



Tishman Environment
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UNDERSTANDING THE EVOLUTION OF ‘CUMULATIVE IMPACTS’ DEFINITIONS AND POLICIES IN THE U.S.

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Released in August 2022

Overview

The issue of cumulative impacts (CI) has been a central focus of the environmental justice (EJ) movement for decades. Understanding cumulative impacts require consideration of the complex interplay between socio-demographic, environmental, and public health factors that impact EJ communities. These communities are both more likely to be overburdened with pollution and more likely to suffer worse impacts from a given amount of pollution due to the socio-economic and other conditions in which they live¹. Yet advancing actions that address cumulative impacts in EJ communities has been challenging for a variety of reasons. One of the key barriers to addressing CI in environmental decision-making is the narrow focus of existing environmental regulations that do not include an explicit mandate to consider multiple pollutants from multiple sources. Scientific frameworks, such as risk assessment, continue to have major gaps in capturing cumulative health risks; and most environmental laws and regulations are not set up to confront the socio-demographic and health disparities that impact EJ communities.² Finally, one of the biggest obstacles to implementing a proactive approach to addressing CI has been the lack of political will to limit the activity of industry in EJ communities where cumulative impacts have traditionally been concentrated.

Nevertheless, in the past decade, EJ advocacy has pushed for increasing attention to CI in federal and state policies. During this time, a variety of CI definitions and methodologies evolved for application in agency guidance, public policies, and academic research. Furthermore, in recent years, various CI screening tools have been developed with the collaboration of diverse stakeholders, including EJ leaders, EJ scholars, and public sector researchers. These advancements have created momentum throughout the US to address the issue of cumulative impacts.

Summary of Findings

¹ Morello-Frosch, R., Zuk, M., Jerrett, M., Shamasunder, B., & Kyle, A. D. (2011). Understanding the cumulative impacts of inequalities in environmental health: implications for policy. *Health affairs*, 30(5), 879-887.

² Cumulative Impacts and the Permitting Process, NJEJA, 2019, https://njeja.org/wp-content/uploads/2021/08/NJEJA-Statewide-Cumulative-Impacts-Policy_2019.pdf

Thirteen states (CA, HI, IL, MA, MD, MI, MN, NJ, NM, NY, OR, VT, WA) were identified that have legislation, mapping tools, and/or agency guidance documents that include consideration of CI. Four of these 13 states (CA, MN, NY, WA) have developed, or are currently developing, geo-spatial mapping tools for expressing CI. There are also mapping tools intended for identifying EJ communities. These tools have evolved to include an increasing number of indicators and advanced mapping methods, but not all of them include methods for calculating a cumulative impact score or threshold. For example, although the US EPA EJScreen has a number of environmental and socio-demographic indicators, it does not have a method for adding or expressing these indicators in a cumulative manner.

There are several state-level CI mapping tools that bring together socio-demographic, health, and environmental information to illustrate the relative CI levels across diverse geographic areas. These mapping tools can help advocates to develop legislation by revealing important patterns and identifying priority areas for protection or investment.³ However, the presence of CI tools or maps alone does not necessarily lead to proactive CI policies to address cumulative impacts. EJ advocates are increasingly seeking the enactment of EJ laws that substantively address cumulative impacts in environmental decision-making rather than for informational purposes. While the development of CI tools has increased in the last decade, the application of these tools to environmental decision-making, such as permitting, has been less prevalent.

At the time of conducting this research in the Summer of 2022, only five states (CA, MD, NY, NJ, WA) had enacted legislation that addresses CI explicitly.⁴ The bills that were enacted in these states have primarily focused on provisions for increased public participation in the permitting processes and on actions for increased understanding (i.e. methodologies) for CI analysis. For example, in New York, *Part 487 Analyzing Environmental Justice Issues in Siting of Major Electric Generating Facilities Pursuant to Public Service Law Article 10* establishes that permit applicants are required to complete a CI analysis that includes consideration of air emissions from facilities that are within several miles of the proposed plant. In New Jersey and Washington, the CI or EJ bills stand out because they require permit applicants to submit impact statements that assess cumulative environmental and public health impacts in EJ communities. The New Jersey EJ bill (*S232*), entitled *An Act Concerning Environmental Permits in Certain Areas*, directly points out that the state shall “deny a permit for a new facility upon a finding that approval of the permit would, together with other environmental or public health stressors affecting the overburdened community, cause or contribute to adverse cumulative environmental or public health stressors in the overburdened community that are higher than those borne by other communities within the State, county, or other geographic unit of analysis.” This is the only law that has been enacted which directs the environmental regulatory agency not only to require a CI analysis but also mandates that the state deny permits if a determination of cumulative impacts is found in the proposed census block.

