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Procedural Environmental Justice

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PROCEDURAL ENVIRONMENTAL JUSTICE

Jonathan Skinner-Thompson*

Abstract: Achieving environmental justice—that is, the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies—requires providing impacted communities not just the formal right, but the substantive ability, to participate as equal partners at every level of environmental decision-making. While established administrative policy purports to provide all people with so-called *meaningful involvement* in the regulatory process, the public participation process often excludes marginalized community members from exerting meaningful influence on decision-making. Especially in the environmental arena, regulatory decisions are often buried among engineering analyses or modeling assumptions.

This Article theorizes and calls for an empowered participatory process—one that provides environmental justice communities (those that are disproportionately exposed to pollution) with the consultation and technical expertise needed to bolster the authority of their lived experiences in order to substantively influence regulatory outcomes. While scholars and advocates have rightly foregrounded certain disparities in regulatory outcomes (for example, decisions about where facilities should be located and where enforcement resources are invested), far less attention is paid to the decision-making process that governs what pollution controls can, should, or must be installed. Yet these decisions legalize *acceptable* levels of pollution that a community must bear and sanction those levels for a generation to come. Environmental justice communities can—if properly supported—push back against inadequate or cursory approvals of what controls are implemented to reduce or avoid pollution. They can even press for better or alternative controls, buttressing recommendations with technical advocacy. Ultimately, this support can help improve administrative decision-making and reinforces a central tenet of the environmental justice movement—that communities be empowered to speak for themselves.

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INTRODUCTION

The Commerce City-North Denver metropolitan area is home to a diverse community, including many people of color, predominantly Spanish-speaking households, and low-income individuals.¹ The area includes not only houses and parks, but also a network of highways and industrial facilities.² One such facility is the Suncor Refinery—really, three plants from two refineries split by a boulevard.³ Plants 1 and 2 are

1. See *Community Health & the Environment in Commerce City-North Denver*, COLO. ENV’T PUB. HEALTH TRACKING, <https://coepht.colorado.gov/ccnd> [<https://perma.cc/2SE5-YP3E>].

2. See Kevin Beaty, *Brighton Boulevard Is Home to One of the Largest Polluters in the State. As the Newcomers Move In, Suncor May See More Pressure to Clean Up Its Act.*, DENVERITE (Oct. 4, 2019, 6:11 PM), <https://denverite.com/2019/10/04/brighton-boulevard-is-home-to-one-of-the-largest-polluters-in-the-state-as-the-hipsters-move-in-suncor-may-see-more-pressure-to-clean-up-its-act/> [<https://perma.cc/SWJ3-MDCW>] (“Past the old homes in Elyria Swansea, just beyond the city’s first cemetery, is the site of massive oil refining operations that date back to the 1940s.”).

3. COLO. DEP’T PUB. HEALTH & ENV’T, OPERATING PERMIT FOR SUNCOR ENERGY (U.S.A.) INC. – COMMERCE CITY REFINERY, PLANT 1 (WEST PLANT) & PLANT 3 (ASPHALT UNIT) (2018), <https://drive.google.com/drive/folders/0B0tmPQ67k3NVNi1ueTImYzRULWc> [<https://perma.cc/CP4G-ZF5A>] [hereinafter SUNCOR TITLE V OPERATING PERMIT (PLANTS 1 AND 3)]; COLO. DEP’T PUB. HEALTH & ENV’T, OPERATING PERMIT FOR SUNCOR ENERGY (U.S.A.) –

major suppliers of gasoline and diesel fuel for Colorado; Plant 3 is the state's main producer of asphalt.⁴ Suncor currently has two separate air operating permits issued by the Colorado Department of Public Health and Environment (CDPHE), which cover processes such as atmospheric and vacuum distillation, desalting, reforming, catalytic cracking, catalytic polymerization, and hydrotreating.⁵

The Suncor Refinery is a recurring source of “operational upsets”⁶ and bursts of “clay-like” smoke⁷ (and that’s just the air pollution).⁸ In fact, a 2017 study found that the neighborhood surrounding the Refinery was the most polluted area in the United States.⁹ According to the U.S. Environmental Protection Agency (EPA), more than 55% of the population within three miles of the Refinery live below the poverty line, and more than 75% of residents identify as a racial minority.¹⁰ “If this isn’t environmental injustice, I don’t know what is,” reported one community organizer; “[e]very time we smell that pollution, I think: We just died a

COMMERCE CITY REFINERY, PLANT 2 (EAST) (2009), <https://drive.google.com/drive/folders/0B0tmPQ67k3NVb3kyU3Byb0cybVU> [<https://perma.cc/5LYD-AY53>].

4. COLO. DEP’T PUB. HEALTH & ENV’T, SUNCOR PERMIT RENEWAL: PUBLIC INPUT OPPORTUNITIES, https://drive.google.com/file/d/1mnlo4ZzTkZGyLJ6_9EGNtNRF8dCQNX_s/view [<https://perma.cc/M7WK-NE5R>].

5. SUNCOR TITLE V OPERATING PERMIT (PLANTS 1 AND 3), *supra* note 3, at 1.

6. Bruce Finley, *Suncor Oil Refinery’s “Operational Upset” Spurs Call for Increased State Protection*, DENVER POST (Dec. 13, 2019, 6:31 AM), <https://www.denverpost.com/2019/12/13/suncor-refinery-emissions-pollution/> (last visited Apr. 7, 2022); *see also* Bruce Finley, *Suncor Oil Refinery Spewed Hundreds of Pounds of Toxic Gases over Denver—Again—After Xcel Power Outage*, DENVER POST (Mar. 17, 2017, 9:14 AM), <https://www.denverpost.com/2017/03/16/suncor-oil-refinery-toxic-gas-denver-xcel/> (last visited Apr. 7, 2022); Bruce Finley, *Suncor Oil Refinery Emitted Elevated Hydrogen Sulfide and Other Gas, at Levels Beyond the Plant that Company Officials Called ‘Acceptable’*, DENVER POST (Aug. 15, 2020, 11:30 AM), <https://www.denverpost.com/2020/08/14/suncor-energy-refinery-pollution-hydrogen-sulfide/> (last visited Apr. 7, 2022).

