Comments of the Attorneys General of California, Colorado, Connecticut, Delaware, the District of Columbia, Illinois, Maine, Maryland, Massachusetts, Minnesota, New Mexico, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont and Washington

August 26, 2019

Via electronic submission to www.regulations.gov
ATTN: Docket ID No. CEQ-2019-0002

Edward A. Boling
Associate Director for the National Environmental Policy Act
Council on Environmental Quality
730 Jackson Place, NW
Washington, DC 20503

Re: Draft National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions, 84 Fed. Reg. 30,097 (June 26, 2019)
Docket No. CEQ-2019-0002

Dear Associate Director Boling:

The undersigned State Attorneys General of California, Colorado, Connecticut, Delaware, the District of Columbia, Illinois, Maine, Maryland, Massachusetts, Minnesota, New Mexico, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont and Washington (hereinafter, "the States") respectfully submit these comments opposing the Council on Environmental Quality's ("CEQ") "Draft National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions" ("Draft Guidance").[1]

CEQ's Draft Guidance is inconsistent with the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq.*, and should be withdrawn for several reasons. First, although the Draft Guidance focuses on greenhouse gas ("GHG") emissions, it fails to address climate change and its impacts. NEPA does not permit, and CEQ may not direct, agencies to ignore the well-documented impacts of climate change in their environmental impact analyses. Second, the Draft Guidance undermines NEPA's full-disclosure purpose and conflicts with NEPA's requirements in multiple ways, including: by failing to provide clarity on how agencies should analyze indirect climate change impacts; by inadequately considering cumulative impacts; by improperly minimizing the analytical value of monetizing climate impacts and supporting an unbalanced approach to cost-benefit analysis; by discouraging analysis and mitigation of a project's climate impacts; and by failing to direct federal agencies to consider climate adaptation and resiliency when analyzing a project's environmental impacts and

[1] 84 Fed. Reg. 30,097 (June 26, 2019), Docket No. CEQ-2019-0002.

mitigation for those impacts. In the States' experience, a robust assessment of climate impacts is not only possible but is also critical to adequate review of environmental impacts under NEPA and its state analogues.

Rather than providing clarity, CEQ rejects the positions taken its prior administrative guidance on the analysis of climate change impacts required under NEPA with an unsupported and outdated three-page document that does not take the threat of climate change seriously.[2] In so doing, CEQ is creating additional legal risk for both federal agencies and project applicants. For all of these reasons, detailed below, we urge CEQ to abandon this Draft Guidance. In addition, we request that CEQ revise and readopt the previous "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews" ("2016 Guidance") issued in 2016 and withdrawn in 2017.[3] If readopted, the 2016 Guidance should be updated consistent with current case law interpreting NEPA and strengthened to reflect the severe and pervasive threats from climate change.

I. THE CRITICAL IMPORTANCE OF ADDRESSING CLIMATE CHANGE

It is well accepted that human-caused or "anthropogenic" GHG emissions are driving climate change that endangers the public health and welfare.[4] Global GHG emissions reached an all-time high in 2018, underscoring the need for more immediate and stronger action to address climate change.[5] And global annual average temperatures have "increased by more than 1.2°F (0.65°C) for the period 1986-2016 relative to 1901-1960."[6] Moreover, recent international assessments of climate change and its impacts demonstrate the urgency and enormity of the situation. In October 2018, the leading international body of climate scientists—the Nobel-prize-winning Intergovernmental Panel on Climate Change ("IPCC")—issued a report finding that, absent substantial GHG reductions by 2030 and net zero emissions by 2050, warming above

[2] Because existing NEPA regulations do not specifically address GHG impacts analysis, CEQ's Draft Guidance represents the *only* guidance on GHG analysis from the NEPA expert administrative agency.
[3] 81 Fed. Reg. 51,866 (Aug. 5, 2016). A copy of the 2016 Guidance is attached as Exhibit 1 to this letter. CEQ withdrew the 2016 Guidance pursuant to Executive Order 13783 on April 5, 2017. *See* 82 Fed. Reg. 16,576 (April 5, 2017).
[4] Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496 (Dec. 15, 2009).
[5] Le Quéré, C. et al., *Global Carbon Budget 2018*, 10 EARTH SYST. SCI. DATA 2141 (2018), https://doi.org/10.5194/essd-10-2141-2018; Chelsea Harvey, *More CO_2 Released in 2018 Than Ever Before*, E&E NEWS (Dec. 6, 2018), https://www.eenews.net/climatewire/stories/1060108875.
[6] U.S. Global Change Research Program, *Climate Science Special Report: Fourth National Climate Assessment, Volume I & II* (2017) [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock eds.], https://www.globalchange.gov/browse/reports/climate-science-special-report-fourth-national-climate-assessment-nca4-volume-i.

1.5°C (2.7°F) from pre-industrial levels is likely and would have wide-ranging and devastating consequences.[7]

The federal government has also previously recognized the severe and growing threats posed by climate change. In 2017, thirteen federal agencies released the first volume of the Fourth National Climate Assessment ("Assessment"), concluding that "[c]hanges in the characteristics of extreme events are particularly important for human safety, infrastructure, agriculture, water quality and quantity, and natural ecosystems. Heavy rainfall is increasing in intensity and frequency across the United States and globally and is expected to continue to increase."[8] On November 23, 2018, the same group of thirteen federal agencies released the second volume of the Assessment, which thoroughly evaluates the harmful impacts of climate change that different regions of the country are experiencing and the projected risks climate change poses to our health, environment, economy, and national security.[9] The Assessment reflects the work of more than 300 governmental and non-governmental experts, was externally peer-reviewed by a committee of the National Academies of Sciences, Engineering and Medicine, and underwent several rounds of technical and policy review by the federal agencies of the U.S. Global Change Research Program.[10] The two volumes of the Assessment represent the federal government's most up-to-date and comprehensive analysis of climate science and the impacts of climate change on the United States.[11]

The second volume of the Assessment cautions that "[i]n the absence of significant global mitigation action and regional adaptation efforts, rising temperatures, sea level rise, and changes in extreme events are expected to increasingly disrupt and damage critical infrastructure and property, labor productivity, and the vitality of our communities."[12] Further, "[w]hile mitigation and adaptation efforts have expanded substantially in the last four years, they do not yet approach the scale considered necessary to avoid substantial damages to the economy, environment, and human health over the coming decades."[13] Documenting many of the record-setting phenomena we have recently seen, including fires, floods, other extreme weather, and sea level rise, the second volume emphasizes the increasing vulnerability of our built environment as these phenomena become the new normal or even more extreme.[14] Additional studies support these disturbing findings. For instance, a modeling analysis of 22 recent hurricanes by U.S.

---

[7] *See* IPCC Press Release, Summary for Policymakers of IPCC Special Report on Global Warming of 1.5º C Approved by Governments (Oct. 8, 2018), https://www.ipcc.ch/site/assets/uploads/2018/11/pr_181008_P48_spm_en.pdf; IPCC Special Report, Global Warming of 1.5º C (IPCC Special Report), https://www.ipcc.ch/sr15/.
[8] *Assessment, Volume I*, *supra* note 6, at 10.
[9] U.S. Global Change Research Program, *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* (D.R. Reidmiller et al. eds., 2018), https://nca2018.globalchange.gov/.
[10] *Id.* at iii, 2.
[11] *Id.* at 1; *see also* Global Change Research Act of 1990, Pub. L. No. 101-606, 15 U.S.C. §§ 2921-2961.
[12] *Assessment, Volume II*, supra note 9, at 25-32 (Summary Findings).
[13] *Id.* at 26.
[14] *See, e.g.*, *id.* at 444, 669-1,308 (documenting regional impacts of climate change).

government scientists concluded that future hurricanes will have stronger maximum winds, move slower, and drop more precipitation.[15]

The States are already facing these severe impacts of climate change.[16] In California, climate change is responsible for successive record-breaking fire seasons resulting in unprecedented loss of life and billions of dollars in damages and economic harm. The 2017 wildfire season killed dozens of people, destroyed thousands of homes, forced hundreds of thousands to evacuate, and burned more than half a million acres.[17] In August 2018, before the devastating Camp Fire that killed more than 80 people, California released a report suggesting that large wildfires (greater than 25,000 acres) could become 50% more frequent by the end of the century if GHG emissions are not reduced.[18] Climate change is expected to make longer and more severe wildfire seasons the new normal for California.[19] Besides the immediate threats they pose to life and property, wildfires significantly impair both air quality (via smoke and ash that can hospitalize residents) and water quality (via the erosion of hillsides stripped of their vegetation). California also weathered a historic five-year drought and a variety of other unprecedented phenomena increasingly harming the health and prosperity of Californians from all parts of the state.[20] Drought conditions beginning in 2012 left reservoirs across the state at record low levels, often no more than a quarter of their capacity. By 2015, the Sierra snowpack—critical to California's water supply, tourism industry, and hydroelectric power—was the smallest in at least 500 years.[21] In the Central Valley, the drought cost California agriculture about $2.7 billion and more than 20,000 jobs in 2015 alone.[22]

With over six-hundred miles of coastline and 2.2 million people living in shoreline towns and communities, Connecticut's residents are extremely vulnerable to the impacts of climate events. Connecticut has already experienced significant damage to natural resources, homes, and

---

[15] Gutmann et al., *Changes in Hurricanes from a 13-Yr. Convection-Permitting Pseudo-Global Warming Simulation*, 31 J. CLIMATE 3,643 (Jan. 24, 2018) (abstract), https://doi.org/10.1175/JCLI-D-17-0391.1.

[16] A detailed summary of state-specific climate change impacts is set forth in the Comments of Attorneys General of New York, et al. on Proposed Rule: Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units: Emission Guideline Implementing Regulations; New Source Review Program, Appendix A: Climate Change Impacts, Docket Id. No. EPA-HQ-OAR-2017-0355-24817 (Oct. 31, 2018), https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0355-24817.

[17] Lauren Tierney, *The Grim Scope of 2017's California Wildfire Season Is Now Clear. The Danger's Not Over.*, WASH. POST (Jan. 4, 2018), https://www.washingtonpost.com/graphics/2017/national/california-wildfires-comparison/.

[18] Bedsworth, L. et al., *2018 Statewide Summary Report, California's Fourth Climate Change Assessment* at 9 (2018), www.climateassessment.ca.gov.

[19] California Department of Forestry and Fire Protection, *California's Forests and Rangelands: 2010 Assessment*, Ch. 3-7 (2010), https://frap.fire.ca.gov/media/3179/assessment2010.pdf.

[20] *See generally* California Air Resources Board, *California's 2017 Climate Change Scoping Plan Update: The Strategy for Achieving California's 2030 Greenhouse Gas Target*, (Nov. 2017), https://ww3.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

[21] *See* NOAA, National Centers for Environmental Information, *Multi-Century Evaluation of Sierra Nevada Snowpack*, https://www.ncdc.noaa.gov/news/multi-century-evaluation-sierra-nevada-snowpack.

[22] California's 2017 Climate Change Scoping Plan Update, *supra* note 20, at 7.

infrastructure from more frequent and more intense storms, which is consistent with scientists' predictions of new weather patterns attributable to climate change.[23] For example, in Connecticut alone, Hurricane Irene (2011) caused power outages affecting 754,000 citizens, and Superstorm Sandy (2012) forced a shutdown of Connecticut's transportation system, causing power outages to 600,000 people and inflicting almost $2 billion in statewide damages.[24] Superstorm Sandy forced evacuations of thousands of Connecticut residents, damaged roads and infrastructure, and took nine days for the affected utilities to restore power.[25]

As one of the most low-lying states in the nation, Delaware is particularly at risk from the harms of climate change, including sea level rise. For example, a 2012 Delaware Sea Level Rise Vulnerability Assessment found that sea level rise of only 0.5 meters would inundate 8% of the state's land area.[26] Areas inundated would include "transportation and port infrastructure, historic fishing villages, resort towns, agricultural fields, wastewater treatment facilities and vast stretches of wetlands and wildlife habitat of hemispheric importance."[27] The Assessment concluded that "every Delawarean is likely to be affected by sea level rise whether through increased costs of maintaining public infrastructure, decreased tax base, loss of recreational opportunities and wildlife habitat, or loss of community character."[28]

As a densely populated area located at the confluence of two tidal rivers, the District of Columbia is particularly vulnerable to the effects of climate change including dangerous heat waves, flooding caused by rising tides and heavy rains, and severe weather. Nuisance flooding in riverfront areas has already increased by more than 300% according to the National Oceanic and Atmospheric Administration.[29] The U.S. Army Corps of Engineers conservatively predicts up to 3.4 feet of additional sea level rise in the District by 2080.[30] Heat emergencies are also 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.[31]

---

[23] *Building a Low Carbon Future for Connecticut: Recommendations from the Governor's Council on Climate Change* (Dec. 18, 2018), https://www.ct.gov/deep/lib/deep/climatechange/publications/building_a_low_carbon_future_for_ct_gc3_recommendations.pdf.

[24] NOAA, National Centers for Environmental Information, *U.S. Billion-Dollar Weather and Climate Disasters: Overview*, https://www.ncdc.noaa.gov/billions/.

[25] John Burgeson, *Rising Above the Tide: 5 Years Since Sandy*, CTPOST, Oct. 28, 2017, https://www.ctpost.com/local/article/Rising-above-the-tide-5-years-since-Sandy-12313727.php.

[26] Delaware Department of Natural Resources and Environmental Control, *Preparing for Tomorrow's High Tide: Sea Level Rise Vulnerability Assessment for the State of Delaware* at ix (July 2012), http://www.dnrec.delaware.gov/coastal/Documents/SeaLevelRise/AssesmentForWeb.pdf.

[27] *Id.*

[28] *Id.*

[29] *Climate Ready DC, The District of Columbia's Plan to Adapt to a Changing Climate* at A3, https://doee.dc.gov/sites/default/files/dc/sites/ddoe/service_content/attachments/CRDC-Report-FINAL-Web.pdf.

[30] *Id.*

[31] *Id.* at A2.

In addition to threatening the lives of Illinois citizens, climate change is fundamentally altering the state's farming industry and greatest environmental asset, Lake Michigan. The farming sector is particularly vulnerable. In spring 2019, record flooding delayed crop planting across the state, causing the U.S. Department of Agriculture to declare an agricultural disaster for the entire state.[32] Climate disruption also contributes to whipsawing water levels on Lake Michigan. In January 2013, the Lake Michigan's water level fell to an all-time low. In 2015, the water level then climbed to its highest level since 1998.[33] These rapid changes harm commercial shipping, recreational boaters, wildlife, and beach-goers.

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 of sea level rise possible under a high emissions scenario.[34] Warmer temperatures, extended heat waves, increased frequency and extent of flooding, changing precipitation, and increasingly severe weather events are already significantly impacting public health, the environment, and agriculture in Massachusetts, causing significant property damage, and straining key infrastructure including transportation networks, wastewater treatment systems, drinking water sources, and energy infrastructure.[35]

New York is experiencing dramatic increases in the frequency and intensity of extreme rain storms.[36] For example, devastating rainfall from Hurricane Irene in 2011 dropped more than 11 inches of rain in just 24 hours, causing catastrophic flooding, power outages, displacement and loss of life, and estimated damage totaling $1.3 billion. New York's rate of sea level rise is much higher than the national average and could account for up to six feet of additional rise by 2100 if GHG emissions are not abated. Storm surge on top of high tide on top of sea level rise is a recipe for disaster for coastal New York. For example, the approximately 12 inches of sea level rise New York City has experienced since 1900 may have expanded Hurricane Sandy's flood area in 2012 by about 25 square miles, flooding the homes of an additional 80,000 people

---

[32] U.S. Dept. of Agriculture, *USDA Designates 102 Illinois Counties as Primary Natural Disaster Areas* (Aug. 14, 2019), https://www.fsa.usda.gov/news-room/emergency-designations/2019/ed_2019_0814_rel_0074.

[33] Tony Briscoe, *Lake Michigan Water Levels Rising at Near Record Rate*, Chicago Tribune (July 12, 2015), *available at* http://www.chicagotribune.com/news/local/breaking/ct-lake-michigan-water-levels-met-20150710-story.html.

[34] Northeast Climate Science Center, University of Massachusetts, *Massachusetts Climate Change Projections* (Mar. 2018), https://necsc.umass.edu/projects/massachusetts-climate-change-projections.

[35] *See, e.g., id.* at 4-6; Massachusetts Dep't of Public Health, *CAPACITY TO ADDRESS THE HEALTH IMPACTS OF CLIMATE CHANGE IN MASSACHUSETTS*, 6 (Apr. 2014), *available at* http://www.mass.gov/eohhs/docs/dph/environmental/exposure/climate-change-report-2014.pdf; Runkle et al., *NOAA National Centers for Environmental Information, State Summaries 149-MA, Massachusetts*, 4 (2017), *available at* https://statesummaries.ncics.org/downloads/MA-screen-hi.pdf.

[36] *Current & Future Trends in Extreme Rainfall Across New York State, A Report from the Environmental Protection Bureau of New York State Attorney General Eric T. Schneiderman* (Sept. 2014), https://ag.ny.gov/pdfs/Extreme_Precipitation_Report%209%202%2014.pdf (based on data from the 2014 National Climate Assessment and the National Oceanographic and Atmospheric Administration's Northeast Regional Climate Center).

in the New York City area alone.[37] Air pollution in New York may also be worsening due to climate change. According to the Third National Assessment on Climate Change, a scenario in which greenhouse gases continue to increase would lead to higher ground-level ozone concentrations in the New York metropolitan region, driving up the number of ozone-related emergency room visits for asthma in the area by 7.3%—more than 50 additional ozone-related emergency room visits per year in the 2020s, compared to the 1990s.[38] The New York City metropolitan area experienced elevated ozone pollution levels in the years 2015-2017, a period that included the hottest years on record.[39]

In Pennsylvania, temperatures have already increased 1.8°F in the last century, and are projected to rise an additional 5.4°F by 2050. Pennsylvania has seen a related rise in precipitation, causing increased flooding and landslides that cost the Commonwealth an additional $125.7 million for infrastructure replacement in 2018 alone. Climate change is also worsening air quality, damaging crops, and increasing the prevalence of invasive species and insect-transmitted diseases.[40]

Climate change will significantly adversely affect Washington's public health and its coasts, mountains, and forests. The warming climate already is increasing ocean acidification,[41] decreasing Washington's snowpack,[42] and threatening Washington's forests and timber industry.[43] With respect to public health, more frequent heat waves and more frequent and intense flooding may harm human health directly and may also exacerbate health risks from poor air quality and allergens.[44] In addition, Washington is also experiencing decreasing winter mountain snowpack, and by the 2080s, snow pack is expected to decline 56-70%, impacting water availability for drinking, irrigation, hydropower, and salmon.[45]

For these reasons, the States are particularly concerned that federal agencies thoroughly consider GHG emissions and the consequences of climate change in their NEPA review and take

---

[37] Horton, et al., *New York City Panel on Climate Change 2015 Report, Chapter 2: Sea Level Rise and Coastal Storms*, 1336 ANN. N.Y. ACAD. SCI. 36 (2015), http://onlinelibrary.wiley.com/doi/10.1111/nyas.12593/full.

[38] U.S. National Climate Assessment, *Climate Change Impacts in the United States*, (2014) at 222 (citing P. E. Sheffield, et al., *Modeling of Regional Climate Change Effects on Ground Level Ozone and Childhood Asthma*, 41 AM. J. PREVENTIVE MEDICINE 251 (2011), http://download.journals.elsevierhealth.com/pdfs/journals/0749-3797/PIIS0749379711003461.pdf)

[39] Am. Lung Ass'n, *State of the Air 2019*, at 5-6, 21, 37, 127-128 (2019), https://www.lung.org/assets/documents/healthy-air/state-of-the-air/sota-2019-full.pdf.

[40] PENN. DEP'T OF ENVTL. PROTECTION, *Climate Change in PA*, https://www.depgis.state.pa.us/ClimateChange/index.html (last visited Aug. 22, 2019).

