

**ENVIRONMENTAL DEFENSE FUND * ENVIRONMENTAL LAW & POLICY
CENTER * NATIONAL LGBTQ TASK FORCE * NATIONAL PARKS
CONSERVATION ASSOCIATION * NATURAL RESOURCES DEFENSE COUNCIL *
WATERKEEPER ALLIANCE**

August 13, 2018

VIA ELECTRONIC SUBMISSION

The Honorable Andrew Wheeler
Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Ave., N.W.
Washington, DC 20460

Attn: EPA-HQ-OA-2018-0107

RE: Comments on the Environmental Protection Agency's Advance Notice of Proposed Rulemaking, Increasing Consistency and Transparency in Considering Costs and Benefits in the Rulemaking Process, 83 Fed. Reg. 27,524 (June 13, 2018) ("ANPRM" or "Notice")

Environmental Defense Fund, Environmental Law & Policy Center, National LGBTQ Task Force, National Parks Conservation Association, Natural Resources Defense Council and Waterkeeper Alliance submit the following comments on the Environmental Protection Agency's ("EPA") June 13, 2018 Advance Notice of Proposed Rulemaking ("ANPRM") on a possible rulemaking to modify the agency's approach to evaluating costs and benefits of vital public health and environmental protections.

EPA safeguards promulgated under the nation's environmental laws have saved lives and improved health nationwide by reducing pollution in the air we breathe, water we drink and use, communities we live in, and public lands including national parks we recreate in and treasure. Thanks to these safeguards, our air and water quality has markedly improved over the past decades—while our population, gross domestic product, and other indicators of economic activity have dramatically increased. Moreover, the United States has become an international leader in pollution control industries, spurring innovation and job creation.

For decades, careful analysis of benefits and costs has been a standard and important part of EPA's development of these vital safeguards. Such analyses are developed in a transparent way and made available for public comment, and are subject to EPA guidance and interagency review that is intended to ensure a high standard of rigor. At the same time, efforts to quantify and monetize the tremendous benefits provided by EPA safeguards only capture a portion of their value, due to the difficulty of quantifying and/or monetizing many of their beneficial impacts. In contrast, experience with landmark protections has demonstrated that the actual costs

of environmental safeguards are frequently overestimated and turn out to be far lower than anticipated. Yet even with these challenges, available analysis still finds that EPA safeguards provide enormous net benefits for American citizens. Recent OMB analyses have concluded that EPA safeguards have an 11 to 1 benefit to cost ratio.¹

This ANPRM on “costs and benefits” glosses over this basic context. It seeks to institute changes to long-standing agency practice without pointing to or identifying a problem with the manner by which EPA currently considers costs and benefits. The Notice never explains why the statute-by-statute approach that EPA currently implements is not appropriate, and neither identifies a need for this ANPRM nor a clear statutory basis for undertaking a cross-cutting rulemaking on benefit-cost analysis. Nor does EPA provide any indication that its existing comprehensive guidance on benefit-cost analysis—*Guidelines for Preparing Economic Analyses*—is inadequate either in substance or in EPA’s compliance with the guidance. Instead, the ANPRM identifies a meager handful of concerns raised by certain regulated industries about benefit-cost practices in prior rulemakings, and on that basis alone provides polluters a forum in which to advance options to weaken and distort the benefit-cost justification for public health and environmental protections.

The ANPRM raises several flawed inquiries. Our comments below lay out our main points in response:

- A one-size-fits-all approach to cost consideration is contrary to EPA’s statutory authorities;
- EPA must properly consider benefits of EPA policies, even if they reflect some degree of uncertainty—including the social cost of climate pollution and the economic benefits provided by our nation’s wetlands;
- Failure to consider co-benefits is unlawful and economically irrational;
- This administration’s efforts to undercut consideration of particulate matter benefits—through this proceeding and numerous others—unconscionably ignores the extensive body of scientific research establishing the health and environmental harms from exposure to particulate matter at all thresholds, as a precursor to weakening clean air protections.

If this administration truly desired to improve EPA’s practice of benefit-cost analysis, its inquiry would focus on better estimation of and/or ways of addressing unquantified and/or unmonetized benefits, not exacerbating the systemic underestimation of benefits by adopting irrational, illegitimate industry-favored techniques. As the ANPRM briefly acknowledges, there are longstanding concerns about the routine underestimation of benefits due to difficulties in putting a price on certain categories of benefits, or even quantifying some categories of benefits, coupled with the virtual disregard of unmonetized benefits and costs in the public discourse, litigation, and agency decision-making processes.

¹ OMB, *2017 Draft Report to Congress on the Benefits and Costs of Federal Regulations and Agency Compliance with the Unfunded Mandates Reform Act* 10 (2017), https://www.whitehouse.gov/wp-content/uploads/2017/12/draft_2017_cost_benefit_report.pdf (compare OMB’s estimates over 2006 to 2016 of \$705.7 billion in benefits to \$64.8 billion in costs).

