

Unfinished Business

A Review of Public Comments on the Environmental Protection Agency's Cumulative Impacts Framework

HIGHLIGHTS

Cumulative impacts analysis evaluates the combined effects of multiple stressors and burdens—social, environmental, health, historical, cultural, and economic—to inform more comprehensive and equitable decisionmaking. After decades of efforts by advocates and experts, the US Environmental Protection Agency (EPA) issued a new framework in November 2024 for the use of cumulative impacts in policymaking and requested public comment. Since January 2025, however, the Trump administration has made changes that undermine environmental justice and public health, including the EPA's ability to use the Cumulative Impacts Framework, and has not responded to any comments on the Framework.

The Union of Concerned Scientists (UCS) reviewed and analyzed public and Tribal community comments on the Framework. UCS also convened four meetings of experts to review the Framework. In the absence of federal leadership, this report will help inform efforts to advance cumulative impacts policies and practices.

Kristie Ellickson, PhD

Darya Minovi, MPH

Robin M. Collin, JD, Esq., PhD

Alan Walts, JD

Carol Ann Gross-Davis, PhD, MS

Samuel Kay, PhD

September 2026

www.ucs.org/resources/unfinished-business
es.ucs.org/recursos/asuntos-pendientes

<https://doi.org/10.47923/2026.16224>

Technical Support Document

Project Planning and Scoping

Early in March of 2025, a group of independent researchers and advocates (formerly of the US Environmental Protection Agency [EPA], National Environmental Justice Advisory Council [NEJAC], and White House Environmental Justice Advisory Council [WHEJAC]) began meeting with Union of Concerned Scientists (UCS) staff to develop strategies in light of the mass financial, programmatic, and staff rescissions at the EPA under the second Trump administration (UCS 2025). Many such groups formed at that time, but this one was specifically focused on advancing the viability of future environmental justice and cumulative impacts (CI) work.

This group identified two actionable priorities: to request EPA CI materials through the Freedom of Information Act so that scientists and nonfederal entities had access to these works; and to review and synthesize the public comments on the EPA *Interim Framework for Advancing Consideration of Cumulative Impacts* (CI Framework) (EPA 2024).

This document lays out the process and procedures that we followed to review and synthesize the public comments and verify the analysis through facilitated discussions in a series of convenings.

Theme Development and Testing Process

Independent researchers (formerly EPA staff) and UCS scientists and analysts began meeting in April 2025 to plan and carry out a qualitative thematic analysis of the 92 public comments on the CI Framework submitted between November 21, 2024, and February 19, 2025 (EPA 2024).

The technical team downloaded the public comments from the nonrulemaking docket for EPA-HQ-OLEM-2024-0360 at Regulations.gov (Fed Reg 2025). The documents saved included public comments submitted directly and public comments submitted as attachments, and several of the public comments included attached documents as evidence. Some of these attachments were relevant to the CI Framework, and others were not (e.g., those regarding an air permit relevant to the commenter's location, but not the CI Framework). Included in the comment docket were 2,890 similar comments reflecting what the EPA identified as a mass comment campaign.

The team of coders identified themes and subthemes (Table A1) in the (coded) documents that were relevant to the CI Framework and did not individually code the results of the mass comment campaign. In all, the coders were able to code 101 of the 107 total available documents on the docket. This was our dataset.

In order for the five individual coders to code the dataset independently and not introduce bias, we needed to develop themes and subthemes, define them clearly, and then test for consistency between coders. We began with five researchers each reading a fifth of the comments, and two additional researchers each reading 24 of the comments in replication. Thus, over 50 percent of the comments were read twice to ensure a complete and robust understanding of the contents, so we could ideate and then test themes and subthemes and relevant definitions.