Similar bills that focus on CI in permitting have been introduced in the last few years in Hawaii, Minnesota, Illinois, and Maryland, but none have been adopted. Many of these proposed bills focus on the implementation of CI tools and on restricting permitting on the basis of cumulative impact analyses. In Maryland, for example, three cumulative impact bills were introduced between 2014 and 2016⁵, but none were adopted. For instance, the *Maryland Act Concerning Environment, Permit Determinations and Cumulative Impact Assessments* (introduced in 2014) included language to require the Department of the

³ Zrzavy, A., Blondell, M., Kobayashi, W., Redden, B. & Mohai, P. (2022). Addressing Cumulative Impacts: Lessons From Environmental Justice Screening Tool Development and Resistance. *Envtl. L. Rep.*

⁴ Since publishing this research other CI legislation has passed in NY.

⁵ Payne-Sturges, D. C., Sangaramoorthy, T., & Mittmann, H. (2021). Framing Environmental Health Decision-Making: The Struggle over Cumulative Impacts Policy. *International journal of environmental research and public health*, 18(8), 3947.



Environment to solicit Cumulative Impact Assessments from permit seekers. This year, *SB. 528 The Climate Solutions Now Act of 2022* passed in Maryland. This act is primarily targeted at greenhouse gas emissions reduction but includes provisions to reduce impacts on overburdened communities, starting with the development of methodologies that include CI analyses to identify “disproportionately affected” communities. An unpassed policy worth highlighting is the *Act Relating to Environmental Justice Mapping* introduced in Hawaii in 2021. This act specifically calls for the identification of a methodology to measure the cumulative impacts of all indicators selected by the EJ mapping task force, but points out that methodologies should “Account for conditions that are not captured by the quantitative data used to develop maps and environmental justice scores by developing and executing a plan to perform outreach to relevant communities; and establishing a mechanism by which communities can self-identify as environmental justice communities in the tool and that may include citing qualitative data on conditions for which quantitative data are lacking, such as cultural loss in native Hawaiian communities.”⁶ This last point is pertinent given that EJ communities and activists have highlighted the importance of difficult-to-quantify indicators for inclusion in cumulative impacts policies.

At the federal level, several environmental justice laws have recently been proposed that include CI considerations. These bills were introduced between 2020 and 2022, but thus far none have passed. The *Environmental Justice for All Act of 2021*, for instance, amends the Federal Water Pollution Control Act and the Clean Air Act to require the submission of CI analyses when applying for or renewing a permit. The *Environmental Justice Legacy Pollution Cleanup Act of 2020* also amends the Clean Air Act to place restrictions on permitting in overburdened communities and includes appropriations for environmental cleanup and remediation of threats to public health. These bills were introduced and then referred to the Committee on Environment and Public Works and the Committee on Appropriations respectively, but no further actions have been taken. In addition to these legislative proposals, there are also several guidance documents and reports from the US EPA addressing CI. Recently, the US EPA’s Office of Research and Development (ORD) released a white paper recommending ways to strengthen the scientific foundation for assessing cumulative impacts within the Office’s Strategic Research Action Plans.

