems.

06/2013 TO CURRENT

CHIEF TECHNOLOGY OFFICER, CALIFORNIA AIR RESOURCES BOARD

CTO of the ECARS Division, overseeing rulemaking development for current and future light-duty vehicle criteria pollutant standards, greenhouse gas standards, and the Zero Emission Vehicle program including: leading CARB's midterm review of the Advanced Clean Cars regulations and CARB's participation in the joint midterm evaluation of U.S. EPA's national greenhouse gas vehicle standards with U.S. EPA and NHTSA, and developing new standards for model years 2026 and beyond.

EDUCATION

JUNE 1992

B.S. MECHANICAL ENGINEERING, UCLA

Specialty in Digital Designs and Control Systems

OTHER EXPERIENCE/AWARDS

- Past committee member of several SAE International and ISO Standards (J1979, J1962, J1699, J1939, ISO 15765)
- Past member of Federal Advisory Committee Act (FACA) workgroup on Inspection and Maintenance Programs
- Co-organizer, SAE International "OBD Symposium" for 10+ years
- SAE International "Henry Souther Standards Award" Recipient, 2006
- CARB "Award of Excellence", 2007
- Professional Engineers in California Government "Professional Achievement Award", 2016
- Contributor to technical papers on vehicle emission testing and measurement of vehicle emissions

Air Resources Board

Mary D. Nichols, Chairman
1001 I Street • P.O. Box 2815
Sacramento, California 95812 • www.arb.ca.gov

Linda S. Adams
Acting Secretary for Environmental Protection

Edmund G. Brown Jr.
Governor

July 28, 2011

The Honorable Ray LaHood
Secretary
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

The Honorable Lisa Jackson
Administrator
Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Secretary LaHood and Administrator Jackson:

California recognizes the benefit for the country of continuing the historic National Program to address greenhouse gases and fuel economy that the Environmental Protection Agency (EPA), the National Highway Traffic Safety Administration (NHTSA), and California began in 2009 with the standards for model years 2012 through 2016, and that those federal agencies and California are continuing for model years 2017 and beyond.

California fully supports the proposal and adoption of a continued National Program that we understand will be subject to full notice-and-comment rulemaking, affording all parties, including California, the right to participate fully, comment, and submit information, the results of which are not pre-determined but depend upon processes set by law. California welcomes the opportunity to be a partner in helping to advance a continued, harmonized National Program, which California understands does not alter California's longstanding authority under the Clean Air Act to have its own motor vehicle emissions program. California also commits to working with EPA and NHTSA, other states, and other stakeholders to help our country address the need to reduce dependence on oil, to save consumers money, and to address global climate change by continuing this kind of strong, coordinated National Program.

In order to promote the adoption of the continued National Program, California commits to take the following actions, subject to the further understandings described thereafter below. California also stands ready to enter into any appropriate agreements permissible by law to effectuate these commitments.

(1) California commits that if EPA proposes federal GHG standards and NHTSA proposes CAFE standards for model years (MYs) 2017 and beyond substantially as described in the July 2011 Notice of Intent, and the agencies adopt standards substantially as proposed, California will not contest such standards.

(2) California commits to propose to revise its standards on GHG emissions from new motor vehicles for model-years MYs 2017 through 2025, such that compliance with the GHG emissions standards adopted by EPA for those model years that are substantially as described in the July 2011Notice of Intent, even if amended after 2012, shall be deemed compliance with the California GHG emissions standards, in a manner that is applicable to states that adopt and enforce California's GHG standards under Clean Air Act (CAA) Section 177.

(3) California commits to propose that its revised ZEV program for the 2018-2021 MYs include a provision providing that over-compliance with the federal GHG standards in the prior model year may be used to reduce in part a manufacturer's ZEV obligation in the next model year.

California's commitment to take the above actions contemplates that all of the following will occur:

(1) Manufacturers of motor vehicles and other parties affiliated with such manufacturers and/or under their control will use their best efforts to ensure that the trade association(s) to which they belong will not contest the actions discussed in paragraphs (2) and (3) above or in paragraphs (3) through (6) below.

(2) EPA proposes federal GHG standards and NHTSA proposes CAFE standards for MYs 2017 and beyond substantially as described in the July 2011 Notice of Intent, and the agencies adopt standards substantially as proposed.

(3) Manufacturers of motor vehicles and other parties affiliated with such manufacturers and/or under their control, commit that if EPA proposes

national GHG standards and NHTSA proposes CAFE standards for MYs 2017 and beyond substantially as described in the July 2011 Notice of Intent, and the agencies adopt standards substantially as proposed, said parties will not contest or challenge any part of those final rules or support any contest or challenge of those final rules.

(4) California submits its amended GHG emissions standards for motor vehicles for MYs 2017-2025 to EPA requesting a waiver of preemption under Section 209 of the CAA, and EPA grants California's request for MYs 2017-2025.

(5) Manufacturers of motor vehicles and other parties affiliated with such manufacturers and/or under their control commit to not contest or challenge any part of California's emission standards for MYs 2017 through 2025 in any state or federal administrative or judicial forum, including but not limited to preemption claims relating to the Energy Policy Conservation Act (EPCA) or the 2007 Energy Independence and Security Act of 2007, or support any such contest or challenge.

(6) Manufacturers of motor vehicles and other parties affiliated with such manufacturers and/or under their control, do not contest or challenge any part of a final decision by EPA granting California's eventual request for a waiver of preemption under Section 209 of the CAA for model years 2017-2025, or support any such contest or challenge, but this does not apply to subsequent changes made by CARB, including changes resulting from the midterm evaluation.

(7) California will fully participate in the mid-term evaluation, however, California reserves all rights to contest final actions taken or not taken by EPA or NHTSA as part of or in response to the mid-term evaluation.

California believes that the actions discussed in the letter could occur under a timeline as follows:

EPA and NHTSA issue the [July 2011] Notice of Intent.

EPA and NHTSA issue a Notice of Proposed Rulemaking.

California holds a hearing on a proposed rule consistent with the actions described above.

EPA and NHTSA issue a Final Rule.

California issues a Final Rule that revises its regulations.

EPA, NHTSA, and California conduct a mid-term evaluation for the standards for MYs 2022-2025.

Sincerely,

Mary D. Nichols
Chairman

EXHIBIT I

Declaration of Marc Nielsen
Legislative Director
District of Columbia Department of Energy and Environment

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF CALIFORNIA, et al., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Respondents.	Case No. 18-1114 (and consolidated cases 18-1118 and 18-1139)

DECLARATION OF MARC NIELSEN

I, Marc Nielsen, declare and state as follows:

1. I am over the age of eighteen (18) years, competent to testify to the matters contained herein, and testify based on my personal knowledge and information.

2. I am the Legislative Director for the District of Columbia ("District") Department of Energy & Environment ("DOEE"). I have served in this position since August 21, 2016. In this role, I serve as principal advisor to the DOEE Director and staff on matters concerning District and federal environmental legislation and regulations impacting or related to the Department and identify the need for legislative and regulatory reforms to achieve the Department's objectives. I also act as the principal liaison for coordinating requests from the Council of the District of Columbia on all legislative matters affecting DOEE, coordinating legislative communications and interactions between DOEE staff and the Executive Office of the Mayor, and soliciting input from the regulated community and stakeholders on proposed regulations. Pursuant to the Department's mission, I identify the need for legislative and

regulatory reforms to achieve the Department's objectives. Previously, I served as an Assistant Attorney General in the District of Columbia Office of the Attorney General, assigned to DOEE's Office of the General Counsel, providing legal guidance and representation for DOEE's Environmental Services Administration, Natural Resources Administration, and Operations Services Administration.

3. I have a Bachelor of Arts in political science from Brigham Young University and a Juris Doctor from the University of the District of Columbia David A. Clarke School of Law.

4. DOEE's mission is to improve the quality of life for the residents and natural inhabitants of the nation's capital by protecting and restoring the environment, conserving our natural resources, mitigating pollution, increasing access to clean and renewable energy, and educating the public on ways to secure a sustainable future. The agency's core responsibilities include, but are not limited to, enforcing environmental regulations; monitoring and assessing environmental risks; developing energy and environmental policies; issuing permits; and providing residents and local businesses with funding, technical assistance, and information on initiatives designed to ensure a more resilient and sustainable city.

5. I submit this declaration in support of the State Petitioners in the above-captioned proceeding and in opposition to Respondents' and Movant-Intervenors' Motions to Dismiss the Petition. As described below, the District has been and continues to be harmed by the United States Environmental Protection Agency's ("EPA") Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles, 83 Fed. Reg. 16077 (Apr. 13, 2018) ("2018 MTE Determination"). The District has ambitious but achievable greenhouse gas emission ("GHG") reduction goals developed, in part, on the anticipated reductions in GHGs from the existing federal GHG emission standards for model year 2022–2025 light-duty vehicles.

In response to EPA's determination that the current federal greenhouse gas emission standards for model year 2022–2025 light-duty vehicles are not appropriate, the District has determined that it is necessary to adopt California's emission standards in order to meet its GHG reduction goals. This requires staff time and resources to develop, implement, and enforce new clean air regulations. As explained below, given the statutory two-year lead time required for the District to adopt California's standards, the District must take action now and cannot wait to see the ultimate revisions to the federal standards.[1]

The District Is Harmed by Climate Change and So Has Committed to GHG Reduction Goals

6. As a densely populated area located at the confluence of two tidal rivers, the District is particularly vulnerable to the effects of climate change caused in large part by GHG emissions, including dangerous heat waves, flooding caused by rising tides and heavy rains, and severe weather. The District is already experiencing a changed climate. In 2012, the District had a record-breaking heatwave during which temperatures soared above 95°F for eleven straight days.[2] Water levels along the Potomac and Anacostia Rivers have increased 11 inches in the past 90 years due to a combination of sea level rise and subsidence. As a result, nuisance flooding in riverfront areas has already increased by more than 300% according to the National Oceanic and Atmospheric Administration.[3] The District is projected to experience even worse effects, especially without action to substantially reduce GHG emissions. By 2080, the U.S. Army Corps of Engineers conservatively predicts up to 3.4 feet of additional sea level rise in the

[1] *See* 42 U.S.C. § 7507(2) (Clean Air Act, § 177).
[2] Climate Ready DC at 2, https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/CRDC-Report-FINAL-Web.pdf ["Climate Ready DC"].
[3] *Id.* at 3.

District.[4] Heat emergencies are projected to increase from 30 days per year (historic average) to 30-45 days by the 2050s, and to 40-75 days by the 2080s.[5] Historically, the average summer high temperature in the District was 87°F – by the 2080's, the average temperature is projected to increase significantly to between 93°F and 97°F.[6] Whether the District experiences the lower or higher end of these projections depends in part on how steeply GHG emissions fall. The combined impact of rising tides and heavier rains pose significant threats to the District's infrastructure, community resources, cultural assets, natural resources, government and military facilities, visitors and residents.

7. In response to the threats facing the residents of, and visitors to, the District, the District adopted two key GHG reduction goals. First, the District committed to reducing carbon emissions 50 percent below 2006 levels by 2032 and 100 percent by 2050, as established in the District's 2013 Sustainable DC plan.[7] Second, the District committed to proportionally upholding the commitment made by the United States in the Paris Agreement to reduce greenhouse gas emissions between 26 and 28 percent from 2005 levels by 2025.[8]

8. The District established plans to meet these goals and address climate change. The District's Clean Energy DC plan lays out how the District can meet the goal of reducing GHG emissions by 50% below 2006 levels by 2032, putting the District on the path to meet all

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[4] *Id.*
[5] *Id.* at 2.
[6] *Id.*

[7] Sustainable DC, at 7, http://www.sustainabledc.org/wp-content/uploads/2017/02/Web-Ready-File-2.6.17.pdf; Press Release: Mayor Bowser Commits to Make Washington, DC Carbon-Neutral and Climate Resilient by 2050, *available at* https://doee.dc.gov/release/mayor-bowser-commits-make-washington-dc-carbon-neutral-and-climate-resilient-2050.
[8] *Id.*

of its GHG reduction goals.[9] The District's 2016 Climate Ready DC plan is its plan to adapt to a changing climate. These plans are ambitious but achievable, especially with support from the federal government, and if parallel actions are taken by neighboring states.

The District's Need to Adopt California's Light-Duty Vehicle GHG Standards

9. Addressing vehicle emissions is an important component of the District's plan to meet its GHG reduction goals and to improve local air quality. Approximately 21% of the District's annual GHG emissions come from vehicles.[10] Vehicle emissions contribute to poor air quality in the District, putting residents at higher risk for asthma and other respiratory illnesses. In 2008, the Council of the District of Columbia passed the Clean Cars Act of 2008, which found that the adoption of California vehicle emissions standards would improve District air quality and help to address global warming. The Act required the Mayor to establish and maintain a low emissions vehicle program by adopting California vehicle emissions standards and compliance requirements applicable to model year 2011 and thereafter, as is authorized by § 177 of the Clean Air Act.[11]

10. Promulgating regulations to implement the California emissions standards would take significant staff time and resources, diverting staff from other competing, and often urgent, priorities. With the proposal of a new national program of vehicle standards in 2009, and establishment by EPA and the National Highway Traffic Administration ("NHTSA") of the

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[9] *See* Clean Energy DC (Aug. 2018) at v, *available at* https://doee.dc.gov/sites/default/files/dc/sites/ddoe/page_content/attachments/Clean%20Energy%20DC%20-%20Full%20Report_0.pdf ["Clean Energy DC"].

[10] Clean Energy DC at 191 (citing the 2011 District of Columbia GHG Inventory, http://doee.DC.gov/sites/default/files/dc/sites/ddoe/publication/attachments/GHGinventory-1205-.pdf).

[11] D.C. Official Code §§ 50-731, 50-732.

national program for GHG emissions and fuel economy standards in 2010, DOEE was able to rely on the federal vehicle GHG emission standards and achieve comparable emission reductions without the need to use staff time to promulgate regulations adopting the California standards. Clean Energy DC projected that the current federal standards will reduce the District's GHG emissions by 7.1% by 2032 (relative to the District's 2006 baseline for reducing GHG emissions).[12]

11. Accordingly, the District was alarmed when EPA re-opened the 2017 MTE and reversed its prior conclusion that the 2022-2025 fuel efficiency standards were appropriate and would reduce GHG emissions significantly. At the same time, EPA announced plans to issue draft regulations to roll-back the 2022-2025 national vehicle emissions and fuel economy standards. In response, on May 2, 2018, Mayor Bowser issued Mayor's Order 2018-044 to implement the Clean Cars Act. DOEE is currently drafting regulations to adopt the California vehicle emissions standards and compliance requirements, which would be applicable to model year 2022 and after.

12. I understand that Respondents argue that the States are not harmed by the 2018 MTE Determination because the same emission standards remain in place until a new final rule is issued and the content of any future final rule is undetermined until then. I also understand that Respondents and Movant-Intervenors argue that the States do not face hardship from the MTE 2018 Determination for the same reason. This is untrue. The 2018 Determination has required the District to focus staff time and resources to respond to this unexpected development in order to promulgate the regulations needed to maintain the District's planned levels of GHG reductions, staff time and resources that would otherwise be focused on other, urgent priorities.