The researchers extracted a set of descriptive data for each document in the dataset, including the unique EPA ID; the comment URL; the date submitted; the organization type; who read the comment and provided this information; whether the comment was general or detailed; what issues the comment described (science, policy, legal, action); the geography of the commenter, if available; whether the comment was supporting, opposing, or neutral; and any specific themes or topics brought up in the comment. Additionally, we identified commenters to potentially invite to a series of facilitated convenings that our analytical team planned to carry out after the analysis to verify our findings. We documented these observer analyses in a spreadsheet (UCS 2026).

The researchers met to discuss this initial reading of the comments and articulated a series of themes and subthemes from that discussion. Two researchers ran two rounds of consistency testing, in which they read two of the comments and assigned themes and subthemes (i.e., coded) and then tested where they coded the same or differently. We used NVivo 15.4.0 (10) software to code and share work, allowed sentences and clauses to be coded with multiple themes and subthemes, and allowed coding at the general theme level (i.e., a subtheme was not necessary).

After these two initial tests, four from the technical team coded 10 of the public comments and then tested for consistency across coders when coding the same document. We determined that there were too many subthemes to distinguish, and we pared down the subthemes. We then repeated this coding and consistency testing two additional times, further paring down the themes and subthemes and clarifying the definitions through group discussions. For example, we reduced “shaping a CI program” and “executing a CI program” into a combination of those themes, since there was too much overlap in the underlying meaning of those themes. Over this process, we reduced the themes from 10 to 5 (UCS 2026).

By the fifth iteration, we were consistently coding the majority of the themes and subthemes per document based on a Gwet’s AC1 score of greater than 0.6, for fair to good agreement (Dettori and Norvell 2020; Neuendorf 2002). Better agreement, based on these statistics, means that coders will predominantly assign the same themes and subthemes to documents when reading independently.

We were not consistent for rationale, qualities and values, goals, evaluation, lack of rule or law, or CI assessments inform actions and decisions. Since our potential for error was higher for these subthemes, we will not compare them using statistical summaries or inference. For overall theme consistency, we only reached moderate reliability for requirements for CI consideration and ensuring desired outcomes from a CI program. Since our potential for error was higher for these themes, we will not compare them using statistical inference or summary.

Next, we divided up the 107 documents available on the docket and began coding each public comment for the themes and subthemes (Table A1). After this coding was completed, we compiled the coding projects and documented the counts of themes and subthemes in the documents and overall.

A writing team of six researchers divided up the coding results into the themes, and each developed a section of a report based on their assigned theme, with instructions to include a description of the themes and subthemes, counts of occurrences, and examples from the relevant public comments.

Ground-Truthing Findings in Facilitated Convenings

Toward the middle of the report drafting, two independent researchers (formerly EPA staff) and a group from the UCS Center for Science and Democracy began planning four facilitated convenings to ground-truth the qualitative analysis. Ground-truthing is used in community participatory research to connect a technical analysis or report with the expertise of those directly involved, such as community members who live with multiple stressors and burdens, or CI (Sadd et al. 2014; Sadd et al. 2015). We developed the basic structure and diversity of perspectives that would be useful to improve, verify (ground-truth), and expand the report. We also devised clear roles for the convenings, including assigning rapporteurs, multiple note-takers, facilitators, and presenters. We did not record the convenings, to ensure confidentiality. The planning team determined the agendas, discussion questions, and the framing of each of the four convenings.

We invited 18 individuals to four virtual one hour and a half convenings on February 18, March 18, April 15, and May 6. These individuals were involved in developing the CI Framework, commenting on the CI Framework, or developing other recommendations on CI for the EPA (e.g., through the National Academies of Sciences, Engineering, and Medicine [NASEM]; WHEJAC; or NEJAC). They were offered a stipend for their time, and were sent the draft report for review before the first convening.

First Convening

In the first convening on February 18, our planning group, two rapporteurs, and 13 participants agreed on the following community agreements:

- We agree to create a space that is respectful and confidential, listen with intent, have shared accountability, and center community voices.
- We agree to echo and agree with each other in the chat or with reaction emojis.
- Everyone here has expertise, including community lived experiences.