7. Bruce Finley, *Suncor Energy Oil Refinery North of Denver Emits Burst of “Clay-Like” and Hydrogen Sulfide Air Pollution*, DENVER POST (Mar. 18, 2020, 10:48 PM), <https://www.denverpost.com/2020/03/17/suncor-energy-oil-refinery-denver-air-pollution/> (last visited Apr. 7, 2022).

8. Bruce Finley, *Suncor Reports Chemical Sheen on Sand Creek, Breach of Containment Area at Refinery North of Denver*, DENVER POST (May 28, 2020, 3:25 PM), <https://www.denverpost.com/2020/05/27/suncor-refinery-chemical-sheen-sand-creek/> [<https://perma.cc/AT24-EFMW>] (describing a “sheen of benzene and other chemicals” detected on the surface of Sand Creek); *see also* Bruce Finley, *Colorado Ramps Up Response to Toxic “Forever Chemicals” After Discovery of Hot Spots Across Metro Denver*, DENVER POST (July 14, 2021, 2:33 PM), <https://www.denverpost.com/2019/09/10/pfas-chemical-contamination-denver-colorado/> (last visited Apr. 7, 2022) (reporting elevated levels of PFAS (toxic “forever chemicals”) contaminating Suncor’s property that may be spreading into Sand Creek, the South Platte River, and groundwater).

9. Complaint at 6, *WildEarth Guardians v. Colo. Dep’t of Pub. Health & Env’t*, No. 2021-CV-30213 (Colo. Dist. Ct. Feb. 16, 2021).

10. *Id.* at 7.

little. It's like we are closer to death.”¹¹

To achieve environmental justice—that is, the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies¹²—for marginalized communities, however, requires more than just extra process and more outreach. Indeed, those efforts could be counterproductive—to the extent they create a patina of participation and false legitimacy without empowered participation.¹³ In order to make meaningful change, an environmental justice agenda must provide impacted communities not just the formal right, but the substantive ability to participate as partners at every level of environmental decision-making. While established administrative policy purports to provide all people with so-called *meaningful involvement* in the regulatory process,¹⁴ the public participation process nevertheless often excludes marginalized community members from exerting meaningful influence on the decision-making process. Especially in the environmental arena, regulatory decisions are often buried among engineering analyses or modeling assumptions.¹⁵ Environmental regulation is difficult, dense, and often inaccessible to people without extremely specific training.¹⁶ Even courts are reluctant to second-guess the scientific and technical judgments of expert agencies.¹⁷ How then can impacted communities' perspectives be given real weight, shaping important decisions that affect their daily lives?

This Article calls for an empowered participatory process—one that provides environmental justice communities with the consultation and technical expertise needed to bolster the authority of their lived experiences in order to substantively influence regulatory outcomes. While scholars and advocates have rightly foregrounded certain disparities in regulatory outcomes (for example, decisions about where facilities should be located and where enforcement resources are invested), far less attention is paid to the decision-making process that governs what pollution controls can, should, or must be installed once

11. Bruce Finley, *Suncor Refinery Faces Colorado Review of Outdated Permits*, ASSOCIATED PRESS (Dec. 5, 2020), <https://apnews.com/article/denver-colorado-air-pollution-pollution-3741aede1fb41dee483b1d34e241d702> (last visited Apr. 7, 2022).

12. *See infra* Part I.

13. *See infra* section I.A.

14. *See infra* Part I.

15. *See infra* section II.C.

16. *Id.*

17. *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council*, 462 U.S. 87, 103 (1983).

facilities exist.¹⁸ Yet these decisions legalize *acceptable* levels of pollution that a community must bear and sanction those levels for generations to come.¹⁹ Environmental justice communities can—if properly supported—push back against inadequate or cursory approvals of lenient controls. They can even press for better or alternative controls, grounding their recommendations in technical advocacy. This is not to suggest that technical judgments are divorced from normative choices, but it recognizes that successful advocacy will require a degree of scientific fluency.

Some environmental statutes include models for how to provide this very support. The federal Superfund law²⁰—regulating the cleanup of contaminated soils, sediments, and groundwater—offers grant funds “to community groups to contract their own technical advisor to interpret and explain technical reports, site conditions, and EPA’s proposed cleanup proposals and decisions.”²¹ This Article uses the Superfund experience as a case study and recommends establishing a technical advisory program to help communities engage meaningfully with environmental decision-makers on pollution control as well. In doing so, environmental justice communities will gain the tools and capabilities to weigh in on technical judgments that have real and long-term impacts to their health and environment and attach substance to their right of participation.²²

Public participation is a fundamental principle of democratic governance.²³ But to ensure meaningful engagement in regulatory decision-making, governance reformists must be mindful of three principles of administrative law. The first is that agencies must consider all significant comments received during notice-and-comment decision-making.²⁴ The second is that significant comments are those that may

18. See *infra* section I.B.

19. See, e.g., RESTATEMENT (SECOND) OF TORTS § 286 (AM. L. INST. 1965) (“The court may adopt as the standard of conduct of a reasonable man the requirements of a legislative enactment or an administrative regulation whose purpose is found to be exclusively or in part (a) to protect a class of persons which includes the one whose interest is invaded, and (b) to protect the particular interest which is invaded, and (c) to protect that interest against the kind of harm which has resulted, and (d) to protect that interest against the particular hazard from which the harm results.”).

20. 42 U.S.C. §§ 9601–9675.

21. *Superfund: Technical Assistance Grant (TAG) Program*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/superfund/technical-assistance-grant-tag-program> [<https://perma.cc/2XEG-XSKQ>].

22. Adding substance to procedure is not unique to environmental advocacy. See generally, e.g., Robert J. Miller, *Consultation or Consent: The United States’ Duty to Confer with American Indian Governments*, 91 N.D. L. REV. 37 (2015) (critiquing “tribal consultation” practices as purely procedural in nature without any substantive right or effect).