[12] Clean Energy DC at xiv.

Increased staff time and resources will be needed in the future to implement and enforce these regulations.

13. The District cannot wait to see the content of EPA's final regulations to take these actions because by then it may be too late to adopt California standards for model year 2022 and to establish a working registration and enforcement program. In particular, Clean Air Act, § 177 requires that a state wishing to adopt California's standards "adopt such standards at least two years before commencement of such model year." 42 U.S.C. § 7507(2). Because MY 2022 vehicles will go on sale in calendar year 2021, and the annual production period may commence as early as January 2, 2019, the District has already been taking the steps required to adopt California's standards now in order to ensure that it can meet the two-year lead time requirement to apply California's standards to as many MY 2022 vehicles as possible. Moreover, given the time it takes for vehicles to turnover, any delay in adopting these standards will delay the District's efforts to reduce GHG emissions and make it more difficult to achieve its goals.

Conclusion

14. For these reasons, the District has been harmed by, and faces hardship from, the 2018 MTE Determination.

I declare under penalty of perjury that the foregoing is true and correct and of my own personal knowledge.

Executed on January 29, 2019, in Washington, District of Columbia.

Marc A. Nielsen
Legislative Director
District of Columbia Department of Energy and Environment

EXHIBIT J

Declaration of Bruce Carlisle
Former Director, Office of Coastal Zone
Massachusetts Executive Office of Energy and Environmental Affairs
(Current Senior Director for Offshore Wind
Massachusetts Clean Energy Center)

ORAL ARGUMENT NOT YET SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF CALIFORNIA, *et al.*, Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *et al.*, Respondents.	No. 18-1114 (and consolidated cases 18-1118, 18-1139, and 18-1162)

DECLARATION OF BRUCE CARLISLE

I, Bruce Carlisle, declare as follows:

1. I am currently employed by the Massachusetts Executive Office of Energy and Environmental Affairs (EEA) as Director of the Office of Coastal Zone Management (CZM). CZM is the lead policy and planning agency on coastal and ocean issues in Massachusetts. I have held this position for seven years. I have been employed by CZM since 1994, having held positions with increasing responsibility. I previously held the position of Assistant Director for six years.

2. I have extensive professional knowledge and experience regarding the impacts of climate change on coastal resources and communities in Massachusetts,

as well as Massachusetts' efforts to plan and prepare for such impacts. My job duties include providing oversight and administration for CZM and directing policy development, planning efforts, and technical approaches for CZM program areas. I supervise a team of 35 multidisciplinary professionals working in a range of program areas, including climate change adaptation, coastal resilience, and shoreline and floodplain management, collectively administered as CZM's StormSmart Coasts Program. Most of the staff I oversee have many years of professional experience in coastal and environmental management, planning, science, policy, or other related fields. I routinely collaborate, engage, and partner with scientific and technical subject matter experts in federal agencies and academia. As part of my management responsibilities, I oversee CZM's work to provide information, strategies, tools, and financial resources to support communities and people working and living on the Massachusetts coast to address the challenges of erosion, flooding, storms, sea level rise, and other climate-change-related impacts. For instance, I am responsible for directing and overseeing all sea level rise assessment and data compilation projects undertaken by CZM, including the development of Massachusetts-specific sea level rise projections, maps, guidance documents and summaries, and other decision-support tools and services. I am also responsible for directing and overseeing CZM's work to provide policy and planning support and technical assistance to other state

agencies, local communities, and private entities regarding adapting and increasing resilience to current and future impacts of climate change on our coast. For example, I oversee CZM's StormSmart Coasts Program that offers competitive grants, hands-on technical and planning assistance, and decision-support tools to Massachusetts cities and towns for the purposes of planning for and adapting to sea level rise and other climate-change-related coastal hazards.

3. In my role with CZM, I have chaired and participated in various legislative and executive branch official groups, including the Massachusetts Coastal Erosion Commission, the Massachusetts Ocean Advisory Commission, the Coastal Zone and Ocean Subcommittee of the Massachusetts Climate Change Adaptation Advisory Committee, and was lead author for the formal reports of these bodies. I also represent the Commonwealth of Massachusetts (Commonwealth) on several multi-state organizations, including the Coastal States Organization, Northeast Regional Ocean Council, Gulf of Maine Council on the Marine Environment, and Northeast Regional Ocean Planning Body. I have testified before the United States Senate Committee on Commerce, Science, and Transportation on climate change issues in the coastal zone, focusing on priority modeling and information needs, and I have provided congressional and state legislative briefings on managing climate change impacts for coastal communities and economies.

4. I have a Bachelor's degree and a Master's degree in Environmental Policy from Tufts University.

5. I am aware of and familiar with the science related to global climate change. My knowledge comes from my review of scientific peer-reviewed literature and consensus assessment reports, attendance at professional conferences and workshops, and professional exposure to other research and material. As a result of my professional experience and my knowledge of the peer-reviewed literature and reports, as well as my knowledge of the Massachusetts coastal resources and policies and planning related thereto, I can attest to the following.

6. The purposes of this declaration are to: (i) briefly describe the serious harms that climate change, caused in part by motor vehicle emissions, is causing and will continue to cause to Massachusetts' coastal resources, infrastructure, and communities; and (ii) briefly summarize existing state and local initiatives, programs, and plans to respond to and prepare for such impacts. I am submitting this declaration in support of the Opposition by the State Petitioners to Respondents' and Movant-Intervenors' Motions to Dismiss (*State of California, et al. v. U.S. Environmental Protection Agency, et al.*, United States Court of Appeals for the District of Columbia Circuit, No. 18-1114 (and consolidated cases)), and in support of Petitioners' standing to seek review of the U.S. Environmental Protection Agency's action taken in its Mid-Term Evaluation of Greenhouse Gas

Emissions Standards for Model Year 2022–2025 Light-Duty Vehicles, 83 Fed. Reg. 16,077 (April 13, 2018).

7. I have reviewed the declaration of Christine Kirby, Assistant Commissioner in charge of the Bureau of Air and Waste and the Director of Air and Climate Programs for the Massachusetts Department of Environmental Protection (MassDEP) (Kirby Decl.), which is being filed concurrently with this Declaration. To avoid duplication, I adopt and incorporate herein by reference the portions of Ms. Kirby's declaration concerning Massachusetts' Global Warming Solutions Act (GWSA), MassDEP's role in implementing the GWSA and facilitating Massachusetts' compliance with emission-reduction mandates, the critical need to reduce emissions from the transportation sector for Massachusetts to meet its emission-reduction mandates, and MassDEP's upcoming rulemaking to ensure that its vehicle emission standards continue to reduce greenhouse gas (GHG) emissions as expected from 2022 and subsequent model year vehicles. Kirby Decl. ¶¶ 7–32.

Climate Change Threatens Massachusetts' Coastal Resources and Communities

8. The accelerated rate of global sea level rise and the severity and timing of coastal impacts due to this rise in sea level are largely dependent on current and future global GHG emissions and reduction measures. Continued increases in GHG emissions, including from motor vehicles, will result in increases

in global temperature, yielding additional contributions to global sea level rise (*i.e.*, increased contributions from thermal expansion of warmer waters and melting of land-based ice sheets).[1]

9. Human-caused climate change has led to a rise in global mean sea levels of 7 to 8 inches since 1900, and a rate of rise greater than any preceding century in the last 2,800 years.[2] Global average sea levels will continue to rise by 1 to 4 feet by 2100, and emerging science regarding Antarctic ice sheet stability indicates sea level rise of as much as 8 feet by 2100 cannot be ruled out.[3] Due to the relationship of the East Coast to the Gulf Stream and melting Antarctic ice sheets, sea level rise will be higher than the global average on the East and Gulf Coasts of the United States.[4]

10. A March 2018 report entitled *Massachusetts Climate Change Projections* (2018 Projections Report), developed by a team of scientists from the U.S. Department of the Interior's Northeast Climate Adaptation Science Center at the University of Massachusetts Amherst, summarizes and presents the best available, peer-reviewed science on climate change downscaled, or localized,

[1] *See generally* U.S GLOBAL CHANGE RESEARCH PROGRAM, CLIMATE SCIENCE SPECIAL REPORT: FOURTH NATIONAL CLIMATE ASSESSMENT, VOLUME I (D.J. Wuebbles et al. eds., 2017), https://science2017.globalchange.gov/.
[2] *Id.* at 10.
[3] *Id.*
[4] *Id.*

projections that show how the climate is likely to change in Massachusetts through the end of this century.[5] The 2018 Projections Report projects significant changes in the climate of Massachusetts as a result of human-caused greenhouse gas emissions.

11. A key component of the 2018 Projections Report is future sea level projections for the state's coastline. The analysis for Massachusetts consisted of a probabilistic assessment of future relative sea level rise at tide gauge stations with long-term records at Boston Harbor, MA, Nantucket, MA, Woods Hole, MA, and Newport, RI.[6] The sea level projections are based on a methodology that provides complete probability distributions for different greenhouse gas emissions scenarios.[7] Working with the principal investigators (Robert DeConto and Robert Kopp), a group from CZM, and a team of external peer reviewers, I participated in the review and synthesis of the downscaled projections, which are made available by the Commonwealth to set forth a standard set of sea level rise projections to be used by municipalities, state government, industry, and the private sector, and

[5] MASSACHUSETTS CLIMATE CHANGE PROJECTIONS (2018), https://nescaum-dataservices-assets.s3.amazonaws.com/resources/production/MA%20Statewide%20and%20MajorBasins%20Climate%20Projections_Guidebook%20Supplement_March2018.pdf.
[6] *See id.* at 11 (citing Robert M. DeConto & Robert E. Kopp, *Massachusetts Sea Level Assessment and Projections*, Technical Memorandum (2017).
[7] *See id.* (citing Robert E. Kopp et al., *Probabilistic 21st and 22nd century sea level projections at a global network of tide gauge sites*, 2 EARTH'S FUTURE 383–406 (2014)).

others to assess vulnerability and identify and prioritize actions to reduce risk. By 2100, Massachusetts is projected to experience between 4.0 and 7.6 feet of sea level rise relative to mean sea level from the year 2000, with up to 10.2 feet possible when accounting for higher ice sheet contributions to sea level rise under a high emissions scenario.

12. Massachusetts has 2,819 miles of tidal coastline, and a coastal zone (defined as areas landward to 100 feet inland of major roads or railways from New Hampshire to Rhode Island) that encompasses 59 square miles. Approximately 4.9 million people or 75% of the Commonwealth's population (as of the 2010 U.S. census) reside in coastal counties. In 2014, the total output of the Massachusetts coastal economy was $249.2 billion, representing over 54% of the state's annual gross domestic product, and coastal counties accounted for 53% of the state's employment and wages.[8] Approximately 170,000 year-round residents are currently (as of the 2010 U.S. census) located within coastal flood hazard areas, as defined by the Federal Emergency Management Agency (FEMA), and are susceptible to 1% annual chance coastal storm flooding under current sea level

[8] NAT'L OCEAN ECONOMICS PROGRAM, STATE OF THE U.S. OCEAN AND COASTAL ECONOMIES: COASTAL STATES SUMMARIES – 2016 UPDATE 29 (2016), http://midatlanticocean.org/wp-content/uploads/2016/03/CoastalStatesSummaryReports_2016.pdf.

conditions.[9] Accelerated sea level rise will lead to more regular flooding of developed and natural coastal areas due to more frequent tidal inundation, and will also exacerbate erosion along beaches, dunes, and coastal banks.

13. In addition, there is very high confidence that sea level rise will increase the frequency and extent of extreme flooding associated with coastal storms, such as hurricanes and nor'easters.[10] Coastal storm events will cause inundation of larger areas, and will occur more frequently, damaging or destroying coastal engineering structures such as seawalls, critical infrastructure such as waste water treatment plants and transportation systems, and private property.

14. More frequent and severe storm surge and inundation will create serious risks for public safety and health, especially where sewer mains and pump stations are impacted. Frequent tidal flooding from sea level rise may also lead to increases in respiratory diseases due to mold from dampness in homes.[11] Saltwater intrusion—or the increased penetration of saltwater into sources of freshwater—from sea level rise will impact water resources (such as drinking

[9] *See* MARK CROWELL ET AL., ESTIMATING THE UNITED STATES POPULATION AT RISK FROM COASTAL FLOOD-RELATED HAZARDS, in COASTAL HAZARDS , 151, 167 (CHARLES W. FINKL ed., 2013), https://tinyurl.com/yaolf6bk.
[10] *See* U.S GLOBAL CHANCE RESEARCH PROGRAM, *supra*, at 27.
[11] *See generally* CENTERS FOR DISEASE CONTROL & PREVENTION, U.S. DEP'T OF HEALTH & HUMAN SERVS., COASTAL FLOODING, CLIMATE CHANGE, AND YOUR HEALTH: WHAT YOU CAN DO TO PREPARE (2017), https://www.cdc.gov/climateandhealth/pubs/CoastalFloodingClimateChangeandYourHealth-508.pdf.

water) by contaminating freshwater sources with salt water and also through the corrosion of water supply infrastructure.

15. The Massachusetts coastline includes a diverse array of ecosystems including, among others, sandy beaches, rocky shores, barrier beaches, islands, estuaries, and salt marshes. These ecosystems offer immense recreational, cultural, and aesthetic value to the residents of and visitors to the Commonwealth, while also serving important ecological functions. For instance, some natural coastal resources, including barrier beaches, salt marshes, and estuaries, provide valuable resilience services to the Commonwealth by buffering inland coastal communities and the built environment from storm surges and flooding. Salt water will also impact these coastal resources, as saltwater intrusion into estuarine habitats such as salt marshes and freshwater wetlands will alter the composition of the plant species and affect wildlife that depend on these ecosystems.

Massachusetts is Experiencing Economic Impacts from Climate Change and Will Expend Significant Resources to Prepare for the Impacts of Climate Change on Our Coastal Areas.

16. The Commonwealth is already experiencing the impacts of climate change. The relative sea level trend at the Boston tide station is 2.82 millimeters

per year based on monthly mean sea level data from 1921 to 2017, which is equivalent to a change of 0.89 feet in less than 100 years.[12]

17. These impacts are directly harming the welfare of Massachusetts residents and causing significant economic losses. Coastal storms currently result in severe coastal flooding with extensive damage to public infrastructure, private homes and businesses, and a significant demand for emergency services. For example, a recent coastal storm on March 2–3, 2018, which reached the third-highest water level recorded at the Boston Harbor tide gauge, resulted in public damages and expenditures for response and recovery. The Massachusetts Emergency Management Agency determined that these costs exceeded $24 million across six coastal counties. On April 30, 2018, Massachusetts Governor Charles Baker requested a federal disaster declaration, which the Trump Administration approved on June 25, 2018.

18. Rising sea levels will only increase the frequency and duration of these types of coastal events; and the associated magnitude of coastal flooding and damage costs, including costs associated with the increased demand on first responders, will escalate accordingly.

[12] *See* Nat'l Oceanic & Atmospheric Admin., *Relative Sea Level Trend 8443970 Boston, Massachusetts*, TIDES & CURRENTS https://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?id=8443970.

