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Dear Mr. Lee and Mr. Breen,

Thank you for the opportunity to comment on the U.S. Environmental Protection Agency's (EPA) "Interim Framework for Advancing Consideration of Cumulative Impacts" released in November 2024.[1] The undersigned groups (hereafter referred to as "Public Interest Organizations" or "Commenters") applaud EPA's efforts to incorporate analysis and consideration of cumulative impacts into its work, with the express goal of "achieving results that improve health and quality of life" in communities throughout the country. For years, Public Interest Organizations have diligently worked to advance cumulative impacts at the federal, state, and local level and across issue areas like air, water, soil, energy, toxic chemical exposures, and in work against climate change. As articulated by the Equitable and Just National Climate Platform, communities across the United States suffer from the cumulative effect of *multiple* pollution sources and therefore, environmental solutions must advance a comprehensive approach to reducing legacy environmental and economic impacts on communities.[2] Moreover, those solutions must be "designed intentionally to ensure that they do not impose further risks."[3] Cumulative impacts analysis, when equitably and responsibly deployed through a community-forward lens, can meet that goal.

We commend EPA for publishing the "Interim Framework for Advancing Consideration of Cumulative Impacts" (hereafter referred to as the "Interim Framework").[4] Considering Public Interest Organizations' longstanding commitment to cumulative impacts, the historical underpinnings of environmental injustice, present harms imposed on communities, and the current landscape of environmental law and policy - EPA's Interim Framework offers a different choice. The EPA is among the first Agencies within the federal government to offer such a framework that incorporates both analysis and consideration of cumulative impacts into their

[1] Environmental Protection Agency, *Interim Framework for Advancing Considerations of Cumulative Impacts,* https://www.epa.gov/system/files/documents/2024-11/epa-interim-cumulative-impacts-framework-november-2024.pdf (November 2024).
[2] Equitable and Just National Climate Platform, Home, https://ajustclimate.org/#platform (Undated).
[3] Id.
[4] Environmental Protection Agency, *Interim Framework for Advancing Considerations of Cumulative Impacts,* https://www.epa.gov/system/files/documents/2024-11/epa-interim-cumulative-impacts-framework-november-2024.pdf (November 2024).

work. To support this framework, Public Interest Organizations offer the following thoughts to cement the importance of this framework and to strengthen it.

I. Cumulative Impacts Analysis Is Critical to Addressing Historical Environmental Inequities and Injustice

The importance of the interim framework stems back to historical environmental inequities and injustice. Solutions to address the harms of environmental inequities and injustice must address the unjust systems that upheld them.[5] Indeed, discriminatory practices such as redlining, segregation, poor oversight, and overburdening communities with polluting infrastructure caused a concentration of harms in communities of Color, Tribal and Indigenous communities, and/or low-income communities.[6] These practices created unsafe environments that persist today – from the River Parishes of Louisiana and the Gulf Coast, to Newark, New Jersey; Los Angeles, California; Mebane, North Carolina; Kansas City, and countless others.[7]

In regions described as "sacrifice zones", residents often live "immediately adjacent to heavily polluted industries", creating "some of the most polluted and poisoned places in America."[8] People of Color and those with low-income are more likely to live in or near heavily polluted areas and are more likely to die of environmental causes.[9] More than one-million African Americans live within a half mile of gas facilities and more than 6.7 million African Americans live near oil refineries. Overall, African Americans are 75% more likely than their White counterparts to live near commercial facilities producing noise, odor, traffic, or emissions that directly affect the population.[10] And these inequities span across income status, with children living in poverty more likely to live in communities filled with heavily polluting industries, hazardous waste sites, and contaminated water and soil, and in old housing with deteriorating lead-based paint, and limited access to healthy food, among other harmful conditions.[11]

The lack of the utilization and implementation of cumulative impact assessments perpetuates environmental harm. Environmental justice communities are often exposed to "multiple pollutants from multiple sources at the same time" which causes negative health

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[5] Id.
[6] University of Michigan, *Redlining and Environmental Racism*, https://seas.umich.edu/news/redlining-and-environmental-racism (August 16, 2021).
[7] World Resources Institute, CEQ's Climate and Economic Justice Screening Tool Needs to Consider How Burdens Add Up. https://www.wri.org/technical-perspectives/ceq-climate-and-economic-justice-screening-tool-cumulative-burdens. (March 15, 2023).
[8] National Library of Medicine, *Sacrifice Zones: The Front Lines of Toxic Chemical Exposure in the United States* https://pmc.ncbi.nlm.nih.gov/articles/PMC3114843/ (June 2011).
[9] Princeton University, *Racial Disparities and Climate Change*, https://psci.princeton.edu/tips/2020/8/15/racial-disparities-and-climate-change (August 15, 2020).
[10] Id.
[11] National Library of Medicine, *Environmental victims: Environmental Injustice issues that Threaten the Health of Children Living in Poverty*, https://pubmed.ncbi.nlm.nih.gov/22206190/ (2011).

outcomes, diminished quality of life, decreased property values, and other adverse impacts.[12] Pairing the risks and impacts caused by the pollutants themselves or the total pollution burden with socio-economic vulnerabilities creates a holistic and fulsome picture of one's built environment and every day, lived, experiences.[13] Indeed, the Interim Framework itself includes the principle of "engaging communities and incorport[ing] their lived experience" as a key consideration for EPA decision making and Commenters support the inclusion of first-hand and traditional knowledge in the overall Framework. Inversely, analyzing impacts on an individual, facility-by-facility basis, offers only partial insight into overall impact. EPA's Interim Framework correctly asserts

> "[c]umulative impacts experienced at the community scale generally result from the presence of multiple stressors and the absence of or limited access to critical benefits that are the products of intersecting decisions made at all levels of government and society over time. These decisions may have intended and unintended consequences that can either improve or detract from community health, quality of life, and capacity for resilience."[14]

In 2024, a coalition of environmental and community-based organizations published *The Community Guide to Cumulative Impacts* ("Community Guide"), "a resource to drive policy changes at the state and local level to protect overburdened communities from cumulative chemical and pollution harms".[15] The Guide provides a useful approach for operationalizing a framework into practice and provides insights on mapping and evaluating cumulative impacts. Commenters encourage EPA to not only reference state-based laws and guidance's but to broaden its Interim Framework to include references to community-based perspectives and guides in the finalized Framework.

Disturbingly, provisions and spaces that supported addressing cumulative impacts are being actively deconstructed across the federal government as of January 2025. Examples include – the recission of Executive Order 14008 "Tackling the Climate Crisis at Home and

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[12] Dr. Nicky Sheats and Dr. Ana Baptista (Coming Clean), *Addressing Environmental Injustice Through the Adoption of Cumulative Impacts Policies*, https://comingcleaninc.org/assets/media/images/Louisville%20Charter%20content/plank%202%20policy%20brief.pdf (Undated).

[13] *Id.*

[14] Environmental Protection Agency, *Interim Framework for Advancing Considerations of Cumulative Impacts,* https://www.epa.gov/system/files/documents/2024-11/epa-interim-cumulative-impacts-framework-november-2024.pdf (November 2024) at 6.