23. See *infra* section I.B.

24. *Home Box Off., Inc. v. FCC*, 567 F.2d 9, 35 (D.C. Cir. 1977).

cause an agency to change course or alter a rule.²⁵ The third is that legal challenges to an agency decision must be based on issues that were raised with reasonable specificity during the comment period.²⁶ These three principles highlight not only the importance of public participation in administrative governance, but the necessity of effective participation. With these principles in mind, this Article proposes a capacity-based approach²⁷ to assessing procedural justice (or at least in defining *meaningful involvement*).²⁸ In doing so, the Article builds on democratic governance and environmental justice scholarship by focusing on the administrative state²⁹ and draws from my experience at the EPA and my work with small, under-resourced community and environmental groups.

This Article proceeds in four Parts. Part I introduces and analyzes the theoretical foundations of environmental and procedural justice, underscoring the need for meaningful participation as a part of any environmental justice agenda. Part II analyzes the complex regulatory framework for addressing air quality, explaining how it fails to promote the theories of environmental justice and public participation outlined in Part I. Part III describes the enhanced public participation opportunities available under the federal Superfund program while foregrounding its strengths and limitations. Part III also provides a case study of the Lower Duwamish Waterway Superfund site, which is the first and only Superfund site to include a stand-alone environmental justice analysis. Finally, Part IV draws from the Superfund analysis and case study to propose and outline the establishment of technical advisory groups to support environmental justice communities in other important regulatory contexts, helping fulfill some of the core environmental justice principles outlined in Part I. While its focus on empowered participation is situated in the environmental justice context, the Article also holds lessons for participatory procedure more broadly in other administrative governance

25. *Public Citizen, Inc. v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993) (citing *Home Box Off.*, 567 F.2d at 35 & n.58).

26. *See infra* note 86.

27. This approach dovetails from the capability approach to justice pioneered by Amartya Sen and further developed by Martha Nussbaum. Ingrid Robeyns & Morton Fibieger Byskov, *The Capability Approach*, STAN. ENCYC. PHIL. (Dec. 10, 2020), <https://plato.stanford.edu/entries/capability-approach/> [<https://perma.cc/8KHP-ESTM>]. In particular, Nussbaum's list of capabilities includes the ability to participate effectively in political choices. *See* MARTHA C. NUSSBAUM, *CREATING CAPABILITIES: THE HUMAN DEVELOPMENT APPROACH* 33–34 (2011).

28. Providing funds for technical support in rulemakings and permitting decisions will not solve all of the systemic injustices faced by environmental justice communities, but it can help those communities meaningfully engage in highly technical decisions. And though their participation may slow regulatory decisions, effective participation by affected communities can bring legitimacy to agency decision-making and build trust in a process that might otherwise be opaque or exclusionary.

29. *See infra* sections I.A–B.

contexts by offering a substantive lens through which to examine procedural rights like public participation.³⁰

I. ENVIRONMENTAL JUSTICE AND PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISION-MAKING

Environmental justice—as widely defined³¹—is the (1) fair treatment and (2) meaningful involvement of all people³² regardless of race, color, national origin, or income with respect to the development, and implementation and enforcement of environmental laws, regulations, and policies.³³ More broadly, environmental justice refers to those cultural

30. For example, the Federal Energy Regulatory Commission is currently taking steps to establish an Office of Public Participation and has solicited input on forming such an office. *See* FED. ENERGY REGUL. COMM'N, THE OFFICE OF PUBLIC PARTICIPATION (2021), <https://www.ferc.gov/media/ferc-report-office-public-participation> [<https://perma.cc/Q9GH-3S6Z>].

31. This “standard definition” of environmental justice was introduced by the EPA’s Office of Environmental Justice in 1998. Robert R. Kuehn, *A Taxonomy of Environmental Justice*, 30 ENV'T L. REP. 10681, 10682–83 (2000). Notably, the 1998 definition was limited to “fair treatment” and only included “development and enforcement” of environmental laws, but not “implementation.” *Id.* The definition evolved from earlier uses of the term *environmental equity*, which meant the “equitable distribution of environmental risks across population groups.” *Id.* at 10682. Because “equity” failed to promote risk reduction and avoidance, the EPA shifted to a “justice” lens in 1994 (renaming its Office of Environmental Equity, for example, to the Office of Environmental Justice). Other terms, including *environmental racism*, *environmental discrimination*, and *environmental injustice*, are sometimes used (particularly when identifying institutional causes and problems). *Id.* (defining “environmental racism” as “any policy, practice or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups, or communities based on race or color” and “environmental discrimination” as the “disparate treatment of a group or community based on race, class, or some other distinguishing characteristic”). Today most advocates and scholars employ *environmental justice* to focus on solutions and to include issues like class and tribal sovereignty. *See id.* at 10682; INDIGENOUS ENVIRONMENTAL JUSTICE (Karen Jarratt-Snyder & Marianne O. Nielsen eds., 2020); DINA GILIO-WHITAKER, AS LONG AS GRASS GROWS: THE INDIGENOUS FIGHT FOR ENVIRONMENTAL JUSTICE, FROM COLONIZATION TO STANDING ROCK (2019).

32. Some definitions limited attention to “citizens.” *Compare* MELINDA DOWNING, U.S. DEP'T OF ENERGY, ENVIRONMENTAL JUSTICE AND PUBLIC PARTICIPATION THROUGH TECHNOLOGY—BUILDING COMMUNITY CAPACITY (1999), https://www.energy.gov/sites/prod/files/EJ_buildingcommunitycapacity_0.pdf [<https://perma.cc/9XQF-2JYD>] (defining environmental justice as “the fair treatment and meaningful involvement of all citizens in environmental decision-making”), with Clifford J. Villa, *Remaking Environmental Justice*, 66 LOY. L. REV. 469, 478–80 (2020) (discussing concerns with “all people” in light of the Black Lives Matter movement and the countertextual “All Lives Matter”).