19. Sea level rise and other impacts of a changing climate pose major risks to communities in Massachusetts' coastal zone. Looking out to the end of the century, a recent study analyzed the number of coastal homes and commercial properties throughout the United States that will be at risk from chronic, disruptive tidal flooding (*i.e.*, at least 26 floods per year) under future sea level conditions.[13] In Massachusetts, over 89,000 existing homes and 8,000 commercial properties may experience tidal flooding by 2100 under a high-emissions scenario (*i.e.*, 6.6 feet of sea level rise over this century). The current market value of residential buildings at risk is estimated at $63 billion, and homeowners currently contribute over $400 million to the local property tax base.[14]

20. The Massachusetts coast is afforded protection from coastal landforms such as beaches and dunes, and from engineered infrastructure such as revetments and seawalls. These coastal engineered structures will experience greater impacts from flooding and wave energy from the anticipated increase in frequency and intensity of coastal storm events associated with accelerated sea level rise. With these greater impacts will come more frequent need for maintenance of coastal

[13] *See* UNION OF CONCERNED SCIENTISTS, UNDERWATER: RISING SEAS, CHRONIC FLOODS, AND THE IMPLICATIONS FOR US COASTAL REAL ESTATE (2018), https://www.ucsusa.org/global-warming/global-warming-impacts/sea-level-rise-chronic-floods-and-us-coastal-real-estate-implications#.W3cY0c4zrcs.

[14] *See* Massachusetts-specific data available at: https://www.ucsusa.org/sites/default/files/attach/2018/06/underwater-data-by-state.xlsx.

engineered structures as well as beaches in the form of sediment nourishment at significant cost. For example, the Town of Winthrop needed additional protection from storm surge and flood impacts for a suburban neighborhood with existing engineered shoreline structures and an eroding beach. At a total project cost of over $22 million, 460,000 cubic yards of sand, gravel, and cobble were placed along 4,200 linear feet of shoreline. The community gained approximately 150 feet of beach width at high tide and increased protection against wave energy and coastal storms. Other communities in Massachusetts are currently working to design beach nourishment projects and address erosion and failing coastal engineered structures that will be exacerbated by sea level rise and increased flooding from coastal storms.

21. Coastal engineered structures have been built on over a quarter of the Commonwealth's ocean-facing shoreline to protect public and private infrastructure and assets from flooding and erosion. The Commonwealth and its municipalities own approximately 92 miles of seawalls and revetments along the coastline. As a result of wave forces on the coastal structures and lowered beach elevations, the Commonwealth and local governments routinely invest millions of dollars to repair and reinforce these structures so they can adequately protect coastal communities. For example, a seawall reconstruction project was recently completed in the Town of Marshfield to address public safety issues. The

Commonwealth provided a $1.85 million grant to the town, which was matched with roughly $620,000 in local funds. The 600-foot section of seawall sustained damages during a coastal storm in January 2015, and the state-funded project increased the height of the seawall by two to three feet to better protect a public road, utilities, and homes. The Town of Marshfield has 32 additional coastal engineered structures totaling 3.2 miles of shoreline (18,625 feet) that have been identified as needing repairs and retrofits to address the current and future threats of coastal storms. With higher flood levels and greater storm surges, significantly more investments will be required to achieve the current flood-design protections afforded by these engineered structures across the coast.

22. The Commonwealth owns a substantial portion of the state's coastal property. The Commonwealth owns, operates, and maintains approximately 177 coastal state parks, beaches, reservations, and wildlife refuges located within the Massachusetts coastal zone. The Commonwealth also owns, operates, and maintains numerous properties, facilities, and infrastructure in the coastal zone, including roads, parkways, piers, and dams. Rising sea levels along the Massachusetts coast will result in either the permanent or temporary loss of the Commonwealth's coastal property through inundation, storm surge, flooding, and erosion events. These projected losses of coastal property will likely destroy or damage many of the state-owned facilities and infrastructure described above. The

Commonwealth likely will be required to expend significant resources to protect, repair, or rebuild the affected properties, facilities, and infrastructure. According to the Commonwealth's 2013 *State Hazard Mitigation Plan*,[15] the replacement cost of state-owned buildings exposed to FEMA's 1% annual chance flood event in coastal counties exceeds $1.6 billion.

23. The Massachusetts coastal zone is home to several major ports including the Port of Boston and New Bedford/Fairhaven Harbor. Recent economic studies indicate the income generated from the Massachusetts maritime economy supports 2.6% of the state's direct employment and 1.3% of gross domestic product.[16] In 2015, New Bedford/Fairhaven Harbor alone generated $3.2 billion in direct business revenue from seafood processing and fleet operation businesses.[17] By nature of their purpose, the state's ports and harbors are generally low-lying, coastal-dependent areas of high density-built environment and are susceptible to service interruption and associated revenue loss when flooded or

[15] Available at: https://www.mass.gov/files/documents/2017/01/mp/massachusetts-state-hazard-mitigation-plan.pdf.
[16] *See* DAVID R. BORGES ET AL., UMASS DARTMOUTH PUBLIC POLICY CTR., NAVIGATING THE GLOBAL ECONOMY: A COMPREHENSIVE ANALYSIS OF THE MASSACHUSETTS MARITIME ECONOMY 11 (2018), https://www.mass.gov/files/documents/2018/01/24/Maritime_Economy.pdf.
[17] MARTIN ASSOCIATES & APEX COMPANIES, LLC, ECONOMIC IMPACT STUDY OF NEW BEDFORD/FAIRHAVEN HARBOR 5 (2016), http://www.portofnewbedford.org/New%20Bedford%20Economic%20Impact%20Assessment%20September%202016.pdf.

otherwise impacted by coastal events. Additionally, coastal dependent businesses, maritime schools, and public facilities and departments will face disruptions in service in post-storm conditions.

24. The Commonwealth is committed to protecting public safety, human health, the environment, and public resources through programs and policies that address sea level rise and other climate-change-related coastal hazards. EEA and CZM provide information, strategies, and tools to help other state agencies and communities plan for and address the challenges of erosion, flooding, storms, sea level rise, and other climate change impacts.

25. Of more than $29 million requested over the past 5 years alone, CZM has awarded $14.4 million in state-funded grants to local communities to support sea level rise adaptation planning and implementation through the Coastal Resilience Grant Program. Local governments have matched these state funds with roughly $7.5 million in local funds and in-kind services for coastal resilience. In 2017–2018, EEA also awarded roughly $8.5 million in municipal grants for climate vulnerability planning and implementation statewide through the Municipal Vulnerability Preparedness (MVP) Program. Local governments have matched MVP grants with over $2 million in local funds and staff time. These grant programs are extremely competitive. The total amount of funding requested

in 2018 for these programs was $5.4 million (from CZM) and $7.4 million (from EEA). There is a growing need at the local level for support.

26. Municipalities, private entities, and other partners have begun to support planning to address the impacts of sea level rise and other climate change impacts in Massachusetts and fund implementation of adaptation measures. Adaptation planning efforts include vulnerability assessments to determine areas and infrastructure susceptible to coastal impacts, prioritization of vulnerable assets and areas, and development of adaptation alternatives to mitigate climate risks in the near and long term. One example is the City of Boston's "Climate Ready Boston" initiative, which is developing district-level adaptation plans to address near-term coastal flooding and establish a framework for the funding and implementation of long-term, broader scale solutions. For the East Boston and Charlestown districts, the City of Boston identified near-term (2030–2050) and long-term (2050–2070) actions for addressing the future flood risks created by sea level rise; work is underway on similar studies for South Boston and Downtown Boston. The City of Boston's report estimates the costs for these actions range from $202 million to $342 million for these two districts alone.[18] Another example

[18] *See* COASTAL RESILIENCE SOLUTIONS FOR EAST BOSTON AND CHARLESTOWN: FINAL REPORT (2017), https://www.boston.gov/sites/default/files/climatereadyeastbostoncharlestown_finalreport_web.pdf.

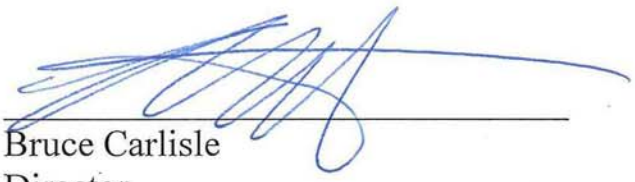
of planning for the impacts of coastal climate change is the *Great Marsh Coastal Adaptation Plan* led by the National Wildlife Federation in partnership with the Ipswich River Watershed Association.[19] The plan assesses climate impacts and vulnerability for the Great Marsh region and each of its six communities (Salisbury, Newburyport, Newbury, Rowley, Ipswich, and Essex), examining the risk and exposure of critical infrastructure and natural resources, and identifies areas of special concern. The plan states that in Newburyport, estimated one-time damages to buildings and structures (not contents) from a 1% annual exceedance probability storm (also known as the 100-year storm) under 1.09 feet of sea level rise would be $18.3 million and under 3.45 feet of sea level rise the damages would increase to $32.4 million.[20]

27. In conclusion, any increase in the rate of sea level rise and the frequency, magnitude, and severity of coastal flooding, erosion, and storms related to increased GHG emissions, including from motor vehicle emissions, will impact the Commonwealth and its residents and will require the Commonwealth to expend additional resources and incur additional costs.

[19] *See* TAJ SCHOTTLAND ET AL., GREAT MARSH COASTAL ADAPTATION PLAN (2017), https://www.nwf.org/-/media/Documents/PDFs/NWF-Reports/NWF-Report_Great-Marsh-Coastal-Adaptation-Plan_2017.ashx.
[20] *Id.* at 49, tbl. 3.3-3.

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Boston, Massachusetts on August 29, 2018.



Bruce Carlisle
Director
Massachusetts Office of Coastal Zone Management

EXHIBIT K

Declaration of Christine Kirby
Ass't Commissioner, Bureau of Air and Waste
Massachusetts Department of Environmental Protection

ORAL ARGUMENT NOT YET SCHEDULED

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF CALIFORNIA, *et al.*, Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, *et al.*, Respondents.	No. 18-1114 (and consolidated cases 18-1118, 18-1139, and 18-1162)

DECLARATION OF CHRISTINE KIRBY

I, Christine Kirby, declare as follows:

1. I am currently employed by the Massachusetts Department of Environmental Protection (MassDEP) as the Assistant Commissioner in charge of the Bureau of Air and Waste and was, prior to my current position, the Director of Air and Climate Programs. I have held the former position for 2 years, and I held the latter for 6 years. I have been employed by MassDEP since 1985, having previously held the positions of Deputy Division Director of the Mobile Source Section for 8 years, and Branch Chief for Transportation Programs for 7 years.

2. My job duties include overseeing the promulgation and implementation of MassDEP regulations that establish emission standards and other emission-related requirements applicable to on-road mobile sources. I have managed the Massachusetts Low Emission Vehicle (LEV) program since 1997 in my various capacities as Branch Chief, Deputy Director, Director, and Assistant Commissioner. As part of my management responsibilities, I have been involved in numerous revisions to keep the LEV program up-to-date with the California standards in order to ensure that Massachusetts meets its air-quality obligations and greenhouse gas-reduction goals. I have also been the Massachusetts point of contact with the California Air Resources Board (CARB) on development and implementation of the California standards.

3. In my tenure as the Director of Air and Climate Programs, I was the chair of the Mobile Source Committee of the Ozone Transport Commission, which is a multi-state organization created under the Clean Air Act and is responsible for advising the United States Environmental Protection Agency (EPA) on transportation issues and for developing and implementing regional solutions to the ground-level ozone problem in the Northeast and Mid-Atlantic regions. I also served on the Board of Directors of the Northeast States for Coordinated Air Use Management (NESCAUM), an association of the air quality agencies in eight Northeast states that provides scientific, technical, analytical, and policy support to

the air quality programs of those agencies, especially regarding implementation of national environmental programs required under the Clean Air Act and other federal legislation. I currently serve on the Board of Directors of the National Association of Clean Air Agencies—a national association of state and local air quality agencies.

4. I have a Bachelor of Arts degree from Clark University.

5. This declaration refers to an action of Respondent EPA, the "Mid-Term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-Duty Vehicles," 83 Fed. Reg. 16,077 (Apr. 13, 2018) (Revised Final Determination). I am personally familiar with the Revised Final Determination.

6. I am submitting this declaration in support of State Petitioners' February 7, 2019 Brief in *State of California, et al. v. U.S. Environmental Protection Agency, et al.*, United States Court of Appeals for the District of Columbia Circuit, No. 18-1114 (and consolidated cases).

Massachusetts is Legally Obligated to Reduce Economywide Greenhouse Gas Emissions

7. The Commonwealth of Massachusetts (Commonwealth) is committed to protecting public health and the environment through programs and policies that address air pollution and climate change.

8. Massachusetts state law imposes legally binding requirements on the Commonwealth to reduce emissions of climate-warming greenhouse gases from sources across the economy. *See Kain v. Mass. Dep't Envtl. Prot.,* 474 Mass. 278, 287–88 (2016). The Global Warming Solutions Act of 2008 (GWSA) mandates that the Commonwealth reduce statewide greenhouse gas emissions at least 80% below the 1990 emissions level by 2050 and meet interim emissions-reduction limits. MASS. GEN. LAWS ch. 21N, §§ 3(b) & 4(a). Specifically, the GWSA required the Commonwealth's Secretary of Energy and Environmental Affairs (Secretary) to adopt a 2020 statewide greenhouse gas emissions limit between 10% and 25% below the 1990 emissions level. *Id.* § 4(a).

9. In 2010, the Secretary established the emissions limit for 2020 to be 25% below the 1990 emissions level.[1]

10. The GWSA also directs the Secretary to develop implementation plans for obtaining sufficient emissions reductions to meet the 2020, 2030, 2040, and 2050 emissions limits, and to update the Commonwealth's implementation plans at least once every 5 years. MASS. GEN. LAWS ch. 21N, §§ 3(b), 4(h).

11. In 2010, the Secretary published the first GWSA implementation plan, entitled the "Massachusetts Clean Energy and Climate Plan for 2020," which

[1] *See* Ian A. Bowles, *Determination of Greenhouse Gas Emission Limit for 2020* (Dec. 28, 2010), https://tinyurl.com/y8uaromz.

included a menu of policies to reduce greenhouse gas emissions from all significant emitting sectors, including transportation. As required by the GWSA, the Secretary updated the "Massachusetts Clean Energy and Climate Plan for 2020" in 2015. The "2015 update to the Massachusetts Clean Energy and Climate Plan for 2020" (MA Climate Plan) supersedes the 2010 plan and describes policies that Massachusetts relies on to achieve its legally binding 2020 emissions-reduction requirement. MASS. EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS, 2015 UPDATE: MASSACHUSETTS CLEAN ENERGY AND CLIMATE PLAN FOR 2020 (Dec. 31, 2015) [MA Climate Plan]. The policies set forth in the MA Climate Plan represent the Commonwealth's comprehensive strategy to address greenhouse gas emissions from emissions sources across the economy. Although the MA Climate Plan focuses on achieving the Commonwealth's near-term emissions-reduction requirement for 2020, the MA Climate Plan also looks ahead to the 2050 emission-reduction requirement and describes policies and plans that will help achieve this long-term limit, as well as to-be-determined interim limits for 2030 and 2040.