[41] Climate Impacts Group, University of Washington, *State of Knowledge Report, Climate Change Impacts and Adaptation in Washington State: Technical Summaries for Decision Makers*, at ES-1 (Dec. 2013), (hereinafter "State of Knowledge Report"), https://cig.uw.edu/resources/special-reports/wa-sok/.

[42] *Id.*

[43] *Id.* at ES-4.

[44] *Id.* at ES-4, ES-5.

[45] *Id.* at ES-4, 6-1, 6-6, 6-11, 6-12.

a hard look at the full environmental impacts, including climate-related impacts, of any proposed actions.

II. NEPA AND THE COUNCIL ON ENVIRONMENTAL QUALITY

Congress enacted NEPA in 1969 to establish a national policy for the environment and to create and maintain conditions under which man and nature can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations of Americans.[46] NEPA is "our basic national charter for protection of the environment."[47] NEPA's goals are to ensure agencies consider environmental consequences of their proposed actions and "inform the public about their decision-making process."[48] Nearly every major federal action requires compliance with NEPA, which also requires consultation with other federal agencies possessing expertise on particular resources impacted by a project, with the aim to help develop more robust alternatives.

NEPA established CEQ within the Executive Office of the President to ensure that federal agencies meet their obligations under NEPA.[49] CEQ reviews and approves federal agency NEPA procedures, approves alternative arrangements for compliance with NEPA in emergencies, and helps to resolve disputes between federal agencies and other governmental entities and members of the public.[50] CEQ oversees NEPA implementation across the nation, principally through issuing regulations and guidance to implement NEPA's procedural requirements and provide direction to both federal agencies and private project proponents.

Over the past forty years, CEQ's regulations and guidance have shaped NEPA's implementation and have become integral to the daily functioning and responsible decision-making of numerous federal and state agencies. CEQ's guidance also helps provide legal certainty to both federal agencies and private project applicants. And circuit courts reviewing challenges to NEPA compliance often rely on CEQ's guidance documents as "persuasive authority offering interpretive guidance regarding the meaning of NEPA and the implementing regulations."[51] Rather than implement or properly interpret the law, however, CEQ's Draft Guidance undermines NEPA's letter and spirit, sows confusion about consideration of climate change impacts under NEPA, increases uncertainty, and creates new legal risks for projects subject to NEPA.

---

[46] 42 U.S.C. § 4321.
[47] 40 C.F.R. § 1500.1 (2018).
[48] Draft Guidance, *supra* note 1, at 30,097.
[49] 42 U.S.C. § 4321.
[50] *See* https://ceq.doe.gov/index.html (last visited August 22, 2019).
[51] *See, e.g., Wyoming v. U.S. Dep't of Ag.*, 661 F.3d 1209, 1260 n.36 (10th Cir. 2011); *New Mexico ex rel. Richardson v. Bureau of Land Mgmt.*, 565 F.3d 683, 705 n.25 (10th Cir. 2009); *American Rivers v. F.E.R.C.*, 201 F.3d 1186, 1200-01 & n.21 (9th Cir. 1999).

III. CEQ UNLAWFULLY AND ARBITRARILY IGNORES THE EFFECTS OF CLIMATE CHANGE IN THE DRAFT GUIDANCE

CEQ's 2016 Guidance offered clarity and consistency in how federal agencies should address climate change—including how climate change may alter an action's environmental effects—in the environmental impact assessment process. Central to the prior guidance was the goal of identifying important interactions between climate change and environmental impacts from a proposed action. The 2016 Guidance appropriately focused on the environmental risks associated with climate change, recognizing the critical importance of climate change as a "fundamental environmental issue" whose effects "fall squarely within NEPA's purview."[52] It also detailed the science on climate change, citing multiple international and federal government studies documenting the impacts of climate change.[53] CEQ also emphasized the need to consider climate change and the evolving body of scientific information available to understand and identify a project's affected environment.[54]

The Draft Guidance unlawfully and arbitrarily ignores a growing body of scientific literature regarding climate change. Notably absent from the three-page Draft Guidance is any discussion of climate change and its effects. Proper assessment of the effects of GHG emissions requires a recognition—wholly absent in the Draft Guidance—that climate change presents an extremely challenging threat that must be addressed in NEPA analyses. Instead, the Draft Guidance offers only a cursory overview of the assessment of a project's GHG emissions. And despite its nominal focus on GHG emissions, the Draft Guidance only refers to climate effects in stating that GHG emissions "may be used as a proxy for assessing potential climate effects" and that an agency may qualitatively discuss the effects of GHG emissions based on literature.[55] These passing references do little to underscore the significance of GHG emissions in the context of climate change or to acknowledge the severe impacts that our States and cities are already facing today.

The Draft Guidance's disregard for climate change is the latest in a series of the Trump Administration's efforts to arbitrarily minimize or disregard the overwhelming scientific consensus that immediate and continual progress toward a near-zero GHG-emission economy by mid-century is necessary to avoid truly catastrophic climate change impacts.[56] Indeed, CEQ's

---

[52] 2016 Guidance, *supra* note 3, at 2.
[53] *Id.* at 6-8.
[54] *Id.* at 21.
[55] Draft Guidance, *supra* note 1, at 30,098.
[56] *See* Intergovernmental Panel on Climate Change (IPCC), *Summary for Policymakers of IPCC Special Report on Global Warming of 1.5 C* at 15 (2018). Multiple federal actions reflect the Trump administration's repeated disregard for the need to reduce GHG emissions, including, among others: the Affordable Clean Energy Rule, 84 Fed. Reg. 32,520 (July 8, 2019) (rolling back Clean Power Plan emissions controls on existing power plants); the Safer Affordable Fuel-Efficient (SAFE) Vehicles Proposed Rule for Model Years 2021-2026 Passenger Cars and Light Trucks, 83 Fed. Reg. 42,986 (Aug. 24, 2018); and *State of California v. EPA*, No. 4:18-03237-HSG (N.D. Cal. May 31, 2018) (challenging EPA's refusal to implement landfill methane emission regulations).

refusal to address climate impacts in the Draft Guidance is all the more troubling in light of the federal government's *own* conclusions, detailed above, that climate change resulting from GHG emissions is already having a serious impact on communities throughout the country and that immediate action is necessary to avoid the most severe long-term consequences.[57] In the face of these severe and well-documented climate change impacts, CEQ's guidance should *highlight* rather than minimize the critical importance of addressing climate change and its impacts in NEPA analyses. The Draft Guidance unlawfully and arbitrarily ignores these impacts and encourages agencies to minimize the treatment of GHG emissions and climate effects during NEPA review of federal projects.

IV. CEQ'S DRAFT GUIDANCE SUBVERTS THE PURPOSE AND REQUIREMENTS OF NEPA

CEQ's Draft Guidance undermines NEPA's purpose to promote informed decision-making by disregarding the most pressing environmental challenge of our time: climate change.[58] As the Supreme Court long ago emphasized, and as the Draft Guidance itself acknowledges, NEPA requires agencies to take a "hard look" at all environmental consequences—whether direct or indirect—of any proposed action on the environment.[59] And that "hard look" requirement obligates agencies to carefully consider every significant environmental impact of a project,[60] which must necessarily include examining a project's contribution to climate change through its GHG emissions.[61] NEPA's regulations, too, expressly require consideration of indirect effects on air, water, and other natural systems, like those resulting from climate change.[62] Inherent in NEPA and its implementing regulations is a "rule of

---

[57] *Assessment, Volume I*, *supra* note 6, at 16 ("[B]ased on extensive evidence, … it is extremely likely that human activities, especially emissions of GHGs, are the dominant cause of the observed warming since the mid-20th century[.]"); *see also* Assessment, Volume II, *supra* note 9 at 1453; Daniel R. Coats, *Statement for the Record: Worldwide Threat Assessment of the U.S. Intelligence Community* at 23 (Jan. 29, 2019), https://www.hsdl.org/?view&did=820727, ("Global environmental and ecological degradation, as well as climate change, are likely to fuel competition for resources, economic distress, and social discontent through 2019 and beyond. Climate hazards such as extreme weather, higher temperatures, droughts, floods, wildfires, storms, sea level rise, soil degradation, and acidifying oceans are intensifying, threatening infrastructure, health, and water and food security. Irreversible damage to ecosystems and habitats will undermine the economic benefits they provide, worsened by air, soil, water, and marine pollution.").

[58] *See Assessment, Volume II*, *supra* note 9, at 26, 73, 1347 (reaffirming that climate change is human-caused, that continued growth in emissions will produce economic losses across all sectors, and that mitigation measures do not "yet approach the scale considered necessary to avoid substantial damages to the economy, environment and human health over the coming decades").

[59] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989); Draft Guidance, *supra* note 1, at 30,097.

[60] *See Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983) ("NEPA…places upon an agency the obligation to consider every significant aspect of the environmental impact of a proposed action.") (internal quotation marks and citations omitted).

[61] *See, e.g.*, *WildEarth Guardians v. Jewell*, 738 F.3d 298, 301 (D.C. Cir. 2013) (holding that agency took the requisite hard look at the effect of its decision to authorize the lease of public lands for coal mining operations on global climate change).

[62] *See* 40 C.F.R. § 1508.8.

reason," which ensures that agencies determine whether and how to prepare an Environmental Impact Statement ("EIS") based on the usefulness to the decision-making process of any new potential information regarding such impacts.[63]

While NEPA does not mandate substantive outcomes, the requirement that federal agencies consider and publicly disclose the environmental consequences of a proposed action, including actions that contribute to climate change, has practical significance.[64] Although NEPA does not necessarily mandate that federal agencies reduce GHG emissions related to a proposed action, a full evaluation of a proposed action's GHG emissions and/or climate change impacts under NEPA affects agency activity by increasing awareness and allowing meaningful evaluation of alternative courses of action. And disclosure of GHG impacts provides states and the public with useful information that increases their ability to lobby agencies and Congress to move toward greener and sustainable options in federal actions.

The Draft Guidance moves in the wrong direction, muddying the waters on the analysis of climate change impacts under NEPA and creating new legal risks for actions subject to NEPA. As discussed in more detail below, the Draft Guidance conflicts with NEPA's "hard look" mandate by: (1) failing to clarify how agencies analyze indirect climate change effects under NEPA; (2) improperly instructing agencies on cumulative impacts analysis; (3) encouraging agencies to forgo quantifying climate change impacts even though complex analysis and modeling of GHG impacts have been routinely performed by federal agencies since at least 2010; (4) discouraging a proper cost-benefit analysis; and (5) improperly indicating that evaluation of mitigation of GHG impacts is not required. In short, rather than informing agencies how to meaningfully analyze a project's GHG emissions and climate change impacts,[65] the Draft Guidance encourages agencies *not* to analyze a project's likely climate change impacts and to avoid taking a "hard look" at climate-related impacts, in conflict with NEPA. As noted below,[66] a growing body of case law demonstrates that, for many projects, CEQ's instructions in the Draft Guidance on how to address climate change impacts under NEPA encourage agencies to disregard relevant environmental information and are thus contrary to the law and arbitrary and capricious.[67]

---

[63] *Dep't of Transp. v. Public Citizen*, 541 U.S. 752, 754 (2004).

[64] 40 C.F.R. §§ 1501.5, 1501.6, 1500.5, 1508.7 (2019); *see Robertson*, 490 U.S. at 333 ("NEPA itself does not impose substantive duties mandating particular results, but simply prescribes the necessary process for preventing uninformed—rather than unwise—agency action").

[65] *Compare* 2016 Guidance, *supra* note 3, at 20-27.

[66] *See, e.g., WildEarth Guardians v. Zinke*, 368 F. Supp. 3d 41, 68-71 (D.D.C. 2019); *Ctr. for Biological Diversity v. Nat'l Highway Transportation Safety Admin.*, 538 F.3d 1172, 1198-1203 (9th Cir. 2008); *see also Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 532, 549-50 (8th Cir. 2003) (agencies must assess proposed action's indirect effect on climate change when nature of effect is reasonably foreseeable, even if extent of that effect is not).

[67] *See Motor Vehicle Mfrs. Ass'n of the United States v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) ("under the 'arbitrary and capricious' standard ... the agency must examine the relevant data and articulate a satisfactory explanation for its action including a 'rational connection between the facts found and the choice made"').

A. CEQ's Draft Guidance Does Not Clarify to What Extent Agencies Must Consider Indirect GHG Emissions

CEQ's disregard for indirect GHG emissions conflicts with NEPA, its regulations, and case law. As noted above, an agency conducting review under NEPA must consider the project's direct and indirect environmental effects.[68] Indirect effects are "caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable."[69] Federal courts have held that upstream and downstream GHG emissions are an indirect effect of agencies authorizing projects such as pipelines and mining.[70] Where an agency could deny a project on the ground that it would be too harmful to the environment, the agency is the "legally relevant cause" of both the direct and indirect effects of that project.[71] Thus, federal agencies are required to analyze indirect GHG emissions under NEPA.[72]

The Draft Guidance, however, fails to clarify the extent to which agencies should consider GHG emissions from major federal actions. Instead, it employs broad language and general terms to significantly reduce the scope of environmental impacts that agencies should analyze under NEPA. Purporting to rely on the "rule of reason," the Draft Guidance suggests that agencies "should analyze reasonably foreseeable environmental consequences of major federal actions, but should not consider those that are remote or speculative."[73] However, climate change harms are already occurring. Although there may be uncertainties in terms of additional types of harms and the magnitude of impacts, CEQ seems to ignore the very predicate that harms are happening now. And, rather than employ any "rule of reason," the Draft Guidance attempts to limit agencies' consideration of GHG emissions by not specifying the meaning of the terms or the analysis necessary for an agency to support such a determination.

Litigation challenging NEPA review by the Federal Energy Regulatory Commission ("FERC") provides a useful example of the proper analysis of GHG emissions as indirect effects under NEPA. FERC, in particular, has struggled in its approach to analysis of climate effects of pipeline decisions under NEPA and the Natural Gas Act.[74] Historically, FERC contended that

---

[68] 40 C.F.R. § 1502.16.
[69] 40 C.F.R. § 1508.8(b).
[70] *See, e.g.*, *Sierra Club*, 867 F.3d at 1374 ("greenhouse-gas emissions are an indirect effect of authorizing this [pipeline] project, which FERC could reasonably foresee"); *San Juan Citizens Alliance v. U.S. Bureau of Land Mgmt.*, 326 F. Supp. 3d at 1244 (finding that combustion emissions were indirect effect of agency's decision to extract those natural resources); *Montana Envtl. Info. Ctr. v. U.S. Office of Surface Mining*, No. CV 15-106-M-DWM, 2017 WL 5047901, *3 (stating that "effects of the estimated 23.16 million metric tons of greenhouse gas emissions the Mining Plan EA concluded would result from combustion of the coal that would be extracted from the Mine" are indirect effects from coal trains).
[71] *Sierra Club*, 867 F.3d at 1373.
[72] *Id.*
[73] Draft Guidance, *supra* note 1, at 30,098.
[74] In April 2018, FERC issued a Notice of Inquiry (NOI) aimed at reevaluating its previous approach to balancing the competing interests involved in pipeline projects, to which it invited comments (Certification of New Interstate Natural Gas Facilities Notice of Inquiry, 163 FERC ¶ 61,042 (2018)); *see also* Rich Glick & Matthew Christiansen, *FERC and Climate Change*, 40 ENERGY L. J. 1, 43 (2019)

upstream and downstream GHG emissions are not "reasonably foreseeable."[75] Based on this reasoning, FERC has taken the position that it need not analyze such emissions pursuant to NEPA, or factor them into its public convenience and necessity determinations under the Natural Gas Act.[76] The court in *Sierra Club v. FERC* disagreed, holding that under NEPA, FERC must consider GHG emissions as indirect effects of a project.[77] CEQ should provide clarity on the process of evaluating GHG emissions by instructing agencies to consider upstream and downstream GHG emissions as indirect effects of a project, as *Sierra Club* requires. Instead, the Draft Guidance directs agencies such as FERC to follow an approach inconsistent with NEPA and case law.

NEPA, CEQ's implementing regulations, and federal court decisions thus make clear that agencies cannot shirk their NEPA obligations by simply claiming that GHG emissions are too speculative.[78] Any NEPA reviews conducted pursuant to the Draft Guidance—and thus in conflict with decisions such as *Sierra Club v. FERC*—will be unlawful and subject to increased litigation. By failing to describe the factors triggering rigorous analysis of GHG impacts, the Draft Guidance fails to reduce uncertainty, invites speculation, and *reduces* clarity for agencies in assessing GHG emissions. Rather than making agencies' NEPA reviews less robust and more vulnerable to challenge, CEQ should provide agencies with more meaningful guidance on how to analyze indirect GHG emissions.

(recommending that FERC should "meaningfully engage the issue and develop a framework for fully considering climate change in the section 7 process").

[75] *See, e.g.*, New Market Project Rehearing Order, 163 FERC ¶ 61,128 at P 34.

[76] *Id.* at P 43 ("We are not aware of any basis that indicates the Commission is required to consider environmental effects that are outside of our NEPA analysis of the proposed action in our determination of whether a project is in the public convenience and necessity under section 7(c).").

[77] *Sierra Club*, 867 F.3d at 1373-75.

[78] *See, e.g.*, *id*. at 1374 (holding that agency had not provided a satisfactory explanation for why quantification of indirect GHG emissions was not feasible and stating, "we understand that emission estimates would be largely influenced by assumptions rather than direct parameters about the project, but some educated assumptions are inevitable in the NEPA process" (internal quotation marks and citations omitted)); *San Juan Citizens Alliance*, 326 F. Supp.3d at 1241-44 (holding that BLM's failure to quantify and analyze the impacts of downstream GHG emissions was arbitrary, despite the agency's finding that impacts were "not feasible to predict with certainty"); *see Allegheny Defense Project v. FERC*, No. 17-1098, ___F.3d ___, 2019 WL 3518835 at *8, (D.C. Cir. Aug. 2, 2019) (holding "NEPA required the Commission to consider both the direct and indirect environmental effects of the Project, and that, despite what the Commission argues, the downstream greenhouse-gas emissions are just such an indirect effect," (citing *Sierra Club v. FERC* and 40 C.F.R. § 1502.16(b))); *see generally Scientists' Inst. For Pub. Info, Inc. v. U.S. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973) ("Reasonable forecasting and speculation is thus implicit in NEPA, and we must reject any attempt by agencies to shirk their responsibilities under NEPA by labeling any and all discussion of future environmental effects as 'crystal ball inquiry.'").

B. Vague and Undefined Terms in the Draft Guidance Add Legal Risk and Encourage Agencies to Unlawfully Avoid Quantification of GHG Emissions

The Draft Guidance contains numerous ambiguous terms that, in effect, would encourage agencies to unlawfully cast aside their obligations under NEPA. In particular, the Draft Guidance directs agencies to "attempt to quantify a proposed action's projected direct and reasonably foreseeable indirect GHG emissions when the amount of those emissions is *substantial* enough to warrant quantification, and when it is *practicable* to quantify them using available data and GHG quantification tools."[79] But the Draft Guidance fails to explain what constitutes "substantial" emissions or what factors determine whether quantification would be "practicable." CEQ's decision to add these ambiguous terms to the Draft Guidance conflicts directly with the more straightforward language of the 2016 Guidance, which directed agencies to "quantify…direct and indirect GHG emissions, taking into account available data and GHG quantification tools."[80] The Draft Guidance provides agencies leeway to create their own technical definitions and, in some cases, to avoid analyzing a project's climate change impacts altogether. What is more, if different agencies adopt their own interpretations of the terms set forth in the Draft Guidance, it is likely that major inconsistencies will arise in the processes by which different agencies assess GHG impacts under NEPA.