[15] Union of Concerned Scientists and Coming Clean. 2024. "The Community Guide to Cumulative Impacts: Using Science and Organizing to Advance Public Health Policy" https://www.ucsusa.org/resources/community-guide-cumulative-impacts.

Abroad"[16] which dismantled the Justice40 Initiative[17] and the federally-created Climate and Economic Justice Screening Tool ("CEJST")[18]; revoking the National Environmental Policy Act ("NEPA") Phase II regulations that required the explicit consideration of cumulative impacts[19]; and the recission of Executive Order 14096 "Revitalizing Our Nation's Commitment to Environmental Justice for All" which required federal agencies to "identify, analyze, and address" cumulative impacts.[20] With or without the executive orders and other regulations in place to offer some protection, it is imperative that the EPA and all federal agencies work to enact the Interim Framework to ensure "Clean Air, Land, and Water for Every American".[21]

II. Cumulative Impact Assessment Is Scientifically Validated and Necessary

There is developing scientific consensus that consideration of cumulative impact and cumulative risk is necessary and there is "growing recognition of the urgency for actionable science to address the needs of overburdened communities".[22] The National Academy of Sciences has repeatedly called for the consideration of cumulative exposures in chemical risk evaluations, explaining that "it is difficult to imagine any risk assessment in which it would not be important to understand the effects of co-exposures to agents or stressors that have similar [modes of action] or to identify characteristics of the affected populations that could contribute to vulnerability to a given exposure."[23] More recently, the National Academy of Sciences called on agencies to "move beyond source-by-source and pollutant-by-pollutant … risk assessment and toward a fuller characterization of the cumulative and potentially synergistic health risks from multiple environmental and social stressors that disproportionately impact communities of color."[24] EPA's designated TSCA scientific review panel, the SACC, has affirmed that "[t]he

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[16]Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad,* https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad (February 2021).

[17] Executive Order 14008, *Tackling the Climate Crisis at Home and Abroad*, https://www.federalregister.gov/documents/2021/02/01/2021-02177/tackling-the-climate-crisis-at-home-and-abroad (February 2021); *also see* Harvard Environmental and Energy Law Program, *Rollback Trump Rescinded Bidens Executive Order 14008 that Established Justice 40 Initiative,* https://eelp.law.harvard.edu/tracker/rollback-trump-rescinded-bidens-executive-order-14008-that-established-justice40-initiative/ (2025).

[18] Id.

[19] Harvard Environmental and Energy Law Program, *NEPA Environmental Review Requirements*, https://eelp.law.harvard.edu/tracker/nepa-environmental-review-requirements/ (February 3, 2025).

[20] Executive Order 14096, Revitalizing Our Nation's *Commitment to Environmental Justice For All Act,* https://www.federalregister.gov/documents/2023/04/26/2023-08955/revitalizing-our-nations-commitment-to-environmental-justice-for-all (April 21, 2023).

[21] *See* EPA, News Release: EPA Administrator Lee Zeldin Announces EPA's "Powering the Great American Comeback" Initiative. https://www.epa.gov/newsreleases/epa-administrator-lee-zeldin-announces-epas-powering-great-american-comeback (February 4, 2025).

[22] Tulve, Nicolle S., et al. "Challenges and opportunities for research supporting cumulative impact assessments at the United States environmental protection agency's office of research and development." *The Lancet Regional Health–Americas* 30 (2024).

[23] Science and Decisions, *supra* note 14, at 219.

[24] National Academy of Science, Eng'g, and Med., *Transforming EPA Science to Meet Today's and Tomorrow's Challenge*s, at 35 (2023), https://nap.nationalacademies.org/catalog/26602/transforming-epa-science-to-meet-todays-and-tomorrows-challenges.

best possible science [for chemical assessment] includes cumulative impacts."[25] The World Health Organization's International Programme on Chemical Safety (IPCS) has acknowledged "a need … for assessing the combined risk from exposure to multiple chemicals via all relevant routes and pathways."[26]

In recent years, EPA's Children's Health Protection Advisory Committee has recommended addressing cumulative impacts across EPA practices, including by adding new indicators in the *America's Children and the Environment Report*, an EPA administered report on children's environmental health.[27] Cumulative impacts assessment provides an approach to address the unique vulnerabilities of populations, like infants and children. The Interim framework should be finalized and implemented across Agency offices and should continue to be updated to incorporate new science on the consideration of cumulative risks and impacts.

III. Key Distinctions and Considerations Between Cumulative Impact Assessment and Cumulative Risk Assessment

The Interim Framework acknowledges that "cumulative impacts assessment [CIA] at the EPA shares methodological features with risk assessment and cumulative risk assessment [CRA]" and goes on to define CRA as "an analysis, characterization, and possible quantification of the combined risks to human health or the environment from multiple agents or stressors (both chemical and nonchemical)."[28] While the Interim Framework's definition for CRA refers to chemical and non-chemical stressors, EPA's *Framework for Cumulative Risk Assessment* does not include such a distinction and instead states that CRA accounts for "…combined risks to human health and/or the environment from multiple agents and/or stressors" – a far more limited scope when compared to a CIA.[29]

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[25] Memorandum from Denise Keehner, Dir., Off. of Pollution Prevention and Toxics, EPA to Steven M. Knott, Executive Sec'y, Sci. Advisory Comm. on Chem., EPA Re: Transmittal of Meeting Minutes and Final Report for the Science Advisory Committee on Chemical Virtual Meeting, Draft TSCA Screening Level Approach for Assessing Ambient Air and Water Exposures to Fenceline Communities Version 1.0 46, Docket No. EPA-HQ-OPPT-2021-0415-009, at 47–49 (May 16, 2022), https://www.regulations.gov/document/EPA-HQ-OPPT-2021-0415-0095 (click "Download").

[26] World Health Org., *Assessment of Combined Exposures to Multiple Chemicals: Report of a WHO/IPCS International Workshop on Aggregate/Cumulative Risk Assessment*, at 18 (2009), https://inchem.org/documents/harmproj/harmproj/harmproj7.pdf.

[27] EPA Children's Environmental Health Protection Advisory Committee, America's Children and the Environment Report. https://www.epa.gov/system/files/documents/2023-03/Future%20Direction%20of%20the%20Americas%20Children%20and%20the%20Environment%20Report.%20prepublication.pdf. (February 2023).

[28] U.S. EPA. Interim Framework for Advancing Consideration of Cumulative Impacts at 15 (November 2024). ("Interim Framework")

[29] U.S. EPA. Framework for Cumulative Risk Assessment. U.S. Environmental Protection Agency, Office of Research and Development, Center for Public Health and Environmental Assessment (CPHEA), formerly known as the National Center for Environmental Assessment (NCEA), Washington Office, Washington, DC, EPA/600/P-02/001F, 2003

More than a decade ago, the National Academy of Sciences (NAS) suggested that the EPA should consider chemical and non-chemical stressors as well as how these stressors work in concert to promote adverse health outcomes.[30] The NAS went on to warn that the failure to account for cumulative health risks could render risk assessment "irrelevant in many decision contexts, and ... exacerbate the credibility and communication gaps between risk assessors and stakeholders."[31] Commenters agree with this statement, while also recognizing that the differences between CIA and CRA cumulative impacts and cumulative risk assessment are important to expound upon.