12. The GWSA also requires the Secretary to convene an advisory committee to advise the Commonwealth on matters related to implementation of the GWSA, including strategies to achieve emissions-reduction targets. MASS. GEN. LAWS ch. 21N, § 8. The required advisory committee, known as the GWSA

Implementation Advisory Committee, has begun advising the Commonwealth on development of the forthcoming "Massachusetts Clean Energy and Climate Plan for 2030."[2]

13. By Executive Order, Massachusetts Governor Charles Baker directed the Secretary to consult with the GWSA Implementation Advisory Committee regarding emissions limits for 2030 and 2040, as well as strategies to reduce emissions from the transportation sector.[3] This Executive Order further requires the Secretary to develop and publish every five years a comprehensive energy plan, which shall include strategies to meet the Commonwealth's energy demands for the transportation sector.[4]

14. By separate Executive Order, Governor Baker established the Commission on the Future of Transportation in the Commonwealth to advise the Governor on how to ensure that transportation planning, forecasting, operations, and investments for 2020 through 2040 can best account for likely demographic,

[2] *See, e.g.*, Mass. Executive Office of Energy & Environmental Affairs, Meeting Slidedeck for GWSA IAC Meeting (Feb. 15, 2018), https://www.mass.gov/event/february-15-2018-meeting-of-the-gwsa-implementation-advisory-committee-iac-2018-02-15t143000.
[3] *See* Exec. Order No. 569, § 1.1 (Mass. 2016) https://www.mass.gov/executive-orders/no-569-establishing-an-integrated-climate-change-strategy-for-the-commonwealth.
[4] *Id.*, §§ 1.3, 1.5.

technological, climate, and other changes in future mobility and transportation behaviors, needs, and options.[5]

15. MassDEP plays a critical role in implementing the GWSA and facilitating the Commonwealth's compliance with emissions-reduction requirements. For instance, MassDEP monitors state-level emissions trends, collects data on emissions from various sources, and records and reports annual statewide and sector-specific emissions through the Commonwealth's Greenhouse Gas Emissions Inventory. MassDEP is also responsible for implementing numerous policies and programs included in the MA Climate Plan. The Commonwealth's highest court, the Massachusetts Supreme Judicial Court, has recognized that MassDEP shoulders a crucial responsibility in state-wide emissions-reductions efforts. Section 3(d) of the GWSA requires MassDEP to promulgate regulations that address multiple sources or categories of sources of greenhouse gas emissions, impose a limit on emissions that may be released from such sources, limit the aggregate emissions released from each group of regulated sources or categories of sources, set emission limits for each year, and set limits that decline on an annual basis. *See Kain,* 474 Mass. at 292. MassDEP has promulgated two regulations that impose declining limits on the transportation

[5] *See* Exec. Order No. 579, § 1 (Mass. 2018), https://www.mass.gov/executive-orders/no-579-establishing-the-commission-on-the-future-of-transportation-in-the.

sector. *See* 310 MASS. CODE REGS. 60.05 ("GWSA Requirements for Transportation"); *id.* 60.06 ("CO_2 Emission Limits for State Fleet Passenger Vehicles").

Reductions in Transportation-Sector Emissions Are Critical to Achieving Massachusetts' Required Greenhouse Gas-Emissions Reductions

16. Significant reductions in transportation-sector greenhouse gas emissions are critical to achieving Massachusetts' emission-reduction requirements for 2020 and beyond. The transportation sector is the single largest source of greenhouse gas emissions in the Commonwealth, accounting for 42.7% of Massachusetts' statewide emissions in 2016.[6] Motor vehicles, including light-duty cars and trucks, are a leading source of emissions in the transportation sector. If Massachusetts' transportation-sector emissions were to remain, through 2050, at the 2016 level of 31.7 million metric tons of carbon dioxide equivalent ($MMTCO_2e$), or even at the lower end of the projected range of 2020 levels—29 MMTCO2e, Massachusetts would not be able to meet its required 2050 emissions limit of 18.9 $MMTCO_2e$ (which is equivalent to 80% below the 1990 emissions level). *See* MA Climate Plan, *supra*, at 13, tbl. 3 (projecting 2020 emissions).

[6] *See* MASS. DEP'T ENVTL. PROT., STATEWIDE GREENHOUSE GAS (GHG) EMISSIONS BASELINE & PROJECTION UPDATE, APPENDIX C: MASSACHUSETTS ANNUAL GREENHOUSE GAS EMISSIONS INVENTORY: 1990–2016, WITH PARTIAL 2017 DATA (2018), https://www.mass.gov/doc/appendix-c-massachusetts-annual-greenhouse-gas-emissions-inventory-1990-2016-with-partial-2017/download.

Even if emissions from all other sectors of the economy were eliminated, emissions from the transportation sector alone would exceed Massachusetts' economy-wide 2050 emissions limit if they did not decline after 2020.

Greenhouse Gas Emissions Standards for Motor Vehicles Are Key to Massachusetts' Compliance with Mandated Emissions Reductions

17. I have reviewed the Declaration of Joshua M. Cunningham, Chief of the Advanced Clean Cars Branch of CARB, executed on February 6, 2019 and submitted in support of the State Petitioners' February 7, 2019 Brief (Cunningham Decl.). I adopt and incorporate herein by reference the portions of Mr. Cunningham's declaration describing California's vehicle emission standards, the history of state and federal regulation of vehicle emissions, and the establishment of the national program. *See* Cunningham Decl., ¶¶ 4 – 40.

18. The Massachusetts Clean Air Act, MASS. GEN. LAWS ch. 111, §§ 142A–142O, specifically section 142K, requires MassDEP to adopt and implement California's emissions standards for new motor vehicles if such standards, in the aggregate, are at least as protective as federal motor-vehicle emissions standards. *See* MASS. GEN. LAWS ch. 111, § 142K. MassDEP initially adopted California's Low Emission Vehicle (LEV) program under regulations promulgated in 1991. *See* 310 MASS. CODE. REGS. 7.40.

19. The LEV program is applicable to 1995 and subsequent model year passenger cars, medium-duty passenger vehicles, and light-duty trucks sold, leased, or registered in Massachusetts. The LEV program requires most new vehicles to be equipped with California-certified advanced emission-control systems in order to be sold, leased, or registered in Massachusetts. These advanced emission-control systems reduce tailpipe emissions of so-called criteria pollutants, including particulate matter, carbon monoxide, sulfur oxides, and nitrogen oxides.

20. As required by state law, MassDEP amended its LEV program regulations in 1999 to adopt amendments to California's LEV program that applied to model year 2004–2007 vehicles. These amendments, known as the "LEV II regulations," included more stringent emissions requirements for criteria pollutants and for zero-emission vehicles (*e.g.*, battery-electric vehicles and fuel-cell vehicles). The LEV II regulations also extended emissions standards to certain categories of heavier sport utility vehicles and pickup trucks.

21. MassDEP amended its LEV program regulations again in 2012 to adopt further amendments to California's LEV program, known as the "Advanced Clean Cars Program" or "ACC regulations." The ACC regulations included the "LEV III regulations," which combined stringent emissions limits for criteria pollutants for 2015 and subsequent model year vehicles, with greenhouse gas

emissions standards for 2017 to 2025 model year vehicles. The ACC regulations also included revised zero-emission vehicle requirements.

22. Reducing greenhouse gas emissions from motor vehicles is a key objective of Massachusetts's ACC regulations. Under the LEV program, automobile manufacturers must decrease greenhouse gas emissions on a fleetwide basis for 2017 and subsequent model year cars and light trucks. As described in ¶¶ 10-15 of the Cunningham Decl., the greenhouse gas standards under the LEV program are designed to be harmonized with federal fuel economy and tailpipe emissions standards for 2017 to 2025 model year vehicles, such that vehicles that comply with federal standards are deemed to also comply with Massachusetts' ACC regulations.

23. Massachusetts is committed to reducing near-term and long-term greenhouse gas emissions from the transportation sector by maintaining the current LEV regulations. Massachusetts relies on the current LEV regulations as a key component of its strategy to satisfy GWSA mandates. The current LEV regulations are among the emissions-reduction policies included in the MA Climate Plan as part of the Commonwealth's strategy to meet both near-term and long-term emissions-reduction requirements. *See* MA Climate Plan, *supra*, at 26. Greenhouse gas emission reductions associated with the LEV program are critical to the Commonwealth's long-term compliance with the GWSA. The MA Climate

Plan estimates that the ACC regulations will reduce greenhouse gas emissions by 3.7 $MMTCO_2e$ in 2020, accounting for greater emission reductions than any other transportation-sector policy in Massachusetts. *Id*. According to the MA Climate Plan, "[b]ecause of these standards, per-mile [greenhouse gas] emissions from 2025 model year vehicles are forecast to be 34% lower, on average, compared to 2016 model year vehicles." *Id.* The MA Climate Plan expects continued reductions in transportation-sector emissions after 2020 from the ACC regulations. *See id.* MA Climate Plan, *supra*, at 28, fig. 8.

24. Reducing emissions of ozone precursors from motor vehicles is also a key objective of Massachusetts's LEV program, including the ACC regulations.

25. The federal Clean Air Act sets timelines and milestones for states to meet and maintain the national ambient air quality standard (NAAQS) for ozone and other criteria air pollutants. If a state's ambient air fails to meet a standard, the state must develop and implement pollution-control strategies to attain the standard. Once a state's ambient air meets the standard, the state must develop strategies to maintain that standard while accounting for future economic growth.

26. Ground-level ozone, or smog, is a chemical that adversely affects human health and the environment. It is not typically emitted directly from sources, but rather is the product of chemical reactions in the atmosphere.

Specifically, ozone is formed when oxides of nitrogen (NOx) react with volatile organic compounds (VOCs) in the presence of sunlight and heat.

27. From the time of promulgation to the present day, the LEV program has been a crucial and necessary part of Massachusetts' efforts to attain and maintain the NAAQS for ozone under the federal Clean Air Act by reducing emissions of VOCs and NOx.

Due to the Revised Final Determination, Massachusetts Needed to Take Action to Ensure the LEV Program Continues to Reduce Greenhouse Gas Emissions in Furtherance of GWSA Requirements

28. I am personally aware that EPA concluded in its Revised Final Determination that current federal greenhouse gas emissions standards for 2022 to 2025 model year light-duty vehicles are not appropriate and should be revised. *See* 83 Fed. Reg. at 16,087. I am also personally aware that the Revised Final Determination withdrew and superseded EPA's robust previous Final Determination issued on January 12, 2017, the "Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation." *See id*.

29. I am personally aware that on August 24, 2018, EPA and the National Highway Traffic Safety Administration (NHTSA) proposed a joint rulemaking to establish new federal fuel economy and greenhouse gas emissions standards for 2021 to 2026 model year light-duty vehicles, "The Safer Affordable Fuel-Efficient

(SAFE) Vehicles Rules for Model Years 2021-2026 Passenger Cars and Light Trucks." 83 Fed. Reg. 42,986 (Aug. 24, 2018). I understand that this proposal indicates EPA and NHTSA's preferred regulatory alternative is to freeze greenhouse gas emissions standards at the current 2020 levels for 2021 to 2026 model year light-duty vehicles. *Id.* at 42,988, 42,990.

30. As a result of EPA's Revised Final Determination, Massachusetts could no longer be assured that its LEV Program would continue to achieve anticipated reductions in greenhouse gas emissions from motor vehicles. Revised federal greenhouse gas emissions standards may no longer require 2022 to 2025 model year vehicles to obtain reductions in emissions equivalent to the reductions required under Massachusetts' existing greenhouse gas emissions standards. As such, the Revised Final Determination undermined Massachusetts' strategy to achieve emissions-reduction limits mandated by the GWSA.

31. Because EPA's Revised Final Determination upended Massachusetts' reliance on the harmonized national program to achieve anticipated reductions in greenhouse gas emissions, Massachusetts needed to act expeditiously to amend its LEV Program regulations, consistent with state law, to ensure forthcoming model year vehicles are subject to appropriate emissions standards.

32. I am personally aware that, as a result of EPA's Revised Final Determination, CARB initiated a rulemaking to amend its ACC regulations.

Specifically, CARB advanced a proposal to amend the provision of its regulations stating that vehicles that comply with federal greenhouse gas emissions standards are "deemed to comply" with California's motor vehicle emissions standards—known as the "Deemed to Comply Compliance Option." CARB proposed to clarify that the Deemed to Comply Compliance Option is available only to vehicles that meet current federal emissions standards, and would not apply to any weakened federal standards for 2022 to 2025 model year vehicles.

33. MassDEP has always interpreted the Deemed to Comply Compliance Option in its and California's regulations to be available only for vehicles that meet current federal motor vehicle emission standards, which are harmonized with the state's LEV program. Accordingly, I submitted comments to CARB on May 31, 2018, indicating MassDEP's support of CARB's then-proposed action to codify this interpretation in its regulations.[7]

34. Under Massachusetts state law, upon CARB's adoption of the proposed amendments to California's LEV program regulations, MassDEP must then take regulatory action to incorporate the amendments into Massachusetts' LEV program regulations. *See* MASS. GEN. LAWS ch. 111, § 142K.

[7] *See* MassDEP comment letter to Sarah Carter of CARB on Potential Alternatives to Clarification of the "Deemed to Comply" Provision, May 31, 2018, available at www.arb.ca.gov/lists/com-attach/25-leviii-ghgdtc2018-ws-VDcFYgBzBTRSC1A8.pdf.

35. On September 28, 2018, CARB adopted the proposed amendments to California's LEV program regulations. The adopted amendments took effect on December 12, 2018 following approval by the California Office of Administrative Law. *See* Cunningham Decl., ¶ 40.

36. Because it is critically important for Massachusetts to ensure that its LEV program continues to reduce greenhouse gas emissions as expected from 2022 and subsequent model year vehicles as a key component of Massachusetts' strategy to achieve mandatory GWSA emissions-reduction limits, MassDEP commenced its own rulemaking process after CARB adopted changes to California's regulations.

37. Pursuant to this rulemaking, MassDEP developed an amendment to the LEV program regulations, 310 MASS. CODE REGS. 7.40, which became effective on December 13, 2018, when MassDEP filed the amendment as an emergency regulation with the Massachusetts Secretary of State. MassDEP is engaged in ongoing efforts to make the emergency regulation permanent. For instance, MassDEP held a public hearing on January 28, 2019. MassDEP will accept public comment through February 8, 2019, post a summary of and response to comments it receives, and, within three months of filing the emergency regulation, file with the Secretary of State either a notice of compliance, in the

event that there are no changes to the emergency regulation, or a final regulation, in the event that there are changes to the emergency regulation.

The Revised Final Determination Necessitated Massachusetts to Undertake Burdensome Administrative Action and Directly and Concretely Impacted the Commonwealth

38. The rulemaking process necessary to amend Massachusetts' LEV program has resulted in, and will continue to require, significant expenditure of MassDEP resources.

39. MassDEP has devoted substantial resources to evaluating and preparing the necessary regulatory amendments, and to coordinating with CARB and other states that have adopted California's LEV program. For instance, since April 2018, MassDEP has participated in numerous calls—roughly on a biweekly basis—to consult and coordinate with staff from CARB and other states agencies regarding the scope of the states' respective regulatory revisions and the schedule for such revisions. In addition to me, the staff present on these calls typically has included an attorney from MassDEP's Office of General Counsel and three employees from MassDEP's Division of Air and Climate Programs, which is responsible for implementing Massachusetts' LEV program.