After group introductions, we presented on the theme development process and reviewed the themes and subthemes for participants, and then had a facilitated discussion around these questions:

Q1. From the overview presented, what resonates most strongly with you? What do we least need to explore further?

Q2. Based on the report, the presentation, and looking beyond the EPA: What is missing in the public comments? What feels incomplete or unclear?

Q3. What do you wish you would have stated in your comments? What do we need to be doing to get this work implemented in communities with respect to tools that allow community leaders to pick up the process and drive it from the community scale and supporting long-term community ownership?

Q4. What are the anticipated and hoped-for roles in CI work? Government? Community leaders? Businesses? What does this type of work look like?

Second Convening

In the second convening on March 18, 15 participants and two rapporteurs discussed the themes and subthemes resulting from the qualitative analysis. Two breakout groups had facilitated discussions on the science and legal aspects of CI reflected in the public comments. The discussion questions were as follows:

Developing CI Assessments (science breakout)

Q1. The NASEM report offers a framework for CI assessment. What resonates—and what needs to be challenged, expanded, or localized? What are the most critical gaps in the state of the science?

Q2. What role should public health play in setting the standards and direction of CI science going forward?

Q3. What elements must be included in effective CI legislation or regulatory frameworks to ensure consistent implementation and meaningful outcomes?

Requirements for CI Assessments and Programs (legal breakout)

Q1. Which actors, agencies, offices, or decisionmakers must be explicitly identified in law or policy to ensure accountability for implementing a CI assessment?

Q2. Where are the critical decision points in environmental governance, and who are the key decisionmakers, partners, and leverage points needed to move CI assessments from an optional practice to a routine and required component of decisionmaking? How do we pull in decisionmakers to get them more connected to the environmental decisions?

Q3. Many agencies have adopted explicit equity commitments. How can CI assessments be positioned as a practical mechanism through which agencies fulfill—and can be held accountable for—those commitments? Why don't they move forward on the ground? Why are they hung up even in states with progressive laws?

Shaping and Executing a CI Program

Q1. What does it look like when CI becomes a program rather than a project? What structural elements make it sustainable and impactful?

Q2. Where are the trust deficits that most need to be addressed for a CI program to work—and what would meaningful repair outcomes look like? What accountability measures need to be present to ensure meaningful outcomes for those with direct lived experience?

Third Convening

In convening three, we continued the facilitated discussions, covering two additional themes with the following discussion questions:

Q1: What does meaningful community engagement in a CI program actually require and how is that different from what most agencies currently do?

Q2: What types of activities, connections, and information-sharing are required for community engagement in a CI program?

Q3: How do we move from process outcomes (who was consulted) to health and equity outcomes that CI programs are actually supposed to deliver?

Q4: CI touches civil rights, environmental justice, environmental science, and public health but these are not the same thing. How do we hold that complexity without collapsing it or creating turf battles? They have their own institutional goals and guidance.

During the discussion of the theme ensuring desired outcomes in a CI program, convening participants used the word “accountability” to describe this concept. So we pivoted this discussion to get a better understanding of what the participants meant by accountability. This discussion probed the gap and possible convergence between accountability as codified in law and regulation versus accountability as defined and envisioned by impacted communities.

Q1. What is a good process for determining accountability metrics, and what should those metrics be?

And finally, in convening three, we asked participants to lead us through what must be in and could be left out of the report.

Between the third and the fourth convenings, we integrated quotes and concepts from these three convenings into the report and sent the updated report out to the participants for review.

Fourth Convening

In convening four on May 6, 13 participants and one rapporteur discussed the draft report, including what was potentially missing, over- or understated, and adequate. The participants additionally discussed dissemination plans for the report and spent time thanking participants for their time and expertise.

Use of the Zoom Chat Feature

In each of the convenings, we used the Chat feature to gather and share additional information as follows:

Convening 1 - What motivates you to do this work?

Convening 2 - What is one thing you wish decisionmakers understood about CI that they consistently get wrong or overlook?