In 2004, the New Jersey Environmental Justice Advisory Council laid the groundwork for the landmark cumulative impacts law where it advised the state that the definition for cumulative risk was not sufficient as it is "silent on the issue of multiple sources".[32] While Commenters have long urged (and continue to implore) the Agency to update its risk assessment policies and guidelines to protect public health by assessing cumulative impacts of multiple sources and types of pollution, routes of exposure, and individual and population vulnerabilities, we have not yet seen finalized risk assessments that incorporate and quantify such factors.[33] However, CIA offers a more comprehensive method for evaluation of such factors, and it is important to operationalize distinctly at the Agency. And nevertheless, EPA must update its risk assessment policies, including its cumulative risk assessment framework and guidelines if it is to meaningfully eliminate current inequities in the burden of environmental pollution.

IV. The Final Framework Is Critical to Implementing Core EPA Statutes

The Interim Framework acknowledges that "statutory requirements" can help "determine[e] which approaches and analytical methods to use in cumulative impacts assessment,"[34] but it fails to recognize that pursuant to the mandates of several statutes implemented by EPA, the agency must consider cumulative impacts when conducting chemical risk evaluations. Indeed, absent cumulative impact assessment, public health will not be protected from pollution and toxic exposures.

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[30] NAS, Science and Decisions: Advancing Risk Assessment at 9-10, 219-23 (2009), https://nap.nationalacademies.org/catalog/12209/science-and-decisions-advancing-risk-assessment.
[31] *Id.* at 213.
[32] NJ Environmental Justice Advisory Council, Strategies for Addressing Cumulative Impacts in Environmental Justice Communities at 8 (2009), https://dep.nj.gov/wp-content/uploads/ej/docs/ejac_impacts_report200903.pdf.
[33] *See* Earthjustice et al, Comment submitted to https://www.regulations.gov/comment/EPA-HQ-OAR-2018-0746-0083 (February 2020). *See* Earthjustice et al, Comment submitted to https://www.regulations.gov/comment/EPA-HQ-OAR-2018-0746-0083 (February 2020).*See* Earthjustice et al, Comment submitted to rulemaking docket Review of National Emission Standards for Hazardous Air Pollutants: Miscellaneous Organic Chemical Manufacturing. https://www.regulations.gov/comment/EPA-HQ-OAR-2018-0746-0083 (February 2020).
[34] Interim Framework at 15.

The consideration of "cumulative risks"—which arise from real-world exposures to multiple chemicals, from a combination of sources and pathways, along with non-chemical stressors that can worsen the harms from those exposures—is an essential part of the risk evaluation process. More than a decade ago, the National Academy of Sciences warned that the failure to account for cumulative health risks could render risk assessment "irrelevant in many decision contexts, and … exacerbate the credibility and communication gaps between risk assessors and stakeholders."[35] We therefore urge EPA to clarify in the final framework that cumulative risk analysis is mandated by law in several contexts. As examples, we have set forth below the requirements in the Toxic Substances Control Act ("TSCA"), the Food Quality Protection Act ("FQPA"), and the Clean Air Act ("CAA") for cumulative risk assessment.

a. TSCA requires EPA to evaluate and to address cumulative risks.

Dating back to the original enactment of TSCA in 1976, Congress directed EPA to consider and address the risks associated with cumulative chemical exposures. Congress enacted TSCA in 1976 in response to concerns that then-existing environmental laws, many of which focused on discrete exposure pathways like air, land or water, had failed to address "the full extent of human or environmental exposure" to chemical substances.[36] In TSCA, Congress requires EPA to "look comprehensively" at chemical risks and to regulate any chemicals that were found to present "unreasonable risk."[37] During the debate over the initial TSCA enactment, Congress made clear that this "comprehensive" assessment included the consideration of cumulative risks, with the Conference Committee Report explaining that

> "[o]ftentimes an unreasonable risk will be presented because of the interrelationship or cumulative impact of a number of different substances or mixtures. *The conferees intend that the Administrator have authority to protect health and the environment in such situations*."[38]

Congress turned that authorization into a mandate in the 2016 TSCA amendments, enacting multiple provisions that require the consideration of aggregate and cumulative risks. First, the amendments require EPA to evaluate the risks posed by new and existing chemicals under their "conditions of use,"[39] which are defined as "the circumstances … under which a chemical substance is intended, known, or reasonably foreseen to be manufactured, processed, distributed in commerce, used, or disposed of."[40] If a chemical is released along with or in the same locations as other toxic chemicals, or is frequently found in products containing combinations of toxic chemicals, those form part of the "circumstances … under which [the]

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[35] *See* National Research Council, *Science and Decisions: Advancing Risk Assessment*, at 213 (2009), https://www.nap.edu/catalog/12209/science-and-decisions-advancing-risk-assessment, at 213.
[36] H.R. Rep. No. 94-1341, at 6-7 (1976).
[37] 15 U.S.C. § 2605(a).
[38] H.R. Rep. No. 94-1679, at 61 (1976) (Conf. Rep.) (emphasis added).
[39] 5 U.S.C. § 2605(b)(4)(A).
[40] Cumulative Risk Principles at 20.

chemical is intended, known, or reasonably foreseen to be used … or disposed of,"[41] and are thus part of the chemical's conditions of use.

Second, when conducting risk evaluations or reviewing new chemicals under TSCA, EPA must determine whether the chemical presents unreasonable risk to any "potentially exposed or susceptible subpopulation," including groups that face greater risks because of their aggregate or cumulative chemical exposures.[42] TSCA defines "potentially exposed or susceptible subpopulation" as "a group of individuals within the general population … who, due to either greater susceptibility or greater exposure, may be at greater risk than the general population of adverse health effects from exposure to a chemical substance or mixture."[43] Therefore, even when EPA is conducting a risk evaluation for a single chemical, it must still evaluate all factors that can render a population more exposed to or more susceptible to harm.[44] People who are exposed to a chemical from multiple sources experience "greater exposure," and thus greater risk, than the general population.[45] Moreover, people who are exposed to multiple chemicals that cause the same health effects are more likely to experience harm than they would be without those cumulative exposures, and thus have "greater susceptibility" to the effects of each chemical.[46] TSCA requires EPA to evaluate risks to populations whose aggregate and cumulative exposures place them at greater risk than the general population.