40. I and other MassDEP managers, along with multiple other MassDEP technical staff and attorneys from the Office of General Counsel, are devoting, and must continue to devote, significant resources to this rulemaking. Consistent with

state administrative law requirements, the rulemaking process included development of the proposed regulation and technical support materials, and conducting the required public process, including notice requirements and holding a public hearing.

41. MassDEP also expended considerable resources to review and evaluate CARB's proposed amendments to its ACC regulations in order to determine the scope of necessary revisions to MassDEP's regulations. In addition to me, this evaluation involved four attorneys from MassDEP's Office of General Counsel and other staff from MassDEP's Division of Air and Climate Programs.

42. All of the resources that MassDEP is devoting, and must continue to devote, to this rulemaking process are resources that otherwise would be available to focus on other critical priorities of the Commonwealth.

43. In conclusion, EPA's Revised Final Determination has had direct consequences for Massachusetts. The Revised Final Determination interfered with the ongoing implementation and operation of Massachusetts' regulatory programs and policies. Because of EPA's Revised Final Determination, Massachusetts has had to undertake costly actions, and must continue to take actions, to protect the benefits due to residents of the Commonwealth from its LEV Program—benefits that EPA's action has effectively assured will be curtailed. These necessary state actions require expenditure of limited agency resources that otherwise would be

devoted to other matters important to the Commonwealth. In short, the Revised Final Determination has directly and concretely impacted Massachusetts resources.

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Boston, Massachusetts on February 7, 2019.

Christine Kirby
Assistant Commissioner
Bureau of Air and Waste
Massachusetts Department of
Environmental Protection

EXHIBIT L

Declaration of Steven E. Flint
Director, Division of Air Resources
New York State Department of Environmental Conservation

IN THE UNITED STATES COURT OF APPEALS

FOR THE DISTRICT OF COLUMBIA CIRCUIT

STATE OF CALIFORNIA, et al., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, et al., Respondents.	No. 18-1114 (lead)
NATIONAL COALITION FOR ADVANCED TRANSPORTATION, Petitioner, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, Respondent.	No. 18-1118 (con.)
CENTER FOR BIOLOGICAL DIVERSITY, et al., Petitioners, v. UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, Respondent.	No. 18-1139 (con.)

DECLARATION OF STEVEN E. FLINT

Pursuant to 28 U.S.C § 1746, I, Steven E. Flint, P.E., declare as follows:

1. I am the Director of the Division of Air Resources (DAR) at the New York State Department of Environmental Conservation (NYSDEC), where I have worked since 1980. I provide this declaration in support of the brief filed in this action by the State Petitioners in opposition to the Motions to Dismiss filed by the U.S. Environmental Protection Agency and Acting Administrator Andrew Wheeler ("EPA") and the automobile industry trade association intervenors on the side of EPA. The State of New York filed this case because of our strong interest in the state-level environmental protections allowed under Sections 209 and 177 of the Clean Air Act (the CAA or Act) (42 U.S.C. §§ 7543, 7507). As an administrator of New York's program adopting California's vehicle emissions standards under Section 177, it is clear to me that New York will suffer harm if those state-level environmental protections are undermined, as they would be if the EPA action challenged in this lawsuit is not invalidated.

PERSONAL BACKGROUND AND QUALIFICATIONS

2. I have Bachelor of Science and Master of Science in Civil and Environmental Engineering degrees from Clarkson College. I am a licensed Professional Engineer in New York.

3. I have been the Director of the Division of Air Resources for approximately 2 years. In addition to my current position of Director of DAR, I have held the positions of Assistant Director of Air Resources; Director, Bureau of Mobile Sources and Technology Development; Chief of Light and Heavy Duty Vehicle Section of the Bureau of Mobile Sources and Technology Development; and other engineering positions within DEC.

4. My responsibilities include overseeing DAR's central office in Albany, which carries out the development of mobile source regulations and technology development, air quality planning, monitoring and research functions, and stationary source permitting. In addition, I work with nine regional offices, which are responsible for air permitting and enforcement throughout the state.

5. Another of my responsibilities is overseeing DEC's air quality planning efforts, including regulating and mitigation of greenhouse gas (GHG) emissions.

6. I also oversee the development of CAA-mandated State Implementation Plans (SIP). SIPs detail how DEC will assure that, among other things, the air quality in New York will come into or maintain compliance with the National Ambient Air Quality Standards (NAAQS) for the "criteria pollutants," including ozone, particulate matter ($PM_{2.5}$) and sulfur dioxide (SO_2), set by EPA

under Sections 108 and 109 of the CAA. States are primarily responsible for ensuring attainment and maintenance of a NAAQS once EPA has established one.

7. As part of my job responsibilities, I have worked on efforts within New York to adopt motor vehicle emission control programs that reduce emissions of nitrogen oxides (NOx) and volatile organic compounds (VOCs), which are pollutants that lead to the formation of ozone and are commonly referred to as "ozone precursors," as well as GHG emissions. These control programs include 6 New York Code of Rules & Regulations (NYCRR) Part 217, Motor Vehicle Emissions and 6 NYCRR Part 218 (Part 218), Emission Standards for Motor Vehicles and Motor Vehicle Engines.

EPA's RECONSIDERATION OF THE MIDTERM EVALUATION IMPOSES AN ADMINISTRATIVE BURDEN ON NEW YORK

8. EPA's action harms New York because it requires the State to take administrative action, among other actions, to ensure that the protections provided by Part 218 are not impaired. Part 218 incorporates by reference California's stringent new motor vehicle emissions standards, as permitted by Section 177 of the CAA, and provides substantial GHG emission reductions from motor vehicles. These reductions are an important component of New York's goal to achieve a

statewide reduction in greenhouse gas emissions to forty percent (40%) below 1990 levels by 2030.

9. In 1990, New York was the first state in the nation to adopt California's standards, in the form of Part 218, which took effect beginning with the 1993 vehicle model year. With the exception of model year 1995, New York has continued to implement California's updates to its new motor vehicle program because this program provides substantial reductions in both criteria and GHG pollutants. Section 177 of the CAA allows a State to adopt California's standards so long as the State's standards are identical to California's and the State adopts the standards at least two years prior to the applicable vehicle model year. As to the standards at issue here, California adopted its greenhouse gas emission standards for model year 2017 to 2025 vehicles in 2012 and New York followed suit that same year.

10. California's new motor vehicle emission standards and New York's incorporation of them into Part 218 provide vital reductions in harmful air emissions. As such, New York clearly has a very strong interest in California's standards, specifically in maintaining the most stringent standards possible to provide emissions reductions, particularly GHG reductions.

11. As explained further below, New York needs the standards the 2017 MTE found "appropriate" to achieve reductions of the $PM_{2.5}$, VOC and NOx

emissions that cause and worsen respiratory illness and smog; to enable New York to meet its national ambient air quality standards requirements; and to meet its state goals for greenhouse gas emissions.

12. Provisions of the New York State Administrative Procedure Act (SAPA) govern how rulemaking proceeds in New York. In addition to SAPA, there are other administrative procedures to follow.

13. DAR held a stakeholder webinar on December 12, 2018 to explain DEC's proposal to revise Part 218 to incorporate by reference, California's changes to its regulations concerning motor vehicle GHG emissions, and to answer questions posed by stakeholders on such action.

14. DAR drafted the actual rulemaking terms (express terms), a regulatory impact statement, a job impact statement, a rural area flexibility analysis, and a regulatory flexibility for small businesses document pursuant to SAPA and provide, a State Environmental Quality Review Act review in addition to drafting various required forms. After internal Department review of the regulatory package, the Governor's Regulatory Review Unit (RRU) reviewed and approved the package.

15. The rulemaking was filed with the New York Department of State (DOS) as a combined Notice of Emergency Adoption and Proposed Rulemaking on December 21, 2018. The Emergency Adoption was effective upon filing with DOS.

The Proposed Rulemaking initiated a process for the permanent adoption of the revisions to Part 218. A required hearing will be held on March 11, 2019. Comments will be accepted until 5 pm on March 18, 2019. DAR will assess those comments and prepare an Assessment of Public Comments. Unless substantial revisions are made to the express terms, DEC will then proceed to finalize the permanent adoption of the revisions to Part 218. The Emergency Adoption will be readopted as permitted under SAPA until the Proposed Rulemaking becomes final.

16. This process consumed and will continue to consume time and resources the DEC could otherwise direct to other agency projects. In light of the time required for this administrative process, DEC cannot afford to wait and see if EPA later changes its mind and retains the currently applicable standards despite its final determination, challenged in this lawsuit, that the standards are inappropriate. As stated above, New York must maintain the most stringent standards available to fulfil its duty to provide clean air to its citizens and to meet the legal obligations the the Clean Air Act imposes on New York to meet national ambient air quality standards.

WITHOUT ADMINISTRATIVE ACTION BY NEW YORK AND OTHER STATES, NEW YORK WILL BE HARMED BY THE EPA ACTION

17. California's regulations—whether implemented in California, New York, or other states—help regulate and reduce emissions of both GHGs and criteria pollutants.

18. Without expending resources to respond to EPA's actions as described above, New York's ability to regulate motor vehicle GHG emissions would be jeopardized, resulting in the failure to reduce GHG emissions and likely preventing New York from meeting its GHG emission reduction targets. Moreover, to the extent that other Section 177 states do not act to maintain more stringent emissions standards, New York will be harmed by those states' increased GHG emissions.

19. In addition, New York will be harmed by increased GHG emissions arising from EPA's failure to meet its obligations to reduce greenhouse gas emissions from motor vehicles in non-177 states.

20. In New York, DEC in particular will be forced to expend efforts to evaluate and implement other methods of reducing GHG emissions in order to achieve the state's GHG reduction goals.

21. New York State has climate goals that call for reduction of greenhouse gas emissions by 40 percent (from 1990 levels) by 2030. Transportation is the largest sector of GHG emissions, and this segment is growing as a result of

increasing vehicle use. New York cannot reasonably expect to meet our climate goals without reductions in GHG emissions from the transportation sector.

22. EPA research anticipates significant reductions of harmful GHG emissions from light-duty vehicles meeting the standards set in the 2012 final rule. In July 2016, EPA, NHTSA and the California Air Resources Board (CARB) issued a draft Technical Assessment Report (TAR) that states, "Over the lifetimes of MY2021-2025 vehicles, EPA estimates that under the GHG standards, GHG emissions would be reduced by about 540 million metric tons (MMT)".[1] Failure to implement the standards adopted in the 2012 final rule and confirmed by EPA's initial MTE will result in the failure to achieve this significant reduction of the emissions from light-duty vehicles emissions that contribute to climate change.

23. Similarly, without expending resources to respond to EPA's actions as described above, New York's ability to regulate motor vehicle criteria-pollutant emissions would be jeopardized. Moreover, while the impact of criteria air pollutant emissions is more dependent upon location of the emissions, to the extent that other upwind states do not act to maintain more stringent emissions standards, New York

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[1] U.S. Environmental Protection Agency, U.S. Department of Transportation, and California Air Resources Board, "Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025", July 2016, Page ES-11. EPA-420-D-16-900. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF

will be harmed by those states' criteria pollutant emissions that travel beyond state borders, such as ozone and its precursors. Ground-level ozone, commonly referred to as smog, is a secondary air pollutant that forms in the atmosphere through a series of complex chemical reactions involving NOx and VOCs in the presence of sunlight and warm temperatures. NOx and VOC emissions from local urban sources over successive hot days combine with high-level concentrations of ozone and ozone precursors that have been transported into the area from sources located outside the state by westerly to southerly winds.

24. EPA research anticipates reductions in emissions of particulate matter, SO_2, and ozone precursors from light-duty vehicles meeting MTE standards. The TAR reports under the 2012 final rule, the MY2022-2025 lifetime emission reductions of $PM_{2.5}$ are 10,663 short tons, SO_2 are 44,693 short tons, Volatile Organic Compounds (VOCs) are 227,857 short tons, and NOx are 67,760 short tons.[2] Failure to implement MTE standards will result in the failure to achieve these reductions of $PM_{2.5}$, VOC and NOx emissions from light-duty vehicles. It may also cause New York to fail to meet its national ambient air quality standards requirements.

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[2] U.S. Environmental Protection Agency, U.S. Department of Transportation, and California Air Resources Board, "Draft Technical Assessment Report: Midterm Evaluation of Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards for Model Years 2022-2025", July 2016, Table 12.75, Page 12-62. EPA-420-D-16-900. Available at: https://nepis.epa.gov/Exe/ZyPDF.cgi/P100OXEO.PDF?Dockey=P100OXEO.PDF

INCREASED GHG EMISSIONS WOULD HARM NEW YORK

25. Climate change, which is fueled by GHG emissions, is already harming New York, and these harms are expected to increase if GHG emissions increase. Climate change is having and will continue to have adverse impacts on human health and property, including property damage from increased flooding, increased heat illnesses and mortality, respiratory illnesses from increased formation of ground-level ozone, and the introduction or spread of vector-borne illnesses. Climate change is harming and will continue to harm New York State's environment, including shorelines, drinking water sources, agriculture, forests, and wildlife diversity.

26. Anthropogenic emissions of the predominant GHG, CO_2, are contributing to the observed warming of the planet.[3] The Earth's lower atmosphere, oceans, and land surfaces are warming; sea level is rising; and snow cover, mountain glaciers, and Greenland and Antarctic ice sheets are shrinking. The Earth's climate is changing, with adverse consequences already well documented across the globe, in our nation and in the State. Extreme heat events are increasing, and intense storms

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[3] Intergovernmental Panel on Climate Change Working Group I Fifth Assessment Report, Climate Change 2013: The Physical Science Basis, 2013, and available at: https://www.ipcc.ch/report/ar5/wg1/

are occurring with greater frequency. Many of the observed climate changes are beyond what can be explained by natural variability of the climate.[4]

27. Similarly, New York's climate has also begun to change. Temperatures in New York State have risen on average 0.25°F per decade over the past century, with the greatest warming coming in recent decades. This warming includes an increase in the number of extreme hot days (days at or above 90°F) and a decrease in the number of cold days (days at or below 32°F). The 2011 New York State ClimAID assessment[5] and the 2014 update to ClimAID[6] present the numerous direct impacts that have already been observed in New York State. These impacts are described in more detail below.

28. Warming ocean waters contribute to sea level rise, with adverse impacts for New York State. Warmer ocean water, which results in thermal expansion of ocean waters, melting of land ice, and local changes in the height of land relative to the height of the continental land mass, are the major contributors of sea level rise. Warming ocean water has the potential to strengthen the most powerful storms and

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[4] Ibid.