This proceeding is particularly improper in a time of continued shrinkage of EPA budgets and workforce. This administration should first prioritize completion of ongoing and upcoming rulemakings with significant benefits for public health and the environment, many of which have been inexcusably and unlawfully delayed well beyond statutory or other deadlines. EPA also should prioritize enforcement and compliance assurance activities with direct benefits for communities and families burdened by pollution, particularly in communities suffering from environmental injustices. We note too that EPA is currently frequently responding to Freedom of Information Act requests estimating that it will take EPA more than a year to respond, despite the statutory 20-day deadline for a response. This ANPRM and any follow-on rulemaking will necessarily divert EPA's shrinking resources from far more urgent priorities, and some of the potential elements suggested in the ANPRM, such as mandating systemic retrospective review in new regulations, could impose additional and potentially far greater resource demands. This administration must not expend further resources on this ANPRM exercise without a clear and compelling showing of how the rulemaking will advance the agency's mission of protecting public health and the environment.

Despite the tremendous record of success demonstrated by EPA safeguards, and the enormous benefits they provide for the health and well-being of the American public the current administration has relentlessly sought to undermine and dismantle these life-saving protections. In recent months alone, this administration has proposed to restrict the science that EPA can consider in its decision-making, shortchange the review process for developing national air quality standards, ignore numerous exposures when evaluating the risks presented by toxic chemicals, and roll back numerous important air and water quality safeguards, among other attacks. This notice is another piece of the administration's efforts to undermine justifications for protections that safeguard our health and well-being. For these reasons and those detailed below, the agency must not proceed with any rulemaking based on or related to this notice.

1. EPA safeguards have a long history of tremendous success: protecting American health and well-being while our economy has expanded.

EPA protections have improved the health and well-being of communities nationwide. Under the Clean Air Act, for instance, EPA protects communities, natural resources and public lands from soot, smog, mercury, and climate pollution. From power plants alone, EPA estimates that mercury emissions have decreased by 86% from 2006 to 2016, with further reductions expected from the sector.² Power plant emissions of pollutants that cause acid rain, haze and smog have fallen dramatically as well—89% for sulfur dioxide and 81% for oxides of nitrogen, from 2005 to 2017.³ Since the early 1990s, average visibility in Class 1 protected areas like Great Smoky Mountains National Park, has improved by 20 miles with significant reductions in sulfur dioxide and ozone pollution from Clean Air Act requirements.⁴ Improved air quality results in

² EPA, *Comparing Industry Sectors*, in 2016 TRI National Analysis 31 (Jan 2018), https://www.epa.gov/sites/production/files/2018-01/documents/comparing_industry_sectors.pdf.

³ EPA, *Clean Air Markets: Power Plant Emission Trends Data*, <https://www3.epa.gov/airmarkets/progress/datatrends/index.html>.

increased tourism at national parks,⁵ as visitors highly value clean air in turn generating significant revenue for local economies.⁶

There have been dramatic health improvements nationwide because of EPA safeguards adopted in recent years. A peer-reviewed EPA study found that reductions in PM_{2.5} and ground-level ozone under the Clean Air Act Amendments are providing enormous benefits to workers and schoolchildren by preventing 13 million lost workdays and keeping kids healthy and in school, avoiding 3.2 million lost school days.⁷ These measures avoided over 164,000 deaths, 1,700,000 cases of asthma exacerbation, 3,400,000 cases of respiratory health impacts, and 130,000 heart attacks in 2010 alone, and the benefits are only expected to increase through 2020.⁸ Protections adopted under the Clean Air Act over the last few decades have also led to a dramatic decrease in deposition of acid rain,⁹ sharply reduced levels of neurotoxic lead pollution in the air,¹⁰ and resulted in motor vehicles that are 99 percent cleaner than cars produced in 1970.¹¹

Similarly, clean water protections have improved lives and helped spur economic growth by preserving rivers, lakes, and streams for hunting and fishing as well as industrial and agricultural activities. Since passage of the Clean Water Act, the number of waterways that are fishable and swimmable has doubled.¹² Before the Safe Drinking Water Act was passed in 1974, over 40 percent of our drinking water systems failed to meet basic health standards.¹³ Under the statute's authority, EPA sets standards for many harmful contaminants in our nation's drinking water, and as of 2014, EPA reported that 90 percent of Americans have access to water that meets these standards at all times.¹⁴

⁴ National Parks Conservation Association, *Polluted Parks: How Dirty Air is Harming America's National Parks*, (Sept. 2015), <https://www.npca.org/resources/3137-polluted-parks-how-dirty-air-is-harming-america-s-national-parks>.

⁵ Keiser, D. et al., *U.S Air pollution and visitation at U.S. national parks*, Science Advances (July 18, 2018), <http://advances.sciencemag.org/content/4/7/eaat1613>.

⁶ See National Parks Service, "2017 National Park Visitor Spending Effects Economic Contributions to Local Communities, States, and the Nation," <https://www.nps.gov/subjects/socialscience/vse.htm>.

⁷ EPA, *The Benefits and Costs of the Clean Air Act from 1990-2020 Summary Report* 14 (Mar. 2011), <https://www.epa.gov/sites/production/files/2015-07/documents/summaryreport.pdf>.

⁸ *Id.*

⁹ National Acid Precipitation Assessment Program, *Report to Congress 2011* at ES-2, ES-3 (Dec. 28, 2011) (noting that the health benefits in 2010 alone resulting from the Acid Rain Program are estimated at \$170 to 430 billion, and that wet sulfate deposition has decreased 42-44% since the program was enacted).

¹⁰ See EPA, *Lead Trends*, <https://www.epa.gov/air-trends/lead-trends> (last visited Aug. 11, 2018) (showing mean concentrations of lead in the air have declined over 99%).