Convening 3 - When you hear the word “accountability,” what comes to mind?

Convening 4 - If you had to bet on the single biggest lever for advancing CI policy at the state and local levels in the next two years, what is it?

Limitations of the Work

One limitation of the conclusions of the report stems from the exclusion of representation by regulated parties in the convenings. Although they bring relevant expertise to this topic, there is significant evidence (Ford et al. 2025) that regulated parties have greater access to EPA staff and leadership in programmatic and regulatory work of the agency. A second limitation stems from the fact that there were 2,890 comment letters that the EPA deemed similar, to the point of being duplicative. Our team did not individually code these letters, and therefore any individual concepts or recommendations in these letters could have been lost in our analysis. A third limitation was mentioned earlier and stems from our lower inter-reliability scores for some subthemes and themes. This means that coding is noisier than for other themes and subthemes and that we cannot (and have not) applied any statistical inference or summaries to these themes and subthemes.

References

- Dettori, Joseph R., and Daniel C. Norvell. 2020. "Kappa and Beyond: Is There Agreement?" *Global Spine Journal* 10 (4): 499–501. <https://doi.org/10.1177/2192568220911648>
- EPA (US Environmental Protection Agency). 2024. *Interim Framework of Cumulative Impacts*. <https://www.epa.gov/system/files/documents/2024-11/epa-interim-cumulative-impacts-framework-november-2024.pdf>.
- Fed Reg (Federal Register). 2025. "Interim Framework for Advancing Consideration of Cumulative Impacts." <https://www.regulations.gov/document/EPA-HQ-OLEM-2024-0360-0001/comment>
- Ford, Alex T., Marlene Ågerstrand, Michael G. Bertram, Miriam L. Diamond, Rainer Lohmann, Andreas Schäffer, Martin Scheringer. 2025. "Corporate 'Capture Strategies' Impacting Human and Ecosystem Health." *Environmental Science & Technology Letters* 12 (10): 1279–86. <https://doi.org/10.1021/acs.estlett.5c00277>
- Gwet, Kilem L. 2021. *Handbook of Inter-Rater Reliability: The Definitive Guide to Measuring the Extent of Agreement Among Raters: Analysis of Categorical Ratings*. 5th ed. Vol. 1. Gaithersburg, MD: AgreeStat Analytics.
- Minovi, Darya, Kristie Ellickson, Jules Barbati-Dajches, and Rachel Cleetus. 2025. *Science and Democracy Under Siege: Documenting Six Months of the Trump Administration's Destructive Actions*. Cambridge, MA: Union of Concerned Scientists. <https://www.ucs.org/resources/science-and-democracy-under-siege>
- Neuendorf, Kimberly. 2002. *The Content Analysis Guidebook*. Thousand Oaks, CA: Sage Publications.
- Sadd, James L., Rachel Morello-Frosch, Manuel Pastor, Martha Matsuoka, Michele Prichard, Vanessa Carter. 2014. "The Truth, the Whole Truth, and Nothing but the Ground-Truth: Methods to Advance Environmental Justice and Researcher–Community Partnership." *Health Educ Behav* Jun; 41(3):281–90. <https://pubmed.ncbi.nlm.nih.gov/24347142/>
- Sadd, James. L., Eric S. Hall, Manuel Pastor, Rachel A. Morello-Frosch, Debbie Lowe-Liang, JJacquelyn Hayes, Charles Swanson. 2015 "Ground-Truthing Validation to Assess the Effect of Facility Locational Error on Cumulative Impacts Screening Tools". *Geography Journal* 324683. <https://doi.org/10.1155/2015/324683>
- UCS (Union of Concerned Scientists). 2025. *Fair Access: Guidance for Meaningful Public Participation in Government Decisionmaking*. Cambridge, MA. <https://www.ucs.org/resources/fair-access>
- . 2026. "CI Framework Public Comments Thematic Analysis." Accessed April 2026. Harvard Dataverse. <https://doi.org/10.7910/DVN/PTIJVU>