[5] Rosenzweig, C., W. Solecki, A. DeGaetano, M. O'Grady, S. Hassol, P. Grabhorn (Eds.) 2011. 'Responding to Climate Change in New York State: The ClimAID Integrated Assessment for Effective Climate Change Adaptation'. New York State Energy Research and Development Authority http://www.nyserda.ny.gov/climaid

[6] Horton, R., D. Bader, C. Rosenzweig, A. DeGaetano, and W.Solecki. 2014. Climate Change in New York State: Updating the 2011 ClimAID Climate Risk Information. New York State Energy Research and Development Authority (NYSERDA), Albany, New York.

combined with sea level rise will lead to more frequent and extensive coastal flooding. Sea level in the coastal waters of New York State and up the Hudson River has been steadily rising over the 20th century. Tide-gauge observations in New York indicate that rates of relative sea level rise were significantly greater than the global mean, ranging from 0.9 to 1.5 inches per decade.

29. Sea level rise increases the extent and magnitude of coastal flooding. For example, the twelve inches of sea level rise the New York City area has experienced in the past century exacerbated the flooding caused by Hurricane Sandy by about twenty-five square miles, damaging the homes of an additional 80,000 people in the New York City area alone.[7] That flooding devastated areas of New York, including the Brooklyn-Queens Waterfront, the East and South Shores of Staten Island, South Queens, Southern Manhattan, and Southern Brooklyn, which in some areas lost power and other critical services for extended periods. Overall, Hurricane Sandy caused 53 deaths and the estimated costs of damage and loss in New York State exceeded 30 billion dollars.[8]

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[7] New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms. Ann. N.Y. Acad. Sci. ISSN 0077-8923, available at: http://onlinelibrary.wiley.com/doi/10.1111/nyas.12593/full

[8] FEMA expenditures in New York State totaled $16.9 billion (https://www.fema.gov/news-release/2015/10/21/fema-aid-reaches-169-billion-new-yorks-hurricane-sandy-recovery). US HUD expenditures totaled $7 billion (HUD Archives News Release, HUD # 13-153, 10/28/13. https://archives.hud.gov/news/2013/pr13-153.cfm). Total insurance payments in New York State totaled $8.3 billion, including National Flood Insurance payments, and private auto, homeowner, and commercial property insurance. (Hurricane Sandy: Rebuilding Task

30. New York State tidal shoreline, including barrier islands, coastal wetlands, and bays, is expected to be particularly adversely affected by increased sea levels. New York State has 1,850 miles of tidal coastline,[9] and the State owns dozens of state parks within New York State's coastal boundary. Tidal shoreline property in the State held by private landowners is similarly at risk.

31. Climate change will increase the frequency and magnitude of flood damage and storms. Rising air temperatures associated with climate change intensify the water cycle by driving increased evaporation and precipitation. The resulting altered patterns of precipitation include more rain falling in heavy events, often with longer dry periods in between. Heavy downpours have increased in New York State over the past 50 years. By the end of the 21st century, coastal flood levels currently associated with a 100-year flood could occur approximately four times as often under conservative sea level rise scenarios.[10] This trend will increase localized flash flooding in urban areas and hilly regions.

32. New York State incurs significant costs from damage from flooding. Grants to the State from the FEMA Public Assistance Program made in the aftermath

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Force: Hurricane Sandy Rebuilding Strategy, August 2013, page 29. https://www.hud.gov/sites/documents/hsrebuildingstrategy.pdf)

[9] U.S. Bureau of the Census, *Statistical Abstract of the United States 1987* at 187 (107th Ed.).

[10] Rosenzweig et al. p. 35

of flood disasters almost always require the State to fund a portion of the project. For example, in the aftermath of Hurricane Sandy, FEMA made 4,127 Public Assistance grants totaling nearly $10 billion to State and local governments for facilities damaged by the storm, including parks, beaches, marinas, water treatment plants, hospitals, schools, public housing and other public buildings. While FEMA grants to New York covered 90% of the eligible costs of such projects, the State was left responsible for covering the remaining 10 percent.[11]

33. Flooding due to climate change exacerbates harm to public health and the environment in New York State. Flooding increases water pollution by carrying runoff from land areas containing road oils, salts, farm and lawn chemicals, pesticides, metals, and other pollutants into New York's water bodies. Flooding has also inundated and/or overloaded New York wastewater treatment plants, causing raw sewage to enter waterways. Polluted floodwaters can inundate communities and other vulnerable development within floodplains, impairing potable public and private water supplies, and rendering cleanup more hazardous. Contaminated floodwaters can also impede other water uses including swimming, beach-going, and fishing. The U.S. Secretary of Health and Human Services issued Public Health

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[11] https://www.fema.gov/news-release/2015/10/21/fema-aid-reaches-169-billion-new-yorks-hurricane-sandy-recovery

Emergency Declarations in New York[12] following Hurricane Sandy and Tropical Storm Lee, in large part because of post-flood conditions.

34. Climate change requires an increased commitment of State emergency response resources to protect lives and property in flood prone areas. For example, swift-water or air-rescue teams rescued over one thousand state residents during the flooding caused by Hurricane Irene and Tropical Storm Lee. New York State committed extensive emergency resources in response to the storms, including: deploying 1,700 State Police and 3,200 National Guard members, opening 200 shelters to house 18,000 citizens, and staffing 74 Disaster Recovery Centers to assist citizens during the recovery period.[13] The storms closed 400 road segments and bridges and required repairs at 945 locations on the State highway system.

35. Climate change is also expected to result in less frequent summer rainfall, increased evaporation, and additional, and possibly longer, summer dry periods, potentially impacting the ability of water supply systems to meet demands. Reduced summer flows on large rivers and lowered groundwater tables could lead to conflicts among competing water users.

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[12] https://www.phe.gov/emergency/news/healthactions/phe/Pages/default.aspx

[13] New York State Responds – Hurricane Irene and Tropical Storm Lee: One Year Later. August 2012. Available at: https://www.governor.ny.gov/sites/governor.ny.gov/files/archive/assets/documents/Irene-Lee-One-Year-Report.pdf

36. While shorter-term water level variations are anticipated to be large, over the long term, climate change is likely to lower the water levels of Lake Erie and Lake Ontario through increased evaporation. These Great Lakes are critical water sources to New York State: New York relies on them for drinking water; hydroelectric power; commercial shipping; and recreation, including boating and fishing. New York State has approximately 331 miles of shoreline along Lake Ontario and approximately 77 miles along Lake Erie.[14] Decreased water levels in the Great Lakes could severely affect commercial shipping, reducing maximum loads carried by vessels. Each one-inch loss in draft in the Great Lakes shipping channels causes the ships used for inter-lake transportation to lose 270 tons of cargo capacity,[15] or approximately $30,000 per transit.[16]

37. New York State is likely to see widespread shifts in species composition in the State's forests and other natural landscapes within the next several decades due to climate change. Losses of spruce-fir forests, alpine tundra and boreal plant communities are expected. Climate change favors the expansion of some invasive species into New York, such as the aggressive weed, kudzu, and the insect

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[14] Michigan Department of Environmental Quality: Shorelines of the Great Lakes. http://www.michigan.gov/deq/0,1607,7-135-3313_3677-15959B,00.html.

[15] Climate Change and Water Quality in the Great Lakes Basin 2003: Report of the Great Lakes Water Quality Board to the International Joint Commission. Chapter 3.2, page18.

[16] Climate Change in the Great Lakes Region. Great Lakes Integrated Sciences Assessments, University of Michigan, 2014. http://glisa.umich.edu/media/files/GLISA_climate_change_summary.pdf

pest, hemlock woolly adelgid. Increased CO_2 in the atmosphere due to climate change is likely to preferentially increase the growth rate of fast-growing species, which are often weeds and other invasive species. Lakes, streams, inland wetlands and associated aquatic species will be highly vulnerable to changes in the timing, supply, and intensity of rainfall and snowmelt, groundwater recharge and duration of ice cover. Increasing water temperatures will negatively affect brook trout and other native cold-water fish.

38. Climate change is expected to hurt agriculture in New York State. Increased summer heat stress will negatively affect cool-season crops, requiring farmers to take adaptive measures such as shifting to more heat-tolerant crop varieties and eventually resulting in a different crop mix for New York's farmers. The loss of long cold winters could limit the productivity of apples and potatoes, as these crops require longer cold dormant periods. New York's maple syrup industry also requires specific temperature conditions in order for the sugar maples to produce sap. It is projected that sugar maple trees will be displaced to the north as the climate changes and temperatures increase. Increased weed and pest pressure associated with longer growing seasons and warmer winters will be an increasingly important challenge. Water management will be a more serious challenge for New York

farmers in the future due to increased frequency of heavy rainfall events, and more frequent and intense summer water deficits by mid-to late-century.

39. Dairy farmers will also be impacted by warmer air temperatures associated with climate change. Milk production is maximized under cool conditions ranging from 41°F to 68°F.[17] New York is the third largest producer of milk in the United States, behind California and Wisconsin, with 14.8 billion pounds of milk produced in 2016.[18] During the unusually hot summer in 2005, declines in milk production of five to 15 pounds of milk per cow per day (an eight to 20 percent decrease) in many New York dairy herds were reported.[19] In 2016, New York reported approximately $2.5 billion dollars of cash receipts from its dairy industry.[20] A loss of milk production efficiency from heat effects could result in the loss of hundreds of millions of dollars annually for New York's dairy industry.

40. New York State's forests and the economy that depends on them will be hurt by climate change. Climate change will affect the forest mix in New York, which could change from the current mixed forest to a temperate deciduous forest.

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[17] Garcia, Alvaro. Dealing with Heat Stress in Dairy Cows. South Dakota Cooperative Extension Service. September, 2002. Page 1.

[18] Milk Production, Disposition and Income: 2016 Summary, at p. 10, United States Department of Agriculture, National Agricultural Statistics Service, April 2017, available https://www.nass.usda.gov/Publications/Todays_Reports/reports/mlkpdi17.pdf

[19] Frumhoff, Peter. Confronting Climate Change in the U.S. Northeast: Science, Impacts, and Solutions, Northeast Climate Impacts Assessment, July 2007, p. 69.

[20] Milk Production, Disposition and Income: 2016 Summary, at p. 12.

The habitat for existing tree species will decrease as suitable climate conditions shift northward. As forest species change, the resulting decrease in the vibrant display of New York State fall foliage could have a negative impact on regional tourism. New York State's Adirondack Park is the largest forested area east of the Mississippi and consists of six million acres including 2.6 million acres of state-owned forest preserve.[21] The Adirondack Park, one the most significant hardwood ecosystems in the world, is likely to be threatened by these changes. These changes will also further impact plant and wildlife species in the Adirondack Park and throughout the state, as the forest composition changes.

41. Demand for health services and the need for public health surveillance and monitoring will increase as the climate continues to change. Heat-related illness and death are projected to increase, while cold-related deaths are projected to decrease. Increases in heat-related death, however, are projected to outweigh reductions in cold-related death. Increased coastal and riverine flooding resulting from intense precipitation could lead to increased stress and mental health impacts, impaired ability to deliver public health and medical services, increased respiratory diseases such as asthma, and increased outbreaks of gastrointestinal diseases.

[21] New York State Adirondack Park Agency (APA), http://www.apa.ny.gov/About_Park/index.html

Vector-borne diseases, such as those spread by mosquitoes and ticks (e.g., West Nile virus and Lyme disease), may expand or their distribution patterns may change, either of which may adversely affect additional populations. Water- and food-borne diseases are likely to increase without mitigation and adaptation intervention.

Increased Criteria Air Pollutants Would Harm New York

42. Increases in the emission of criteria pollutants threaten to exacerbate New York's preexisting air quality problems, including harms to human health and the environment from ozone, $PM_{2.5}$ and SO_2. $PM_{2.5}$ emissions have a serious negative impact on New York and its citizens. In 2011, the New York City Department of Health and Mental Hygiene issued a report providing estimates of the impacts of $PM_{2.5}$ pollution on the health of New York City residents. That report estimates that $PM_{2.5}$ causes over 3,000 premature deaths every year in the State. It also attributes to $PM_{2.5}$ exposure more than 1,200 hospital admissions, and 5,000 asthma-related emergency department visits for children and adults.[22]

43. New York has a significant ozone problem. Climate change is likely to worsen the harms New York is already suffering from ozone. As NHTSA recognized during the rulemaking for the 2017-2025 CAFE standards, "increased

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[22] New York City Department of Health and Mental Hygiene, *Air Pollution and the Health of New Yorkers: The Impact of Fine Particles and Ozone* at 16 (2011), *available at* https://www1.nyc.gov/assets/doh/downloads/pdf/eode/eode-air-quality-impact.pdf

temperatures from climate change are projected to increase ground-level ozone concentrations, triggering asthma attacks among children."[23]

44. Breathing ozone can trigger a variety of health problems. These problems include chest pain, coughing, throat irritation, airway inflammation, reduced lung function and damaged lung tissue. Ozone can worsen bronchitis, emphysema and asthma, leading to increased medical costs. Exposure to ozone has also been linked to early deaths. People most at risk from breathing air containing ozone include people with asthma, children, older adults and people who are active outdoors, especially outdoor workers.

45. Ozone also interferes with the ability of plants and forests to produce and store nutrients, which makes them more susceptible to disease, insects, harsh weather and other pollutants. This harms crop production throughout the United States, resulting in significant losses and injury to native vegetation and ecosystems. Furthermore, ozone damages the leaves of trees and other plants, ruining the appearance of cities, parks and recreation areas. Ozone can also damage certain man-made materials, such as textile fibers, dyes, rubber products and paints.

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[23] 77 Fed. Reg. at 63,148.

Executed on Feb 5, 2019 (date)

in Albany, New York Steven E Flint

(signature)

COLLEEN A. McCARTHY
Notary Public, State of New York
Qualified in Albany County
No. 02MC5046480
Commission Expires July 17, 2021

EXHIBIT M

Declaration of Ali Mirzakhalili
Administrator, Division of Air Quality
Oregon Department of Environmental Quality

DECLARATION OF ALI MIRZAKHALILI

I, Ali Mirzakhalili, declare as follows:

1. My name is Ali Mirzakhalili and I am the Division of Air Quality Administrator for the State of Oregon's Department of Environmental Quality (DEQ). In my capacity, I am responsible for overall administration of air quality programs in the State of Oregon which includes development and implementation of State Implementation Plans, stationary source regulation, permitting and enforcement and mobile source programs such as Low Emission Vehicles, Zero Emission Vehicle program and Clean Fuels Programs. Prior to joining DEQ, I served as the Director of the Air Quality Division for the State of Delaware for 17 years. I was in overall charge of all aspects of the air quality program including stationary and mobile source programs. I hold a Bachelor's degree in engineering from University of Delaware and a Master's of Science in Environmental Planning and Policy from Johns Hopkins University.

2. Greenhouse gas emissions threaten public health and the environment in many ways. The major threats that climate change presents for Oregon include, but are not limited to: increasing flooding; increasing wildfire activity; droughts; insect outbreaks that threaten forests; and rising sea levels, which will exacerbate coastal flooding and erosion hazards, and could put thousands of Oregonians, and their homes, at risk. Portland, Oregon set a new record – for the second time in four years – for the number of 90-degree days in a year, and smoke due to wildfires blanketed the area, resulting in DEQ issuing air quality advisories. These events are consistent with the long-predicted effects of climate change caused by greenhouse gas emissions.