¹¹ See EPA, *History of Reducing Air Pollution From Transportation in the United States*, <https://www.epa.gov/transportation-air-pollution-and-climate-change/accomplishments-and-success-air-pollution-transportation#success> (last visited August 11, 2018).

¹² Nancy Stoner, *Celebrate the 40th Anniversary of the Clean Water Act*, EPA Blog (Oct. 18, 2012), <https://blog.epa.gov/blog/2012/10/cwa40/>.

¹³ Administrator Gina McCarthy, *Remarks Celebrating the 40th Anniversary of the Safe Drinking Water Act*, As Prepared (Dec. 9, 2014), https://archive.epa.gov/epapages/newsroom_archive/speeches/21a0a07494e97f3985257da9006ad9d0.html.

¹⁴ *Id.*

These benefits have occurred as America has achieved robust economic growth. By 2015, the combined emissions of the six most common air pollutants fell 70%, compared to 1970.¹⁵ During this time, Gross Domestic Product grew 246% and population grew by more than 50%.¹⁶ EPA standards themselves can drive innovation and progress, establishing the United States as a leader. For example, the Clean Air Act's Significant New Alternatives Policy has helped drive American innovations in alternative products that are less harmful to the ozone layer, while providing new markets to American manufacturers.¹⁷

At the same time, the costs of these invaluable protections have often been grossly exaggerated by industry—and actual costs have often been markedly lower than initially estimated by EPA. In 1990, for example, American Electric Power told the Boston Globe that bipartisan solutions to address acid rain could lead to “the potential destruction of the Midwest economy.”¹⁸ Power companies predicted that reducing sulfur dioxide pollution would cost \$1,000-\$1,500 per ton and electricity prices would increase up to 10% in many states.¹⁹ In fact, the actual pollution reduction cost has been between \$100 and \$200 per ton for most of the program, and electricity prices fell in most states.²⁰ Acid rain has been dramatically reduced and the limits on sulfur dioxide pollution were met faster and at a strikingly lower price than anyone expected in 1990.²¹ Similarly despite initial concerns about the costs of compliance with the Mercury and Air Toxics Standards, industry has since lowered cost estimates by hundreds of millions—even billions of dollars—as it implemented the standards.²²

EPA's most recent analysis of the costs and benefits of the Clean Air Act projects that the benefits of the 1990 Clean Air Act Amendments will exceed the costs of compliance by a factor

¹⁵ EPA, *Progress Cleaning the Air and Improving People's Health*, <https://www.epa.gov/clean-air-act-overview/progress-cleaning-air-and-improving-peoples-health> (last accessed July 16, 2018).

¹⁶ *Id.*; See US Population by Year, <http://www.multpl.com/united-states-population/table> (last accessed July 16, 2018).

¹⁷ See, e.g., Honeywell, *Performance Materials and Technologies: Reducing the impact on climate change*, https://www.honeywell-refrigerants.com/europe/wp-content/uploads/2013/03/honeywell-igwp_hfo-environmental_brochure.pdf (“[T]he Company has been at the forefront of the industry's drive to develop these safer, non-ozone depleting alternatives to the older technology (CFC and HCFC refrigerants), in compliance with global legislation for their phase-out.”).

¹⁸ Michael Kranish, *A clean air revival*, Boston Globe (Oct. 17, 2010), http://archive.boston.com/news/science/articles/2010/10/17/washing_away_of_acid_rain_offers_lesson/.

¹⁹ U.S. House of Representatives Committee on Energy and Commerce, *Industry Claims about the Costs of the Clean Air Act* (2009).

²⁰ U.S. House of Representatives Committee on Energy and Commerce, *Industry Claims about the Costs of the Clean Air Act* (2009).

²¹ EDF, *There They Go Again: AEP Seeks Delay in Health Protections for Children and Elderly*, <http://www.edf.org/sites/default/files/AEP%20-%20There%20They%20Go%20Again.pdf>; See also, Sam Napolitano, et. al., *The U.S. Acid Rain Program: Key Insights from the Design, Operation, and Assessment of a Cap-and-Trade Program*, 20 Elsevier 47 (Aug./Sept. 2007), https://www.epa.gov/sites/production/files/2016-03/documents/us_acid_rain_program_elec_journal_aug_2007.pdf (“Since its inception in 1995, the U.S. Acid Rain Program (ARP) has earned widespread acclaim due to dramatic sulfur dioxide (SO₂) and nitrogen oxides (NO_x) emission reductions, far-ranging environmental and human health benefits, and far lower-than expected compliance costs.”)

²² EDF, *Power Companies' Declining Estimates of the Compliance Costs of Mercury & Air Toxics Standards (MATS)*, http://blogs.edf.org/climate411/files/2014/05/Declining-costs-of-MATS-compliance.pdf?_ga=1.64911789.383468789.1454952534.

of 30 to 1 over the period of 1990 to 2020.²³ Required by section 812 of the Clean Air Act, this comprehensive analysis rests on a vast body of peer-reviewed literature and numerous technical reports, and was reviewed by an Advisory Council of the agency's Science Advisory Board and three separate technical subcommittees. Studies by the Office of Management and Budget and private researchers support these conclusions as well, and as recently as 2017 OMB has noted that Clean Air Act rules account for some of the greatest benefits across the federal government and far exceed their costs.

The ANPRM improperly ignores this basic context. Below we respond to the Notice's content in greater detail:

2. EPA must properly follow its statutory authority in carrying out its rulemaking responsibilities, which prevents it from adopting one rule to apply across statutes.