33. *See* Aelita Neimanis, Heather Castleden & Daniel Rainham, *Examining the Place of Ecological Integrity in Environmental Justice: A Systematic Review*, 17 INT'L J. JUST. & SUSTAINABILITY 349, 358 (2012) (finding after a systematic review of relevant literature that “the EPA main definition . . . of environmental justice was cited most frequently”). This definition is not without its detractors. *See, e.g.,* *Environmental Justice & Environmental Racism*, GREENACTION, <http://greenaction.org/what-is-environmental-justice/> [<https://perma.cc/6DTH-QN7R>] (“Government agencies, like the EPA, have been trying to coopt the movement by redefining environmental justice

norms, values, rules, regulations, behaviors, policies, and decisions to support sustainable communities where people can interact with confidence that the environment is safe, nurturing, and productive.³⁴

As defined above, there are two pillars of environmental justice: fair treatment and meaningful involvement. Fair treatment means that no group of people should bear a disproportionate share of any negative environmental consequences.³⁵ Meaningful involvement means that people have an opportunity to participate in decisions that may affect their environment or health; that their contributions can influence regulatory decisions; that their concerns will be considered in the decision-making process; and that decision makers will seek out and facilitate the involvement of those potentially affected.³⁶ While both are critical dimensions of environmental justice, this Article is focused on the second pillar—meaningful involvement.

Several legal scholars have offered alternative models to improve public input in administrative governance, but those models fall short for historically marginalized communities.³⁷ Environmental justice scholars, meanwhile, have tried to more squarely target the structural barriers to full and meaningful participation of those same communities.³⁸ Nevertheless, I contend that because these efforts fail to displace traditional notice-and-comment decision-making, they too fail to fully empower environmental justice communities.

A. *A History of Public Participation Models in Administrative Governance*

Public participation is a central feature of democratic governance.³⁹

as ‘fair treatment and meaningful involvement,’ something they consistently fail to accomplish, but which also falls far short of the environmental justice vision.”).

34. Bunyan Bryant, *Pollution Prevention and Participatory Research as a Methodology for Environmental Justice*, 14 VA. ENV'T L.J. 589, 589 n.1 (1995).

35. *Learn About Environmental Justice*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/environmentaljustice/learn-about-environmental-justice> [https://perma.cc/Q5AE-QX7U]. Fair treatment is a form of “distributive justice,” which (as a concept) goes back as far as Aristotle. JOHN THIBAUT & LAURENS WALKER, *PROCEDURAL JUSTICE: A PSYCHOLOGICAL ANALYSIS* 3 (1975).

36. *Learn About Environmental Justice*, *supra* note 35. Meaningful involvement, as a form of “procedural justice,” is a much newer concept than distributive justice. THIBAUT & WALKER, *supra* note 35, at 2. And to some (such as legal practitioners and scholars), procedural justice has attained “supreme importance.” *Id.*

37. *See infra* section I.B.

38. *See id.*

39. While this Article is focused on democratic governance, public participation may also be a fundamental or human right—a subject for further research.

The belief that every person has a voice is a cornerstone of deliberative democracy.⁴⁰ Participatory theorists have long argued that meaningful participation not only leads to better decisions, “but also facilitates social stability by developing a sense of community, increasing collective decision making, and promoting acceptance and respect of the governance process.”⁴¹ This notion is an equally “enduring tradition in administrative law.”⁴²

40. Sherry R. Arnstein, *A Ladder of Citizen Participation*, 35 J. AM. PLANNING ASS'N 216, 216 (1969). And it is no longer unique to the United States. *See, e.g.*, Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, art. 6–8, June 25, 1998, 2161 U.N.T.S. 447 (calling for party States to ensure public participation in certain environmental decision-making activities); Milan Declaration of the Sixth International Indigenous Peoples Forum on Climate Change, Nov. 30, 2003, <http://www.ilc.unsw.edu.au/sites/ilc.unsw.edu.au/files/mdocs/milan%20declaration.pdf> [<https://perma.cc/429P-GQL7>] (calling for “necessary support to indigenous peoples for their full and effective participation in all levels of discussion, decision making and implementation as well as ensuring that the necessary funding be provided to guarantee such participation and to strengthen their capacities”); *see also* Jeroen van Bekhoven, *Public Participation as a General Principle in International Environmental Law: Its Current Status and Real Impact*, 11 NAT'L TAIWAN U. L. REV. 219, 248–58 (2016) (finding that public participation is widely accepted and firmly embedded in the international environmental legal framework).

41. Kathe Callahan, *Citizen Participation: Models and Methods*, 30 INT'L J. PUB. ADMIN. 1179, 1180 (2007) (citing CAROLE PATEMAN, PARTICIPATION AND DEMOCRATIC THEORY (1970)); *see also* Mark Squillace, *Meaningful Engagement in Public Lands Decision Making*, 59 ROCKY MTN. MIN. L. INST. 21-1, 21-7 to 21-10 (2013) (discussing five social goals for promoting public participation: (1) incorporating public values into decisions; (2) improving substantive quality of the decision; (3) resolving conflict among competing interests; (4) building trust in institutions; and (5) educating and informing the public). *But see id.* at 21-10 to 21-13 (discussing arguments against public engagement, including cost considerations and context); Jim Rossi, *Participation Run Amok: The Costs of Mass Participation for Deliberative Agency Decisionmaking*, 92 NW. U. L. REV. 173, 247–49 (1997) (concluding that mass participation must be balanced with deliberative values).