The Draft Guidance also states that agencies "are not required to quantify effects where information necessary . . . is unavailable, not of high quality, or the complexity of identifying emissions would make quantification overly-speculative."[81] Here, too, the Draft Guidance fails to clarify what these terms mean or how they should be implemented, and the provision conflicts with both section 1502.22(b) of the NEPA implementing regulations regarding "Incomplete and Unavailable Information" and federal court decisions examining the scope of NEPA review.[82] Specifically, section 1502.22(b) provides that where "the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because . . . the means to obtain it are not known," the agency must still include in its EIS, among other items, "a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment" and "the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community."[83] Similarly, although agencies need not have "perfect foresight when considering indirect effects,"[84] courts have rejected agency attempts to ignore an important aspect of a

[79] Draft Guidance, *supra* note 1, at 30,098 (emphases added).
[80] 2016 Guidance, *supra* note 3, at 4.
[81] Draft Guidance, *supra* note 1, at 30,098.
[82] 40 C.F.R. § 1502.22(b).
[83] *See id.*
[84] *See WildEarth Guardians v. United States Office of Surface Mining, Reclamation & Enf't*, 104 F. Supp. 3d 1208, 1230 (D. Colo. 2015), *order vacated as moot, appeal dismissed*, 652 F. App'x 717 (10th Cir. 2016).

problem by writing it off as too speculative[85] or acting on incomplete information or assumptions.[86]

The Draft Guidance also states that "when an agency determines that the tools, methods, or data inputs necessary to quantify a proposed action's GHG emissions are not *reasonably available*, or it otherwise would not be *practicable*, the agency should [alternatively] include a qualitative analysis. . . ."[87] Again, CEQ has failed to explain what these terms mean. This provision also presents an unlikely scenario because there are many tools available for quantification,[88] including CEQ's own compilation of GHG accounting tools, methodologies, and reports that it published for use by agencies engaged in emissions quantification.[89] Moreover, federal agencies reviewing actions that are likely to have significant GHG emissions impacts such as pipelines, mining activities, and transportation projects have already implemented quantification at the environmental assessment and EIS stages of NEPA review and are thus familiar with the available data and methodologies.[90] Absent clarification, CEQ's use of

---

[85] *See id.* at 1230-31; *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d at 548-50 (rejecting agency's argument that it need not consider air quality impacts of building national railroad to transport coal because the exact extent of impact was speculative).

[86] *WildEarth Guardians v. Bur. of Land Mgmt.*, 870 F.3d 1222, 1237-38 (10th Cir. 2017) (rejecting agency's analysis of impacts from coal leasing on carbon emissions and climate change that relied on faulty economic assumption); *see generally W. Watersheds Project v. Kraayenbrink*, 632 F.3d 472, 493 (9th Cir. 2011) (holding that agency violated NEPA when it failed to consider important aspect of problem by relying on data from only one-third of the rangeland in dispute and evaluating impacts without complete data); *Churchill County v. Norton*, 276 F.3d 1060, 1072-73 (9th Cir. 2001) (stating that NEPA "emphasizes the importance of coherent and comprehensive up-front environmental analysis to ensure…that the agency will not act on incomplete information" (internal quotation marks and citations omitted)).

[87] Draft Guidance, *supra* note 1, at 30,098 (emphases added).

[88] *See, e.g.*, U.S. Envtl. Protection Agency, *EPA Detailed Comments on FERC NOI for Policy Statement on New Natural Gas Transportation Facilities* 2-4 (June 21, 2018), https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20180621-5095 (listing numerous existing tools and information available to calculate upstream and downstream climate emissions associated with pipeline infrastructure).

[89] NEPA.GOV, *Greenhouse Gas (GHG) Accounting Tools*, https://ceq.doe.gov/guidance/ghg-accounting-tools.html (last visited August 23, 2019).

[90] *See, e.g.*, Surface Transp. Bd., *Draft Environmental Impact Statement for the Proposed Construction and Operation of the Tongue River Railroad Appendix F* (Apr. 2015), https://www.stb.gov/decisions/readingroom.nsf/UNID/E7DE39D1F6FD4A9A85257E2A0049104D/$file/AppF_Lifecycle+GHG.pdf (quantifying not only downstream combustion emissions of a coal-rail project, but also upstream emissions including the production of the steel and other materials for construction); Office of Surface Mining Reclamation and Enforcement, Environmental Assessment (DOI-BLM-CO-S010-2011-0074-EA), Federal Coal Lease (COC-62920) Modification and Federal Mine Permit (CO-0106A) Revision and Renewal 76-82, 173 (Oct. 12, 2017), https://eplanning.blm.gov/epl-front-office/projects/nepa/70895/127910/155610/King_II_Lease_Mod_Final_EA_2017-1012.pdf (quantifying direct carbon dioxide emissions from equipment to operate mine and construct improvements; indirect carbon dioxide emissions from mine workers' commutes; methane emissions from coal extraction process; indirect carbon dioxide emissions from transporting coal; and downstream carbon dioxide

ambiguous language encourages agencies to avoid quantification that can and should be done. The Draft Guidance is thereby inconsistent with NEPA and CEQ's obligation to ensure that agencies comply with the statute.[91]

As noted in the comments submitted in 2015 by the California Governor's Office of Planning and Research ("OPR") regarding the previous CEQ draft GHG guidance (referred to herein as the "2015 OPR Comments"), emissions from many projects are easily quantified using existing tools. The 2015 OPR Comments note that "[n]ational protocols for calculating greenhouse gas emissions are also readily available, such as the United States Community Protocol for Calculating Greenhouse Gas Emissions and the Local Government Operations Protocol."[92] California has long recognized that GHG quantification tools are widely available and reliable. Nearly a *decade* ago, during the process for amending the CEQA Guidelines to address GHG quantification, the California Natural Resources Agency noted that "quantification of GHG emissions is possible for a wide range of projects using currently available tools."[93] This is not unique to California; such tools are widely available to the federal government, in connection with federal projects, as well. For example, emission factors from construction equipment and other non-road engines have been readily available from EPA's NONROAD model since the late 1990s, while EPA's MOBILE6.1/6.2 model has included GHG emission factors since 2002. As OPR noted in its comments four years ago, the available tools have improved, and their use has become widespread.[94] That is even more true today.

C. The Draft Guidance's Direction Regarding Cumulative Impacts Does Not Comply With NEPA

The Draft Guidance's instruction regarding cumulative impacts analysis also conflicts with NEPA. NEPA requires a lead agency to give a "hard look" at the cumulative impacts of a project, i.e., the "impact on the environment which results from the incremental impact of the

---

emissions from coal combustion; quantifying total direct and estimated indirect GHG emissions from maximum production at mine relative to total U.S. and global emissions).

[91] A survey conducted July 2012 through December 2014 found that of the 238 EISs surveyed, 214 (90%) contained some discussion of GHG emissions or climate change impacts, 172 (72%) discussed the GHG emissions associated with a proposed action, and 167 (70%) discussed how climate change may affect the proposed action. Jessica Wentz et al., Columbia Law School Sabin Ctr. For Climate Change Law, *Survey of Climate Change Considerations In Federal Environmental Impact Statements, 2012-2014*, at ii, 5, 11 (2016), http://columbiaclimatelaw.com/files/2016/06/Wentz-et-al.-2016-02-Climate-Change-Considerations-in-Federal-EIS-2012-14.pdf.

[92] *See* Comments from the Governor's Office of Planning and Research regarding the White House Council on Environmental Quality's "Revised Draft Guidance on Greenhouse Gases and Climate Change" at 3 (Mar. 24, 2015) A copy of the 5 OPR Comments is attached as Exhibit 2 to this letter. *See also* California Air Resources Board, Local Government Operations Protocol for Greenhouse Gas Assessments, https://ww3.arb.ca.gov/cc/protocols/localgov/localgov.htm (last visited Aug. 23, 2019).

[93] Cal. Natural Resources Agency, *Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB 97*, at 21 (Dec. 2009), http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf.

[94] 2015 OPR Comments, *supra* note 92, at 4.

action when added to other past, present, and reasonably foreseeable future actions."[95] A cumulative impact "can result from individually minor but collectively significant actions taking place over a period of time."[96] The level of analysis required for NEPA's "hard look" is project-specific, and the analysis must be sufficient to provide a meaningful basis for an agency to compare amongst alternatives and decide whether to undertake the action in question.[97]

Several courts have upheld GHG cumulative impact analyses when they quantify both the project's GHG emissions and sector-related regional emissions, and have found cumulative impact analyses to be insufficient when they do not.[98] For example, in *WildEarth Guardians v. Zinke*, the United States District Court for the District of Columbia held that the U. S. Department of the Interior, Bureau of Land Management's (BLM) environmental assessments for oil and gas leasing on federal land were insufficient because BLM failed to quantify the drilling-related GHG emissions from the leased parcels and failed to sufficiently compare them to regional and national emissions.[99] The cumulative impacts analyses were insufficient because they did not provide "data-driven" comparisons of drilling-related GHG emissions resulting from the leases to regional and national GHG emissions.[100] To satisfy NEPA, the court concluded that BLM should have quantified these comparisons and should have stated the cumulative effect of the decision with "reasonable specificity."[101]

In line with these requirements, the 2016 Guidance urged agencies to take an expansive view of cumulative impacts. It admonished that a "statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA."[102] And "[a]gencies should

---

[95] 40 C.F.R. § 1508.7 (2019); *Fritiofson v. Alexander*, 772 F.2d 1225, 1247 (5th Cir. 1985).
[96] 40 C.F.R. § 1508.7.
[97] *See Nat. Res. Defense Council, Inc. v. Hodel*, 865 F.2d 288, 299 (D.C. Cir. 1988) (EIS must analyze the combined effects of the actions in sufficient detail to be "useful to a decisionmaker in deciding whether, or how, to alter the program to lessen cumulative environmental impacts.").
[98] *See, e.g.*, *Citizens for a Healthy Cmty. v. Bur. of Land Mgmt.*, 49 ELR 20,044 (D. Colo. March 27, 2019) (upholding BLM's cumulative impact analysis of GHG emissions for master development plan for unit in Colorado basin because BLM looked at statewide emissions levels from coal-fired power plant for comparative assessment, performed regional cumulative impacts analysis of future mineral development in region, and quantified emissions expected from developments on land in question); *San Juan Citizens Alliance*, 326 F. Supp. 3d at 1240-41, 1248 (finding cumulative impacts analysis of GHG emissions from leasing of federal lands insufficient "facile conclusion" because it made qualitative comparison between "very small" increase in GHG emissions from leasing and regional and global emissions); *see also Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1180, 1216 (9th Cir. 2008); *Coal. for Healthy Ports v. U.S. Coast Guard*, 2015 U.S. Dist. LEXIS 159090 (S.D.N.Y. Nov. 24, 2015) (generally upholding cumulative impacts analysis of bridge project because it included "detailed, quantitative information").
[99] *WildEarth Guardians*, 368 F. Supp. 3d at 51, 63.
[100] *Id.* at 77.
[101] *Id.*
[102] 2016 Guidance, *supra* note 3, at 11.

not limit themselves to calculating a proposed action's emissions as a percentage of sector, nationwide, or global emissions in deciding whether or to what extent to consider climate change impacts under NEPA."[103] The 2016 Guidance also directed agencies to "discuss relevant approved federal, regional, state, tribal, or local plans, policies, or laws for GHG emissions reductions or climate adaption to make clear whether a proposed project's GHG emissions are consistent with such plans or laws."[104]

The Draft Guidance, by contrast, does not provide clarity on how agencies should perform cumulative impacts analyses for projects that implicate climate change, again inviting agencies to shirk their responsibilities to consider GHG effects. Instead, the Draft Guidance suggests that agencies may meet NEPA's cumulative impact analysis requirement by comparing a project's GHG emissions to local, regional, national, or sector-wide emissions estimates and providing a qualitative summary discussion of the effects of GHG emissions.[105] But this analysis of cumulative impacts would be insufficient for many projects, especially those involving fossil fuel leasing or transportation infrastructure, because NEPA's "hard look" requires a thorough analysis of cumulative GHG emissions and a more specific discussion of impacts and mitigation. The Draft Guidance thus ignores NEPA's requirement to analyze a project's cumulative effects when combined with other past, present, and reasonably foreseeable future federal actions.

As it did in the 2016 Guidance, CEQ should instruct agencies to thoroughly analyze a project's incremental impact on climate change. Specifically, CEQ should revise the Draft Guidance to instruct agencies to quantify cumulative impacts from GHG emissions, to consider a project's consistency with plans and policies to reduce GHG emissions, and to consider mitigation measures for cumulative impacts from GHG emissions.[106]

D. CEQ's Draft Guidance Improperly Supports an Unbalanced Approach to Cost-Benefit Analysis

CEQ's Draft Guidance also encourages improper assessment of climate costs of federal agency actions. Specifically, CEQ's Draft Guidance directs agencies that they do not need to monetize or quantify climate impacts even if they quantify employment or other socio-economic impacts of a project.[107] As courts have concluded, such a one-sided approach to monetizing project impacts lacks legal or rational support.[108]

---

[103] *Id.*
[104] *Id.* at 28-29.
[105] Draft Guidance, *supra* note 1, at 30,098.
[106] *See Sierra Club v. Clinton*, 689 F. Supp. 2d 1123, 1127, 1138-39 (D. Minn. 2010) (upholding cumulative impact analysis for GHG emissions from new 326-mile pipeline to transport crude oil, in part, because it discussed mitigation measures to offset emissions).
[107] Draft Guidance, *supra* note 3, at 30,099.
[108] *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1198 (9th Cir. 2008) (agency "cannot put a thumb on the scale by undervaluing the benefits and overvaluing the costs" in failing to analyze benefits of reducing GHG emissions); *High Country Conservation Advocates v. U.S.*

Although NEPA does not require a federal agency to conduct a cost-benefit analysis,[109] where an agency chooses to quantify the benefits of a proposed action, it must also quantify the costs of that action when a tool is available to do so.[110] For GHG emissions, the "social cost of carbon" provides such a tool. The former federal Interagency Working Group on Social Cost of Greenhouse Gases ("IWG") developed the social cost of carbon "through an interagency process committed to ensuring that the [social cost of carbon] estimates reflect the best available science and methodologies" for monetizing long-term damage caused by increased carbon dioxide emissions.[111] As CEQ noted in its 2016 Guidance, the social cost of carbon is a useful, available tool during NEPA review for agencies and the public to understand the potential climate impacts of a proposed federal action.[112]

In a reversal from the 2016 Guidance, the Draft Guidance now rejects the social cost of carbon or any other cost metric as a tool for monetizing climate impacts under NEPA.[113] It instructs agencies that they "need not weigh the effects of the various alternatives in NEPA in a monetary cost-benefit analysis using any monetized Social Cost of Carbon estimates."[114] CEQ then states that "[t]here may be some effects that are more capable of monetization or quantification, such as employment or other socio-economic impacts …. Monetization or quantification of some aspects of an agency's analysis does not require that all effects, including potential effects of GHG emissions, be quantified."[115] The message is clear: monetize benefits, such as employment, but do not monetize the climate costs. In other words, the Draft Guidance wrongly directs agencies that they may monetize some aspects of their analysis, such as employment or other socio-economic impacts, without quantifying the costs from climate impacts of the action.[116]

But courts have taken agencies to task for following the one-sided approach CEQ is suggesting here—monetizing the benefits of a project while failing to use the social cost of

---

Forest Serv., 52 F. Supp. 3d 1174, 1195 (D. Colo. 2014) ("It is arbitrary to offer detailed projections of a project's upside while omitting a feasible projection of the project's costs.").

[109] 40 C.F.R. § 1502.23.

[110] *See Columbia Basin Land Prot. Ass'n v. Schlesinger*, 643 F.2d 585, 595 (9th Cir. 1981) (NEPA's "policy of full disclosure applies equally to the economic and technological benefits of a project as to its environmental costs. If full disclosure were applied only to the environmental costs, the purposes of mandating a balancing analysis would be defeated."); *Mont. Envtl. Info. Ctr v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1095–99 (D. Mont. 2017) (agency arbitrarily failed to consider costs of GHG emissions from coal combustion when agency quantified socioeconomic benefits of coal mining).

[111] 2016 Guidance, *supra* note 3, at 33 n.86; *see also* Interagency Working Group on Social Cost of Greenhouse Gases, *Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis* – Under Executive Order 12866 (Aug. 2016).

[112] 2016 Guidance, *supra* note 3, at 33 n.86 (stating that social cost of carbon "provides a harmonized, interagency metric that can give decision makers and the public useful information for their NEPA review").

[113] Draft Guidance, *supra* note 1, at 30,098.

[114] *Id.*

[115] *Id.* at 30,099.

[116] *Id.*

carbon tool to monetize the climate costs—because it impairs an agency's ability to make an informed decision.[117] In *High Country*, for example, the court faulted the U.S. Forest Service for refusing to use social cost of carbon estimates: "[e]ven though NEPA does not require a cost-benefit analysis, it was nonetheless arbitrary and capricious to quantify the *benefits* of the lease modifications and then explain that a similar analysis of the *costs* was impossible when such an analysis was in fact possible [using the social cost of carbon tool]."[118]

Nor can CEQ's proffered rationale save its unlawful approach. In particular, CEQ dismisses the social cost of carbon on the basis that the IWG developed the tool for evaluation of regulatory actions and not for socio-economic analysis under NEPA.[119] CEQ cannot reasonably dismiss this tool on the basis that it was not created for the precise purpose of aiding NEPA review. Such reasoning is nonsensical: it would allow agencies to dismiss a whole host of reports, tools, and methods—including some of the GHG accounting tools identified on CEQ's own website—on the basis that they were not created specifically for the NEPA process,[120] in violation of NEPA's purpose of driving informed decision-making. Indeed, in *High Country*, the court rejected this exact argument, observing that it did not "explain why these agencies believed the protocol was inaccurate or not useful in this instance."[121] The court recognized that even if the IWG did not design the social cost of carbon specifically for the NEPA process, the tool could still provide useful information for the NEPA decision-making process, particularly where an agency decides to quantify benefits of a project. Further, even if the social cost of carbon were not an appropriate tool for the NEPA process (it is), CEQ does not—because it cannot—explain why agencies could not use a different climate impact metric.

Consistent with NEPA, CEQ should revise the Draft Guidance to recommend a balanced approach that quantifies both the costs—including the social cost of carbon—and the benefits of proposed actions to ensure that federal agencies and the public have all necessary information about the potential environmental consequences of federal actions.[122] In 2016, CEQ stated the social cost of carbon "provides a harmonized, interagency metric that can give decision makers and the public useful information for their NEPA review."[123] Now, three years later, CEQ appears to have changed its mind, but fails to provide a reasoned basis for this change.[124]

---

[117] *See Ctr. for Biological Diversity*, 538 F.3d at 1198; *Columbia Basin Land Prot. Ass'n*, 643 F.2d at 595; *Mont. Envtl. Info. Ctr.*, 274 F. Supp. 3d at 1095–99.
[118] *High Country Conservation Advocates*, 52 F. Supp. 3d at 1191.
[119] Draft Guidance, *supra* note 1, at 30,099.
[120] *See* NEPA.GOV, *Greenhouse Gas (GHG) Accounting Tools*, https://ceq.doe.gov/guidance/ghg-accounting-tools.html.
[121] 52 F. Supp. 3d at 1192.
[122] 42 U.S.C. § 4331.
[123] 2016 Guidance, *supra* note 3, at 33 n.86.
[124] *Federal Commc'ns Comm'n v. Fox Television Stations*, 556 U.S. 502, 515 (2009) (agency must supply "good reasons" for departing from prior policy).

E. CEQ's Draft Guidance Impermissibly Discourages Consideration of Required Mitigation Measures

The Draft Guidance also conflicts with NEPA by discouraging the mitigation and exploration of reasonable alternatives to reduce climate change impacts. Regarding mitigation, the Draft Guidance flatly concludes: "NEPA does not require agencies to *adopt* mitigation measures."[125] While it is true that NEPA does not require agencies to *adopt* mitigation measures, courts interpret NEPA's "hard look" requirement as requiring agencies to evaluate mitigation measures for a project that may impact the environment.[126] The Draft Guidance fails to recognize that, while agencies are not required to adopt mitigation measures, they must include a discussion of "appropriate mitigation measures not already included in the proposed action or alternative" where a proposed action may impact the environment.[127] Instead, CEQ's Draft Guidance steers federal agencies away from a thorough assessment of mitigation measures for a proposed project that may significantly impact climate change.