It would be inappropriate and unlawful for EPA to adopt a blanket rule on weighing costs and benefits of regulatory action across statutes, as the agency is bound in rulemaking by the particular factors intended to be considered under a specific statutory provision. The scope and context of EPA's ability to consider costs and other factors in rulemaking are set forth in its specific statutory authorities. An agency is obligated to follow its statutory directives when it carries out its regulatory responsibility, and may not "rel[y] on factors Congress did not intend it to consider" when conducting rulemaking.²⁴ The specific factors EPA must consider in rulemaking depend upon the statute the agency is implementing in that particular regulatory action, and can vary significantly between statutes. A factor such as cost may even be prohibited from consideration by the agency under certain statutory directives. For example, the Supreme Court has held that the "text of § 109(b) [of the Clean Air Act], interpreted in its statutory and historical context and with appreciation for its importance to the CAA as a whole, unambiguously bars cost considerations from the NAAQS-setting process."²⁵ As another example, under the Toxic Substances Control Act, when conducting a risk evaluation for a chemical substance, "the Administrator shall ... not consider costs or other nonrisk factors."²⁶

In addition to these statutory constraints on EPA's ability to promulgate a rule to govern EPA's consideration of costs and benefits, historically, EPA's primary approach to its analysis of costs and benefits has properly been laid out through guidance, not regulations. The ANPRM states that "EPA is taking comment on the role that regulatory analysis or aspects of that analysis play in decision making consistent with statutory direction. . . ." This is a broad, general question where context is critical, flexibility is necessary, and best practices evolve over time—and all of these characteristics are much better accommodated through guidance than rules. EPA's currently applicable *Guidelines for Preparing Economic Analyses* were issued in 2010 and revised in 2014 and 2016—timeframes that would be highly challenging for regulatory

²³ EPA, *The Benefits and Costs of the Clean Air Act from 1990-2020* 7-1 (Apr. 2011), https://www.epa.gov/sites/production/files/2015-07/documents/fullreport_rev_a.pdf.

²⁴ *Or. Nat. Desert Ass'n v. Jewell*, 840 F.3d 562, 568 (9th Cir. 2016).

²⁵ *Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 471 (2001).

²⁶ 15 U.S.C. § 2605(b)(4)(F)(iii).

revisions.²⁷ The guidelines are also fully externally peer reviewed, comprehensive (over 300 pages long), and contain extensive discussions of considerations that EPA should take into account as it prepares and presents economic analyses in the decision making context.²⁸ Yet it is unclear from the ANPRM how the contemplated rulemaking relates to the existing guidance and whether it would translate portions of the *Guidelines* into regulations, supplement them, or supplant them.

In particular, it is unclear how EPA might distinguish between “cost and benefit considerations” that EPA apparently believes should be addressed through regulations versus those that are properly addressed in the current guidance. EPA vaguely tries to distinguish existing guidance documents by suggesting that they speak to “how best to conduct the underlying analysis of regulatory actions,” versus “the role that regulatory analysis . . . play[s] in decision making. . . .” But the distinction is far from clear cut, and the existing EPA guidance includes discussion of how analysis should be used in decision making, as well as extensive direction on how analysis should be presented to decision makers (which in turn suggests the use).²⁹ Further, the ANPRM does not even acknowledge, let alone discuss, the overlap between many of the specific issues it raises and what is already addressed in the *Guidelines*. For example, the ANPRM raises questions about how non-quantified or non-monetized effects should be included in decision-making, but the *Guidelines* already explicitly address this question.³⁰

The ANPRM also sheds no light on why EPA believes it is necessary or appropriate to issue a binding regulation to govern its own economic analyses, rather than continue to improve benefit-cost analyses through the time-tested existing guidance framework. Even if any of the industry complaints that EPA alludes to in the ANPRM had merit (which they do not), EPA has presented no evidence that those issues must be addressed by discarding current guidance and issuing a binding regulation that would fail to address the various statutory contexts that apply to EPA.

3. EPA consideration should properly weigh benefits, even if uncertain; scientific uncertainty should not result in potential benefits being discarded.

EPA must incorporate all benefits of an action in a benefit-cost analysis, even if there is some scientific uncertainty regarding the full scope of those benefits. It is not defensible to assign a value of no benefit when there is a range of possible benefits. In *Center for Biological Diversity v. National Highway Traffic Safety Administration*, the Ninth Circuit rejected the National Highway Traffic Safety Administration’s argument that the value of reducing climate pollution emissions was too uncertain to support its inclusion in a benefit-cost analysis, and held that the agency’s failure to value benefits associated with these pollution reductions was arbitrary

²⁷ See U.S. EPA, *Guidelines for Preparing Economic Analysis* (Dec. 17, 2010, updated May 2014) (<https://www.epa.gov/sites/production/files/2017-08/documents/ee-0568-50.pdf>) [Hereinafter: *Guidelines*]; see also U.S. EPA, *Guidelines for Preparing Economic Analysis*, <https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses> (website noting 2016 update).

²⁸ *Id.*

²⁹ U.S. EPA, *Guidelines* at 11-1 to 11-12.