The consideration of cumulative risk is also required by TSCA's mandate to evaluate and regulate chemicals "in a manner consistent with the best available science,"[47] as described above.

b. The FQPA Requires Consideration of Cumulative Risk

EPA must also consider aggregate and cumulative impacts when assessing pesticide risks under the FQPA. Congress enacted the Food Quality Protection Act (FQPA) to implement the recommendations of the 1993 NAS report, *Pesticides in the Diets of Infants and Children*. That report recommended that EPA protect the general population, and children in particular, from aggregate exposures to a pesticide, whether in food, drinking water, the air, or in and around

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[41] *Id.*
[42] 15 U.S.C. § 2605(b)(4)(A).
[43] *Id.* § 2602(12).
[44] *See* Nat'l Rsch. Council, *Science and Decisions: Advancing Risk Assessment*, at 214 (2009), https://www.nap.edu/catalog/12209/science-and-decisions-advancing-risk-assessment ("[E]ven if the regulatory decision of interest were related to strategies to address a single chemical with a single route of exposure, consideration of other compounds and other factors may be necessary to inform the decision. Ignoring numerous agents or stressors that affect the same toxic process as the chemical of interest and omitting background processes could lead to risk assessments that, for example, assume population thresholds in circumstances when such thresholds may not exist.").
[45] *Id.* at 147.
[46] *Id.*; *see also* Kristi P. Fedinick, et al., *A Cumulative Framework for Identifying Overburdened Populations under the Toxic Substances Control Act: Formaldehyde Case Study*, 18 Int'l J. of Env't Rsch. and Pub. Health Art. No. 6002 (2021), https://doi.org/10.3390/ijerph18116002; EPA, *Framework for Cumulative Risk Assessment,* Doc. No. EPA/630/P-02/001F, at 51 (May 2003), https://www.epa.gov/sites/default/files/2014-11/documents/frmwrk_cum_risk_assmnt.pdf.
[47] *Id.* § 2625(h).

homes, schools, and parks. It also recommended that EPA consider cumulative exposures to pesticides that cause the same health effects with a particular focus on neurotoxic pesticides. [48]

To implement the NAS recommendations, the FQPA expressly mandates the consideration of aggregate and cumulative exposures when assessing the risks associated with a pesticide's food uses and establishing "tolerances" for the amount of the pesticide's residues that can remain on food. Under the FQPA, EPA must "consider … the cumulative effects of [the pesticide's] residues and other substances that have a common mechanism of toxicity."[49] When determining whether a tolerance is "safe," EPA must also consider whether "harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information," aside from occupational exposures.[50]

c. The Clean Air Act's Air Toxics Program Must Consider Cumulative Risk

When performing health risk assessment rulemakings for sources of hazardous air pollution pursuant to the Clean Air Act's air toxics program, EPA has an obligation to assure protection from cumulative health risks to the greatest extent scientifically possible.

Within eight years of setting national emission standards for hazardous air pollutants (NESHAP) pursuant to CAA § 112(d), EPA must assess the health and environmental risks that remain, and under CAA § 112(f)(2) must issue standards for each source category to "provide an ample margin of safety to protect public health."[51] As part of this test, EPA must first assess risk with a focus on the "individual most exposed" to toxic air pollution and assure "safety" by preventing all unacceptable risk to public health, without consideration of cost.[52] Then, EPA must ensure an additional, "ample margin" of protection beyond the bare minimum of what is

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[48] Nat'l Research Council Comm. on Pesticides in the Diets of Infants and Child., *Pesticides in the Diets of Infants and Children,* at 303–05 (1993), https://www.ncbi.nlm.nih.gov/books/NBK236275/.
[49] 21 U.S.C. § 346a(b)(2)(D).
[50] *Id.* §346a(b)(2)(A)(ii).
[51] EPA must perform this rulemaking for all major source categories and has authority to do so for all area source categories. 42 U.S.C. § 7412(f)(2), (d)(5).
[52] 42 U.S.C. § 7412(f)(2); *see e.g.*, *Nat. Res. Def. Council, Inc. v. EPA*, 824 F.2d 1146, 1165 (D.C. Cir. 1987) (*en banc*) ("if the Administrator cannot find that there is an acceptable risk at any level, then the Administrator must set the level at zero"); *see also* National Emission Standards for Hazardous Air Pollutants; Benzene Emissions From Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants, 54 Fed. Reg. 38,044, 38,045, 38,066 (Sept. 14, 1989) (stating that EPA weighs health risks from a given source category along with factors on existing health threats, the number of people exposed, and "other quantified or unquantified health effects, effects due to co-location of facilities, and co-emission of pollutants.") ("Benzene Rule"); 54 Fed. Reg. 38,066 ("Cancer . . . is generally viewed as a chronic disease in which cumulative dose is the principal factor in risk estimation.").

safe, *i.e.*, so that the public will not be "exposed to anything resembling the maximum risk" and, therefore, to set a margin "greater than 'normal' or 'adequate.'"[53]

The expansive terms used in this test for section 112(f) rules direct the broadest evaluation of risks from toxic air pollution that is scientifically possible – because there is no other way to assure "safety" for the individual "most exposed," or to provide an "ample margin of safety to protect public health." To fulfill this statutory directive, EPA must employ the most current information available to address health risks and impacts in the manner that a person experiences them in reality – not singularly or in isolation, but in the aggregate and synergistically, facing the greatest total level of exposure. [54] Thus, these terms require EPA to evaluate the risks from community members' exposure to multiple pollutants and multiple sources through multiple pathways, or the analysis would not be able to guarantee "safety" or provide an "ample margin to protect public health" overall. Consideration of cumulative risk to account for the full picture of the effects of toxic air pollution, is necessary for EPA to satisfy the statutory text and the Act's objective of assuring an "ample margin of safety" for public health.[55]

Indeed, for decades, in its rulemakings and in its 1999 Residual Risk Report to Congress, EPA has interpreted section 112(f)(2) to require consideration of some of the key components of a cumulative risk assessment – the aggregate and combined impacts of multiple pollutants, pathways, and sources on an affected community.[56]

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[53] *Nat. Res. Def. Council*, 824 F.2d at 1153 (quoting *Env't Def. Fund v. EPA*, 598 F.2d 62, 81) (D.C. Cir. 1978) (interpreting "ample margin of safety" language under the Federal Water Pollution Control Act); *id.* at 1152 (ample buffer needed to assure a "reasonable degree of protection . . . meant to compensate for uncertainties and variabilities") (internal citations omitted).

[54] *See e.g.*, 42 U.S.C. § 7412(f)(1)(C) (emphasizing cumulative risks by directing the Agency to investigate the "actual health effects with respect to persons living in the vicinity of sources" including "risks presented by background concentrations of hazardous air pollutants").

[55] *See* 42 U.S.C. § 7401(b) & (c) (stating objective "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare," through "pollution prevention"); *Nat'l Lime Ass'n v. EPA*, 233 F.3d 625, 633–34 (D.C. Cir. 2000), *as amended on denial of reh'g* (Feb. 14, 2001) (1990 CAA amendments "entirely restructure the existing law, so that toxics might be adequately regulated by the Federal Government"; section 112 requires control of all emitted hazardous air pollutants).

[56] *See, e.g.*, EPA, *Residual Risk Report to Congress*, Office of Air Quality Planning and Standards (OAQPS), Doc. No. EPA–453/R–99–001, at 93-94, 118 (Mar. 1999), https://www.epa.gov/sites/default/files/2013-08/documents/risk_rep.pdf. (stating that carcinogenic risk may be considered "additive"; recognizing that cumulative risk "from all possible natural and anthropogenic sources of a HAP other than the particular source or source category under evaluation" may be assessed as part of residual risk and to address the "ample margin of safety" test "when the sources can be identified and their contributions measured and compared"; recognizing the need to address health risk from exposure through multiple pathways, including inhalation and ingestion); *see also* Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards, 80 Fed. Reg. 75,178, at 75,354 (Dec. 1, 2015).

i. The Final Framework Should Expand Appendix B. National-Scale Rulemakings and Guidance.