3. In 2007, the Oregon Legislature adopted ORS 468A.205, declaring that "it is the policy of this state to reduce greenhouse gas emissions in Oregon" and adopting greenhouse gas emissions reduction goals. ORS 468A.205(1)(c) sets a goal of, by 2050, "achieving greenhouse gas levels that are at least 75 percent below 1990 levels."

4. The largest source of greenhouse gas emissions in Oregon is, by far, the transportation sector. In 2016, this sector was responsible for nearly 40% of total statewide emissions.

5. In order for Oregon to achieve the environmental goals established by ORS 468A.205, mobile source emissions – i.e., emissions from vehicles – must be reduced dramatically.

6. Under Section 177 of the Clean Air Act, states that choose to adopt vehicle standards that are more stringent than federal standards for new vehicles may only adopt California's vehicle emission standards. In 2005, pursuant to the Governor's request, the Oregon Environmental Quality Commission ("EQC") approved adoption by DEQ of California's low emission vehicle standards. Oregon is considered a "Section 177" state as a result of adopting California's rules. Oregon has periodically updated its rules to match changes in California's since 2005. Oregon Administrative Rule 340-257.

7. On April 13, 2018, EPA announced that it was withdrawing its 2017 Final Determination that the existing federal greenhouse gas emission requirements for model year (MY) 2022-25 vehicles remain appropriate. 83 Fed.Reg, 16,077. EPA simultaneously issued a revised Final Determination that the current federal standards "are not appropriate" and must be revised.

8. EPA's withdrawal of the 2017 Final Determination forced the California Air Resources Board (CARB) to issue a clarification regarding its regulation to ensure that California will be able to enforce its own greenhouse gas standards for 2022-25 vehicles. In order to ensure that Oregon is also able to enforce its own greenhouse gas standards for 2022-25 vehicles, and thus continue to reduce greenhouse gas emissions from vehicles, Oregon DEQ has had to revise its rules to ensure that the California standards for MY2022-25 will be applicable in Oregon.

9. EPA's revised Final Determination has forced Oregon DEQ to take action in order to provide the public and regulated entities certainty as to the status of Oregon's program, mitigate the increased climate harms that will result from a weakening of the Federal standards, and ensure that Oregon can meet its emission reduction goals. If DEQ did not act, this could mean that EPA's revised federal emissions standards could be determined to apply to MY 2022-25 vehicles sold in Oregon, and any relaxation in those federal standards would result in an increase in vehicle emissions, thereby undercutting Oregon's progress toward its greenhouse gas emissions goals.

10. On information and belief, it is my understanding that automakers have multi-year planning and development cycles, and are likely already in the midst of planning and development for MY 2022 and beyond. Thus, the planning decisions that automakers are making right now and in the coming months will determine the amount of greenhouse gas emissions those vehicles will produce.

11. Immediately after EPA issued its revised determination Oregon DEQ concluded that it had to take action forthwith, in order to prepare to adopt the anticipated changes in California's rules, because of the planning and development cycles referred to above and the length of time required to complete Oregon rulemakings.

12. Rulemaking for the Oregon DEQ requires adoption of such rules by the Environmental Quality Commission (EQC). DEQ officials notified the members of the EQC of the need for expedited rulemaking at the May, 2018 meeting of the EQC.

13. Pursuant to Oregon's Administrative Procedure Act ("OAPA"), DEQ convened a stakeholder advisory meeting with automobile manufacturers, automobile engine manufacturers, environmental groups, and electric vehicle groups on August 14, 2018, to discuss the fiscal impact of this rulemaking.

14. Oregon DEQ proposed its rule, based on California's proposed rule, for public comment from August 30, 2018 through October 2, 2018.

15. Pursuant to the OAPA, DEQ was required to schedule and convene a public hearing on its proposed rules. DEQ held a public hearing on its proposed rule on October 1, 2018.

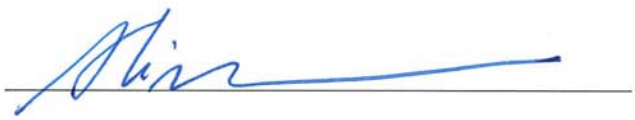
16. Pursuant to the OAPA, DEQ was required to prepare responses to comments (including comments at the public hearing and those otherwise submitted in writing). DEQ prepared responses to comments.

17. Finally, DEQ was required to present its proposed rule to the EQC, and the EQC then had to review and deliberate on the proposed rule. DEQ presented its proposed rule to the EQC at the November 15, 2018 meeting, and the EQC adopted the rule. The rule was filed with the Secretary of State and became effective on November 15, 2018.

18. As a result of the foregoing, DEQ has incurred costs. A number of DEQ staff, including management staff and the Director, who otherwise would have been focused on other projects have been required to focus on the actions described above. The same is true of the members and staff of the EQC.

I certify under penalty of perjury under the laws of the State of Oregon that the foregoing is true and correct.

Executed on January 31, 2019 at Portland, Oregon.



Ali Mirzakhalili

EXHIBIT N

Declaration of Heidi Hales
Director, Air Quality and Climate Division
Vermont Department of Environmental Conservation

DECLARATION OF HEIDI HALES

I, Heidi Hales, declare as follows:

1. I am the Director of the Vermont Air Quality and Climate Division, which is the Division within the Vermont Department of Environmental Conservation that is charged with implementing the federal Clean Air Act, state air pollution control law, and routinely adopts and implements state air pollution control regulations within the bounds of the aforementioned authority. I hold a Bachelor of Arts degree in Biology with a minor in Chemistry and a Master of Arts in Conservation Biology from the University of Pennsylvania, and a doctorate from the Department of Plant and Soil Science at the University of Vermont, with a dissertation focusing on the $\delta^{15}N$ and $\delta^{18}O$ of nitrate in precipitation, stream water and soil solution to study nitrogen export and transformations in forest soils. I have more than 14 years of experience at the Vermont Air Quality and Climate Division and Vermont Department of Health Environmental Health Division and have worked on a variety of programs including air quality planning and regulation, air toxics, climate change mitigation and adaptation, and compliance. This declaration is based on my experience managing air quality programs and implementing state and federal air quality laws and regulations in Vermont.
2. Vermont, along with several other states, is challenging the Environmental Protection Agency's (EPA) withdrawal of the January 2017 final determination in which EPA concluded that the federal greenhouse gas emission standards for model year (MY) 2022-2025 vehicles remain appropriate. In place of that determination, EPA substitutes a new determination that the standards are no longer appropriate and must be revised.
3. EPA's action substantially disrupts the existing "National Program", which harmonized the federal greenhouse gas emission standards for light duty vehicles with those of California and the several states, including Vermont, that have adopted California's greenhouse gas emission standards pursuant to the Clean Air Act. This harmony was achieved through California including in its regulations a provision stating that the state would accept compliance with the federal standards in lieu of compliance with the California standards for the 2017-2025 model years. Vermont incorporated this so-called "deemed to comply" provision into its low emission vehicle rules.

4. EPA's action causes concrete harm to Vermont in several ways, including the need to expend resources to update Vermont's low emission vehicle rules. Vermont has updated its rules to provide automakers and the public certainty as to the status of Vermont's program in the face of lengthy vehicle planning and development cycles, and to ensure that Vermont will realize the greenhouse emission reduction benefits of the California greenhouse gas emission standards that Vermont has adopted.
5. In December 2018, Vermont completed a rulemaking action to amend existing regulations to incorporate changes made to the California rules, which clarify that the "deemed to comply" option is available only if the currently adopted federal greenhouse gas regulations remain in effect. This rulemaking did not change the California greenhouse gas emission standards that are already in place in Vermont.
6. The Vermont Air Quality and Climate Division incurred costs and expended valuable yet scarce state resources, including staff time, in conducting the rulemaking. This included staff time and other resources used to draft the regulatory amendment, comply with the procedures of the Vermont Administrative Procedure Act (VAPA), prepare for and attend rulemaking hearings, respond to public comments and answer questions from the public and stakeholeders, and fees associated with publication of the draft and final rule electronically and in print publications.
7. The costs and expenditure of scarce state resources, including staff time, required to commence and complete the regulatory action described above diverted those resources from other current work and thereby harmed the Vermont Air Quality and Climate Division's ability to carry out its mission of protecting human health and the environment by improving air quality in the state.
8. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 4 day of February 2019.

Heidi Hales

Heidi Hales

EXHIBIT O

Declaration of Julia Moore
Secretary
Vermont Agency of Natural Resources

DECLARATION OF JULIE MOORE

I, Julie Moore, declare as follows:

1. I am the Secretary of the Vermont Agency of Natural Resources (ANR), a position I have held since January 2017. I have worked in the environmental field for more than 21 years. I received a Bachelor of Science in Civil Engineering from the University at Buffalo and a Master of Science in Environmental Science and Policy from Johns Hopkins University. Prior to my current position, I worked as the Water Resources Group Leader at Stone Environmental, an environmental consulting firm in Vermont.
2. As Secretary of ANR, I oversee the management of Vermont's natural environmental on behalf of the people of Vermont. ANR is comprised of three departments: Department of Environmental Conservation, Department of Fish and Wildlife, and the Department of Forest, Parks, and Recreation. Together, these departments preserve and manage air and water quality, protect human health, conserve fish, plants, wildlife and their habitats, and conserve and manage Vermont's forests and public lands.
3. I make this declaration in support of the action by the States of California, Connecticut, Delaware, Illinois, Iowa, Maine, Maryland, Minnesota, New Jersey, New York, Oregon, Rhode Island, Vermont and Washington, the commonwealths of Massachusetts, Pennsylvania, and Virginia, and the District of Columbia challenging the final action of the Environmental Protection Agency (EPA) titled "Mid-term Evaluation of Greenhouse Gas Emissions Standards for Model Year 2022-2025 Light-duty Vehicles."
4. The statements made in this declaration are based on my review of various publicly available records, reports, statements and data compilations prepared by public agencies of the federal government and the State of Vermont.
5. Based on my review and analysis, the State of Vermont and its residents will be harmed by EPA's withdrawal of the January 2017 determination that the federal greenhouse gas emission standards for motor vehicles model year 2022-2025 remain appropriate, and EPA's issuance of a new determination that the federal standards are not appropriate.

I. Introduction

6. Vermont's climate is changing in response to the continued increase in atmospheric concentrations of greenhouse gases (GHG) like carbon dioxide (CO_2) and other climate-

forcing pollutants emitted through human activity. Throughout the northeastern United States, spring conditions are arriving earlier and bringing more precipitation. As recognized by the U.S. EPA, heavy rainstorms are more frequent, and summers are hotter with more extreme conditions that can include periods of drought, severe storms, and resultant floods that damage property and infrastructure.[1] The potential consequences of climate change are expected to include significant warming, a combination of droughts and flooding, changes in the makeup of forests, the continued spread of vector-borne diseases like Lyme disease, and increased frequency and expanded range of harmful cyanobacteria blooms. In Vermont, this warming could produce a shorter ski season, allow incursion of warmer climate tree species which would replace the current mix of hardwoods that produce our spectacular fall foliage[2], and result in changes in the quality and quantity of maple sap available for maple syrup production. Climate change is a critical issue facing Vermont's citizens, ecosystems, and economic vitality.

II. Greenhouse Gas Emissions in Vermont

7. The combustion of fossil fuels for transportation represents the single largest source of energy consumption and GHG emissions in Vermont.[3,4] According to Vermont Agency of Transportation data, the increase in vehicle miles traveled (VMT) in Vermont was over 30 percent between 1991 and 2001. VMT declined from 2001 through 2014 but have begun to increase steadily again over the past several years.[5] Even with improvements in GHG emission standards for light-duty vehicles in recent years, the increase in transportation-related GHG emissions tracks the increase in VMT.
8. Accordingly, ANR has determined that it is critically important that Vermont ensure that it is able to continue to apply rigorous GHG emissions standards to passenger and light-duty vehicles. To maintain the emissions reductions that were expected as a result of EPA's existing federal GHG emissions standards, but which EPA has now determined are not

[1] U.S. EPA report – What Climate Change Means for Vermont (https://19january2017snapshot.epa.gov/sites/production/files/2016-09/documents/climate-change-vt.pdf)
[2] http://fpr.vermont.gov/forest/ecosystem/climate_change
[3] Vermont Greenhouse Gas Emissions Inventory Updates: http://dec.vermont.gov/air-quality/climate-change
[4] Vermont Comprehensive Energy Plan: https://outside.vermont.gov/sov/webservices/Shared%20Documents/2016CEP_Final.pdf
[5] U.S. Dept. of Transportation – Traffic Volume Trends July 2017 (https://www.fhwa.dot.gov/policyinformation/travel_monitoring/17jultvt/17jultvt.pdf)

appropriate and must be revised, Vermont has taken steps to incorporate action taken by the California Air Resources Board to clarify the scope of its "deemed to comply" regulation.

9. The California GHG standards will continue to reduce vehicle emissions, as well as upstream emissions, including those associated with refining, marketing and distribution of gasoline. In Vermont, fuel-cycle CO_2 reductions are estimated to be approximately 461 tons per day (tpd) in 2020 and 815 tpd in 2030.[6] The California GHG standards will result not only in the benefit of reduced GHG emissions, but also in emissions reductions for other pollutants that harm human health, such as fine particulate matter and hazardous air contaminants (e.g., benzene), and ozone-precursors like volatile organic compounds and oxides of nitrogen.

III. Climate Change Impacts in Vermont

10. Global warming is no longer a matter of the future or of places far away. Climate change is happening now and is already evident in Vermont. During the past 50 years, Vermont's climate has shown a clear warming trend in all seasons, especially in winter. Average winter temperatures have risen about 4.5 degrees Fahrenheit over this period, and the intensity of extreme winter cold is projected to decrease. Average summer temperatures have risen about 2 degrees Fahrenheit.[7] Historically unprecedented warming is projected to continue throughout the 21st century (Figure 1).

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[6] *See CARB Report to Legislature* at 16.