42. Eileen Gauna, *The Environmental Justice Misfit: Public Participation and the Paradigm Paradox*, 17 STAN. ENV'T L.J. 3, 17 (1998); *see also* Miriam Seifter, *Second-Order Participation in Administrative Law*, 63 UCLA L. REV. 1300, 1302 n.1 (2016) (“*See, e.g.*, COMM. ON ADMIN. PROCEDURE, ADMINISTRATIVE PROCEDURE IN GOVERNMENT AGENCIES, S. REP. NO. 77-8, at 103 (1941) (advocating the APA’s passage, stating that participation would be ‘essential . . . to permit . . . agencies to inform themselves and to afford adequate safeguards to private interests’); Edward Rubin, *It’s Time to Make the Administrative Procedure Act Administrative*, 89 CORNELL L. REV. 95, 101 (2003) (describing the Administrative Procedure Act (APA) as ‘a one-trick pony,’ because ‘[a]ll of its basic provisions rely on a single method for controlling the actions of administrative agencies, namely, participation by private parties’); Wendy Wagner, *The Participation-Centered Model Meets Administrative Process*, 2013 WIS. L. REV. 671, 677–78 (2013) (describing the goal of ‘[m]aximizing the participation of affected parties, without bias or capture,’ as ‘central to the design of administrative process’); Richard A. Bierschbach & Stephanos Bibas, *Notice-and-Comment Sentencing*, 97 MINN. L. REV. 1, 24 (2012) (noting that ‘virtually all of the major theories that seek to legitimate administrative decision-making see participation as important’); William Funk, *Public Participation and Transparency in Administrative Law—Three Examples as an Object Lesson*, 61 ADMIN. L. REV. 171, 171 (2009) (“Public participation” and “transparency” are hallmarks of American administrative law’); Philip J. Harter, *Negotiating Regulations: A Cure for Malaise*, 71 GEO. L.J. 1, 17 (1982) (“To the extent that rulemaking has political legitimacy,

Legal scholars have identified three models of decision-making in our regulatory agencies: expertise (sometimes called technocratic or managerial); pluralistic; and civic republicanism.⁴³ The expertise model relies heavily on *formal* expertise and “ultimately rests upon empiricism and faith in the ability of science and technology to solve environmental problems.”⁴⁴ The pluralist model is based on broad public input and agency neutrality—it “is essentially a mechanism for aggregating and distilling private preferences”⁴⁵ and is committed to conceptions of majority rule.⁴⁶ And, lastly, the civic republican model aspires to focus on “true public good”⁴⁷ solutions and calls on people, organizations, and government to set aside their private preferences to focus “squarely on the public interest.”⁴⁸

Over the years, the expertise model has been displaced by pluralist and civic republican ideals for public participation. From the late nineteenth to middle twentieth century, public administration in the United States was dominated by the expertise model. At the turn of the century, for example, Gifford Pinchot—the first chief of the U.S. Forest Service—“established a strong managerial ethos” for the new agency.⁴⁹ Pinchot’s

it derives from the right of affected interests to present facts and arguments to an agency . . . to ensure the rationality of the agency’s decision.’); Ernest Gellhorn, *Public Participation in Administrative Proceedings*, 81 YALE L.J. 359, 359 (1972) (‘[W]hen government agencies are challenged as being unresponsive to public needs and to the public interest, one “solution” frequently suggested is to broaden citizen involvement and participation in administrative decision making.’).’).

43. Gauna, *supra* note 42, at 17.

44. *Id.*

45. Squillace, *supra* note 41, at 21–20.

46. Cass R. Sunstein, *Beyond the Republican Revival*, 97 YALE L.J. 1539, 1543 (1988).

47. Gauna, *supra* note 42, at 17.

48. Squillace, *supra* note 41, at 21–21. Jody Freeman offered an alternative to civic republicanism (and notice-and-comment, or “call and response,” rulemaking) in her work on collaborative governance. Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1, 27 (1997). Negotiated decision-making has been used with success for some environmental decisions. See generally Alejandro Camacho, *Can Regulation Evolve? Lessons from a Study in Maladaptive Management*, 55 UCLA L. REV. 293 (2007). But, as other scholars point out, negotiated decision-making can favor the well-organized (especially for national rulemakings). See John Applegate, *Beyond the Usual Suspects: The Use of Citizens Advisory Boards in Environmental Decisionmaking*, 73 IND. L.J. 903, 917 (1998). This can make some forms of collaborative governance fatal to local issues and for environmental justice communities, which often are not as well-organized as national environmental organizations. *Id.* at 917–18. Similarly, applying alternative dispute resolution (ADR) principles to environmental contexts may disadvantage parties with fewer resources or be underinclusive of the wider public in terms of education, income, race, and gender. See Freeman, *supra*, at 75 n.229; see also J. Clarence Davies, *Environmental ADR and Public Participation*, 34 VALPARAISO U. L. REV. 389, 394, 396 (2000) (discussing failures of ADR, including inadequate representation of the public).

49. THOMAS C. BEIERLE & JERRY CAYFORD, *DEMOCRACY IN PRACTICE: PUBLIC PARTICIPATION IN ENVIRONMENTAL DECISIONS 2* (2002).

scientific forestry aimed to maximize social welfare by producing “the greatest good for the greatest number for the longest time.”⁵⁰ But the “myth that science produces truth”⁵¹ eventually gave way to the ideals of pluralism and the modern administrative state.⁵² Today, according to some legal scholars, American institutions reflect both pluralist and republican theories;⁵³ its modern environmental laws, however, are “pluralist-created and pluralist-driven.”⁵⁴

Nonetheless, just as democratic pluralism was gaining steam, Sherry Arnstein—former chief advisor on citizen participation for the U.S. Department of Housing, Education, and Welfare⁵⁵—countered that “participation without redistribution of power is an empty and frustrating process for the powerless,” namely, the “have-nots.”⁵⁶ She emphasized the “critical difference between going through the empty ritual of participation and having the real power needed to affect the outcome of the process.”⁵⁷ So Arnstein proposed an eight-rung ladder of participation.⁵⁸ The bottom rungs (manipulation and therapy) describe levels of non-participation that enable powerholders (government agencies, experts, elites) to *educate* or *cure* participants without genuine public participation.⁵⁹ The middle rungs represent degrees of tokenism (informing, consulting, and placating) that allow the have-nots to *hear* and *be heard* but offer no assurances that their voices will *be heeded*.⁶⁰ The top rungs (partnership, delegated power, and citizen control) lead to

50. *Id.*

51. BRUCE A. WILLIAMS & ALBERT R. MATHENY, DEMOCRACY, DIALOGUE, AND ENVIRONMENTAL DISPUTES: THE CONTESTED LANGUAGES OF SOCIAL REGULATION 39 (1995) (citing DAVID COLLINGRIDGE & COLIN REEVE, SCIENCE SPEAKS TO POWER: THE ROLE OF EXPERTS IN POLICY MAKING (1986)).