The Interim Framework references EPA's air toxics rulemaking for the Synthetic Organic Chemical Manufacturing Industry (SOCMI) source category, which underwent review in 2023 and was finalized in 2024.[57] The draft 2023 residual risk assessment for the source category included a novel community-based risk assessment, however, EPA did not rely on this assessment to inform the rulemaking.[58] Additionally, the rule fell short of ensuring a reduction in cancer risk across all populations within the 10-kilometer radius of SOCMI facilities. The 2023 residual risk assessment states, "[t]he number of people estimated to have a cancer risk greater than 100-in-1 million would be reduced from 100,000 (pre-control) to 4,000 (post-control)."[59] Currently, the EPA considers only cancer risks exceeding 100-in-1 million to be presumed as unacceptable. However, EPA inexplicably determines that thousands of community members will be subjected to cancer risks at the 100-in-1 million benchmark. Commenters continue to urge EPA to strengthen its policy and recognize that, even if its risk assessment is accurate, its benchmark is excessively high. No level of health risks associated with hazardous air pollutants (HAPs) can be assumed to be safe or acceptable, and the EPA must instead reduce risks to the lowest level possible to protect public health.

EPA's current risk assessment practice evaluates pollutants emitted by a single category of regulated air pollution sources and does not support the directive outlined in the Executive Order, which is designed to protect against adverse cumulative impacts. For context, the national average for cancer risk from air pollution falls closer to 30-in-1 million meaning the SOCMI rule permits some communities to be exposed to toxic air pollution at levels that are at least three times higher than the national average.[60] Allowing communities that have already faced years of undue exposure to toxic air pollution to continue to face over three times the national cancer risk should be unacceptable and fails to ensure that "no community bears a disproportionate share of adverse environmental and public health impacts", as described in the Interim Framework.[61]

In the residual risk assessment, EPA acknowledged that it must assess the combined impact of cancer risks from different sources to determine the combined cancer risk from inhalation, but it did not evaluate the combined chronic non-cancer risk associated with different sources within the 10-kilometer radius. Such an evaluation is essential and consistent with

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[57] *See* EPA, New Source Performance Standards for the Synthetic Organic Chemical Manufacturing Industry and National Emission Standards for Hazardous Air Pollutants for the Synthetic Organic Chemical Manufacturing Industry and Group I & II Polymers and Resins Industry, 88 Fed. Reg. 25,080, 25,179 (April 25, 2023).
[58] EPA, Residual Risk Assessment for the Polymers & Resins I Neoprene Production Source Category in Support of the 2023 Risk and Technology Review Proposed Rule, EPA-HQ-OAR-2022-0730-0100 at 5, 34 (Mar. 2023).
[59] *See* 88 Fed. Reg. at 25,110 Tbl. 3.
[60] EPA, AirToxScreen Mapping Tool. https://www.epa.gov/AirToxScreen/airtoxscreen-mapping-tool. (May 2024).
[61] Interim Framework at 10.

existing scientific knowledge on conducting cumulative risk assessment. In its draft *Guidelines for Cumulative Risk Assessment Planning and Problem Formulation,* EPA acknowledges that "for assessment of cumulative noncancer hazard, target organ-specific hazard indices are estimated."[62] However, the community risk assessment did not account for noncancer health risks across populations near SOCMI facilities.

Moreover, according to the EPA's own analysis, these sources pose a disproportionate health risk to minority and low-income communities. This problem is exacerbated by the concentration of multiple toxic air sources in minority and low-income communities, which creates severe environmental justice issues.[63] And although EPA evaluated risk based on exposure to adjacent existing sources within a 10-kilometer radius, it did not propose any adjustments to emission standards based on exposure to multiple sources. For years, EPA has calculated what it calls "facility-wide" risk for multiple sources collocated at the same address, but it has not used that number to set standards and its community-based risk assessment continues to fall short. The EPA should acknowledge that the multiple-source exposure risk and the increased risk created by exposing individuals to multiple sources necessitates action.

Lastly, when EPA finalized the SOCMI rule in 2024, it provided an updated residual risk assessment, which eliminated the community-based risk assessment with no explanation from the rule writers. No reference to the community-based risk assessment was included despite it being described in the rulemaking itself. Inclusion of the SOCMI air toxics rule as an example where advances to cumulative impacts have been made should be reconsidered when finalizing the Interim Framework given the limitations of the assessment described above and its elimination of in the final rule. If it is kept in the final document, then the narrative should make clear that the assessment was not incorporated into the decision-making process/outcome.

V. The Final Framework Should Include Explicit Consideration of Uniquely Vulnerable Populations

a. Farmworker Exposures

The Interim Framework makes a distinction between geographically defined communities and definable population groups,[64] but does not examine the latter in detail. Although in this context a definable population group is not bound by geography, members of the group have certain characteristics in common that may lead to their experiencing similar environmental burdens due to exposures to similar chemical stressors, social determinants of

[62] EPA, Guidelines for Cumulative Risk Assessment Planning and Problem Formulation, EPA-HQ-ORD-2013-0292-0169 (May 2023).
[63] CalEPA, Cumulative Impacts: Building a Scientific Foundation (Dec. 2010), https://oehha.ca.gov/media/downloads/calenviroscreen/report/cireport123110.pdf.
[64] U.S. EPA. Interim Framework for Advancing Consideration of Cumulative Impacts at 4.

health and other extrinsic and intrinsic factors. A definable population group may be characterized by occupation, as is the case of farmworkers. Due to the similarity of working and living conditions that many farmworkers experience, the cumulative impacts for members of this group bear similarities as well.

As a "definable population group," farmworkers exemplify the importance of considering the full lived experience of those affected by agency actions, even when those groups or actions are not circumscribed to a specific geographic unit. Farmworkers share many occupational hazards that include exposures to pesticides, particulate matter and excessive heat, among others. These exposures may act synergistically, magnifying the effects of one another. Furthermore, social determinants of health worsen the cumulative impacts from these stressors. Even so, these cumulative impacts are not properly considered when EPA assesses pesticides for registration.

Farmworkers are exposed to pesticides in multiple ways. They may be exposed to pesticide residues in treated areas while performing field work, sometimes when they are required by employers to enter treated areas before the restricted entry interval is over. Some employers do not comply with the Worker Protection Standard (WPS) requirement to provide certain personal protective equipment (PPE) to early entry workers, increasing the risk of pesticide exposure for this group.[65] Some farmworkers also perform the functions of pesticide handlers and may be exposed while mixing, loading, transferring and applying pesticides. Employer compliance with PPE requirements for this group of workers is also inconsistent.[66] Despite these important shortcomings in regulatory compliance, EPA often registers pesticides for use under the assumption that pesticide handlers and early entry workers wear all necessary PPE. This assumption leads the Agency to underestimate occupational exposures and allow pesticide uses that harm farmworkers' health.