³⁰ U.S. EPA, *Guidelines* at 11-1 to 11-4.

and capricious.³¹ The court found that evidence supporting a “scientifically-supported range of values” for the costs of climate pollution showed that the benefits of securing reductions of these emissions was “certainly not zero,” and therefore that the agency must monetize the emissions reductions benefits.³² Office of Management and Budget Circular A-4, as does EPA’s existing guidance on economic analysis, likewise affirms that the appropriate analytical way of dealing with uncertainty is to carefully evaluate sources of uncertainty and undertake sensitivity analyses probing their implications for key regulatory decisions—not to ignore uncertain benefits (or costs) altogether.³³

Fully accounting for benefits is also necessary to prevent a skewed comparison of costs and benefits. Generally, because many environmental benefits are difficult to monetize and contain uncertainties, the benefits of environmental safeguards tend to be vastly underestimated while, as discussed above, high estimates of costs are frequently not borne out in practice.³⁴

Fully accounting for uncertain benefits is also consistent with the precautionary nature of the public health and environmental protections that EPA is charged with carrying out. The courts have repeatedly recognized that uncertainty is no excuse for inaction in the face of serious threats to human health and well-being.³⁵ As these cases suggest, uncertainty about the full effects of threats such as climate change often cuts in favor of strong and proactive protections. Economists, for example, have recognized that the risks of catastrophic climate change—even though uncertain—are extensive enough to *raise* the value of reducing climate pollution.³⁶

³¹ 538 F.3d 1172, 1200 (9th Cir. 2008).

³² *Id.*

³³ See OMB Circular A-4 at 45 (“Where there is significant uncertainty and the resulting inferences and/or assumptions have a critical effect on the benefit and cost estimates, you should describe the benefits and costs under plausible alternative assumptions.”); see also U.S. EPA, *Guidelines for Preparing Economic Analysis*, 11-1 to 11-4 (Dec. 17, 2010, updated May 2014), <https://www.epa.gov/sites/production/files/2017-08/documents/ee-0568-50.pdf>.

³⁴ See, Al McGartland, Richard Revesz, Daniel A. Axelrad, Chris Dockins, Patrice Sutton, Tracey J. Woodruff, *Estimating the health benefits of environmental regulations*, 357 *Science* 457 (Aug. 2017), http://policyintegrity.org/files/publications/Science_Risk_Assessment_RR.pdf (“[H]ealth effects with less certain evidence or without a clear summary statement of the strength of the evidence are usually excluded from benefits analysis, even though it is likely that there is some positive value to reduction of those risks; and. . . analysts frequently do not estimate dose response relationships that provide changes in the probability of developing a specific health outcome from changes in exposure, and in such cases benefits remain unquantified.”); see also Richard L. Revesz, *Quantifying Regulatory Benefits* 102 *Cal. L. Rev.* 1423, 1425 n.4 (2014) (noting that regulatory benefits are frequently difficult to quantify or monetize and that this constitutes an important “antiregulatory bias”) (citing Frank Ackerman & Lisa Heinzerling, *Priceless: On Knowing the Price of Everything and the Value of Nothing* 40 (2004); David M. Driesen, *Is Cost-Benefit Analysis Neutral?* 77 *U. Colo. L. Rev.* 335, 339-42 (2006); Robert H. Frank, *Why is Cost-Benefit Analysis So Controversial?* 29 *J. Legal Stud.* 913, 928 (2000)).

³⁵ See *Ethyl Corp. v. EPA*, 541 F.2d 1, 24-25 (D.C. Cir. 1976) (“Questions involving the environment are particularly prone to uncertainty . . . Yet the statutes – and common sense – demand regulatory action to prevent harm, even if the regulator is less than certain that harm is otherwise inevitable.”); *Massachusetts v. EPA*, 549 U.S. 497, 534 (2007) (“That EPA would prefer not to regulate greenhouse gases because of some residual uncertainty . . . is irrelevant. The statutory question is whether sufficient information exists to make an endangerment finding.”).

³⁶ Thomas Stoerk, Gernot Wagner, and Robert E.T. Ward, *Recommendations for Improving the Treatment of Risk and Uncertainty in Economic Estimates of Climate Impacts in the Sixth Intergovernmental Panel on Climate Change Assessment Report*, 12 *Review of Environmental Economics and Policy*, 371, 374 (Aug. 1, 2018) (“[W]hen uncertainty is explicitly considered within the expected utility framework, estimates of the economic damages from

Nevertheless, the current administration has failed to properly address uncertainty in benefit-cost analyses in current, on-going proceedings. For example, the administration recently failed to attribute any quantifiable value to the benefits of wetland mitigation associated with rescission of the Clean Water Rule. In its economic analysis of the action, EPA generally dismissed the benefits of wetland mitigation due to “uncertainty” associated with contingent valuation studies that quantified benefits, assigning “unquantified benefits” to wetlands protection.³⁷ By ignoring the benefits of wetlands altogether, the EPA distorted its benefit-cost analysis. If the EPA truly desires to improve its benefit-cost analyses, it should begin by adhering to existing court rulings and OMB guidance and ensure that its analyses deal with uncertainty appropriately and with consistent, science-based methodologies.

4. EPA must properly consider and value the cost of climate pollution using the best available estimates—currently those issued by the Inter-agency Working Group on the Social Cost of Greenhouse Gases.