NEPA requires federal agencies to consider possible mitigation strategies for a federal action at multiple points throughout the NEPA analysis: in defining the scope of the EIS, in discussing alternatives to the proposed action and consequences of that action, and in explaining its ultimate decision.[128] Courts have held that "mere lists of mitigation measures are insufficient" to satisfy NEPA.[129] Instead, courts look at whether an agency has provided "an assessment of whether the proposed mitigation measures can be effective . . . [and] whether anticipated environmental impacts can be avoided."[130] As the Supreme Court has explained, omission of a "reasonably complete discussion of possible mitigation measures" undermines the action-forcing purpose of NEPA because it would prevent agencies and the public from fully evaluating the severity of the proposed action.[131]

The Draft Guidance encourages federal agencies to forgo consideration of mitigation measures addressing climate change impacts of the action. The resulting EIS may not present the agency, or the public, with a comprehensive understanding of the project's overall environmental impacts. If an agency were to ignore mitigation measures to address GHG impacts, it likely would be unable to evaluate fully the impacts of a proposed action or an alternative, and thus would fail to fulfill the purpose of NEPA. By steering agencies away from

---

[125] Draft Guidance, *supra* note 1, at 30,098 (emphasis added).
[126] *Neighbors of Cuddy Mountain v. U.S. Forest Service*, 137 F. 3d 1372, 1380 (9th Cir. 1998) (a mere listing of mitigation measures does not supply the reasoned analysis that NEPA requires).
[127] 40 C.F.R. § 1502.14(f) (emphasis added).
[128] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 352 (1989); *see also* 40 C.F.R. §§ 1508.25(b), 1502.14(f), 1502.16(h), 1505.2(c).
[129] *Alaska Survival v. Surface Transp. Bd.*, 705 F.3d 1073, 1088 (9th Cir. 2013).
[130] *S. Fork Band Council of Western Shoshone of Nevada v. U.S. Dept. of Interior*, 588 F.3d 718, 727 (9th Cir. 2009); *High Sierra Hikers Ass'n v. Dept. of Interior*, 848 F. Supp. 2d 1036, 1054 (N.D. Cal. 2012) ("[a]n essential component of a reasonably complete mitigation discussion is an assessment of whether the proposed mitigation measures can be effective").
[131] *Robertson*, 490 U.S. at 352.

a comprehensive discussion of mitigation measures for a proposed agency action, the Draft Guidance undermines the action-forcing function of NEPA and, consequently, conflicts with the general purpose and requirements of NEPA.

Moreover, the Draft Guidance's suggestion that an agency need not consider potential mitigation measures could undercut the efficacy of an agency's cost-benefit analysis regarding a particular action's GHG emissions. The Ninth Circuit, for instance, overturned an agency's NEPA analysis that failed to consider the monetary benefit of mitigating GHG emissions, stating that the mitigation of those emissions was "the most significant benefit" of the more stringent regulatory alternative to the agency's proposed action.[132]

The Draft Guidance's statement that NEPA does not require adoption of mitigation measures for climate change impacts is ill-advised and improper. Where a proposed project has climate change impacts, a robust analysis of mitigation measures from GHG emissions is required. CEQ should so instruct in any final guidance.

F. CEQ's Draft Guidance Should Direct Agencies to Consider Climate Adaptation and Resiliency

Increasing resiliency to a changing climate is a critically important challenge for many communities, yet the Draft Guidance does not even mention climate adaptation or resiliency. As discussed above, our States, cities, and localities are already experiencing climate change, and its effects will continue to worsen. To protect residents, infrastructure, and industries, states must adapt to address these impacts. Climate adaptation is a form of risk management that allows governments, utilities, businesses, and individuals to reduce the risk associated with a changing climate.[133] Climate resiliency improves a community's ability to weather the effects of climate change.[134] Because of the monumental costs associated with the effects of climate change, many climate adaptation measures are cost-effective. As the second volume of the Assessment found, "[p]roactive adaptation initiatives—including changes to policies, business operations, capital investments, and other steps—yield benefits in excess of their costs in the near term, as well as over the long term."[135] Since the effects of climate change are not felt evenly across society, proactive adaptation measures ensure that our most vulnerable residents—including low-income

---

[132] *Center for Biological Diversity*, 538 F.3d at 1199.

[133] *See Assessment, Volume II*, *supra* note 9, at 1314, *available at* https://nca2018.globalchange.gov/downloads/NCA4_Ch28_Adaptation_Full.pdf. The U.S. Climate Resilience Toolkit defines "adaptation" as: "The process of adjusting to new (climate) conditions in order to reduce risks to valued assets." U.S. Climate Resilience Toolkit, Glossary, https://toolkit.climate.gov/topics/built-environment/social-equity (last visited July 14, 2019).

[134] The U.S. Climate Resilience Toolkit defines "resilience" as: "The capacity of a community, business, or natural environment to prevent, withstand, respond to, and recover from a disruption." U.S. Climate Resilience Toolkit, Glossary, *supra* note 133.

[135] *Assessment, Volume II*, *supra* note 9, at 1322.

communities and communities of color—avoid bearing the brunt of the effects of climate change.[136]

Consideration of future adaptation and resiliency comports with NEPA's mandates. As discussed above, NEPA and its implementing regulations require consideration of a changing climate because when preparing an EIS, agencies must describe the affected environment, including by projecting into the future in order to analyze an action's environmental impacts and compare reasonable alternatives.[137] Because the climate is changing rapidly, the projections into the future (the future environment with the action, without the action, and reasonable alternatives) will often need to factor in the effects of climate change, including the ways a changing climate may alter the action. Accordingly, numerous courts have held that agencies acted arbitrarily and capriciously by failing to consider future conditions when analyzing the action's environmental impacts.[138]

The 2016 Guidance thus properly included a detailed discussion of how agencies must account for the impacts of climate change during NEPA reviews.[139] The 2016 Guidance directs agencies to consider "the ways in which a changing climate may impact the proposed action and any alternative actions . . . ."[140] Under the 2016 Guidance, agencies should describe the projected future state of the environment (i.e., the no action alternative) based on "authoritative climate change reports" and look at the expected life of the proposed action and its effects.[141] Agencies should consider how climate change makes a resource, ecosystem, or human community susceptible to environmental impacts. As the 2016 Guidance notes, such considerations fall "squarely within the scope of NEPA."[142] It directs that this analysis should "inform decisions on whether to proceed with, and how to design, the proposed action to

---

[136] *See* U.S. Climate Resilience Toolkit, Social Equity, https://toolkit.climate.gov/topics/built-environment/social-equity (last visited July 14, 2019).

[137] 40 C.F.R. § 1502.15 (2019) (defining affected environment as "the environment of the area(s) to be affected or created by the alternatives under consideration"); *see* Jessica Wentz, *Planning for the Effects of Climate Change on Natural Resources*, 47 ENVTL. L. REV. 10,220, 10,222-23 (2017) (describing how NEPA and regulations require incorporation of climate change into analysis of action's environmental impacts).

[138] *See, e.g.*, *California ex. Rel. Imperial Country Air Pollution Control Dist. v. U.S. Dep't of the Interior*, 767 F.3d 781 (9th Cir. 2014) (upholding EIS that analyzed effects of water transfer agreements on Salton Sea in southern California, in part, because it properly incorporated future conditions when establishing "no action" alternative); *American Canoe Ass'n v. White*, 277 F. Supp. 2d 1244 (N.D. Ala. 2003) (cumulative impact analysis for dam project was insufficient because it failed to consider future conditions of project); *AquAlliance v. U.S. Bureau of Reclamation*, 287 F. Supp. 3d 969, 1032 (E.D. Cal. 2018) (NEPA cumulative impact analysis in EIS analyzing water transfer program was insufficient because it failed to incorporate available information about likely change to future conditions due to climate change).

[139] 2016 Guidance, *supra* note 3, at 20-27.

[140] *Id.* at 9.

[141] *Id.* at 20-21.

[142] *Id.* at 21.

eliminate or mitigate impacts . . . ."[143] The 2016 Guidance provides useful direction on how, under NEPA, agencies should address the effects of climate change on the project and its impacts.

In sharp contrast to the 2016 Guidance, and despite the importance of climate adaptation and climate resiliency in project planning and environmental analysis, the Draft Guidance is virtually silent on the subject. In terms of analyzing the effects of a changing climate on the proposed action and the action's impacts, the Draft Guidance only ambiguously advises that, "[w]hen relevant, agencies should consider whether the proposed action would be affected by foreseeable changes to the affected environment under a reasonable scenario"—again without defining those terms.[144] The States thus urge CEQ to readopt the 2016 Guidance's discussion of climate impacts to account for adaptation and resiliency efforts.

Moreover, providing guidance directing federal agencies to address climate adaptation and resiliency in NEPA reviews would aid coordination among federal approval and planning processes and, as detailed below, with state and local agencies. CEQ regulations encourage agencies to integrate the NEPA process with other processes at the earliest possible time.[145] CEQ strongly encourages coordination of NEPA review with other federal approvals and planning processes, and with state and local agencies.[146] Since many federal agencies, state agencies, and local partners have laws, regulations, and policies that require them to address climate risk during planning and project development, robust NEPA guidance directing similar considerations will encourage consistency and ease such coordination. For example, U.S. Army Corps of Engineers policy requires it to integrate "climate change preparedness and resilience planning and actions in all activities," and the National Park Service's Coastal Adaptation Strategies Handbook provides policy and decision-making guidelines for addressing climate change impacts on vulnerable park resources.[147] The States accordingly request that any final guidance that CEQ issues on consideration of GHG emissions in NEPA reviews robustly addresses climate adaptation and resiliency.

---

[143] *Id.*
[144] Draft Guidance, *supra* note 1, at 30,098.
[145] 40 C.F.R. § 1501.2.
[146] *See* Council on Environmental Quality, Collaboration in NEPA (2007), https://www.energy.gov/sites/prod/files/CEQ_Collaboration_in_NEPA_10-2007.pdf; Council on Environmental Quality, *A Citizen's Guide to the NEPA* (2007), https://ceq.doe.gov/docs/get-involved/Citizens_Guide_Dec07.pdf ("permitting and NEPA processes should be integrated or run concurrently in order to have an effective and efficient decision-making process").
[147] U.S. Army Corps of Engineers, *Adaptation Policy Statement* (2014), https://cdm16021.contentdm.oclc.org/utils/getfile/collection/p266001coll1/id/5255; National Park Service, Coastal Adaptation Handbook (2016), https://www.nps.gov/subjects/climatechange/upload/CASH_FINAL_Document_111016.pdf.

V. CEQ'S DRAFT GUIDANCE SHOULD ENSURE CONSISTENCY BETWEEN NEPA AND STATE ENVIRONMENTAL ANALYSES

The States have a wealth of experience implementing state environmental review statutes and ensuring coordination between NEPA and its state analogues. In developing the Draft Guidance, CEQ should consider ways to ensure that this coordination is as streamlined and smooth as possible. Moreover, CEQ should look to our States for guidance on quantification of GHG emissions and assessment of climate impacts.

First, coordination between state and federal environmental reviews is a critical component of planning for major projects. CEQ should revise the Draft Guidance to encourage agencies to coordinate analysis under NEPA with state environmental reviews that require analysis and mitigation of climate change impacts, such as the California Environmental Quality Act. NEPA coordination with state environmental review laws would thus be improved by robust guidance encouraging federal agencies to likewise incorporate climate resiliency and adaptation in NEPA review. Federal and state environmental review processes can be coordinated for projects requiring both federal and state action.[148] The regulations implementing New York State's environmental review law require an environmental impact statement to identify and discuss measures to avoid or reduce both an action's impacts on climate change and associated impacts due to the effects of climate change such as sea level rise and flooding.[149] The Washington State Department of Transportation ("WSDOT") requires all WSDOT projects subject to NEPA and state environmental review to follow its *Guidance - Project-Level Greenhouse Gas Evaluations under NEPA and SEPA* and directs projects to consider climate change impacts and ways to improve the resilience of transportation assets.[150] Given these requirements, NEPA and state-level analysis can best be coordinated if NEPA reviews also address these important considerations.

Second, CEQ should look to states for guidance on quantitative GHG and climate change analyses under NEPA. As discussed in Section IV.B above, California agencies have been quantifying GHG emissions and assessing climate change impacts associated with projects since at least 2006. As noted in California's 2015 OPR Comments submitted regarding the previous CEQ draft GHG guidance, emissions from many projects are easily quantified using existing

---

[148] *See, e.g.*, 6 N.Y.C.R.R. § 617.15 (as long as NEPA EIS is sufficient for findings required, state and local agencies may rely on NEPA EIS to meet their requirements under New York State environmental review); Mass. Gen. Laws. c. 30, § 62G (allowing submission of NEPA EIS in lieu of state environmental impact report); 301 Code Mass. Regs. § 11.09(c) (authorizing special review procedures including coordination with other permitting agencies and consolidation of federal and state review processes).

[149] 6 N.Y.C.R.R. § 617.9(b)(5)(iii)(i).

[150] Washington State Dep't of Transportation, *WSDOT Guidance - Project-Level Greenhouse Gas Evaluations under NEPA and SEPA* (2018); *WSDOT, Guidance for NEPA and SEPA Project-Level Climate Change Evolutions* (Jan. 2017 update), https://www.wsdot.wa.gov/environment/technical/disciplines/air-quality-noise-energy/addressing-climate-change & https://www.wsdot.wa.gov/sites/default/files/2019/02/08/ENV-ANE-GHGGuidance.pdf.

tools. OPR noted that "quantification of GHG emissions is possible for a wide range of projects using currently available tools."[151] This is not unique to California; such tools are widely available to the federal government, in connection with federal projects, as well. Indeed, the available tools have improved, and their use has become widespread.[152]

States also provide useful guideposts in considering climate impacts generally. For example, Massachusetts law requires that for all administrative approvals and decisions, the agency, department, board, commission, or authority "consider reasonably foreseeable climate change impacts, including additional GHG emissions, and effects, such as predicted sea level rise."[153] In New York, state law requires consideration of future physical climate risk due to sea level rise, storm surge and flooding for a number of specified permitting and funding decisions.[154] California's Sea Level Rise guidance provides methodology for state and local governments to analyze and assess the risks associated with sea level rise, and to incorporate sea level rise into their planning, permitting, and investment decisions.[155]

VI. CEQ SHOULD WITHDRAW THE DRAFT GUIDANCE AND ADOPT AN UPDATED VERSION OF THE 2016 GUIDANCE

For the reasons articulated above, CEQ's Draft Guidance inadequately advises federal agencies on the assessment of GHG emissions and the climate change impacts of projects during NEPA review. The Draft Guidance avoids addressing climate change and its impacts, fails to clarify the proper analysis of indirect climate change effects, confuses and weakens GHG quantification requirements, minimizes the consideration of cumulative impacts and other components of a proper NEPA analysis, improperly supports an unbalanced approach to cost-benefit analysis, discourages consideration of mitigation and alternatives to reduce climate impacts, and fails even to mention consideration of measures to improve climate adaptation and resiliency. The result is a document that conflicts with the statutory requirements of NEPA and does not further NEPA's purposes of promoting informed decision-making and identifying environmental impacts. Instead, the Draft Guidance largely identifies opportunities for—and indeed appears to encourage—agencies to avoid adequately assessing GHG emissions and climate impacts of proposed projects.

Rather than pursue this inadequate and unlawful approach to analyzing GHG emissions and climate impacts, CEQ should withdraw its Draft Guidance. The States urge CEQ instead to

---

[151] Cal. Natural Resources Agency, *Final Statement of Reasons for Regulatory Action: Amendments to the State CEQA Guidelines Addressing Analysis and Mitigation of Greenhouse Gas Emissions Pursuant to SB97*, at 21 (Dec. 2009).
[152] 2015 OPR Comments, *supra* note 92, at 4.
[153] State of Massachusetts, 2012: Mass. Gen. Laws c. 30, § 61.
[154] *See* New York State Department of Environmental Conservation, Community Risk and Resiliency Act (CRRA) Provisions, https://www.dec.ny.gov/energy/104113.html (last visited July 15, 2019).
[155] Cal. Natural Resources Agency, *State of California Sea Level Rise Guidance* (2018), http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20180314/Item3_Exhibit-A_OPC_SLR_Guidance-rd3.pdf.

adopt an updated version of the 2016 Guidance that fully complies with NEPA and current caselaw and acknowledges and reflects the uniquely catastrophic threat of climate change. The 2016 Guidance reflects years of analysis as well as thoughtful recommendations offered by numerous stakeholders, and relies on longstanding NEPA principles.[156] Ensuring robust analysis of greenhouse gas emissions and climate impacts of federal projects is essential for informing decisionmakers and the public of the potential environmental impacts. NEPA demands this transparent and comprehensive process.

[156] 2016 Guidance, *supra* note 3, at 2 & n.4.

If we can provide additional information that would be helpful in considering these comments, or if you wish to discuss with us any issue raised above, please do not hesitate to contact the undersigned.