Pesticides that drift from agricultural fields during or after application are an additional source of exposure. The Application Exclusion Zone (AEZ) rule is meant to prevent bystanders from being exposed to pesticides applied on farms, but pesticides are known to drift beyond the maximum distance (100 feet) covered in the regulations, exposing farmworkers and others within a wider radius.[67] Also, many farmworkers and their families are exposed to pesticide drift

[65] Cameron L, Lalich N, Bauer S, Booker V, Bogue HO, Samuels S, Steege AL. Occupational health survey of farm workers by camp health aides. J Agric Saf Health. 2006 May;12(2):139-53. doi: 10.13031/2013.20389. PMID: 16724790.

[66] Hyland C, Meierotto L, Som Castellano RL, Curl CL. Mixed-Methods Assessment of Farmworkers' Perceptions of Workplace Compliance with Worker Protection Standards and Implications for Risk Perceptions and Protective Behaviors. J Agromedicine. 2024 Jul;29(3):355-371. doi: 10.1080/1059924X.2024.2307483. Epub 2024 Jan 29. PMID: 38284770.

[67] Kasner EJ. On Preventing Farmworker Exposure to Pesticide Drift in Washington Orchards. 2017 PhD Dissertation. Department of Environmental and Occupational Health Sciences, University of Washington. file:///C:/Users/mreiter/Downloads/Kasner_washington_0250E_17967.pdf

in homes located on or near farms.[68,69] Since many farmworkers live in substandard housing, there is a greater likelihood of pesticide drift contaminating their interior space through cracks and openings.[70] Farmworkers may also inadvertently bring pesticide residues home in their work clothing. Once indoors, these pesticide residues can persist for long periods of time.[71] These non-occupational exposures further increase the impacts of those experienced at work.

Excessive heat exposure, a frequent occupational hazard for many farmworkers, is both a hazard and a factor that increases the magnitude and impacts of pesticide exposure. However, EPA's pesticide registration process does not account for how the cumulative impacts of heat increase occupational risks for farmworkers. High temperatures make it difficult—sometimes even dangerous—to wear PPE, which traps heat and humidity around the body.[72] Consequently, farmworkers working in hot environments may be forced to weigh the risk of heat stroke against the risk of pesticide-related illnesses when deciding whether to wear PPE. Although rest breaks, water and shade reduce the risk of heat illness, employers do not always give workers access to these safety measures, even in states where regulations require it.[73] Therefore, assuming that workers will be able correctly wear adequate PPE—as EPA occupational exposure assessments do—when performing handler functions or during early entry activities is likely to underestimate pesticide exposures.

Moisture on the skin resulting from perspiration in hot environments can increase the transfer of pesticide residues from treated surfaces to the skin. Heat can also increase dermal absorption of pesticides and the permeability of protective gloves.[74] Heat has other effects that may affect the way pesticide exposure impacts farmworkers' health. Farmworkers are often dehydrated while they work due to heat exposure, and the combined effects of dehydration and heat cause farmworkers to experience high rates of acute kidney injury or AKI: 12.3 – 33% of

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[68] McCauley LA, Lasarev MR, Higgins G, Rothlein J, Muniz J, Ebbert C, Phillips J. Work characteristics and pesticide exposures among migrant agricultural families: a community-based research approach. Environ Health Perspect. 2001 May;109(5):533-8. doi: 10.1289/ehp.01109533. PMID: 11401767; PMCID: PMC1240315.
[69] Quandt SA, Arcury TA, Rao P, Snively BM, Camann DE, Doran AM, Yau AY, Hoppin JA, Jackson DS. Agricultural and residential pesticides in wipe samples from farmworker family residences in North Carolina and Virginia. Environ Health Perspect. 2004 Mar;112(3):382-7. doi: 10.1289/ehp.6554. PMID: 14998757; PMCID: PMC1241871.
[70] Bradman MA, Harnly ME, Draper W, Seidel S, Teran S, Wakeham D, et al. 1997. Pesticide exposures to children from California's Central Valley: results of a pilot study. J Expo Anal Environ Epidemiol 7:217–234.
[71] Quandt SA, Arcury TA, Mellen, BG, Rao P, Camann DE, Doran AM, et al. 2002. Pesticides in wipes from farmworker residences in North Carolina. In: Proceedings of the 9th International Conference on Indoor Air Quality and Climate, 30 June–5 July 2002, Monterrey, CA (Levin H, ed). Santa Cruz, CA:Indoor Air 2002, 900–905.
[72] National Institute for Occupational Safety and Health (2024) PPE Heat Burden. https://www.cdc.gov/niosh/heat-stress/recommendations/ppe.html. Last updated August 18, 2024.
[73] Gillespie GL, Hittle BM, Bhattacharya A. US Farmworkers' Barriers to Preventing Heat-Related Illness: An Integrative Review. Pub Health Challenges 2004 Jul;3(3):e222. doi: https://doi.org/10.1002/puh2.222.
[74] Thredgold L, Gaskin S, Quy C, Pisaniello D. Exposure of Agriculture Workers to Pesticides: The Effect of Heat on Protective Glove Performance and Skin Exposure to Dichlorvos. Int J Environ Res Public Health. 2019 Nov 29;16(23):4798. doi: 10.3390/ijerph16234798. PMID: 31795387; PMCID: PMC6926567.

farmworkers were found to suffer from AKI in some studies.[75,76] Since exposure to certain pesticides is associated with decreased kidney function,[77,78] the cumulative impacts of heat and pesticide exposure may be more pronounced for the significant number of farmworkers who experience AKI. As temperatures continue to increase due to climate change, the cumulative impacts from pesticides and heat are likely to worsen. Yet the effects of climate change are not accounted for when EPA conducts assessments of occupational exposure to pesticides.

Farmworkers are exposed to other hazards that contribute to their environmental burden. These include exposure to wildfire smoke and other sources of particulate matter, such as dust and farm equipment exhaust. Exposure to high levels of particulate matter may aggravate asthma and are also associated with decreased lung function, respiratory symptoms and cardiovascular effects.[79] Indeed, farmworkers have higher rates of respiratory illnesses associated with occupational exposure to particulate matter.[80]

The cumulative impacts of these exposures are likely to affect more severely the 300,000 to 500,000[81] child farmworkers who labor in the fields. U.S. law allows children as young as 12 years of age to work in agriculture and even allows for special waivers authorizing 10- and 11-year-olds to work on farms.[82] These children are exposed to many of the same chemical and non-chemical stressors as adult farmworkers but have greater susceptibility due to their developing bodies.

Despite the cumulative impacts farmworkers face, they are limited in their ability to protect themselves. Although the WPS requires employers to provide pesticide safety training on

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[75] Moyce S, Mitchell D, Armitage T, Tancredi D, Joseph J, Schenker M. Heat strain, volume depletion and kidney function in California agricultural workers. Occup Environ Med. 2017 Jun;74(6):402-409. doi: 10.1136/oemed-2016-103848. Epub 2017 Jan 16. Erratum in: Occup Environ Med. 2018 Feb;75(2):162. doi: 10.1136/oemed-2016-103848corr1. PMID: 28093502; PMCID: PMC5771643.

[76] Mix J, Elon L, Vi Thien Mac V, Flocks J, Economos E, Tovar-Aguilar AJ, Stover Hertzberg V, McCauley LA. Hydration Status, Kidney Function, and Kidney Injury in Florida Agricultural Workers. J Occup Environ Med. 2018 May;60(5):e253-e260. doi: 10.1097/JOM.0000000000001261. PMID: 29271837.