Climate change causes devastating impacts—extreme weather events like flooding and deadly storms; the spread of disease; sea level rise; increased food insecurity; displacement of populations; infrastructure damage; and other disasters—and these yield enormous costs to businesses, families, governments and taxpayers. The social cost of climate pollution is a measure of the economic harm from those impacts, expressed as the dollar value of the total damages from emitting one ton of climate pollution into the atmosphere. This vital tool helps agencies across the federal government make sound decisions to protect current and future generations of Americans. By properly accounting for the damages caused by climate pollution, agencies can properly evaluate policies that affect this pollution.

After the 2008 *Center for Biological Diversity* decision required the federal government to account for the economic effects of climate change in regulatory benefit-cost analyses, an Interagency Working Group (IWG) began in 2009 to develop a uniform estimate for the social cost of carbon that could be used consistently by agencies across the government. The process allowed for repeated public comment as well as input from the National Academies of Sciences,

climate change generally increase, often by as much as an order of magnitude.”), <https://academic.oup.com/reep/advance-article/doi/10.1093/reep/rey005/5025082>; Sonja Peterson, *Uncertainty and economic analysis of climate change: A survey of approaches and findings*, 11 Environmental Modeling & Assessment 1-17 (2006) (“Most modeling results show (as can be expected) that there is optimally more emission abatement if uncertainties in parameters or the possibility of catastrophic events are considered.”).

³⁷ U.S.EPA and Army Corps of Engineers, *Economic Analysis for the Proposed Definition of “Waters of the United States” – Recodification of Pre-existing Rules* 9 (June 2017), <https://www.epa.gov/wotus-rule/economic-analysis-proposed-definition-waters-united-states-recodification-pre-existing>.

Engineering and Medicine.³⁸ Because of the incomplete ability to capture all damages from climate change, the figures provide a conservative estimate of the cost of climate change.³⁹

Notwithstanding the firmly grounded basis of the IWG estimates, the current administration has improperly adopted discredited, erroneous approaches to estimating the value of the social cost of carbon in recent analyses.⁴⁰ For example, the proposed repeal of the Clean Power Plan shortchanged the costs of increased climate pollution by employing an inappropriately high discount rate—one rejected by leading economic authorities—and employing a so-called “domestic” estimate, even though such estimates have also been rejected by leading economic authorities as methodologically flawed.⁴¹

The Interagency Working Group estimate of the social cost of carbon provides a consistent, transparent framework to help make sound decisions based on the most rigorous scientific data and economic modeling currently available.⁴² EPA must properly consider and apply the best available estimate of the social cost of climate pollution.

Additionally, OMB Circular A-4 points to the importance of using lower discount rates in analyses that examine inter-generational effects—as climate change implicates. It additionally points agencies to basing their regulatory analysis on the on the best reasonably obtainable scientific, technical, and economic information available at the time of analysis, which further supports using lower discount rates and taking into account global estimates of climate benefits.

5. EPA must consider and value co-benefits; ignoring these benefits would be arbitrary and capricious.

EPA must fully consider and value the benefits of its actions when it regulates, subject to any constraints provided by the relevant statute—including co-benefits for public health and the environment that are additional to the direct benefits that a regulation is primarily aiming to

³⁸ National Academies of Sciences, Engineering, and Medicine, *Assessment of Approaches to Updating the Social Cost of Carbon: Phase 1 Report on a Near-Term Update*, The National Academies Press (2016), <https://doi.org/10.17226/21898>; National Academies of Sciences, Engineering, and Medicine, *Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide*, The National Academies Press (2017), <https://doi.org/10.17226/24651>.

³⁹ Interagency Working Group on Social Cost of Carbon, United States Government, *Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* 29-31 (Feb. 2010) (noting limitations and uncertainties in the analysis, including lack of precise information on the nature of damages).

⁴⁰ EPA, *Regulatory Impact Analysis for the Review of the Clean Power Plan: Proposal* (Oct. 2017), https://www.epa.gov/sites/production/files/2017-10/documents/ria_proposed-cpp-repeal_2017-10_0.pdf.

⁴¹ Joint Comments of Environmental Defense Fund, Institute for Policy Integrity at New York University School of Law, Montana Environmental Information Center, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists, Western Environmental Law Center, WildEarth Guardians on Comments on Flawed Estimates of the Social Cost of Carbon in the Proposed Repeal of Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units Docket ID EPA-HQ-OAR-2017-0355 (Apr. 26, 2018), http://policyintegrity.org/documents/042618_Joint_SCC_Comment_on_CPP.pdf.

⁴² R. Revesz, et. al., *Best cost estimate of greenhouse gases*, 357 Science 655 (Aug. 18, 2017), http://policyintegrity.org/files/publications/Science_SCC_Letter.pdf.

secure. Any attempt to ignore the full benefits of its actions would defy common sense, and would be arbitrary and capricious.⁴³

The ANPRM highlights industry criticisms of EPA's long-standing practice of considering co-benefits, pointing to the Mercury and Air Toxics Standards (MATS) as an example of a rule whose direct monetized benefits were outweighed by co-benefits.⁴⁴ This example only illustrates the absurdity of ignoring co-benefits in taking regulatory action. The MATS rule, which was adopted in response to a study directed by Congress after years of delay, is achieving dramatic reductions in toxic power plant emissions of mercury and acid gases. At the same time, EPA found the MATS rule will reduce particulate matter pollution and avoid between 4,200 and 11,000 premature deaths each year—resulting in overall monetized benefits for MATS of \$37 to 90 billion each year.⁴⁵ The critics EPA refers to in the ANPRM argue that EPA should have completely ignored these massive, life-saving benefits. This is tantamount to arguing that a person who quits smoking to reduce her risk of lung cancer should ignore all other benefits of that decision, such as improving heart function, reducing blood pressure, and reducing expenditures on cigarettes.