Respectfully submitted,

Dated: August 26, 2019

FOR THE STATE OF CALIFORNIA

XAVIER BECERRA
Attorney General

By: /s/ Sarah E. Morrison_____

SARAH E. MORRISON
Supervising Deputy Attorney General
JAMIE JEFFERSON
JULIA K. FORGIE
Deputy Attorneys General
California Department of Justice
300 South Spring Street, Suite 1702
Los Angeles, CA 90013
Tel. (213) 269-6328
Sarah.Morrison@doj.ca.gov
Jamie.Jefferson@doj.ca.gov
Julia.Forgie@doj.ca.gov

FOR THE STATE OF COLORADO

PHILIP J. WEISER
Attorney General

By: /s/ Amy W. Beatie

AMY W. BEATIE
Deputy Attorney General
Natural Resources and Environment Section
Colorado Attorney General's Office
1300 Broadway, 7th Floor
Denver, Colorado 80203
720-508-6295
Amy.Beatie@coag.gov

FOR THE STATE OF CONNECTICUT

WILLIAM TONG
Attorney General

By: /s/ Robert Snook_____

MATTHEW I. LEVINE
ROBERT SNOOK
Assistant Attorneys General
Office of the Attorney General
P.O. Box 120
55 Elm Street
Hartford, CT 06141-0120
Tel: (860) 808-5250
Robert.snook@ct.gov

FOR THE STATE OF DELAWARE

KATHLEEN JENNINGS
Attorney General

By: /s/ Jameson Tweedie_____

DEVERA SCOTT
Deputy Attorney General
JAMESON TWEEDIE
Special Assistant Deputy Attorney General
Department of Justice
391 Lukens Drive
New Castle, DE 19720
Telephone: (302) 395-2521
devera.scott@state.de.us
jameson.tweedie@state.de.us

FOR THE DISTRICT OF COLUMBIA

KARL A. RACINE
Attorney General

By: /s/ Sarah Kogel Smucker____

SARAH KOGEL-SMUCKER
Special Assistant Attorney General
Office of the Attorney General
441 4th Street, N.W., Suite 630 South
Washington, D.C. 20001
(202) 724-9727
sarah.kogel-smucker@dc.gov

FOR THE STATE OF ILLINOIS

KWAME RAOUL
Attorney General

By: /s/ Jason E. James__

JASON E. JAMES
Assistant Attorney General
MATTHEW J. DUNN
Chief, Environmental Enf./Asbestos Litig. Div.
Office of the Attorney General
Environmental Bureau
69 W. Washington St., 18th Floor
Chicago, IL 60602
(312) 814-0660
jjames@atg.state.il.us

FOR THE STATE OF MAINE

AARON M. FREY
Attorney General

By: /s/ Laura E. Jensen

LAURA E. JENSEN
Assistant Attorney General
Office of the Maine Attorney General
6 State House Station
Augusta, ME 04333
(207) 626-8868
laura.jensen@maine.gov

FOR THE COMMONWEALTH OF MASSACHUSETTS

MAURA HEALEY
Attorney General

By: /s/ Turner Smith

CHRISTOPHE COURCHESNE
Assistant Attorney General and Chief
TURNER SMITH
Assistant Attorney General
Office of the Attorney General
Environmental Protection Div.
One Ashburton Place, 18th Floor
Boston, MA 02108
(617) 727-2200
Turner.Smith@mass.gov

FOR THE STATE OF MARYLAND

BRIAN E. FROSH
Attorney General

By: /s/ Steven J. Goldstein

STEVEN J. GOLDSTEIN
Special Assistant Attorney General
Office of the Attorney General
200 Saint Paul Place, 20th Floor
Baltimore, Maryland 21202
(410) 576-6414
sgoldstein@oag.state.md.us

FOR THE STATE OF MINNESOTA

KEITH ELLISON
Attorney General

By: /s/ Christina Brown

CHRISTINA M. BROWN
Assistant Attorney General
445 Minnesota Street, Suite 900
St. Paul, MN 55105
(651) 757-1471
christina.brown@ag.state.mn.us

FOR THE STATE OF NEW JERSEY

GURBIR S. GREWAL
Attorney General

By: /s/ Aaron A. Love

AARON A. LOVE
Deputy Attorney General
New Jersey Division of Law
R.J. Hughes Justice Complex
25 Market Street, PO Box 093
Trenton, NJ 08625-0093
(609) 376-2762
Aaron.Love@law.njoag.gov

FOR THE STATE OF NEW MEXICO

HECTOR H. BALDERAS
Attorney General

By: /s/ Anne E. Minard

ANNE MINARD
Special Assistant Attorney General
BILL GRANTHAM
Assistant Attorney General
State of New Mexico Office of the Attorney General
Consumer & Environmental Protection Division
408 Galisteo Street
Santa Fe, NM 87501
505-490-4045
505-717-3520
AMinard@nmag.gov
WGrantham@nmag.gov

FOR THE STATE OF NEW YORK

LETITIA JAMES
Attorney General

By: /s/ Claiborne Walthall

MICHAEL J. MYERS
Senior Counsel
CLAIBORNE E. WALTHALL
Assistant Attorney General
Environmental Protection Bureau
New York State Attorney General
The Capitol
Albany, NY 12224
(518) 776-2380
Claiborne.Walthall@ag.ny.gov

FOR THE STATE OF NORTH CAROLINA

JOSHUA H. STEIN
Attorney General

By: /s/ Asher Spiller

ASHER SPILLER
Assistant Attorney General
North Carolina Department of Justice
114 W. Edenton Street
Raleigh, NC 27603
(919) 716-6977
Aspiller@ncdoj.gov

FOR THE STATE OF OREGON

ELLEN F. ROSENBLUM
Attorney General

By: /s/ Paul Garrahan

PAUL GARRAHAN
Attorney-in-Charge
STEVE NOVICK
Special Assistant Attorney General
Natural Resources Section
Oregon Department of Justice
1162 Court Street NE
Salem, OR 97301-4096
(503) 947-4593
steve.novick@doj.state.or.us

FOR THE STATE OF PENNSYLVANIA

JOSH SHAPIRO
Attorney General

By: /s/ Aimee D. Thomson

AIMEE D. THOMSON
Deputy Attorney General
ANN R. JOHNSTON
Senior Deputy Attorney General
Pennsylvania Office of Attorney General
1600 Arch St., Suite 300
Philadelphia, PA 19103
Tel. (267) 940-6696
athomson@attorneygeneral.gov
ajohnston@attorneygeneral.gov

FOR THE STATE OF RHODE ISLAND

PETER F. NERONHA
Attorney General

By: /s/ Alison B. Hoffman

ALISON B. HOFFMAN
Special Assistant Attorney General
Office of the Attorney General
150 South Main Street
Providence, RI 02903
(401) 274-4400
AHoffman@riag.ri.gov

FOR THE STATE OF VERMONT

THOMAS J. DONOVAN, JR.
Attorney General

By: /s/ Nicholas F. Persampieri

NICHOLAS F. PERSAMPIERI
Assistant Attorney General
Office of the Attorney General
109 State Street
Montpelier, VT 05609
(802) 828-3186
nick.persampieri@vermont.gov

FOR THE STATE OF WASHINGTON

ROBERT W. FERGUSON
Attorney General

By: /s/ Aurora R. Janke____

WILLIAM R. SHERMAN
Assistant Attorney General
AURORA R. JANKE
Special Assistant Attorney General
Counsel for Environmental Protection
800 5th Ave Suite 2000, TB-14
Seattle, WA 98104-3188
(206) 442-4485
bill.sherman@atg.wa.gov
aurora.janke@atg.wa.gov

ATTACHMENT 1

EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL ON ENVIRONMENTAL QUALITY
WASHINGTON, D.C. 20503

August 1, 2016

MEMORANDUM FOR HEADS OF FEDERAL DEPARTMENTS AND AGENCIES

FROM: CHRISTINA GOLDFUSS
COUNCIL ON ENVIRONMENTAL QUALITY

SUBJECT: Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews

I. INTRODUCTION

The Council on Environmental Quality (CEQ) issues this guidance to assist Federal agencies in their consideration of the effects of greenhouse gas (GHG) emissions[1] and climate change when evaluating proposed Federal actions in accordance with the National Environmental Policy Act (NEPA) and the CEQ Regulations Implementing the Procedural Provisions of NEPA (CEQ Regulations).[2] This guidance will facilitate compliance with existing NEPA requirements, thereby improving the efficiency and consistency of reviews of proposed Federal actions for agencies, decision makers, project proponents, and the public.[3] The guidance provides Federal agencies a common

[1] For purposes of this guidance, CEQ defines GHGs in accordance with Section 19(m) of Exec. Order No. 13693, Planning for Federal Sustainability in the Next Decade, 80 Fed. Reg. 15869, 15882 (Mar. 25, 2015) (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride). Also for purposes of this guidance, "emissions" includes release of stored GHGs as a result of land management activities affecting terrestrial GHG pools such as, but not limited to, carbon stocks in forests and soils, as well as actions that affect the future changes in carbon stocks. The common unit of measurement for GHGs is metric tons of CO_2 equivalent (mt CO_2-e).

[2] *See* 42 U.S.C. 4321 et seq.; 40 CFR Parts 1500–1508.

[3] This guidance is not a rule or regulation, and the recommendations it contains may not apply to a particular situation based upon the individual facts and circumstances. This guidance does not change or substitute for any law, regulation, or other legally binding

approach for assessing their proposed actions, while recognizing each agency's unique circumstances and authorities.[4]

Climate change is a fundamental environmental issue, and its effects fall squarely within NEPA's purview.[5] Climate change is a particularly complex challenge given its global nature and the inherent interrelationships among its sources, causation, mechanisms of action, and impacts. Analyzing a proposed action's GHG emissions and the effects of climate change relevant to a proposed action—particularly how climate change may change an action's environmental effects—can provide useful information to decision makers and the public.

CEQ is issuing the guidance to provide for greater clarity and more consistency in how agencies address climate change in the environmental impact assessment process. This guidance uses longstanding NEPA principles because such an analysis should be similar to the analysis of other environmental impacts under NEPA. The guidance is intended to assist agencies in disclosing and considering the reasonably foreseeable effects of proposed actions that are relevant to their decision-making processes. It confirms that agencies should provide the public and decision makers with explanations of the basis for agency determinations.

---

requirement, and is not legally enforceable. The use of non-mandatory language such as "guidance," "recommend," "may," "should," and "can," is intended to describe CEQ policies and recommendations. The use of mandatory terminology such as "must" and "required" is intended to describe controlling requirements under the terms of NEPA and the CEQ regulations, but this document does not affect legally binding requirements.

[4] This guidance also addresses recommendations offered by a number of stakeholders. *See* President's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience, *Recommendations to the President* (November 2014), p. 20 (recommendation 2.7), *available at* www.whitehouse.gov/sites/default/files/docs/task_force_report_0.pdf; U.S. Government Accountability Office, *Future Federal Adaptation Efforts Could Better Support Local Infrastructure Decision Makers*, (Apr. 2013), *available at* http://www.gao.gov/assets/660/653741.pdf. Public comments on drafts of this guidance document are available at http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/comments.

[5] NEPA recognizes "the profound impact of man's activity on the interrelations of all components of the natural environment." (42 U.S.C. 4331(a)). It was enacted to, *inter alia,* "promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man." (42 U.S.C. 4321).

Focused and effective consideration of climate change in NEPA reviews[6] will allow agencies to improve the quality of their decisions. Identifying important interactions between a changing climate and the environmental impacts from a proposed action can help Federal agencies and other decision makers identify practicable opportunities to reduce GHG emissions, improve environmental outcomes, and contribute to safeguarding communities and their infrastructure against the effects of extreme weather events and other climate-related impacts.

Agencies implement NEPA through one of three levels of NEPA analysis: a Categorical Exclusion (CE); an Environmental Assessment (EA); or an Environmental Impact Statement (EIS). This guidance is intended to help Federal agencies ensure their analysis of potential GHG emissions and effects of climate change in an EA or EIS is commensurate with the extent of the effects of the proposed action.[7] Agencies have discretion in how they tailor their individual NEPA reviews to accommodate the approach outlined in this guidance, consistent with the CEQ Regulations and their respective implementing procedures and policies.[8] CEQ does not expect that implementation of this guidance will require agencies to develop new NEPA implementing procedures. However, CEQ recommends that agencies review their NEPA procedures and propose any updates they deem necessary or appropriate to facilitate their consideration of GHG emissions and climate change.[9] CEQ will review agency

[6] The term "NEPA review" is used to include the analysis, process, and documentation required under NEPA. While this document focuses on NEPA reviews, agencies are encouraged to analyze GHG emissions and climate-resilient design issues early in the planning and development of proposed actions and projects under their substantive authorities.
[7] *See* 40 CFR 1502.2(b) (Impacts shall be discussed in proportion to their significance); 40 CFR 1502.15 (Data and analyses in a statement shall be commensurate with the importance of the impact…).
[8] *See* 40 CFR 1502.24 (Methodology and scientific accuracy).
[9] *See* 40 CFR 1507.3. Agency NEPA implementing procedures can be, but are not required to be, in the form of regulation. Section 1507.3 encourages agencies to publish explanatory guidance, and agencies also should consider whether any updates to explanatory guidance are necessary. Agencies should review their policies and implementing procedures and revise them as necessary to ensure full compliance with NEPA.

proposals for revising their NEPA procedures, including any revision of CEs, in light of this guidance.

As discussed in this guidance, when addressing climate change agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration);[10] and, (2) The effects of climate change on a proposed action and its environmental impacts.

This guidance explains the application of NEPA principles and practices to the analysis of GHG emissions and climate change, and

- Recommends that agencies quantify a proposed agency action's projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools that are suitable for the proposed agency action;
- Recommends that agencies use projected GHG emissions (to include, where applicable, carbon sequestration implications associated with the proposed agency action) as a proxy for assessing potential climate change effects when preparing a NEPA analysis for a proposed agency action;
- Recommends that where agencies do not quantify a proposed agency action's projected GHG emissions because tools, methodologies, or data inputs are not reasonably available to support calculations for a quantitative analysis, agencies include a qualitative analysis in the NEPA document and explain the basis for determining that quantification is not reasonably available;

[10] Carbon sequestration is the long-term carbon storage in plants, soils, geologic formations, and oceans.

- Discusses methods to appropriately analyze reasonably foreseeable direct, indirect, and cumulative GHG emissions and climate effects;
- Guides the consideration of reasonable alternatives and recommends agencies consider the short- and long-term effects and benefits in the alternatives and mitigation analysis;
- Advises agencies to use available information when assessing the potential future state of the affected environment in a NEPA analysis, instead of undertaking new research, and provides examples of existing sources of scientific information;
- Counsels agencies to use the information developed during the NEPA review to consider alternatives that would make the actions and affected communities more resilient to the effects of a changing climate;
- Outlines special considerations for agencies analyzing biogenic carbon dioxide sources and carbon stocks associated with land and resource management actions under NEPA;
- Recommends that agencies select the appropriate level of NEPA review to assess the broad-scale effects of GHG emissions and climate change, either to inform programmatic (e.g., landscape-scale) decisions, or at both the programmatic and tiered project- or site-specific level, and to set forth a reasoned explanation for the agency's approach; and
- Counsels agencies that the "rule of reason" inherent in NEPA and the CEQ Regulations allows agencies to determine, based on their expertise and

experience, how to consider an environmental effect and prepare an analysis based on the available information.

II. BACKGROUND

A. NEPA

NEPA is designed to promote consideration of potential effects on the human environment[11] that would result from proposed Federal agency actions, and to provide the public and decision makers with useful information regarding reasonable alternatives[12] and mitigation measures to improve the environmental outcomes of Federal agency actions. NEPA ensures that the environmental effects of proposed actions are taken into account before decisions are made and informs the public of significant environmental effects of proposed Federal agency actions, promoting transparency and accountability concerning Federal actions that may significantly affect the quality of the human environment. NEPA reviews should identify measures to avoid, minimize, or mitigate adverse effects of Federal agency actions. Better analysis and decisions are the ultimate goal of the NEPA process.[13]

Inherent in NEPA and the CEQ Regulations is a "rule of reason" that allows agencies to determine, based on their expertise and experience, how to consider an environmental effect and prepare an analysis based on the available information. The usefulness of that information to the decision-making process and the public, and the

[11] 40 CFR 1508.14 ("'Human environment' shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment.").
[12] 40 CFR 1508.25(b) ("Alternatives, which include: (1) No action alternative. (2) Other reasonable courses of actions. (3) Mitigation measures (not in the proposed action).").
[13] 40 CFR 1500.1(c) ("Ultimately, of course, it is not better documents but better decisions that count. NEPA's purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.").

extent of the anticipated environmental consequences are important factors to consider when applying that "rule of reason."

B. Climate Change

Climate change science continues to expand and refine our understanding of the impacts of anthropogenic GHG emissions. CEQ's first Annual Report in 1970 referenced climate change, indicating that "[m]an may be changing his weather."[14] At that time, the mean level of atmospheric carbon dioxide (CO_2) had been measured as increasing to 325 parts per million (ppm) from an average of 280 ppm pre-Industrial levels.[15] Since 1970, the concentration of atmospheric carbon dioxide has increased to approximately 400 ppm (2015 globally averaged value).[16] Since the publication of CEQ's first Annual Report, it has been determined that human activities have caused the carbon dioxide content of the atmosphere of our planet to increase to its highest level in at least 800,000 years.[17]

It is now well established that rising global atmospheric GHG emission concentrations are significantly affecting the Earth's climate. These conclusions are built upon a scientific record that has been created with substantial contributions from the

[14] *See* CEQ, *Environmental Quality The First Annual Report*, p. 93 (August 1970); *available at* https://ceq.doe.gov/ceq_reports/annual_environmental_quality_reports.html.
[15] *See* USGCRP, *Climate Change Impacts in the United States The Third National Climate Assessment* (Jerry M. Melillo, Terese (T.C.) Richmond, & Gary W. Yohe eds., 2014) [hereinafter "Third National Climate Assessment"], *Appendix 3 Climate Science Supplement*, p. 739; EPA, April 2015: *Inventory of U.S. Greenhouse Emissions and Sinks 1990-2013, available at* https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf. *See also* Hartmann, D.L., A.M.G. Klein Tank, M. Rusticucci, et al., *2013 Observations Atmosphere and Surface. In Climate Change 2013 The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K., et al. (eds)]. Cambridge University Press: Cambridge, United Kingdom and New York, NY, USA. *Available at* http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter02_Final.pdf.
[16] *See* Ed Dlugokencky & Pieter Tans, National Oceanic and Atmospheric Administration/Earth System Research Laboratory, http://www.esrl.noaa.gov/gmd/ccgg/trends/global.html.
[17] *See* http://earthobservatory.nasa.gov/Features/CarbonCycle; University of California Riverside, National Aeronautics and Space Administration (NASA), and Riverside Unified School District, *Down to Earth Climate Change*, http://globalclimate.ucr.edu/resources.html; USGCRP, *Third National Climate Assessment, Appendix 3 Climate Science Supplement*, p. 736 ("Although climate changes in the past have been caused by natural factors, human activities are now the dominant agents of change. Human activities are affecting climate through increasing atmospheric levels of heat-trapping gases and other substances, including particles.").

United States Global Change Research Program (USGCRP), which informs the United States' response to global climate change through coordinated Federal programs of research, education, communication, and decision support.[18] Studies have projected the effects of increasing GHGs on many resources normally discussed in the NEPA process, including water availability, ocean acidity, sea-level rise, ecosystem functions, energy production, agriculture and food security, air quality and human health.[19]

Based primarily on the scientific assessments of the USGCRP, the National Research Council, and the Intergovernmental Panel on Climate Change, in 2009 the Environmental Protection Agency (EPA) issued a finding that the changes in our climate caused by elevated concentrations of greenhouse gases in the atmosphere are reasonably anticipated to endanger the public health and public welfare of current and future generations.[20] In 2015, EPA acknowledged more recent scientific assessments that "highlight the urgency of addressing the rising concentration of CO_2 in the atmosphere," finding that certain groups are especially vulnerable to climate-related effects.[21] Broadly

---

[18] *See* Global Change Research Act of 1990, Pub. L. 101–606, Sec. 103 (November 16, 1990). For additional information on the United States Global Change Research Program [hereinafter "USGCRP"], visit http://www.globalchange.gov. The USGCRP, formerly the Climate Change Science Program, coordinates and integrates the activities of 13 Federal agencies that conduct research on changes in the global environment and their implications for society. The USGCRP began as a Presidential initiative in 1989 and was codified in the Global Change Research Act of 1990 (Public Law 101–606). USGCRP-participating agencies are the Departments of Agriculture, Commerce, Defense, Energy, Interior, Health and Human Services, State, and Transportation; the U.S. Agency for International Development, the Environmental Protection Agency, NASA, the National Science Foundation, and the Smithsonian Institution.

[19] *See* USGCRP, *Third National Climate Assessment*, *available at* http://nca2014.globalchange.gov/system/files_force/downloads/low/NCA3_Climate_Change_Impacts_in_the_United%20States_LowRes.pdf?download=1; IPCC, *Climate Change 2014 Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (R.K. Pachauri, & L.A. Meyer eds., 2014), *available at* https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf; *see also* http://www.globalchange.gov; 40 CFR 1508.8 (effects include ecological, aesthetic, historic, cultural, economic, social, and health effects); USGCRP, *The Impacts of Climate Change on Human Health in the United States A Scientific Assessment, available at* https://health2016.globalchange.gov/.

[20] *See generally Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66496 (Dec. 15, 2009). (For example, at 66497-98: "[t]he evidence concerning how human-induced climate change may alter extreme weather events also clearly supports a finding of endangerment, given the serious adverse impacts that can result from such events and the increase in risk, even if small, of the occurrence and intensity of events such as hurricanes and floods. Additionally, public health is expected to be adversely affected by an increase in the severity of coastal storm events due to rising sea levels").

[21] *See* EPA, *Final Rule for Carbon Pollution Emission Guidelines for Existing Stationary Sources Electric Utility Generating Units*, 80 Fed. Reg. 64661, 64677 (Oct. 23, 2015) ("Certain groups, including children, the elderly, and the poor, are most vulnerable to climate-related effects. Recent studies also find that certain communities, including low-income communities and some communities of color … are disproportionately affected by certain climate change related impacts—including heat waves, degraded air quality, and

stated, the effects of climate change observed to date and projected to occur in the future include more frequent and intense heat waves, longer fire seasons and more severe wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea-level rise, more intense storms, harm to water resources, harm to agriculture, ocean acidification, and harm to wildlife and ecosystems.[22]

III. CONSIDERING THE EFFECTS OF GHG EMISSIONS AND CLIMATE CHANGE

This guidance is applicable to all Federal actions subject to NEPA, including site-specific actions, certain funding of site-specific projects, rulemaking actions, permitting decisions, and land and resource management decisions.[23] This guidance does not – and cannot – expand the range of Federal agency actions that are subject to NEPA. Consistent with NEPA, Federal agencies should consider the extent to which a proposed action and its reasonable alternatives would contribute to climate change, through GHG emissions, and take into account the ways in which a changing climate may impact the proposed action and any alternative actions, change the action's environmental effects over the lifetime of those effects, and alter the overall environmental implications of such actions.