[77] Shearer JJ, Sandler DP, Andreotti G, Murata K, Shrestha S, Parks CG, Liu D, Alavanja MC, Landgren O, Beane Freeman LE, Hofmann JN. Pesticide use and kidney function among farmers in the Biomarkers of Exposure and Effect in Agriculture study. Environ Res. 2021 Aug;199:111276. doi: 10.1016/j.envres.2021.111276. Epub 2021 May 11. PMID: 33989625; PMCID: PMC8489787.

[78] Wan ET, Darssan D, Karatela S, Reid SA, Osborne NJ. Association of Pesticides and Kidney Function among Adults in the US Population 2001-2010. Int J Environ Res Public Health. 2021 Sep 29;18(19):10249. doi: 10.3390/ijerph181910249. PMID: 34639548; PMCID: PMC8507643.

[79] U.S. EPA. 2024. Health and Environmental Effects of Particulate Matter (PM). https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm. Last updated July 16, 2024.

[80] Clarke K, Manrique A, Sabo-Attwood T, Coker ES. A Narrative Review of Occupational Air Pollution and Respiratory Health in Farmworkers. Int J Environ Res Public Health. 2021 Apr 13;18(8):4097. doi: 10.3390/ijerph18084097. PMID: 33924663; PMCID: PMC8070429.

[81] Forti M. Farmworker Children's Perils. Farmworker Justice Health Policy Bulletin. Winter 2023:3-5. https://www.farmworkerjustice.org/wp-content/uploads/2023/04/HPB_2023.pdf.

[82] Hernandez-Jimenez, H. Policy Update: Overview of Federal and State Laws that Impact the Wellbeing of Child Farmworkers. Farmworker Justice Health Policy Bulletin. Winter 2023:1-2. https://www.farmworkerjustice.org/wp-content/uploads/2023/04/HPB_2023.pdf.

an annual basis, 36 percent of farmworkers report not receiving any training by their employer within the past year.[83] Some farmworkers also have concerns about the quality of the training they receive.[84] Even farmworkers who handle pesticides often lack training in these tasks.[85] As low-wage workers, they face a power imbalance in the workplace that makes it difficult to demand better work conditions or to report any regulatory violations to the authorities.

Farmworkers also experience barriers accessing health care due to low incomes and the fact that 48% of them lack health insurance.[86] Many born outside the U.S. also struggle with language barriers and difficulties navigating the U.S. health care system. Low wages also lead to food insecurity and unsafe housing where they are exposed to lead, pests, mold and moisture. Physically taxing work leads to high levels of stress, chronic pain and depression.[87]

Understanding the full environmental burden of farmworkers and other population groups that are not geographically defined requires additional effort on the part of the Agency to engage with these groups and ensure that their cumulative impacts are properly considered. It will be necessary for the Agency to seek input from members of these population groups in different geographic locations and ensure the participation of representative of different segments of these groups (*e.g.* migratory and settled farmworkers; field, greenhouse and fernery workers).

Members of a population group may be hard to reach due to language or logistical barriers, as is the case for many migratory farmworkers, or may face other barriers to participation (lack of transportation; long work hours; insufficient information, etc.) For all these reasons, it is important for the Agency to provide ways to overcome these barriers and work in collaboration with community-based organizations (CBOs) that have access to and enjoy the trust of the population groups EPA seeks to engage. These collaborations will help ensure that outreach is conducted in an effective and culturally appropriate way. Due to the resource limitations that CBOs face, it is also important for the Agency to provide some form of support to enable these organizations to take part in the process of securing engagement from relevant groups.

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[83] U.S. Department of Labor (2022). Findings from the National Agricultural Workers Survey (NAWS) 2021-2022: A Demographic and Employment Profile of United States Farmworkers. Research Report No. 17. Prepared by JBS International. September 2023.
https://www.dol.gov/sites/dolgov/files/ETA/naws/pdfs/NAWS%20Research%20Report%2017.pdf

[84] Hyland C, Meierotto L, Som Castellano RL, Curl CL. Mixed-Methods Assessment of Farmworkers' Perceptions of Workplace Compliance with Worker Protection Standards and Implications for Risk Perceptions and Protective Behaviors. J Agromedicine. 2024 Jul;29(3):355-371. doi: 10.1080/1059924X.2024.2307483. Epub 2024 Jan 29. PMID: 38284770.

[85] *Id.*

[86] U.S. Department of Labor (2022). Findings from the National Agricultural Workers Survey (NAWS) 2021-2022: A Demographic and Employment Profile of United States Farmworkers. Research Report No. 17. Prepared by JBS International. September 2023.

[87] Winkelman SB, Chaney EH, Bethel JW. Stress, depression and coping among Latino migrant and seasonal farmworkers. Int J Environ Res Public Health. 2013 May 3;10(5):1815-30. doi: 10.3390/ijerph10051815. PMID: 23644829; PMCID: PMC3709350.

b. Alaska Natives and Tribal Communities' Exposure to Persistent, Bioaccumulative, and Toxic Substances

Persistent, bioaccumulative, and toxic (PBT) substances highlight the importance of cumulative impact assessment because they are toxic to humans and animals, and exposure pathways to them will exist in the natural environment, and from consumer and commercial uses. PBTs encompass a range of chemicals, such as asbestos, lead, and several PFAS substances, all of which are known for causing irreversible toxic effects in humans and remain in environmental media long after their release or use is ceased. It's important that guidance on cumulative impacts emphasizes identification of PBT substances and analysis of exposure pathways throughout a chemical's lifecycle. EPA has repeatedly fallen short in assessing cumulative impacts of PBTs for vulnerable communities and populations, including exposure pathways for Tribal and Native populations that maintain subsistence dietary practices.

Clear guidance on identifying PBTs will enable EPA, state, and local risk assessors to identify potential harm to humans and other organisms and assess exposure pathways over time. The PBT Profiler, a tool by EPA that enabled the identification of PBTs among data-poor chemicals, is no longer active and does not appear to have a comparable replacement.[88] For new chemicals or ones that are less studied, a pollutant's half-life in different environmental media may not be well established. EPA must incorporate tools and methods to identify and determine whether pollutants of concern are PBTs into the scoping and problem formulation phase of the cumulative impacts assessment.

PBTs, whether released from facilities during processing, their consumer use, or disposal, will pose a hazard throughout a person's lifetime and contribute to their total environmental burden. People are constantly exposed to multiple pollutants at once, including PBTs. While EPA has made efforts to incorporate risk assessment of mixtures and cumulative exposures,[89] these analyses are not consistently applied in decision making including for cumulative impacts analysis. Assessing exposures to multiple chemicals from multiple routes is consistent with EPA's goal to "more fully and accurately characterize the realities communities face."[90] At least two EPA Toxic Release Inventory (TRI) chemicals were released in all 2,382 counties that reported to EPA in 2022, which accounts for greater than 75% of all counties in the United

[88] EPA, Sustainable Futures/P2 Framework Manual at 7-1 – 7-10, EPA-748-B12-001(2012).
[89] EPA, Guidelines for the Health Risk Assessment of Chemical Mixtures, EPA/630/R-98/002 (September 1986); EPA, Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures, EPA/630/R-00/002 (August 2000); EPA, Draft Proposed Principles of Cumulative Risk Assessment under the Toxic Substances Control Act, EPA-740-P-23-001 (February 2023).
[90] Interim Framework at 9.