Such a narrow view of benefits is not only irrational, it is also contrary to principles of economic analysis reflected in OMB and EPA guidance. As an initial matter, OMB Circular A-4 requires agencies to “look beyond the direct benefits and direct costs of your rulemaking and consider any important ancillary benefits and countervailing risks.”⁴⁶ OMB clarifies that agencies must consider “any important” indirect costs and benefits, which includes any “favorable impact...secondary to the statutory purpose of the rulemaking.”⁴⁷ OMB also recommends that agencies use the ‘same standards’ for assessing indirect and direct benefits.⁴⁸

Consistent with Circular A-4, EPA's *Guidelines* also directly address and resolve this question: “An economic analysis of regulatory or policy options should present all identifiable costs and benefits that are incremental to the regulation or policy under consideration. These should include directly intended effects and associated costs, as well as ancillary (or co-) benefits and costs.”⁴⁹ This directive is fleshed out earlier in the *Guidelines*, where EPA lays out a step-by-step process for assessing benefits that includes all significant benefits.⁵⁰ The process requires EPA to identify potential benefit categories of a policy option and then further analyze (to quantify and monetize if possible) numerous different types of benefits.⁵¹ The *Guidelines*' focus

⁴³ See *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto Ins.*, 463 U.S. 29, 43 (agency action is “arbitrary and capricious if the agency has... entirely failed to consider an important aspect of the problem”); see also Kimberly M. Castle and Richard L. Revesz, *Environmental Standards, Thresholds, and the Next Battleground of Climate Change Regulations* Minnesota Law Review, Vol. 103, 2018, Forthcoming; NYU School of Law, Public Law Research Paper No. 18-22; NYU Law and Economics Research Paper No. 18-12, (Apr. 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3154669.

⁴⁴ 83 Fed. Reg. 27,524, 27,526.

⁴⁵ EPA, *Regulatory Impact Analysis for the Final Mercury and Air Toxics Standards* ES-1 (Dec. 2011), <https://www3.epa.gov/ttn/ecas/regdata/RIAs/matsriafinal.pdf>.

⁴⁶ OMB, Circular A-4, § E.6 (Sept. 2003), https://www.whitehouse.gov/omb/circulars_a004_a-4/.

⁴⁷ OMB, Circular A-4, 26 (Sept. 2003), https://www.whitehouse.gov/omb/circulars_a004_a-4/.

⁴⁸ OMB, Circular A-4, 26 (Sept. 2003), https://www.whitehouse.gov/omb/circulars_a004_a-4/.

⁴⁹ U.S. EPA, *Guidelines* at 11-2.

⁵⁰ U.S. EPA, *Guidelines* at 7-3 to 7-4.

⁵¹ *Id.*

is on including all relevant benefits, and nowhere does it allow for disregarding benefits that are not the primary focus of the statutory requirement for EPA action. This ANPRM offers no explanation for changing course from the agency's well-established approach, which properly reflects the basic purpose of benefit-cost analysis.⁵²

In analogous circumstances, courts have held that agencies are required to consider the environmental co-benefits of their actions. *See Ctr. for Biological Diversity v. Nat'l Highway Traffic Safety Admin.*, 538 F.3d 1172, 1203 (9th Cir. 2008) (holding that NHTSA was required to monetize the benefit of carbon emissions reduction in its analysis of the proper fuel economy standards); *Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 677 (7th Cir. 2016) (rejecting industry argument that the Energy Policy and Conservation Act "does not allow DOE to consider environmental factors" and holding that in determining "whether an energy conservation measure is appropriate under a cost-benefit analysis, the expected reduction in environmental costs needs to be taken into account"); *see also Michigan v. EPA*, 135 S. Ct. 2699, 2709 (2014) (faulting EPA for not taking into account all relevant factors including both direct and indirect costs, including any harms to human health or the environment); *Am. Trucking Ass'n v. EPA*, 175 F.3d 1027, 1051–52 (D.C. Cir. 1999), *rev'd on other grounds*, *Whitman v. Am. Trucking Ass'n*, 531 U.S. 457 (2001) (holding that EPA must consider the indirect health impacts of reducing a pollutant).

6. EPA must continue to consider the benefits achieved by reductions in particulate matter at all levels of exposure.

Recent benefit-cost analyses and other actions taken by EPA under this Administration have sought to question the well-established science demonstrating that particulate matter pollution harms human health at all levels of exposure. For example, the Regulatory Impact Analysis accompanying the proposed repeal of the Clean Power Plan included several alternative scenarios suggesting that particulate matter pollution reduction has no health benefits at levels below the NAAQS or below other thresholds—contravening the vast body of scientific literature showing that particulate matter is not a threshold pollutant. In addition, former Administrator Pruitt's proposal restricting science takes explicit aim at the rigorous and repeatedly validated studies showing that reducing particulate matter saves lives and improves health and the Administration's NAAQS memorandum revising EPA's NAAQS review process also weakens EPA's ability to set particulate matter protections to protect human health.⁵³

It would be arbitrary and capricious for EPA to disregard the benefits of particulate matter reduction in future rulemakings, whether as a result of rulemakings flowing from this ANPR or as part of a separate agency action. Fine particulate matter is linked to a host of adverse health effects from short-term and long-term exposure including: increased mortality in infants and young children, increased hospitalization for asthma among children, increased severity of

⁵² Kimberly M. Castle and Richard L. Revesz, *Environmental Standards, Thresholds, and the Next Battleground of Climate Change Regulations* Minnesota Law Review, Vol. 103, 2018, Forthcoming; NYU School of Law, Public Law Research Paper No. 18-22; NYU Law and Economics Research Paper No. 18-12, 48-58 (Apr. 2018), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3154669.