[7] Vermont Agency of Natural Resources, *Resilience: A Report on the Health of Vermont's Environment* (2011), available at http://anr.vermont.gov/sites/anr/files/aboutus/documents/Resilience%202011.pdf

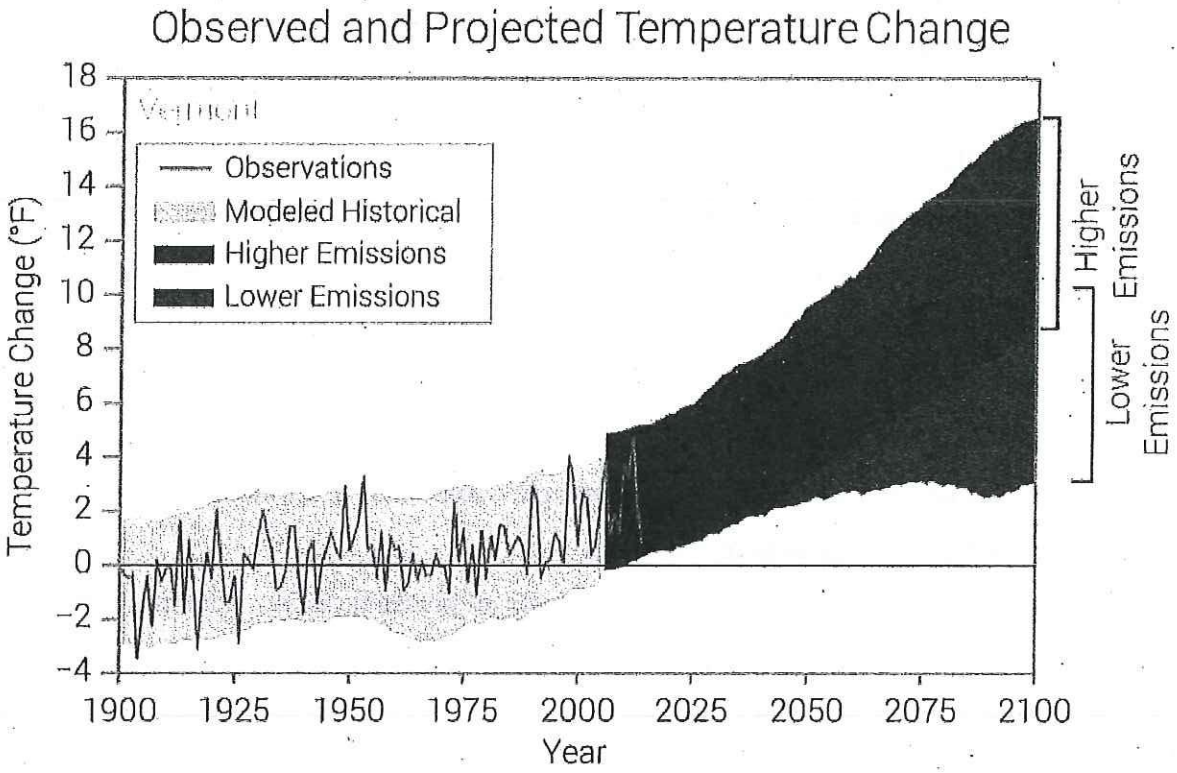

Figure 1. Observed and projected changes (compared to the 1901–1960 average) in near-surface air temperature for Vermont. Observed data are for 1900–2014. Projected changes for 2006–2100 are from global climate models for two possible futures: one in which greenhouse gas emissions continue to increase (higher emissions) and another in which greenhouse gas emissions increase at a slower rate (lower emissions). Temperatures in Vermont (orange line) have risen by more than 2°F since the beginning of the 20th century. Shading indicates the range of annual temperatures from the set of models. Observed temperatures are generally within the envelope of model simulations of the historical period (grey shading). Historically unprecedented warming is projected to continue through the 21st century. Less warming is expected under a lower emissions future (the coldest years being about 2°F warmer than the historical average; green shading) and more warming under a higher emissions future (the hottest years being about 12°F warmer than the hottest year in the historical record; red shading). Source: CICS-NC and NOAA NCEI.[8]

[8] NOAA National Centers for Environmental Information, State Climate Summaries, available at https://statesummaries.ncics.org/vt.

11. Despite the variability in our weather from day to day or year to year, it is clear that natural processes in Vermont are responding to the warming trend. Data show that, *on average*, the following changes have occurred over the last 40 years:[9]

    - The growing season for frost-sensitive plants has increased by two weeks.
    - The ice-out of Vermont's small lakes has come roughly three days earlier per decade, and the first freeze-up has occurred about four days later per decade. As a result, lakes and ponds, such as Stiles Pond in northeastern Vermont, are frozen each winter for about four weeks less than they were 40 years ago.
    - The first leaf of Vermont lilacs, an indicator of early spring, is also occurring earlier, by an average of approximately three days per decade.

12. Other changes in Vermont's climate provide harbingers of what we can expect in the future. Average annual precipitation has increased by 15 to 20 percent in the past 50 years, and has increased nearly 6 inches in Vermont since the beginning of the 20th century.[10] Across the Northeast, heavy downpours have increased in frequency and intensity too; these storms now release 67 percent more rain than they did 50 years ago.[11] From 1995-2014, Vermont experienced nearly twice as many precipitation events greater than 2" as compared to the previous 45 years. [12]

13. These factors have already contributed to increased flooding in Vermont, with almost twice as many FEMA-declared disasters in Vermont from 2007-2016 as compared to the previous 10 years. Most notably, Tropical Storm Irene in 2011 resulted in six deaths, extensive damage to buildings, farms, and infrastructure, and widespread water contamination. In January of 2018, a cold and snowy period was followed by rapid warming into the 60's and heavy rains, causing ice jams and extensive flooding in several Vermont communities.

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[9] *Vermont Climate Change Indicators* , available at http://alanbetts.com/understanding-climate-change/topic/vermont-climate-change-indicators/

[10] NOAA National Centers for Environmental Information, State Climate Summaries, available at https://statesummaries.ncics.org/vt.

[11] Vermont Agency of Natural Resources, *Resilience: A Report on the Health of Vermont's Environment* (2011), available at http://www.anr.state.vt.us/anr/envrptsb/ANREnvReport2011.pdf

[12] https://statesummaries.ncics.org/vt

14. Changes in local climate will also impact Vermont's environment and economy by affecting activities dependent on seasonal climate patterns, such as maple sugaring, farming, fall foliage tourism, timber harvesting, and winter sports. Researchers predict that by 2050, and maybe even earlier, ski areas in Southern New England will not be economically viable.[13] Also, more intense rain events increase nutrient runoff to surface waters and warmer water temperatures create more favorable conditions for cyanobacteria blooms at beach and waterfront locations with high tourist traffic.
15. Changing climate may reduce the output of Vermont's $700-million dairy industry, which provides 70 percent of the state's farm revenue. Higher temperatures cause cows to eat less and produce less milk. Climate change may also pose challenges for field crops: Some farms may be harmed if more hot days and droughts reduce crop yields, or if more flooding and wetter springs delay their planting dates.
16. Warmer temperatures are likely to shift the suitable habitat for sugar maples farther north into Canada. Scientists are not certain whether warming will reduce maple syrup production in Vermont over the next few decades, although Vermont stands much to lose as the nation's leading maple syrup producer.
17. In addition to environmental and economic impacts, climate change has already affected the health and well-being of Vermonters. Climate change is altering the frequency, timing, intensity, and duration of extreme weather events (meteorological events that have a significant impact on local communities). Injuries and deaths have been the most direct health impacts associated with floods and other natural disasters in Vermont, though impacts to housing, businesses, drinking water, and mental health have also lingered long after some disasters. Heavy rains wash contaminants (even when flooding has not occurred) into drinking, recreational surface, and irrigation waters, increasing the risks for waterborne illnesses. The projected increase in the frequency and intensity of hot weather in Vermont is also expected to increase risk for heat illnesses and deaths, particularly among older adults.
18. Warming conditions are one of several factors that have contributed to increased distribution and abundance of black-legged ticks that transmit the pathogens causing Lyme disease,

[13] Steiger, Robert, et al., *A critical review of climate change risk for ski tourism*, Current Issues in Tourism. 13 (2017).

anaplasmosis, babesiosis and other diseases. Climate change is expected to further expand the range of the black-legged tick and lengthen the tick activity season, increasing the risk of tickborne diseases in Vermont in the future. Warmer and wetter conditions in the state will also make conditions more favorable for the survival and reproduction of mosquitoes that can transmit West Nile Virus, Eastern Equine Encephalitis or other harmful pathogens.

19. A lengthening growing season, combined with increased plant growth due to higher levels of carbon dioxide in the air, will likely increase allergenic pollen in the air we breathe, while increased humidity and occasional flooding will likely also lead to increased problems with mold growth in buildings. Both pollen and damp or moldy conditions in buildings can trigger allergic reactions, asthma attacks, or other health problems. Because Vermont already has one of the highest asthma rates in the country, increases in asthma triggers could have widespread impacts for Vermonters.
20. Ultimately, some impacts from climate change will be impossible to avoid because the greenhouse gases already in the atmosphere will persist for a very long time. However, what the future holds will depend in large measure on our ability to reduce future GHG emissions to minimize climate change impacts and to adapt to those unavoidable impacts of climate change. EPA's withdrawal of the determination that the greenhouse gas emission standards for MY 2022-2025 vehicles and its revised determination that those standards are not appropriate and should be revised demonstrates EPA's intention to weaken the federal greenhouse gas emission standards, which will contribute to worsening of the adverse impacts from climate change in Vermont as described above.
21. I declare under penalty of perjury that the foregoing is true and correct.

Executed this 4th day of February 2019.

Julie Moore

EXHIBIT P

Declaration of Stuart Clark
Manager, Air Quality Program
Washington State Department of Ecology

UPDATED DECLARATION OF STUART CLARK

I, Stuart Clark, do hereby declare as follows:

1. I am now, and at all times mentioned have been, a citizen of the United States and am a resident of the state of Washington, over the age of 18 years, competent to make this declaration, and make this declaration from my own personal knowledge.

2. I am currently employed by the Washington State Department of Ecology (Ecology) as the Manager of the Air Quality Program. As Manager of the Air Quality Program, I oversee the work of Ecology's entire Air Quality Program throughout the state of Washington. I have worked in this position for approximately 13 years. I have worked with Ecology on air quality issues for more than 35 years.

3. In 2005, recognizing that motor vehicles are the largest source of air pollution in the state of Washington, the Washington State Legislature adopted the California motor vehicle emission standards, and required Ecology to adopt rules to implement the standards. Revised Code of Washington (RCW) 70.120A.010(1). Ecology has adopted the required rules, which incorporate California's motor vehicle standards by reference. Washington Administrative Code (WAC) 173-123-070.

4. On April 13, 2018, EPA published its determination that the nationally negotiated greenhouse gas emission requirements for model year (MY) 2022–2025 vehicles are no longer appropriate. This change of direction from a nationally negotiated consistent set of emissions standards forced the California Air Resources Board (CARB) to revise its rules to ensure that California will be able to enforce its own greenhouse gas standards for MY 2022–2025 vehicles. We were consequently required to revise our rules to ensure that the California standards for MY 2022–2025 will be applicable in Washington State. Our final rules were adopted on December 27, 2018.

5. In revising our rules to accommodate the changes in CARB's rules, we were required to follow the rulemaking requirements of the state Administrative Procedure Act (APA) as well as requirements internal to Ecology. In accordance with APA requirements, we were required to draft rule language, issue a notice of proposed rulemaking, provide notice and the rule language to the public, allow at least 30 days for public comment, hold a public hearing, respond to comments, revise the rule as necessary to respond to public comments and then formally adopt the rule. For each rule, Ecology must also conduct a review under the state environmental policy act (SEPA). For each step of the rulemaking process, we must fully document the scope of the rule, the rationale for it, the results of the SEPA assessment and complete other paperwork required by Ecology's internal rulemaking procedures, and provide briefings to Ecology management. The substantial time and resources needed to revise Ecology's rule were required just to keep the current vehicle emission standards in place and diminished resources that otherwise would have been used for other critical work to keep Washington's air clean and meet federal ambient air quality standards.

6. Scientists from the Climate Impacts Group at the University of Washington have determined that climate change will significantly adversely affect Washington State, with an associated significant impact on Washington's economy. For example, under a business-as-usual greenhouse gas scenario, sea level is predicted to rise in Seattle relative to 2000 levels by 2 feet by 2050 and 5 feet by 2100. With 2 feet of sea level rise, a 1-in-100 year flood event will become an annual event.[1]

7. Washington has the largest shellfish industry on the west coast.[2] Increased ocean acidity caused by climate change is already affecting some shellfish species.[3] Under a

[1] State of Knowledge: Climate Change in Puget Sound (November 2015), Climate Impacts Group, University of Washington, at https://cig.uw.edu/resources/special-reports/ps-sok/ (Puget Sound) at 4–7.

[2] Washington: A Shellfish State, Washington Shellfish Initiative, at http://www.governor.wa.gov/sites/default/files/WSI%20factsheet.pdf.

[3] State of Knowledge Report, Climate Change Impacts and Adaptation in Washington State: Technical Summaries for Decision Makers, (December 2013), Climate Impacts Group, University of Washington, at https://cig.uw.edu/resources/special-reports/wa-sok/ (State of Knowledge) at 2–3.

business-as-usual greenhouse gas scenario, ocean waters are expected to become at least 100% more acidic by 2100 relative to 1986–2005.[4] The predicted level of ocean acidification is expected to cause a 34% decline in shellfish survival by 2100.[5]

8. Washington depends on yearly winter mountain snow pack for drinking water, as well as water for irrigation, hydropower, and salmon. Washington's winter mountain snow pack is decreasing because climate change is causing more precipitation to fall as rain rather than snow. By the 2040s, snow pack is predicted to decrease 38–46% relative to 1916–2006,[6] and by the 2080s, snow pack is expected to decline 56–70%.[7] This loss of snow pack will cause a 50% increase in the number of years in which water is not available for irrigation,[8] as well as a 20% decrease in summer hydropower production.[9]

9. Of Washington's total area (42.5 million acres), a little more than half (22 million acres) is forested.[10] Douglas fir accounts for almost half the timber harvested in Washington.[11] Under a moderate greenhouse gas scenario, Douglas fir habitat is expected to decline 32% by the 2060s relative to 1961–1990.[12] Wildland fires pose another threat to Washington's forests. Under a business as usual greenhouse gas scenario, decreases in summer precipitation, increases in summer temperatures and earlier snow melt are predicted to result in up to a 300% increase in the area in eastern Washington burned annually by forest fires[13] and up to a 1000% increase in area burned annually on the west side of the state (typically, the wet side).[14]

[4] State of Knowledge at ES-2.
[5] State of Knowledge at 8-4.
[6] State of Knowledge at ES-2
[7] State of Knowledge at 6-10.
[8] State of Knowledge at 6-5.
[9] State of Knowledge at 6-5.
[10] Sustainable Forestry, Washington Forest Protection Association, at http://www.wfpa.org/sustainable-forestry/
[11] Department of Natural Resources 2015 Washington Timber Harvest Report, September, 2016, at https://www.dnr.wa.gov/publications/em_obe_wa_timber_harvest_2015_final2.pdf
[12] State of Knowledge at 7-1.
[13] State of Knowledge at 7-3.
[14] State of Knowledge at 7-4.

10. Because of these and other impacts of climate change in Washington, Washington law requires emissions of greenhouse gases in the state to be reduced to 1990 levels by 2020, to 25% below 1990 levels by 2035, and to 50% below 1990 levels by 2050. RCW 70.235.020(1). The majority of greenhouse gases emitted in Washington state come from motor vehicles.[15] Therefore, Washington state has compelling environmental, public health and economic interests in maintaining the nationally negotiated greenhouse gas emission standards for MY 2022–2025 motor vehicles.

I declare under penalty of perjury under the laws of the state of Washington and federal law that the foregoing is true and correct.

DATED this 25th day of January 2019 in Lacey, Washington.

STUART CLARK

[15] Washington State Greenhouse Gas Emissions Inventory 2010-2011, Department of Ecology, State of Washington, December 2014, Publication No. 14-02-024, at 7, http://www.wfpa.org/sustainable-forestry/.

CERTIFICATE OF SERVICE

I hereby certify that I caused a copy of the foregoing State Petitioners' Addendum of Legal Authorities and Standing Declarations to be filed on February 7, 2019 using the Court's CM/ECF system, and that, therefore, service was accomplished upon counsel of record by the Court's system.

/s/ David Zaft
DAVID ZAFT