52. Gauna, *supra* note 42, at 19; *see also* Richard B. Stewart, *The Reformation of American Administrative Law*, 88 HARV. L. REV. 1669, 1684 (1975).

53. Gauna, *supra* note 42, at 30 (citing Sunstein, *supra* note 46, at 1561; Cass R. Sunstein, *Interest Groups in American Public Law*, 38 STAN. L. REV. 29, 49–58 (1985)).

54. Gauna, *supra* note 42, at 24 n.81 (discussing Zygmunt J.B. Plater, *From the Beginning, a Fundamental Shift of Paradigms: A Theory and Short History of Environmental Law*, 27 LOY. L. REV. 981, 981–82 (1994) (observing that environmental law is the result of two paradigm shifts: (1) the public’s awakening to environmental problems in the early 1960s, and (2) the development of confrontational, pluralistic citizen activism in area of governance)).

55. *Climbing the Ladder: A Look at Sherry R. Arnstein*, AM. ASS’N COLL. OSTEOPATHIC MED., <https://www.aacom.org/become-a-doctor/financial-aid-and-scholarships/sherry-r-arnstein-minority-scholarship/sherry-arnstein-biography> [<https://perma.cc/Q8DR-HNM3>].

56. Arnstein, *supra* note 40, at 216. The “have-nots,” as Arnstein might identify them today, are mostly Black, Indigenous, People of Color (BIPOC) communities.

57. *Id.*

58. *Id.* at 217.

59. *Id.*

60. *Id.*

greater power: from negotiating rights to full managerial authority.⁶¹ Arnstein's ladder, which she designed to be provocative, helps illustrate "that there are significant gradations of citizen participation."⁶²

Though perhaps intended to be provocative, Arnstein's thesis falls comfortably within a broader literature on public participation and democratic power.⁶³ According to legal scholar Sabeel Rahman, for political theorists like John Dewey and Progressive Era radicals, the central challenge of democracy was "the need to rebalance the distribution of political and economic power."⁶⁴ "Contesting domination," explains Rahman, "would require engaging more participation, but doing so in a way that also empowered ordinary people to hold accountable political and economic elites who might otherwise usurp their authority as the demos and come to dominate the polity."⁶⁵ Put differently, people should be *agents* "actively working to gain some degree of control over the contingencies of modern life," rather than mere *receptors* of experience and knowledge.⁶⁶

This emphasis on contestation and countervailing power is at the heart of republican theory and institutional design as well.⁶⁷ For thinkers like James Madison, "a central goal of democratic institutional design was to counteract the dangers of 'faction' and of 'cabals of the few' by harnessing the countervailing power of rival factions and groups to prevent concentrations of political power."⁶⁸ By embracing a contestatory framework—over norms like consensus, deliberation, and collaboration—democratic institutions "can serve better at activating more (and more inclusive) participation" and can provide a check on the concentration of power.⁶⁹

Unlike in electoral politics, where the public can make their voices heard at the ballot box, the public's countervailing power in

61. *Id.*

62. *Id.* Founded in 1990, the International Association of Public Participation developed three pillars for effective public participation: The Spectrum of Public Participation; Core Values; and a Code of Ethics. The Spectrum—reminiscent of Arnstein's ladder—provides five elements of increasing impact, from informing, consulting, involving, collaborating, to empowering. See *IAP2 Spectrum of Public Participation*, INT'L ASS'N FOR PUB. PARTICIPATION (Nov. 12, 2018), https://cdn.ymaws.com/www.iap2.org/resource/resmgr/pillars/Spectrum_8.5x11_Print.pdf [<https://perma.cc/FS7F-E235>].

63. *E.g.*, K. SABEL RAHMAN, *DEMOCRACY AGAINST DOMINATION* 22 (2017).

64. *Id.* at 106.

65. *Id.*

66. *Id.*

67. *Id.* at 109.

68. *Id.*

69. *Id.* at 110; see also Daniel E. Walters, *The Administrative Agon: A Democratic Theory for a Conflictual Regulatory State*, 132 *YALE L.J.* __ (forthcoming 2022).

administrative governance is grounded in judicial review.⁷⁰ The Administrative Procedure Act⁷¹ (and many substantive statutes, including the Clean Air Act⁷²), for instance, allows affected members of the public to challenge regulations and other agency actions in federal court.⁷³ Judges can then strike down these actions for being arbitrary and capricious or otherwise not in accordance with law.⁷⁴ Nevertheless, judges will defer to agency decision-makers when they exercise technical expertise⁷⁵ or interpret statutes⁷⁶ that they administer. Enhancing public power within administrative governance, accordingly, must be tied to principles of judicial review—unless the public can better its odds in court, the intervention will have failed.⁷⁷

70. Of course, some agency heads, including the EPA Administrator, are directly accountable to and overseen by elected officials (thus potentially legitimizing regulatory governance). At the same time, others would argue, insulating technocratic regulators from the political arena can reinforce democratic ideals (since elected officials delegated powers to the agencies they created in the first place). See RAHMAN, *supra* note 6363, at 147–52. Additionally, since agencies are “creatures of statute,” legislators can augment or restrain agency authorities by enacting or amending laws. And there is also the Congressional Review Act, which Congress may use to overturn specific rules by federal agencies. See MAEVE P. CAREY & CHRISTOPHER M. DAVIS, CONG. RSCH. SERV., R43992, THE CONGRESSIONAL REVIEW ACT (CRA): FREQUENTLY ASKED QUESTIONS (2021), <https://crsreports.congress.gov/product/pdf/R/R43992> (last visited Apr. 9, 2022).

71. 5 U.S.C. §§ 551–559, 701–706.