This guidance is intended to assist agencies in disclosing and considering the effects of GHG emissions and climate change along with the other reasonably foreseeable environmental effects of their proposed actions. This guidance does not establish any

extreme weather events—which are associated with increased deaths, illnesses, and economic challenges. Studies also find that climate change poses particular threats to the health, well-being, and ways of life of indigenous peoples in the U.S.").

[22] *See* http://www.globalchange.gov/climate-change/impacts-society and Third National Climate Assessment, Chapters 3-15 (Sectors) and Chapters 16-25 (Regions), *available at* http://nca2014.globalchange.gov/downloads.

[23] *See* 40 CFR 1508.18.

particular quantity of GHG emissions as "significantly" affecting the quality of the human environment or give greater consideration to the effects of GHG emissions and climate change over other effects on the human environment.

A. GHG Emissions as a Proxy for the Climate Change Impacts of a Proposed Action

In light of the global scope of the impacts of GHG emissions, and the incremental contribution of each single action to global concentrations, CEQ recommends agencies use the projected GHG emissions associated with proposed actions as a proxy for assessing proposed actions' potential effects on climate change in NEPA analysis.[24] This approach, together with providing a qualitative summary discussion of the impacts of GHG emissions based on authoritative reports such as the USGCRP's National Climate Assessments and the Impacts of Climate Change on Human Health in the United States, a Scientific Assessment of the USGCRP, allows an agency to present the environmental and public health impacts of a proposed action in clear terms and with sufficient information to make a reasoned choice between no action and other alternatives and appropriate mitigation measures, and to ensure the professional and scientific integrity of the NEPA review.[25]

Climate change results from the incremental addition of GHG emissions from millions of individual sources,[26] which collectively have a large impact on a global scale.

[24] *See* 40 CFR 1502.16, 1508.9.
[25] *See* 40 CFR 1500.1, 1502.24 (requiring agencies to use high quality information and ensure the professional and scientific integrity of the discussions and analyses in environmental impact statements).
[26] Some sources emit GHGs in quantities that are orders of magnitude greater than others. *See* EPA, *Greenhouse Gas Reporting Program 2014 Reported Data*, Figure 2: Direct GHG Emissions Reported by Sector (2014), *available at* https://www.epa.gov/ghgreporting/ghgrp-2014-reported-data (amounts of GHG emissions by sector); *Final Rule for Carbon Pollution Emission Guidelines for Existing Stationary Sources Electric Utility Generating Units*, 80 Fed. Reg. 64661, 64663, 64689 (Oct. 23, 2015) (regulation of GHG emissions from fossil fuel-fired electricity generating power plants); *Oil and Natural Gas Sector Emission Standards for New, Reconstructed, and Modified Sources*, 81 Fed. Reg. 34824, 35830 (June 3, 2016 (regulation of GHG emissions from oil and gas sector).

CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact. When considering GHG emissions and their significance, agencies should use appropriate tools and methodologies for quantifying GHG emissions and comparing GHG quantities across alternative scenarios. Agencies should not limit themselves to calculating a proposed action's emissions as a percentage of sector, nationwide, or global emissions in deciding whether or to what extent to consider climate change impacts under NEPA.

1. GHG Emissions Quantification and Relevant Tools

This guidance recommends that agencies quantify a proposed agency action's projected direct and indirect GHG emissions. Agencies should be guided by the principle that the extent of the analysis should be commensurate with the quantity of projected GHG emissions and take into account available data and GHG quantification tools that

are suitable for and commensurate with the proposed agency action.[27] The rule of reason and the concept of proportionality caution against providing an in-depth analysis of emissions regardless of the insignificance of the quantity of GHG emissions that would be caused by the proposed agency action.

Quantification tools are widely available, and are already in broad use in the Federal and private sectors, by state and local governments, and globally.[28] Such quantification tools and methodologies have been developed to assist institutions, organizations, agencies, and companies with different levels of technical sophistication, data availability, and GHG source profiles. When data inputs are reasonably available to support calculations, agencies should conduct GHG analysis and disclose quantitative estimates of GHG emissions in their NEPA reviews. These tools can provide estimates of GHG emissions, including emissions from fossil fuel combustion and estimates of GHG emissions and carbon sequestration for many of the sources and sinks potentially affected by proposed resource management actions.[29] When considering which tool(s) to employ, it is important to consider the proposed action's temporal scale, and the availability of input data.[30] Examples of the kinds of methodologies agencies might consider using are presented in CEQ's 2012 Guidance for Accounting and Reporting GHG Emissions for a wide variety of activities associated with Federal agency operations.[31] When an agency determines that quantifying GHG emissions would not be

[27] *See* 40 CFR 1500.1(b) ("Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail."); 40 CFR 1502.2(b) (Impacts shall be discussed in proportion to their significance); 40 CFR 1502.15 (Data and analyses in a statement shall be commensurate with the importance of the impact…).
[28] *See* https://ceq.doe.gov/current_developments/GHG-accounting-tools.html.
[29] For example, USDA's COMET-Farm tool can be used to assess the carbon sequestration of existing agricultural activities along with the reduction in carbon sequestration (emissions) of project-level activities, http://cometfarm.nrel.colostate.edu/. Examples of other tools are available at https://ceq.doe.gov/current_developments/GHG-accounting-tools.html.
[30] *See* 40 CFR 1502.22.
[31] *See*
https://www.whitehouse.gov/sites/default/files/microsites/ceq/revised_federal_greenhouse_gas_accounting_and_reporting_guidance_

warranted because tools, methodologies, or data inputs are not reasonably available, the agency should provide a qualitative analysis and its rationale for determining that the quantitative analysis is not warranted. A qualitative analysis can rely on sector-specific descriptions of the GHG emissions of the category of Federal agency action that is the subject of the NEPA analysis.

When updating their NEPA procedures[32] and guidance, agencies should coordinate with CEQ to identify 1) the actions that normally warrant quantification of their GHG emissions, and consideration of the relative GHG emissions associated with alternative actions and 2) agency actions that normally do not warrant such quantification because tools, methodologies, or data inputs are not reasonably available. The determination of the potential significance of a proposed action remains subject to agency practice for the consideration of context and intensity, as set forth in the CEQ Regulations.[33]

2. The Scope of the Proposed Action

In order to assess effects, agencies should take account of the proposed action – including "connected" actions[34] – subject to reasonable limits based on feasibility and practicality. Activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate for a proposed agency action or as a consequence of a proposed agency action, should be accounted for in the NEPA analysis.

060412.pdf. Federal agencies' Strategic Sustainability Performance Plans reflecting their annual GHG inventories and reports under Executive Order 13514 are available at https://www.performance.gov/node/3406/view?view=public#supporting-info.

[32] *See* 40 CFR 1507.3.

[33] 40 CFR 1508.27 ("'Significantly' as used in NEPA requires considerations of both context and intensity: (a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. . . . (b) Intensity. This refers to the severity of impact.").

[34] 40 CFR 1508.25(a) (Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously, or; (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.).

For example, NEPA reviews for proposed resource extraction and development projects typically include the reasonably foreseeable effects of various phases in the process, such as clearing land for the project, building access roads, extraction, transport, refining, processing, using the resource, disassembly, disposal, and reclamation. Depending on the relationship between any of the phases, as well as the authority under which they may be carried out, agencies should use the analytical scope that best informs their decision making.

The agency should focus on significant potential effects and conduct an analysis that is proportionate to the environmental consequences of the proposed action.[35] Agencies can rely on basic NEPA principles to determine and explain the reasonable parameters of their analyses in order to disclose the reasonably foreseeable effects that may result from their proposed actions.[36]

3. Alternatives

Considering alternatives, including alternatives that mitigate GHG emissions, is fundamental to the NEPA process and accords with NEPA Sections 102(2)(C) and 102(2)(E).[37] The CEQ regulations emphasize that the alternatives analysis is the heart of the EIS under NEPA Section 102(2)(C).[38] NEPA Section 102(2)(E) provides an independent requirement for the consideration of alternatives in environmental documents.[39] NEPA calls upon agencies to use the NEPA process to "identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment."[40] The requirement to

[35] *See* 40 CFR 1501.7(a)(3), 1502.2(b), and 1502.15.
[36] *See* 40 CFR 1502.16.
[37] 42 U.S.C. 4332(2)(C), 4332(2)(E); 40 CFR 1502.14, 1508.9(b).
[38] 40 CFR 1502.14.
[39] *See* 40 CFR 1500.2, 1508.9(b).
[40] 40 CFR 1500.2(c).

consider alternatives ensures that agencies account for approaches with no, or less, adverse environmental effects for a particular resource.

Consideration of alternatives also provides each agency decision maker the information needed to examine other possible approaches to a particular proposed action (including the no action alternative) that could alter the environmental impact or the balance of factors considered in making the decision. Agency decisions are aided when there are reasonable alternatives that allow for comparing GHG emissions and carbon sequestration potential, trade-offs with other environmental values, and the risk from – and resilience to – climate change inherent in a proposed action and its design.

Agencies must consider a range of reasonable alternatives consistent with the level of NEPA review (e.g., EA or EIS) and the purpose and need for the proposed action, as well as reasonable mitigation measures if not already included in the proposed action or alternatives.[41] Accordingly, a comparison of these alternatives based on GHG emissions and any potential mitigation measures can be useful to advance a reasoned choice among alternatives and mitigation actions. When conducting the analysis, an agency should compare the anticipated levels of GHG emissions from each alternative – including the no-action alternative – and mitigation actions to provide information to the public and enable the decision maker to make an informed choice.

Agencies should consider reasonable alternatives and mitigation measures to reduce action-related GHG emissions or increase carbon sequestration in the same fashion as they consider alternatives and mitigation measures for any other environmental effects. NEPA, the CEQ Regulations, and this guidance do not require the decision

[41] *See* 42 U.S.C. 4332(2)(C), 4332(2)(E), and 40 CFR 1502.14(f), 1508.9(b). The purpose and need for action usually reflects both the extent of the agency's statutory authority and its policies.

maker to select the alternative with the lowest net level of emissions. Rather, they allow for the careful consideration of emissions and mitigation measures along with all the other factors considered in making a final decision.

4. Direct and Indirect Effects

If the direct and indirect GHG emissions can be quantified based on available information, including reasonable projections and assumptions, agencies should consider and disclose the reasonably foreseeable direct and indirect emissions when analyzing the direct and indirect effects of the proposed action.[42] Agencies should disclose the information and any assumptions used in the analysis and explain any uncertainties.

To compare a project's estimated direct and indirect emissions with GHG emissions from the no-action alternative, agencies should draw on existing, timely, objective, and authoritative analyses, such as those by the Energy Information Administration, the Federal Energy Management Program, or Office of Fossil Energy of the Department of Energy.[43] In the absence of such analyses, agencies should use other available information. When such analyses or information for quantification is unavailable, or the complexity of comparing emissions from various sources would make quantification overly speculative, then the agency should quantify emissions to the extent that this information is available and explain the extent to which quantified emissions information is unavailable while providing a qualitative analysis of those emissions. As

[42] For example, where the proposed action involves fossil fuel extraction, direct emissions typically include GHGs emitted during the process of exploring for or extracting the fossil fuel. The indirect effects of such an action that are reasonably foreseeable at the time would vary with the circumstances of the proposed action. For actions such as a Federal lease sale of coal for energy production, the impacts associated with the end-use of the fossil fuel being extracted would be the reasonably foreseeable combustion of that coal.
[43] For a current example, see Office of Fossil Energy, Nat'l Energy Tech. Lab., U.S. Dep't of Energy, *Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States*, Pub. No. DOE/NETL-2014/1649 (2014), *available at* http://energy.gov/sites/prod/files/2014/05/f16/Life%20Cycle%20GHG%20Perspective%20Report.pdf.

with any NEPA analysis, the level of effort should be proportionate to the scale of the emissions relevant to the NEPA review.

5. Cumulative Effects

"Cumulative impact" is defined in the CEQ Regulations as the "impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions."[44] All GHG emissions contribute to cumulative climate change impacts. However, for most Federal agency actions CEQ does not expect that an EIS would be required based *solely* on the global significance of cumulative impacts of GHG emissions, as it would not be consistent with the rule of reason to require the preparation of an EIS for every Federal action that may cause GHG emissions regardless of the magnitude of those emissions.

Based on the agency identification and analysis of the direct and indirect effects of its proposed action, NEPA requires an agency to consider the cumulative impacts of its proposed action and reasonable alternatives.[45] As noted above, for the purposes of NEPA, the analysis of the effects of GHG emissions is essentially a cumulative effects analysis that is subsumed within the general analysis and discussion of climate change impacts. Therefore, direct and indirect effects analysis for GHG emissions will adequately address the cumulative impacts for climate change from the proposed action and its alternatives and a separate cumulative effects analysis for GHG emissions is not needed.

6. Short- and Long-Term Effects

[44] 40 CFR 1508.7.
[45] *See* 40 CFR 1502.16, 1508.7, 1508.8. *See also* CEQ Memorandum to Heads of Federal Agencies, *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*, June 24, 2005, *available at* https//ceq.doe.gov/nepa/regs/Guidance_on_CE.pdf.

When considering effects, agencies should take into account both the short- and long-term adverse and beneficial effects using a temporal scope that is grounded in the concept of reasonable foreseeability. Some proposed actions will have to consider effects at different stages to ensure the direct effects and reasonably foreseeable indirect effects are appropriately assessed; for example, the effects of construction are different from the effects of the operations and maintenance of a facility.

Biogenic GHG emissions and carbon stocks from some land or resource management activities, such as a prescribed burn of a forest or grassland conducted to limit loss of ecosystem function through wildfires or insect infestations, may result in short-term GHG emissions and loss of stored carbon, while in the longer term a restored, healthy ecosystem may provide long-term carbon sequestration. Therefore, the short- and long-term effects should be described in comparison to the no action alternative in the NEPA review.

7. Mitigation

Mitigation is an important component of the NEPA process that Federal agencies can use to avoid, minimize, and compensate for the adverse environmental effects associated with their actions. Mitigation, by definition, includes avoiding impacts, minimizing impacts by limiting them, rectifying the impact, reducing or eliminating the impacts over time, or compensating for them.[46] Consequently, agencies should consider reasonable mitigation measures and alternatives as provided for under existing CEQ Regulations and take into account relevant agency statutory authorities and policies. The NEPA process is also intended to provide useful advice and information to State, local

[46] *See* 40 CFR 1508.20, 1508.25 (Alternatives include mitigation measures not included in the proposed action).

and tribal governments and private parties so that the agencies can better coordinate with other agencies and organizations regarding the means to mitigate effects of their actions.[47] The NEPA process considers the effects of mitigation commitments made by project proponents or others and mitigation required under other relevant permitting and environmental review regimes.[48]

As Federal agencies evaluate potential mitigation of GHG emissions and the interaction of a proposed action with climate change, the agencies should also carefully evaluate the quality of that mitigation to ensure it is additional, verifiable, durable, enforceable, and will be implemented.[49] Agencies should consider the potential for mitigation measures to reduce or mitigate GHG emissions and climate change effects when those measures are reasonable and consistent with achieving the purpose and need for the proposed action. Such mitigation measures could include enhanced energy efficiency, lower GHG-emitting technology, carbon capture, carbon sequestration (e.g., forest, agricultural soils, and coastal habitat restoration), sustainable land management practices, and capturing or beneficially using GHG emissions such as methane.

Finally, the CEQ Regulations and guidance recognize the value of monitoring to ensure that mitigation is carried out as provided in a record of decision or finding of no significant impact.[50] The agency's final decision on the proposed action should identify those mitigation measures that the agency commits to take, recommends, or requires

---

[47] NEPA directs Federal agencies to make "advice and information useful in restoring, maintaining, and enhancing the quality of the environment" available to States, Tribes, counties, cities, institutions and individuals. NEPA Sec. 102(2)(G).
[48] *See* CEQ Memorandum to Heads of Federal Agencies, *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*, 76 FR 3843 (Jan. 21, 2011) *available at* https://ceq.doe.gov/current_developments/docs/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf.
[49] *See* Presidential Memorandum: *Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment* (https://www.whitehouse.gov/the-press-office/2015/11/03/mitigating-impacts-natural-resources-development-and-encouraging-related) defining "durability" and addressing additionality.
[50] *See* 40 CFR 1505.2(c), 1505.3. *See also* CEQ Memorandum to Heads of Federal Agencies, *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*, 76 FR 3843 (Jan. 21, 2011) *available at* https://ceq.doe.gov/current_developments/docs/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf.

others to take. Monitoring is particularly appropriate to confirm the effectiveness of mitigation when that mitigation is adopted to reduce the impacts of a proposed action on affected resources already increasingly vulnerable due to climate change.

B. CONSIDERING THE EFFECTS OF CLIMATE CHANGE ON A PROPOSED ACTION AND ITS ENVIRONMENTAL IMPACTS

According to the USGCRP and others, GHGs already in the atmosphere will continue altering the climate system into the future, even with current or future emissions control efforts.[51] Therefore, a NEPA review should consider an action in the context of the future state of the environment. In addition, climate change adaptation and resilience — defined as adjustments to natural or human systems in response to actual or expected climate changes — are important considerations for agencies contemplating and planning actions with effects that will occur both at the time of implementation and into the future.[52]

1. Affected Environment

An agency should identify the affected environment to provide a basis for comparing the current and the future state of the environment as affected by the proposed action or its reasonable alternatives.[53] The current and projected future state of the environment without the proposed action (i.e., the no action alternative) represents the reasonably foreseeable affected environment, and this should be described based on

[51] *See* Third National Climate Assessment, *Appendix 3 Climate Science Supplement* 753-754, *available at* http://s3.amazonaws.com/nca2014/low/NCA3_Full_Report_Appendix_3_Climate_Science_Supplement_LowRes.pdf?download=1.
[52] *See* Third National Climate Assessment, Chapter 28, "Adaptation" and Chapter 26, "Decision Support: Connecting Science, Risk Perception, and Decisions," *available at* http://www.globalchange.gov/nca3-downloads-materials; see also, Exec. Order No. 13653, 78 Fed. Reg. 66817 (Nov. 6, 2013) and Exec. Order No.13693, *Planning for Federal Sustainability in the Next Decade*, 80 Fed. Reg. 15869 (Mach 25, 2015) (defining "climate-resilient design").
[53] *See* 40 CFR 1502.15 (providing that environmental impact statements shall succinctly describe the environmental impacts on the area(s) to be affected or created by the alternatives under consideration).

authoritative climate change reports,[54] which often project at least two possible future scenarios.[55] The temporal bounds for the state of the environment are determined by the projected initiation of implementation and the expected life of the proposed action and its effects.[56] Agencies should remain aware of the evolving body of scientific information as more refined estimates of the impacts of climate change, both globally and at a localized level, become available.[57]

2. Impacts

The analysis of climate change impacts should focus on those aspects of the human environment that are impacted by both the proposed action and climate change. Climate change can make a resource, ecosystem, human community, or structure more susceptible to many types of impacts and lessen its resilience to other environmental impacts apart from climate change. This increase in vulnerability can exacerbate the effects of the proposed action. For example, a proposed action may require water from a stream that has diminishing quantities of available water because of decreased snow pack in the mountains, or add heat to a water body that is already warming due to increasing atmospheric temperatures. Such considerations are squarely within the scope of NEPA and can inform decisions on whether to proceed with, and how to design, the proposed action to eliminate or mitigate impacts exacerbated by climate change. They can also

[54] *See, e.g.,* Third National Climate Assessment (Regional impacts chapters) *available at* http://www.globalchange.gov/nca3-downloads-materials.
[55] *See, e.g.,* Third National Climate Assessment (Regional impacts chapters, considering a low future global emissions scenario, and a high emissions scenario) *available at* http://www.globalchange.gov/nca3-downloads-materials.
[56] CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* (1997), https://ceq.doe.gov/publications/cumulative_effects html. Agencies should also consider their work under Exec. Order No. 13653, *Preparing the United States for the Impacts of Climate Change*, 78 Fed. Reg. 66817 (Nov. 6, 2013), that considers how capital investments will be affected by a changing climate over time.
[57] *See, e.g.,* http://nca2014.globalchange.gov/report/regions/coasts.

inform possible adaptation measures to address the impacts of climate change, ultimately enabling the selection of smarter, more resilient actions.