⁵³ *Strengthening Transparency in Regulatory Science*, 83 Fed. Reg. 18,768, 18,769 n. 3 (Apr. 30, 2018); Memorandum from E. Scott Pruitt to Assistant Administrators (May 9, 2018), <https://www.epa.gov/sites/production/files/2018-05/documents/image2018-05-09-173219.pdf>.

asthma attacks, and increased risk of death from cardiovascular disease.⁵⁴ The finding that particulate matter is a non-threshold pollutant has been affirmed by scientists and researchers from the Health Effects Subcommittee of the National Academies, the American Heart Association, the National Center for Scientific Assessment, EPA's Clean Air Science Advisory Committee, the Health Effects Institute, the National Research Council, the World Health Organization and many others.⁵⁵

Fine particulate matter is also a primary driver of haze that diminishes visibility in urban areas and viewsheds in national parks and wilderness areas that are protected under the Clean Air Act as Class 1 areas. Despite some improvements in the past decade, haze pollution is still a significant problem for these American treasures. In addition to facing health threats from this air pollution, on average, visitors to these areas are missing out on over 50 miles of views⁵⁶, which is troubling because surveys show that 88% and 90% of respondents found clean air and scenic views, respectively, to be extremely or very important to their visit⁵⁷ and visitation numbers drop when air pollution levels are high⁵⁸.

7. This rulemaking process has not allowed for meaningful input from experts or all stakeholders.

Expert advice, peer review, and robust stakeholder engagement are important features of proper EPA proceedings—yet they have not had a role in this initiative, even though the ANPRM touches on foundational, technical issues. Such input could have helped inform answers to important underlying questions that the ANPRM does not address, including whether there are any problems with transparency or consistency in the agency's cost-benefit analyses, and whether it is appropriate to adopt a binding regulation that could conflict with the agency's statutory mandates.

In particular, EPA should have consulted the EPA Science Advisory Board before even initiating this proceeding. EPA's *Guidelines* was peer reviewed by the SAB. EPA should not move forward to develop a proposal without obtaining advice from the SAB. In addition, while multiple industry groups met with the Office of Information and Regulatory Affairs regarding

⁵⁴ See, ALA, *Particle Pollution*, <http://www.lung.org/our-initiatives/healthy-air/outdoor/air-pollution/particle-pollution.html> (last accessed July 24, 2018).

⁵⁵ EPA, *Summary of Expert Opinions on the Existence of a Threshold in the Concentration-Response Function for PM_{2.5}-related Mortality* (June 2010), <https://www3.epa.gov/ttnecas1/regdata/Benefits/thresholdstd.pdf>; WHO, *Ambient (outdoor) air quality and health*, [http://www.who.int/en/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](http://www.who.int/en/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health) (last updated May 2, 2018).

⁵⁶ National Parks Conservation Association, *Polluted Parks: How Dirty Air is Harming America's National Parks* (Sept. 2015), <https://www.npca.org/resources/3137-polluted-parks-how-dirty-air-is-harming-america-s-national-parks>.

⁵⁷ Kulesza, C., et al. *National Park Service Visitor values and Perceptions of Clean Air, Scenic Views and Dark Night Skies* (Feb. 2013), https://www.nature.nps.gov/air/pubs/pdf/NPS-VisitorValueOf-CleanAir-ScenicViews-DarkSkies_2013_web.pdf.

⁵⁸ David Keiser, Gabriel Lade and Ivan Rudik, *Air pollution and visitation at U.S. national parks*, *Science Advances* (July 18, 2018), <http://advances.sciencemag.org/content/4/7/eaat1613/tab-pdf>.

the proposal, the public interest organization Natural Resources Defense Council was wrongly disinvented from a meeting it was scheduled to have on the ANPRM.⁵⁹

Conclusion

For the reasons identified above, we urge EPA to abandon the misguided rulemaking contemplated in this ANPRM. We appreciate the agency's careful consideration of these comments.

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⁵⁹ Maxine Joselow, *Industry Applauds move to 'sustainable regulation'*, E&E News Greenwire (June 8, 2018), <https://www.eenews.net/greenwire/2018/06/08/stories/1060083939>. This presents a troubling pattern, following American Lung Association and EDF not being granted their requests for an Executive Order 12,866 meeting regarding the *Proposed Rule: Strengthening Transparency in Regulatory Science*, 83 Fed. Reg. 18,768 (Apr. 30, 2018), even though their requests were filed while the rule was still listed as under OIRA review. See Maxine Joselow, *White House approves regulatory overhaul, shuts out NRDC*, E&E News PM (June 6, 2018), <https://www.eenews.net/eenewspm/stories/1060083691/>; Sean Reilly, *OMB backdates completion date for 'secret science' review*, E&E News Greenwire (Apr. 27, 2018), <https://www.eenews.net/greenwire/stories/1060080331/>.

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