72. 42 U.S.C. §§ 7401–7675.

73. See 5 U.S.C. § 702 (providing a “right of review”); see also 42 U.S.C. § 7607(b) (providing a right to “judicial review” of “final [agency] action[s]”).

74. See 5 U.S.C. § 706(2).

75. See, e.g., *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 103 (1983) (“When examining this kind of scientific determination, as opposed to simple findings of fact, a reviewing court must generally be at its most deferential.”); see also Jonathan H. Adler, *Super Deference and Heightened Scrutiny*, 74 FLA. L. REV. __ (forthcoming 2022).

76. See, e.g., *Chevron U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 842–44 (1984) (holding courts must defer to an agency’s interpretation of an ambiguous statute so long as that interpretation is based on a permissible construction of the statute).

77. Of course, some procedural justice scholars rely on different measures to gauge success. Around the time that Arnstein cautioned the shift towards more citizen participation, John Thibaut and Laurens Walker began to develop procedural justice as a branch of social psychology. THIBAUT & WALKER, *supra* note 35. Procedural justice, according to Thibaut and Walker, recognized that participants in decision-making derived significant satisfaction from the procedures used to arrive at a decision (separate from any outcome effects). Rick L. Lawrence, Steven E. Daniels & George H. Stankey, *Procedural Justice and Public Involvement in Natural Resource Decision Making*, 10 SOC’Y & NAT. RES. 577, 579 (1997). For example, if procedures are perceived as fair, participants might reduce dissatisfaction with unfavorable decisions. *Id.* (citing E. ALLAN LIND & TOM R. TYLER, *THE SOCIAL PSYCHOLOGY OF PROCEDURAL JUSTICE* (1988)). On the other hand, if procedures are considered unfair, an objectively fair decision might still be judged unfavorably. Lawrence et al., *supra*, at 579 (citing LIND & TYLER, *supra*).

There are obvious limits to this approach—what seems fair may not in fact be fair. While “satisfaction” may not be a good proxy for justice, some scholars argue that it also is not a good

B. *Pluralism, Environmental Decision-Making, and Environmental Injustice*

Environmental decision-making is incredibly complex (technologically, scientifically, and economically). And while environmental laws and administrative procedures provide for notice and comment decision-making (derided sometimes as “decide, announce, and defend”⁷⁸), the vast majority of decisions are technocratic and inaccessible to lay persons. Nevertheless, principles of administrative law place the burden on the public to raise issues with reasonable specificity before they may challenge an agency action.⁷⁹ This can function as a structural barrier to judicial review—especially for communities that are under-resourced and over-burdened.⁸⁰ This loss of power may lead to a frustrated public

indicator of “success.” Cary Coglianese, *Is Satisfaction Success? Evaluating Public Participation in Regulatory Policymaking* (Harv. Univ. John F. Kennedy Sch. of Gov’t, Working Paper RWP02-038, 2002), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=331420 [<https://perma.cc/ZWA7-VNHB>]. And when the illusion of fairness fades, some studies found that participants might be less satisfied even when they had more input into decisions than when they had less. Lawrence et al., *supra*, at 580. This tendency became known as the *frustration effect*. *Id.*; see also Emily Hammond, *Public Participation in Risk Regulation: The Flaws of Formality*, 2016 UTAH L. REV. 169, 170 & n.6 (citing Emily Hammond Meazell, *Presidential Control, Expertise, and the Deference Dilemma*, 61 DUKE L.J. 1763, 1784–86 (2012)). Though scholars differ as to why it occurs, some theories include “repeated disappointment in the face of rising expectations” and “social support of the perception that the outcome is unfair.” Lawrence et al., *supra*, at 580 (citing LIND & TYLER, *supra*).

78. Applegate, *supra* note 48, at 908 (citing MICHAEL B. GERRARD, WHOSE BACKYARD, WHOSE RISK: FEAR AND FAIRNESS IN TOXIC AND NUCLEAR WASTE SITING 132 (1994); NAT’L RSCH. COUNCIL, UNDERSTANDING RISK: INFORMING DECISIONS IN A DEMOCRATIC SOCIETY 78 (1996)).

79. It is a general principle of administrative law that “the opportunity to comment is meaningless unless the agency responds to significant points raised by the public.” *Home Box Off., Inc. v. FCC*, 567 F.2d 9, 35–36 (D.C. Cir. 1977) (footnote omitted). The trigger for a response though is that “comments must do more than simply state that the agency’s premises or conclusions are wrong; they must explain why and on what basis the agency assertedly has erred.” *Public Citizen, Inc. v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993) (citing *Home Box Off.*, 567 F.2d at 35 n.58). There is a misconception that notice-and-comment decisions are based on “merely tallying individual preferences,” e.g., Kerry Kumabe, *The Public’s Right of Participation: Attaining Environmental Justice in Hawai’i Through Deliberative Decisionmaking*, 17 ASIAN AM. L.J. 181, 182 (2010), which might explain the appeal to mass commenting, see generally Vanessa Duguay, *Views or Votes: The Challenge of Mass Comments in Rulemaking*, 26 GEO. MASON L. REV. 625 (2018). In recent years, mass comments have also become a form of participatory fraud. See STEVEN BALLA, REEVE BULL, BRIDGET DOOLING, EMILY HAMMOND, MICHAEL HERZ, MICHAEL LIVERMORE & BETH SIMONE NOVECK, REPORT FOR THE ADMINISTRATIVE CONFERENCE OF THE UNITED STATES: MASS, COMPUTER-GENERATED, AND FRAUDULENT COMMENTS (2021). Nevertheless, some scholars propose giving (legitimate) mass comments some measure of meaning. See, e.g., Nina A. Mendelson, *Should Mass Comments Count?*, 2 MICH. J. ENV’T & ADMIN. L. 173, 183 (2012) (“[L]arge volumes of comments should be taken more seriously by agencies. They at least should trigger an agency to engage in further deliberation and investigation. They should also prompt a brief response in the rulemaking documents.”).