3. Available Assessments and Scenarios

In accordance with NEPA's rule of reason and standards for obtaining information regarding reasonably foreseeable effects on the human environment, agencies need not undertake new research or analysis of potential climate change impacts in the proposed action area, but may instead summarize and incorporate by reference the relevant scientific literature.[58] For example, agencies may summarize and incorporate by reference the relevant chapters of the most recent national climate assessments or reports from the USGCRP.[59] Particularly relevant to some proposed actions are the most current reports on climate change impacts on water resources, ecosystems, agriculture and forestry, health, coastlines, and ocean and arctic regions in the United States.[60] Agencies may recognize that scenarios or climate modeling information (including seasonal, inter-annual, long-term, and regional-scale projections) are widely used, but when relying on a single study or projection, agencies should consider their limitations and discuss them.[61]

4. Opportunities for Resilience and Adaptation

As called for under NEPA, the CEQ Regulations, and CEQ guidance, the NEPA review process should be integrated with agency planning at the earliest possible time that would allow for a meaningful analysis.[62] Information developed during early

[58] *See* 40 CFR 1502.21 (material may be incorporated by reference if it is reasonably available for inspection by potentially interested persons during public review and comment).
[59] *See* http://www.globalchange.gov/browse/reports.
[60] *See* Third National Climate Assessment, *Our Changing Climate*, *available at* http://nca2014.globalchange.gov/report. Agencies should consider the latest final assessments and reports when they are updated.
[61] *See* 40 CFR 1502.22. Agencies can consult www.data.gov/climate/portals for model data archives, visualization tools, and downscaling results.
[62] *See* 42 U.S.C. 4332 ("agencies of the Federal Government shall … utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making"); 40 CFR 1501.2 ("Agencies shall integrate the NEPA process with other planning at the earliest possible time…"); *See also* CEQ Memorandum

planning processes that precede a NEPA review may be incorporated into the NEPA review. Decades of NEPA practice have shown that integrating environmental considerations with the planning process provides useful information that program and project planners can consider in the design of the proposed action, alternatives, and potential mitigation measures. For instance, agencies should take into account increased risks associated with development in floodplains, avoiding such development wherever there is a practicable alternative, as required by Executive Order 11988 and Executive Order 13690.[63] In addition, agencies should take into account their ongoing efforts to incorporate environmental justice principles into their programs, policies, and activities, including the environmental justice strategies required by Executive Order 12898, as amended, and consider whether the effects of climate change in association with the effects of the proposed action may result in a disproportionate effect on minority and low income communities.[64] Agencies also may consider co-benefits of the proposed action, alternatives, and potential mitigation measures for human health, economic and social stability, ecosystem services, or other benefit that increases climate change preparedness or resilience. Individual agency adaptation plans and interagency adaptation strategies, such as agency Climate Adaptation Plans, the National Fish, Wildlife and Plants Climate Adaptation Strategy, and the National Action Plan: Priorities for Managing Freshwater

for Heads of Federal Departments and Agencies, *Improving the Process for Preparing Efficient and Timely Environmental Reviews under the National Environmental Policy Act*, 77 Fed. Reg. 14473 (Mar. 12, 2012), *available at* https://ceq.doe.gov/current_developments/docs/Improving_NEPA_Efficiencies_06Mar2012.pdf.

[63] *See* Exec. Order No. 11988, "Floodplain Management," 42 Fed. Reg. 26951 (May 24, 1977), *available at* http://www.archives.gov/federal-register/codification/executive-order/11988.html; Exec. Order No. 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, 80 Fed. Reg. 6425 (Jan. 30, 2015), *available at* https://www.gpo.gov/fdsys/pkg/FR-2015-02-04/pdf/2015-02379.pdf.

[64] *See* Exec. Order No. 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, 59 Fed. Reg. 7629 (Feb. 16, 1994), *available at* https://ceq.doe.gov/nepa/regs/eos/ii-5.pdf; CEQ, *Environmental Justice Guidance Under the National Environmental Policy Act* (Dec. 1997), *available at* http://ceq.doe.gov/nepa/regs/ej/justice.pdf.

Resources in a Changing Climate, provide other good examples of the type of relevant and useful information that can be considered.[65]

Climate change effects on the environment and on the proposed project should be considered in the analysis of a project considered vulnerable to the effects of climate change such as increasing sea level, drought, high intensity precipitation events, increased fire risk, or ecological change. In such cases, a NEPA review will provide relevant information that agencies can use to consider in the initial project design, as well as alternatives with preferable overall environmental outcomes and improved resilience to climate impacts. For example, an agency considering a proposed long-term development of transportation infrastructure on a coastal barrier island should take into account climate change effects on the environment and, as applicable, consequences of rebuilding where sea level rise and more intense storms will shorten the projected life of the project and change its effects on the environment.[66] Given the length of time involved in present sea level projections, such considerations typically will not be relevant to short-term actions with short-term effects.

In addition, the particular impacts of climate change on vulnerable communities may be considered in the design of the action or the selection among alternatives to

---

[65] *See* http://sustainability.performance.gov for agency sustainability plans, which contain agency adaptation plans. *See also* http://www.wildlifeadaptationstrategy.gov; http://www.whitehouse.gov/sites/default/files/microsites/ceq/2011_national_action_plan.pdf; and https://www.epa.gov/greeningepa/climate-change-adaptation-plans

[66] *See* U.S. Department of Transportation, Gulf Coast Study, Phase 2, *Assessing Transportation Vulnerability to Climate Change Synthesis of Lessons Learned and Methods Applied*, FHWA-HEP-15-007 (Oct. 2014) (focusing on the Mobile, Alabama region), *available at* http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/gulf_coast_study/phase2_task6/fhwahep15007.pdf; U.S. Climate Change Science Program, Synthesis and Assessment Product 4.7, Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study, Phase I (Mar. 2008) (focusing on a regional scale in the central Gulf Coast), *available at* https://downloads.globalchange.gov/sap/sap4-7/sap4-7-final-all.pdf. Information about the Gulf Coast Study is *available at* *http //www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/gulf_coast_study*. *See also* Third National Climate Assessment, Chapter 28, "Adaptation," at 675 (noting that Federal agencies in particular can facilitate climate adaptation by "ensuring the establishment of federal policies that allow for "flexible" adaptation efforts and take steps to avoid unintended consequences"), *available at* http://nca2014.globalchange.gov/report/response-strategies/adaptation#intro-section-2.

assess the impact, and potential for disproportionate impacts, on those communities.[67] For example, chemical facilities located near the coastline could have increased risk of spills or leakages due to sea level rise or increased storm surges, putting local communities and environmental resources at greater risk. Increased resilience could minimize such potential future effects. Finally, considering climate change preparedness and resilience can help ensure that agencies evaluate the potential for generating additional GHGs if a project has to be replaced, repaired, or modified, and minimize the risk of expending additional time and funds in the future.

C. Special Considerations for Biogenic Sources of Carbon

With regard to biogenic GHG emissions from land management actions – such as prescribed burning, timber stand improvements, fuel load reductions, scheduled harvesting, and livestock grazing – it is important to recognize that these land management actions involve GHG emissions and carbon sequestration that operate within the global carbon and nitrogen cycle, which may be affected by those actions. Similarly, some water management practices have GHG emission consequences (e.g., reservoir management practices can reduce methane releases, wetlands management practices can enhance carbon sequestration, and water conservation can improve energy efficiency).

Notably, it is possible that the net effect of ecosystem restoration actions resulting in short-term biogenic emissions may lead to long-term reductions of atmospheric GHG concentrations through increases in carbon stocks or reduced risks of future emissions. In the land and resource management context, how a proposed action affects a net carbon sink or source will depend on multiple factors such as the climatic region, the distribution

[67] For an example, *see* https://www.blm.gov/epl-front-office/projects/nepa/5251/42462/45213/NPR-A_FINAL_ROD_2-21-13.pdf.

of carbon across carbon pools in the project area, and the ongoing activities and trends. In addressing biogenic GHG emissions, resource management agencies should include a comparison of estimated net GHG emissions and carbon stock changes that are projected to occur with and without implementation of proposed land or resource management actions.[68] This analysis should take into account the GHG emissions, carbon sequestration potential, and the changes in carbon stocks that are relevant to decision making in light of the proposed actions and timeframes under consideration.

One example of agencies dealing with biogenic emissions and carbon sequestration arises when agencies consider proposed vegetation management practices that affect the risk of wildfire, insect and disease outbreak, or other disturbance. The public and the decision maker may benefit from consideration of the influence of a vegetation management action that affects the risk of wildfire on net GHG emissions and carbon stock changes. NEPA reviews should consider whether to include a comparison of net GHG emissions and carbon stock changes that are anticipated to occur, with and without implementation of the proposed vegetation management practice, to provide information that is useful to the decision maker and the public to distinguish between alternatives. The analysis would take into account the estimated GHG emissions (biogenic and fossil), carbon sequestration potential, and the net change in carbon stocks relevant in light of the proposed actions and timeframes under consideration. In such cases the agency should describe the basis for estimates used to project the probability or likelihood of occurrence or changes in the effects or severity of wildfire. Where such

[68] One example of a tool for such calculations is the Carbon On Line Estimator (COLE), which uses data based on USDA Forest Service Forest Inventory & Analysis and Resource Planning Assessment data and other ecological data. COLE began as a collaboration between the National Council for Air and Stream Improvement, Inc. (NCASI) and USDA Forest Service, Northern Research Station. It currently is maintained by NCASI. It is available at http://www.fs.usda.gov/ccrc/tools/cole.

tools, methodologies, or data are not yet available, the agency should provide a qualitative analysis and its rationale for determining that the quantitative analysis is not warranted. As with any other analysis, the rule of reason and proportionality should be applied to determine the extent of the analysis.

CEQ acknowledges that Federal land and resource management agencies are developing agency-specific principles and guidance for considering biological carbon in management and planning decisions.[69] Such guidance is expected to address the importance of considering biogenic carbon fluxes and storage within the context of other management objectives and ecosystem service goals, and integrating carbon considerations as part of a balanced and comprehensive program of sustainable management, climate change mitigation, and climate change adaptation.

IV. TRADITIONAL NEPA TOOLS AND PRACTICES

A. Scoping and Framing the NEPA Review

To effectuate integrated decision making, avoid duplication, and focus the NEPA review, the CEQ Regulations provide for scoping.[70] In scoping, the agency determines the issues that the NEPA review will address and identifies the impacts related to the proposed action that the analyses will consider.[71] An agency can use the scoping process to help it determine whether analysis is relevant and, if so, the extent of analysis

[69] *See* Council on Climate Change Preparedness and Resilience, *Priority Agenda Enhancing the Climate Resilience of America's Natural Resources*, at 52 (Oct. 2014), *available at* http://www.whitehouse.gov/sites/default/files/docs/enhancing_climate_resilience_of_americas_natural_resources.pdf.
[70] *See* 40 CFR 1501.7 ("There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This process shall be termed scoping."); *see also* CEQ Memorandum for Heads of Federal Departments and Agencies, *Improving the Process for Preparing Efficient and Timely Environmental Reviews under the National Environmental Policy Act*, March 6, 2012, *available at* https://ceq.doe.gov/current_developments/docs/Improving_NEPA_Efficiencies_06Mar2012.pdf (the CEQ Regulations explicitly require scoping for preparing an EIS, however, agencies can also take advantage of scoping whenever preparing an EA).
[71] *See* 40 CFR 1500.4(b), 1500.4(g), 1501.7.

appropriate for a proposed action.[72] When scoping for the climate change issues associated with the proposed agency action, the nature, location, timeframe, and type of the proposed action and the extent of its effects will help determine the degree to which to consider climate projections, including whether climate change considerations warrant emphasis, detailed analysis, and disclosure.

Consistent with this guidance, agencies may develop their own agency-specific practices and guidance for framing the NEPA review. Grounded on the principles of proportionality and the rule of reason, such aids can help an agency determine the extent to which an analysis of GHG emissions and climate change impacts should be explored in the decision-making process and will assist in the analysis of the no action and proposed alternatives and mitigation.[73] The agency should explain such a framing process and its application to the proposed action to the decision makers and the public during the NEPA review and in the EA or EIS document.

B. Frame of Reference

When discussing GHG emissions, as for all environmental impacts, it can be helpful to provide the decision maker and the public with a recognizable frame of reference for comparing alternatives and mitigation measures. Agencies should discuss relevant approved federal, regional, state, tribal, or local plans, policies, or laws for GHG emission reductions or climate adaptation to make clear whether a proposed project's

[72] *See* 40 CFR 1501.7 (The agency preparing the NEPA analysis must use the scoping process to, among other things, determine the scope and identify the significant issues to be analyzed in depth) and CEQ, *Memorandum for General Counsels, NEPA Liaisons, and Participants in Scoping*, April 30, 1981, *available at* https://ceq.doe.gov/nepa/regs/scope/scoping.htm.

[73] *See, e.g.,* Matthew P. Thompson, Bruce G. Marcot, Frank R. Thompson, III, Steven McNulty, Larry A. Fisher, Michael C. Runge, David Cleaves, and Monica Tomosy, *The Science of Decisionmaking Applications for Sustainable Forest and Grassland Management in the National Forest System* (2013), *available at* http://www.fs.fed.us/rm/pubs_other/rmrs_2013_thompson_m004.pdf; U.S. Forest Service Comparative Risk Assessment Framework And Tools, *available at* www.fs.fed.us/psw/topics/fire_science/craft/craft; and Julien Martin, Michael C. Runge, James D. Nichols, Bruce C. Lubow, and William L. Kendall, *Structured decision making as a conceptual framework to identify thresholds for conservation and management* (2009), Ecological Applications 19:1079–1090, *available at* http://www.esajournals.org/doi/abs/10.1890/08-0255.1.

GHG emissions are consistent with such plans or laws.[74] For example, the Bureau of Land Management has discussed how agency actions in California, especially joint projects with the State, may or may not facilitate California reaching its emission reduction goals under the State's Assembly Bill 32 (Global Warming Solutions Act).[75] This approach helps frame the policy context for the agency decision based on its NEPA review.

C. Incorporation by Reference

Incorporation by reference is of great value in considering GHG emissions or where an agency is considering the implications of climate change for the proposed action and its environmental effects. Agencies should identify situations where prior studies or NEPA analyses are likely to cover emissions or adaptation issues, in whole or in part. When larger scale analyses have considered climate change impacts and GHG emissions, calculating GHG emissions and carbon stocks for a specific action may provide only limited information beyond the information already collected and considered in the larger scale analyses. The NEPA reviews for a specific action can incorporate by reference earlier programmatic studies or information such as management plans, inventories, assessments, and research that consider potential changes in carbon stocks, as well as any relevant programmatic NEPA reviews.[76]

Accordingly, agencies should use the scoping process to consider whether they should incorporate by reference GHG analyses from other programmatic studies, action

[74] *See* 40 CFR 1502.16(c), 1506.2(d) (where an inconsistency exists, agencies should describe the extent to which the agency will reconcile its proposed action with the plan or law). *See also* Exec. Order No. 13693, 80 Fed. Reg. 15869 (Mar. 25, 2015) (establishing GHG emission and related goals for agency facilities and operations. Scope 1, 2, and 3 emissions are typically separate and distinct from analyses and information used in an EA or EIS.).
[75] *See*, *e.g.*, U.S. Bureau of Land Management, Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment and Final Environmental Impact Statement, Vol. I, § I.3.3.2, at 12, *available at* http://drecp.org/finaldrecp/.
[76] *See* 40 CFR 1502.5, 1502.21.

specific NEPA reviews, or programmatic NEPA reviews to avoid duplication of effort. Furthermore, agencies should engage other agencies and stakeholders with expertise or an interest in related actions to participate in the scoping process to identify relevant GHG and adaptation analyses from other actions or programmatic NEPA documents.

D. Using Available Information

Agencies should make decisions using current scientific information and methodologies. CEQ does not expect agencies to fund and conduct original climate change research to support their NEPA analyses or for agencies to require project proponents to do so. Agencies should exercise their discretion to select and use the tools, methodologies, and scientific and research information that are of high quality and available to assess the impacts.[77]

Agencies should be aware of the ongoing efforts to address the impacts of climate change on human health and vulnerable communities.[78] Certain groups, including children, the elderly, and the poor, are more vulnerable to climate-related health effects, and may face barriers to engaging on issues that disproportionately affect them. CEQ recommends that agencies periodically engage their environmental justice experts, and the Federal Interagency Working Group on Environmental Justice, [79] to identify approaches to avoid or minimize impacts that may have disproportionately high and

[77] *See* 40 CFR 1502.24 (requiring agencies to ensure the professional and scientific integrity of the discussions and analyses in environmental impact statements).
[78] USGCRP, *The Impacts of Climate Change on Human Health in the United States A Scientific Assessment* (Apr. 2016), *available at* https://health2016.globalchange.gov/downloads.
[79] For more information on the Federal Interagency Working Group on Environmental Justice co-chaired by EPA and CEQ, *see* http://www.epa.gov/environmentaljustice/interagency/index.html.

adverse human health or environmental effects on minority and low-income populations.[80]

E. Programmatic or Broad-Based Studies and NEPA Reviews

Agency decisions can address different geographic scales that can range from the programmatic or landscape level to the site- or project-specific level. Agencies sometimes conduct analyses or studies that are not NEPA reviews at the national level or other broad scale level (e.g., landscape, regional, or watershed) to assess the status of one or more resources or to determine trends in changing environmental conditions.[81] In the context of long-range energy, transportation, and resource management strategies an agency may decide that it would be useful and efficient to provide an aggregate analysis of GHG emissions or climate change effects in a programmatic analysis and then incorporate by reference that analysis into future NEPA reviews.

A tiered, analytical decision-making approach using a programmatic NEPA review is used for many types of Federal actions[82] and can be particularly relevant to addressing proposed land, aquatic, and other resource management plans. Under such an approach, an agency conducts a broad-scale programmatic NEPA analysis for decisions such as establishing or revising USDA Forest Service land management plans, Bureau of Land Management resource management plans, or Natural Resources Conservation Service conservation programs. Subsequent NEPA analyses for proposed site-specific

[80] *President's Memorandum for the Heads of All Departments and Agencies, Executive Order on Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (Feb. 11, 1994), *available at* https://ceq.doe.gov/nepa/regs/eos/ii-5.pdf; CEQ, *Environmental Justice Guidance Under the National Environmental Policy Act*, *available at* https://ceq.doe.gov/nepa/regs/ej/justice.pdf.

[81] Such a programmatic study is distinct from a programmatic NEPA review which is appropriate when the action under consideration is itself subject to NEPA requirements. *See* CEQ, *Memorandum for Heads of Federal Departments and Agencies, Effective Use of Programmatic NEPA Reviews*, Dec. 18, 2014, § I(A), p. 9, *available at* https://www.whitehouse.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf (discussing non-NEPA types of programmatic analyses such as data collection, assessments, and research, which previous NEPA guidance described as joint inventories or planning studies).