States. Additionally, it is established that exposure to mixtures of PBTs is associated with increased risk of developing several types of cancers.[91]

Native and Tribal communities face more exposure pathways from "economic, cultural, ceremonial, recreational, and subsistence practices."[92] One such example are polychlorinated biphenyls (PCBs), which highlights EPA's failure to regulate a PBT substance and not account for its cumulative impacts. The general population is exposed to PCBs in their daily life from the use of chalks, auto supplies, product packaging, and dyes, and these products make their way into storm drains and local soils. Due to their mobility in environmental media, PCBs will be found in waters where aquatic life is exposed. Tribal and Native populations that consume aquatic organisms, such as from the Spokane River, are exposed to even higher levels of PCBs, in addition to the exposures expected from typical consumer uses.

VI. Framework-Specific Recommendations and Key Sections to Expand.

- Page 10 of the Interim Framework references the EPA's 2024 Equity Action Plan when stating consideration of cumulative impacts will advance EPA's long-term goals such that "no community bears a disproportionate share of adverse environmental and public health impacts."[93] At the time of submitting these comments, the Equity Action Plan is not accessible to the public and the website is down. However, Commenters point out that long-term goals must include reducing the shortfalls described in the previous section.
- Page 23 references *Cumulative Impacts Implementation at the EPA* and describes the inclusion of narratives to "illustrate that EPA and others' actions that apply the principles of cumulative impacts under various statutory and regulatory authorities",[94] yet it fails to provide substantive feedback as to how these actions can better incorporate consideration of cumulative impacts in a practical manner. Commenters agree that EPA should update the appendix with examples of cumulative impacts projects on a regular basis and should include feedback on areas of improvement for integrating the principles described in the Interim Framework.
- On page 25 of the Interim Framework, EJSCREEN is described as a tool used by EPA to "complete a preliminary assessment of the area…and begin delivering lead awareness outreach to childcare facilities and schools within a 5-mile radius of the accident"[95],

[91] Fernandez-Martinez N, Ching-Lopez A, Lima A, Salamanca-Fernandez E, Perez-Gomez B, Jimenez-Moleon J, Sanchez M, Rodriguez-Barranco M. Relationship between exposure to mixtures of persistent, bioaccumulative, and toxic chemicals and cancer risk: A systematic review. Environmental Research. 2020 Sept; 188:109787. doi: 10.1016/j.envres.2020.109787.
[92] National Tribal Toxics Council. Understanding Tribal Exposures to Toxics. June 2015: 7. https://www7.nau.edu/itep/main/iteps/ORCA/6000_ORCA.pdf.
[93] Interim Framework at 10.
[94] Interim Framework at 23.
[95] Interim Framework at 25.

which references an explosion at a lead smelter in Ohio. EJSCREEN, known as the Environmental Justice Screening and Mapping Tool allows users to access national environmental and demographic data and to assess health risks to communities. At the time of submitting these comments, the EJSCEEN tool as well as other federal screening tools, like the Centers for Disease Control Social Vulnerability Index or the Climate and Economic Justice Screening Tool, have been removed and the data is no longer available online. The removal of these tools severely limits both the Agency and the public's ability to assess environmental health risks at the early stages of conducting a CIA.

- On page 28 under *EPA Cumulative Impacts Work Underway*, it is stated that EPA developed performance measures in response to the 2023 Inspector General report entitled, *The EPA Needs to Further Refine and Implement Guidance to Address Cumulative Impacts and Disproportionate Health Effects Across Environmental Program.* Commenters recommend that the performance measures are placed online for public access and should consider a public comment period for communities to provide input on the performance measures EPA will use to track this effort.
- On pages 55-56, the *Air Toxics Rules for the Synthetic Organic Chemical Manufacturing Industry and Polymers & Resins Industries* are referenced as an example of advancing analysis of cumulative impacts. Here, community risk to air toxics emissions were evaluated, however, the community risk assessment was not used in the final determination for post-control emissions reductions for the source categories. As stated earlier in the section, examples of cumulative impacts projects should be updated on a regular basis, and narratives should include whether consideration of cumulative impacts had a material/tangible effect in regulatory decision making and/or outcomes.
- On page 49 (Appendix A. Tools and Reports for Evaluating Tribal Exposures) lists resources to inform assessment Tribal exposure scenarios. Notably absent from the list is *Draft Considerations and Resources for Assessing Tribal Exposures in TSCA Risk Evaluations* which was released in September 2024. This resource provides data, approaches, and tools to support integration of Tribal exposures and lifeways into exposure assessments conducted under the Toxic Substances Control Act. EPA also engaged in a consultation and coordination process with Tribes to discuss the *Draft Considerations*, which included Tribes providing their own data for EPA to include into the final version of the document.

VII. Conclusion

Commenters commend the EPA for designing a thorough, objective, and evidence-based framework for assessing cumulative impacts at the Agency. Cumulative impacts are an integral part of the risk evaluation process, which is needed to account for the real-world risks and stressors that people in fenceline communities and elsewhere experience daily. The science for evaluating cumulative impacts and risk has evolved, as evidenced by the National Research

Council of the National Academies as well as state-based environmental laws and policies. Commenters urge the EPA to incorporate the assessment of cumulative impacts and risk into all assessments and evaluation methods where it is scientifically possible. Finally, it is integral for the EPA to take careful consideration of public comments and to incorporate them into the final framework document without delay. Thank you for your consideration, and if you have any questions about this comment, please contact Michelle Mabson at mmabson@earthjustice.org, Eve Gartner at egartner@earthjustice.org, Jasmine Jennings at jajennings@earthjustice.org, or Ebony Griffin-Guerrier at eguerrier@singletonschreiber.com.

Respectfully,

California Safe Schools
Center for Biological Diversity
Earthjustice
Environmental Transformation Movement of Flint
Interfaith Council for Peace and Justice
Learning Disabilities Association of America[96]
Moms for a Nontoxic New York
People's Water Board Coalition, Michigan
RiSE for Environmental Justice
Sierra Club
Singleton Schreiber
The Original United Citizens of Southwest Detroit
Union of Concerned Scientists

[96] Learning Disabilities Association of America state affiliate signees include: Learning Disabilities Association of Alabama, Learning Disabilities Association of Arkansas, Learning Disabilities Association of Delaware, Learning Disabilities Association of Georgia, Learning Disabilities Association of Illinois, Learning Disabilities Association of Iowa, Learning Disabilities Association of Maine, Learning Disabilities Association of Michigan, Learning Disabilities Association of Minnesota, Learning Disabilities Association of New Jersey, Learning Disabilities Association of New York State, Learning Disabilities Association of Oklahoma, Learning Disabilities Association of South Carolina, Learning Disabilities Association of Texas, Learning Disabilities Association of Utah, Learning Disabilities Association of Virginia, and Learning Disabilities Association of Wisconsin.