Cumulative Impacts Legislation: 3 State Comparison			
	New Jersey	New York	Hawaii
Cumulative Impacts Legislation	Yes, enacted	Yes, enacted	Introduced but not adopted
Cumulative Impact Link/Title	<u>Environmental Justice and Cumulative Impact Ordinance</u>	<u>S6599. Climate Leadership and Community Protection Act</u>	<u>SB 1277 Environmental Justice, Mapping, Data Collection</u>
Definition of Cumulative Impact	In this ordinance, ' cumulative impacts ' is used to refer to environmental cumulative impacts: the combined total effect of <i>many sources of</i>	Greenhouse gas emission offset projects must consider the potential for direct, indirect, and cumulative emission impacts from this mechanism, including localized impacts in	Cumulative impacts , are referenced in the context of integrated demographic, public health, pollution, and environmental effects vulnerabilities.

⁶ SB.1277 – State of Hawaii Senate 31st Legislature (2021). A Bill for An Act Relating to Environmental Justice Mapping. https://www.capitol.hawaii.gov/session2021/bills/SB1277_.HTM

	<p><i>pollution</i>, from stationary sources such as power plants to mobile sources such as cars and trucks, creates a cumulative impact that may be more harmful to human health than the impact of any one source of pollution in isolation.</p>	<p>disadvantaged communities. (cumulative refers to the aggregated impacts of emissions).</p> <p>The Act also refers to cumulative impacts of climate change in disadvantaged communities</p>	
Social and Environmental Indicators	<p>Permit Applicant shall provide information for the categories below (only if a permit is involved for the category):</p> <ul style="list-style-type: none"> • Air Pollution • Stormwater Retention and Discharge • Hazardous and Toxic Materials • Truck Trips • Fuel Use • Waste & Recycling • Nuisance Issues 	<p>No specific indicators mentioned in Bill. Yet, it is stated that The Environmental Justice working group, in consultation with the Department of Environmental Protection, the departments of health and labor, the New York state energy and research development authority, and the environmental justice advisory group, will establish criteria to identify disadvantaged communities for the purposes of co-pollutant reductions, greenhouse gas emissions reductions, regulatory impact statements, and the allocation of investments related to this article (see row below).</p>	<p>The task force shall integrate indicators into the tool that fall into categories, including:</p> <ul style="list-style-type: none"> (A) Demographics, particularly relating to socioeconomic hardship and social stressors (B) Public health, particularly data that is indicative of sensitive populations (C) Pollution burdens (D) Environmental effects

Emerging Issues and Future Trends

This [spreadsheet](#) summarizes the evolution of Cumulative Impacts (CI) definitions, policies and measurement methodologies shows that the definitions of CI have expanded to include more health disparities and socio-economic indicators and that an increasing number of CI analysis reports, mapping tools, and policies have been released in the last decade. Most of these policies, tools, and agency guidance are intended to provide enhanced information and participation in decision-making processes. Some policies use these tools to allocate resources (such as funding or increased enforcement), while only a handful of policies aim to mitigate cumulative impacts through permitting.

The comparison of various frameworks used to measure CI shows that mapping tools such as CalEnviroScreen 4.0 are being implemented across various states. Most of the tools use some combination of socio-demographic datasets (i.e. census) as well as environmental exposure and burden



data that is widely available at the state and national levels (e.g. NATA data, traffic proximity, etc.). Less frequently used are those indicators that take into consideration local stressors such as impacts to indigenous communities, disparities generated by tourism economies, and high population density in cities—as these are only seen in a few states (HI, NY, NJ). Since cumulative impacts can vary greatly across geographies, and the availability and quality of data can also diverge significantly, CI tools developed in different contexts must consider these divergences. There is high value in the inclusion of locally specific indicators, as well as indicators that capture critical elements related to EJ, such as race, civic engagement, and climate change vulnerabilities.

In terms of legislation, CI bills have been enacted in California, New York, New Jersey, and Washington since 2012. However, the progress in the enactment of legislation has not been as rapid as the development of mapping tools and the increasing comprehensiveness of indicators. Various substantive and protective CI bills have been introduced in states and at the federal level, but have not yet passed. The enactment of protective legislation that addresses regulatory reform and substantive decision-making processes of the state is necessary for addressing the legacy of cumulative impacts—yet these policies face significant legal and industry opposition. Key to the success of these policies is the leadership of EJ communities in the development of tools and legislation, including the processes for determining CI indicators and methodologies specific to their communities.