[82] *See* 40 CFR 1502.20, 1508.28. A programmatic NEPA review may be appropriate when a decision is being made that is subject to NEPA, such as establishing formal plans, programs, and policies, and when considering a suite of similar projects.

decisions – such as proposed actions that implement land, aquatic, and other resource management plans – may be tiered from the broader programmatic analysis, drawing upon its basic framework analysis to avoid repeating analytical efforts for each tiered decision. Examples of project- or site-specific actions that may benefit from being able to tier to a programmatic NEPA review include: constructing transmission lines; conducting prescribed burns; approving grazing leases; granting rights-of-way; issuing leases for oil and gas drilling; authorizing construction of wind, solar or geothermal projects; and approving hard rock mineral extraction.

A programmatic NEPA review may also serve as an efficient mechanism in which to assess Federal agency efforts to adopt broad-scale sustainable practices for energy efficiency, GHG emissions avoidance and emissions reduction measures, petroleum product use reduction, and renewable energy use, as well as other sustainability practices.[83] While broad department- or agency-wide goals may be of a far larger scale than a particular program, policy, or proposed action, an analysis that informs how a particular action affects that broader goal can be of value.

F. Monetizing Costs and Benefits

NEPA does not require monetizing costs and benefits. Furthermore, the weighing of the merits and drawbacks of the various alternatives need not be displayed using a monetary cost-benefit analysis and should not be when there are important qualitative considerations.[84] When an agency determines that a monetized assessment of the impacts of greenhouse gas emissions or a monetary cost-benefit analysis is appropriate and

[83] *See* Exec. Order No. 13693, 80 Fed. Reg. 15869 (Mar. 25, 2015).
[84] *See* 40 CFR 1502.23.

relevant to the choice among different alternatives being considered, such analysis may be incorporated by reference[85] or appended to the NEPA document as an aid in evaluating the environmental consequences.[86] For example, a rulemaking could have useful information for the NEPA review in an associated regulatory impact analysis which could be incorporated by reference.[87] When using a monetary cost-benefit analysis, just as with tools to quantify emissions, the agency should disclose the assumptions, alternative inputs, and levels of uncertainty associated with such analysis. Finally, if an agency chooses to monetize some but not all impacts of an action, the agency providing this additional information should explain its rationale for doing so.[88]

V. CONCLUSION AND EFFECTIVE DATE

Agencies should apply this guidance to all new proposed agency actions when a NEPA review is initiated. Agencies should exercise judgment when considering whether to apply this guidance to the extent practicable to an on-going NEPA process. CEQ does not expect agencies to apply this guidance to concluded NEPA reviews and actions for

[85] *See* 40 CFR 1502.21 (material may be cited if it is reasonably available for inspection by potentially interested persons within the time allowed for public review and comment).

[86] When conducting a cost-benefit analysis, determining an appropriate method for preparing a cost-benefit analysis is a decision left to the agency's discretion, taking into account established practices for cost-benefit analysis with strong theoretical underpinnings (for example, see OMB Circular A-4 and references therein). For example, the Federal social cost of carbon (SCC) estimates the marginal damages associated with an increase in carbon dioxide emissions in a given year. Developed through an interagency process committed to ensuring that the SCC estimates reflect the best available science and methodologies and used to assess the social benefits of reducing carbon dioxide emissions across alternatives in rulemakings, it provides a harmonized, interagency metric that can give decision makers and the public useful information for their NEPA review. For current Federal estimates, *see* Interagency Working Group on Social Cost of Carbon, United States Government, *Technical Support Document Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (revised July 2015), *available at* https://www.whitehouse.gov/omb/oira/social-cost-of-carbon.

[87] For example, the regulatory impact analysis was used as a source of information and aligned with the NEPA review for Corporate Average Fuel Economy (CAFÉ) standards, *see* National Highway Traffic Safety Administration, Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2017-2025, Final Environmental Impact Statement, Docket No. NHTSA-2011-0056 (July 2012), § 5.3.2, *available at* http://www.nhtsa.gov/Laws+&+Regulations/CAFE+-+Fuel+Economy/Environmental+Impact+Statement+for+CAFE+Standards,+2017-2025.

[88] For example, the information may be responsive to public comments or useful to the decision maker in further distinguishing between alternatives and mitigation measures. In all cases, the agency should ensure that its consideration of the information and other factors relevant to its decision is consistent with applicable statutory or other authorities, including requirements for the use of cost-benefit analysis.

which a final EIS or EA has been issued. Agencies should consider applying this guidance to projects in the EIS or EA preparation stage if this would inform the consideration of differences between alternatives or address comments raised through the public comment process with sufficient scientific basis that suggest the environmental analysis would be incomplete without application of the guidance, and the additional time and resources needed would be proportionate to the value of the information included.

# # #

ATTACHMENT 2

STATE OF CALIFORNIA
GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

March 24, 2015

Thank you for the opportunity to review and provide comments on the White House Council on Environmental Quality's "Revised Draft Guidance on Greenhouse Gases and Climate Change," hereafter referred to as the "Guidance." The Guidance provides suggestions and information to public agencies addressing climate change in environmental documents prepared pursuant to the National Environmental Policy Act, or NEPA. Like NEPA, California's Environmental Quality Act, commonly referred to as CEQA, also requires public agencies to study the potential environmental consequences of proposed projects. Over the past decade, California public agencies have developed rich experience and expertise analyzing climate change in environmental documents pursuant to CEQA. Approximately five years ago, this office developed regulations that explicitly require analysis of greenhouse gas emissions in CEQA documents. Since then, robust analytical tools have been made available that significantly reduce the time and effort needed to analyze climate change impacts of projects. Our understanding of the feasibility and effectiveness of a wide variety of mitigation measures has also dramatically increased.

Initially, we strongly agree that NEPA plainly requires covered agencies to consider the effects, including cumulative effects, of their proposed projects if they may be significant, and that the effects of climate change upon those projects must also be taken into account. NEPA's broad analytic scope, with which federal agencies must comply "to the fullest extent possible," clearly encompasses these climate change-related issues, as the federal courts have repeatedly held.[1] We commend the Council for its efforts to further improve the quality and consistency of NEPA analysis in this area.

The Guidance makes important strides in improving nationwide practice in analyzing climate change impacts of proposed projects. The following comments provide California's perspective on these issues, which is informed by our own experience integrating climate change into CEQA analyses. They are intended to strengthen the Guidance for eventual use on a nation-wide scale.

The Guidance Provides Needed Advice on Addressing Climate Change

The Guidance appropriately recommends that agencies analyze not only the project's contribution of greenhouse gas emissions, but also the project's potential to exacerbate effects caused by climate change. California's Natural Resources Agency provides similar direction in regulations requiring the analysis of climate change in documents prepared pursuant to CEQA.

[1] *See, e.g.* 42 U.S.C. § 4332; *Center for Biological Diversity v. National Highway Traffic Safety Administration*, 538 F.3d 1172 (2008).

Section 15126.2 of the CEQA Guidelines[2] states, in part, that an "EIR should evaluate any potentially significant impacts of locating development in other areas susceptible to hazardous conditions (e.g., floodplains, coastlines, wildfire risk areas) as identified in authoritative hazard maps, risk assessments or in land use plans addressing such hazards areas." In its Final Statement of Reasons, which describes the purpose of the regulations, the Natural Resources Agency explained: "that section contemplates hazards which the presence of a project could exacerbate (i.e., potential upset of hazardous materials in a flood, increased need for firefighting services, etc.)." (Final Statement of Reasons,[3] at page 43.)

As noted in detail at page 15 of the Guidance, tools are already are available to do this type of analysis. For example, California worked together with stakeholders to develop tools and resources that could support such analysis. The "Cal-Adapt" website, for example, illustrates impacts of climate change across California using best available science.[4] The Climate Resilience Toolkit[5] was largely modeled after Cal-Adapt and has been referred to as the "Cal-Adapt for the nation". These resources have been helpful in analyzing climate change impacts in California. Similarly, the Climate Resilience Toolkit could perform this role at the national level. The Climate Resilience Toolkit also has a decision support component, which was inspired by California's Adaptation Planning Guide. As with the Adaptation Planning Guide, a narrative could be added to the Climate Resilience Toolkit which highlights its appropriate use under NEPA.

The Guidance Can Be Improved in Several Respects

While the Guidance offers much important information and advice, it can be improved. The following offers several specific suggestions for improvement.

The Suggested "Reference Point" May Confuse Public Agencies, and So CEQ Should Delete It From the Guidance.

The Guidance discourages public agencies from providing a quantitative analysis of greenhouse gas emissions if project emissions fall below a "reference point" of 25,000 metric tons CO2e per year, unless quantification "is easily accomplished." (Guidance, at page 18.) This directive in the Guidance may create more problems than it solves. First, as the Guidance correctly indicates, emissions can be easily quantified for most projects, and consistent with NEPA's information disclosure purposes, agencies should make a good faith effort to analyze and disclose such emissions. Second, quantification of emissions serves an important purpose of

[2] The regulations implementing CEQA are known as the CEQA Guidelines. They are contained in sections 15000 and following in Title 14 of the California Code of Regulations.

[3] The Final Statement of Reasons is available online at http://resources.ca.gov/ceqa/docs/Final_Statement_of_Reasons.pdf

[4] The Cal-Adapt website is available online at www.cal-adapt.org

[5] Available online at www.climate.gov/toolkit

demonstrating where emissions reductions may be easily achieved. Third, application of the reference point might prevent the disclosure of information needed to conduct an adequate cumulative impacts analysis. Finally, the suggested reference is much larger than the quantity of emissions that might be considered to be significant in California. To remedy these concerns, we recommend that the discussion of the "reference point" be removed from the Guidance. These points are discussed in greater detail below.

Emissions from many projects are easily quantified using existing tools.

The Guidance correctly advises that "GHG estimation tools have become widely available, and are already in broad use...."(Guidance, at page 15.) This is certainly true in California. The California Air Pollution Control Officers Association (CAPCOA), for example, has pioneered several important guides, including "CEQA & Climate Change,"[6] which includes options for quantifying and evaluating the significance of greenhouse gas emissions, "Model Policies for Greenhouse Gas Emissions in General Plans,"[7] and "Quantifying Greenhouse Gas Mitigation Measures."[8] National protocols for calculating greenhouse gas emissions are also readily available, such as the United States Community Protocol for Calculating Greenhouse Gas Emissions[9] and the Local Government Operations Protocol.[10] Numerous national and international groups and governments participated in the development of these two protocols. California also helped fund the development of the Clearpath suite of software tools to address greenhouse gas emissions through the State Energy Efficiency Collaborative.[11] These tools are in use statewide but were also used as the basis for a national scale resource called Clearpath.[12] The California Air Resources Board has published an extensive list of quantification tools on its "Cool California" website[13] which could be used in a NEPA analysis. Lastly, for project level emissions there are numerous tools available, though the California Emissions Estimator Model, commonly known as CalEEMod,[14] is widely used throughout California to quantify emissions. In part because of the ready availability of estimation tools, California generally requires lead agencies to quantify emissions as part of their CEQA analysis. (CEQA Guidelines § 15064.4 ("A

[6] http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-White-Paper.pdf

[7] http://www.capcoa.org/wp-content/uploads/downloads/2010/05/CAPCOA-ModelPolicies-6-12-09-915am.pdf

[8] http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf.

[9] http://www.icleiusa.org/tools/ghg-protocol/community-protocol

[10] http://www.arb.ca.gov/cc/protocols/localgov/localgov.htm

[11] http://californiaseec.org/software-tools

[12] http://www.icleiusa.org/tools/clearpath

[13] www.coolcalifornia.org

[14] www.caleemod.com. CalEEMod was developed and is maintained by CAPCOA to support the needs of all air districts in the state.

lead agency should make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate the amount of greenhouse gas emissions resulting from a project").) In adopting this rule, the California Natural Resources Agency found that:

> quantification of GHG emissions is possible for a wide range of projects using currently available tools. Modeling capabilities have improved to allow quantification of emissions from various sources and at various geographic scales. (Office of Planning and Research, CEQA and Climate Change: Addressing Climate Change Through the California Environmental Quality Act Review, Attachment 2: Technical Resources/Modeling Tools to Estimate GHG Emissions (June 2008); CAPCOA White Paper, at pp. 59-78.) Moreover, one of the models that can be used in a GHG analysis, URBEMIS, is already widely used in CEQA air quality analyses. (CAPCOA White Paper, at p. 59.)"

(Final Statement of Reasons, at page 21.) In the five years since California adopted its regulations, tools have been improved and their use has become widespread.

Not Only Are Most Project Emissions Easily Quantified, but Doing So Provides Agencies and the Public with Valuable Information Regarding Ways to Reduce Project Emissions.

CEQA generally requires quantification of greenhouse gas emissions not only because it is usually relatively easy to do so, but also because quantification reveals ways to feasibly reduce those emissions. Again, in adopting its regulations, the California Natural Resources Agency found that:

> [Q]uantification indicates to the lead agency, and the public, whether emissions reductions are possible, and if so, from which sources. Thus, [for example,] if quantification reveals that a substantial portion of a project's emissions result from energy use, a lead agency may consider whether design changes could reduce the project's energy demand.

(Final Statement of Reasons, at page 21.) For similar reasons, project emissions should usually be quantified in NEPA analyses. In fact, such quantification is key to satisfying NEPA's public disclosure policies, and to understanding what level of mitigation is required. . (*See*, *e.g.*, 40 CFR 1500.1(c) ("The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment"); 1500.2 (d)-(e) ("Federal agencies shall to the fullest extent possible: ... [e]ncourage and facilitate public involvement in decisions which affect the quality of the human environment [and] [u]se the NEPA process to identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment"); *see also* 40 CFR 1502.16 (requiring environmental impact statements to discuss "[m]eans to mitigate adverse environmental impacts….").)

The Guidance's Focus on the Relative Quantity of Project Emissions May Obscure Consideration of Cumulative Impacts.

The Guidance correctly notes that climate change impacts "are exacerbated by a series of smaller decisions[.]" (Guidance, at page 9.) The Guidance's discussion of "proportionality" and the 25,000 metric ton "reference point," however, suggests that smaller quantities of emissions are not relevant to a NEPA analysis.

NEPA, however, requires analysis of cumulative impacts.[15] Particularly relevant in the context of climate change, the CEQ regulations state "the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality." (40 CFR 1508.27 (emphasis added).) Further, when considering the significance of an effect, an agency should consider "[w]hether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulatively significant impact on the environment." (*Id*. (emphasis added).)

Agencies might read the Guidance's discussion of a "reference point" to mean that emissions below that point need not be considered, or even disclosed. As a result, neither the agency nor the public would be able to consider the effect of the proposed project in light of the severity of the climate change problem, or other related sources of emissions. Such potential cumulative effects are exactly what NEPA requires agencies to consider.

Finally, the Guidance includes a confusing sentence on page 11 that states: "CEQ does not expect that an EIS would be required based on cumulative impacts of GHG emissions alone." This is misleading, since climate change is an inherently cumulative impact, and it is extremely unlikely that the direct emissions from any single project would have a demonstrable effect on the global climate. Therefore, this sentence should be removed from the Guidance.

California Agencies Have Found Incremental Contributions of Greenhouse Gas Emissions Considerably Lower than 25,000 CO2e to be Potentially Significant.

Like NEPA, CEQA leaves the ultimate conclusion regarding the significance of a project's impacts to the lead agency, considering the context of the project and its circumstances. Nevertheless, some California agencies have developed "thresholds of significance" that identify levels of greenhouse gas emissions that might *normally* be considered significant. The Bay Area Air Quality Management District, for example, developed "thresholds of significance" indicating that emissions of 10,000 metric tons per year are considered cumulatively significant for certain industrial projects, and that emissions as low as 1,100 tons for certain land use projects may be significant. (BAAQMD, "California Environmental Quality Act Air Quality Guidelines," Revised May 2011, at page 2-4.)[16] Other California cities, counties, and air

[15] Cumulative impacts are also a key consideration under CEQA. A California court, in one of the seminal cases addressing cumulative impacts under CEQA, observed:

> "One of the most important environmental lessons evident from past experience is that environmental damage often occurs incrementally from a variety of small sources. These sources appear insignificant, assuming threatening dimensions only when considered in light of the other sources with which they interact. Perhaps the best example is air pollution, where thousands of relatively small sources of pollution cause a serious environmental health problem.
>
> "CEQA has responded to this problem of incremental environmental degradation by requiring analysis of cumulative impacts."

(*Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal. App. 3d 692, 720.)

[16] http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/BAAQMD%20CEQA%20Guidelines%20May%202011.ashx?la=en

districts have reviewed projects using similar bright-line significance thresholds, typically in the 10,000 metric ton per year range. Thus, even as a reference point, 25,000 tons is a very large quantity of emissions.

To Avoid the Problems Described Above, the Guidance Should Encourage Public Agencies to Calculate and Disclose Project Emissions and Delete the Discussion of the 25,000 Ton "Reference Point".

For the reasons described above, instead of *discouraging* disclosure of emissions below a reference point, CEQ should consider revising the Guidance to require a good-faith effort, where possible, to disclose a project's greenhouse gas emissions. Specifically, CEQ should delete the discussion of the 25,000 ton reference point. Doing so will not pose an undue burden on agencies, as the Guidance already advises that quantification should be done when methods to do so are readily available, and indicates that many quantification tools are already in broad use.

The Guidance Should Include Information Describing the Magnitude of Emissions Reductions That Will Be Needed to Avoid the Worst Effects of Climate Change.

The Guidance correctly advises that that projected climate change will adversely affect public health and welfare. (Guidance, at page 7.) While the Guidance also notes that agencies should consider their projects' incremental additions of greenhouse gas emissions, the Guidance does not indicate when such incremental additions might be significant. To help agencies make that determination, CEQ should consider providing additional information regarding the magnitude of emissions reductions that will be needed to avoid the worst effects of climate change. In particular, the recent U.S. National Climate Assessment reports that greenhouse gas concentrations in the atmosphere are already far above historic levels, and are associated with dangerous changes to the climate now occurring. The Report also emphasizes that an emission reduction trajectory consistent with or below the "B1" trajectory projected by the Intergovernmental Panel on Climate Change would "reduce the risk of some of the worst impacts of climate change," though it would not fully mitigate them without further reductions.[17] Agencies should be aware of these reduction levels as they consider their NEPA analyses.

Similarly, California's Scoping Plan, which maps out the state's effort to reduce greenhouse gas emissions, also provides relevant information. For example, it reports:

> To prevent exceeding 450 ppm CO2e, developed countries must substantially reduce their emissions in the near term. The 2008 World Energy Outlook suggests that Organisation for Economic Co-operation and Development (OECD) countries must reduce emissions by about 40 percent below 2006 levels by 2030.18 The Union of Concerned Scientists has suggested a 2030 emissions target for the United States of 56 percent below 2005 levels (44 percent below 1990 levels).19 A governmental study from the Netherlands finds that Europe would have to reduce emissions by 47 percent below 1990 levels and the United States would have to reduce emissions by 37 percent below 1990 levels by 2030. The International Energy Agency comes to a similar conclusion, finding that the United States would have to reduce emissions by about 38

[17] See U.S. Global Change Research Program, *Climate Change Impacts in the United States: U.S. National Climate Assessment* (2014) at 13-14.

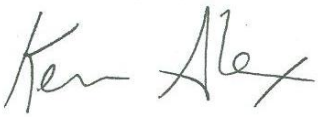
> percent below 1990 levels by 2030.21 Note that percent reductions by 2030 depend on the assumed overall trajectory of emissions, including the amount after 2030.

(Scoping Plan Update, at page 13.) In sum, the research indicates that steep reductions in emissions are needed in the near future. Providing such information in the Guidance would assist lead agencies in determining whether a particular increment of emissions should be treated as significant in a NEPA analysis.

Conclusion

The Guidance provides useful information that should assist lead agencies in analyzing climate change in documents prepared pursuant to NEPA. It can be improved, however, as suggested above. Please do not hesitate to contact us if we can be of any assistance.

Sincerely,



Ken AIex
Director, Governor's Office of Planning and Research
Senior Advisor, Office of California Governor Edmund G. Brown, Jr.