80. Between 2018 and 2020, as an example, the EPA finalized twenty-seven Clean Air Act

and ultimately less public participation.⁸¹

In the eyes of a decision-maker, lack of participation contributes to false legitimacy. For routine and noncontroversial decisions, this may not be problematic. Indeed, EPA purports to use “direct final rulemakings” (*i.e.*, forgoing notice-and-comment) only when the decisions do not implicate significant technical or policy choices.⁸² But sometimes agencies deliberately propose actions that are legally or technically deficient and wait to “see if anyone comments.”⁸³ Most people, however, would not know where to find a proposed rule (let alone know how to effectively comment on one).⁸⁴ Marginalized populations, moreover, may be disproportionately overlooked.⁸⁵ But if the public waives its right to comment (or fails to raise an issue “with reasonable specificity”), courts will insulate agencies from judicial review.⁸⁶ Alternatively, decision-

rulemakings that identified comments “outside the scope of [EPA’s] proposed action” and that “fail to identify any material issue necessitating a response.” See Comments Failing to Identify Material Issue, FED. REG., <https://bit.ly/3wAepH1> [<https://perma.cc/ZA2L-UUW5>] (search <https://www.federalregister.gov/> for “fail to identify any material issue”; then narrow results to final rules issued by the EPA). Though many of these comments may have been truly irrelevant, tangential, incoherent, or even bizarre, comments that express genuine opposition without grappling with the legal or factual issues presented in the proposal can be ignored for failing to identify a “material issue.” Accordingly, no change in the rulemaking was required and the action likely could not have been challenged successfully in court. *What’s the point?* some commenters might wonder.

81. See *infra* note 77.

82. See, e.g., *SIP Processing Manual, Chapter 6: EPA Decision Options*, U.S. ENV’T PROT. AGENCY, <https://cfpub.epa.gov/oarwebadmin/sipman/sipman/mContent.cfm?chap=6&filePos=11> [<https://perma.cc/ZT8Y-LQ28>] (“The direct final rulemaking process is used generally for routine noncontroversial [state implementation plan] changes”). However, if adverse comment is received, the final rulemaking must be withdrawn. *Id.*

83. Telephone Interview with Employee, Env’t Prot. Agency (May 19, 2021).

84. Victor B. Flatt, Michael M. O’Hear, Mark Squillace & Robert R.M. Verchick, *Let the People Speak: Notice-and-Comment Rulemaking (Lessons from the Controversial New Source Review Proposal of the Clean Air Act)*, 34 ENV’T L. REP. 10115, 10115 (2004).

85. Gwendolyn McKee, *Noticing Notice*, YALE J. ON REG. (Aug. 3, 2020), <https://www.yalejreg.com/nc/noticing-notice-by-gwendolyn-mckee/> [<https://perma.cc/L7PJ-EY9W>]. And to the extent that notice-and-comment rulemaking transitions more completely to www.regulations.gov, people without reliable internet service or computers will be disproportionately affected. See Hansi Lo Wang, *Native Americans on Tribal Land Are ‘the Least Connected’ to High-Speed Internet*, NPR (Dec. 6, 2018, 6:42 PM), <https://www.npr.org/2018/12/06/673364305/native-americans-on-tribal-land-are-the-least-connected-to-high-speed-internet> [<https://perma.cc/KPY4-S2L7>]; Dian Schaffhauser, *Poverty, Race Linked to Lack of Internet for Students*, JOURNAL (May 14, 2020), <https://thejournal.com/articles/2020/05/14/poverty-race-linked-to-lack-of-internet-for-students.aspx> [<https://perma.cc/6DAG-AE5Q>] (discussing Anaya Sen & Catherine E. Tucker, *Social Distancing and School Closures: Documenting Disparity in Internet Access Among School Children* (Apr. 10, 2020), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3572922 [<https://perma.cc/ED7E-2R7A>]). Especially, if agency proposals rely on *technical support documents* that may be hundreds of pages long and can only be found in the virtual *public docket*.

86. See, e.g., *Mossville Env’t Action Now v. EPA*, 370 F.3d 1232, 1238 (D.C. Cir. 2004)

makers will narrow public input to highly technical and scientific issues, on which laypersons are generally less equipped to challenge—setting up what some scholars call an *illusion of inclusion*.⁸⁷

C. *Public Participation as Environmental Justice*

Against this backdrop, numerous legal scholars propose alternative models for public participation in environmental decision-making. One wing advocates for greater collaborative governance.⁸⁸ The collaborative model, according to Jody Freeman, is a good fit for environmental regulation “because technical, data-driven disputes lend themselves to adaptive solutions, or because the regulated industries in these sectors have accepted the inevitability of regulation and are willing to discuss implementation.”⁸⁹ Building on Freeman’s work, Alejandro Camacho advocates incorporating collaborative governance strategies to land use decisions (zoning and the like).⁹⁰ Negotiated decisions—one example of collaborative governance—have been used successfully for local environmental disputes like landfill siting.⁹¹ But even proponents of

(“Reasonable specificity requires something more than a general challenge to EPA’s approach.” (internal quotation marks omitted)); *see also* 42 U.S.C. § 7607(d)(7)(B) (“Only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review.”). Although procedural errors are normally reviewable by a court, section 307 of the Clean Air Act restricts courts from invalidating certain rules unless “the errors were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made.” 42 U.S.C. § 7607(d)(8) (applying this limitation to rules that are covered by section 307(d)).

87. *See generally* Roger Few, Katrina Brown & Emma L. Tompkins, *Public Participation and Climate Change Adaptation: Avoiding the Illusion of Inclusion*, 7 CLIMATE POL’Y 46 (2007).

88. Closely related to collaborative governance is the use of environmental alternative dispute resolution, or ADR. ADR, broadly conceived, “includes mediation, policy dialogues, and negotiated settlements (including regulatory negotiation).” Davies, *supra* note 48, at 390. ADR is not, however, best viewed as a form of public participation, and it carries the same limitations associated with collaborative models discussed above. *See* U.S. COMM’N ON C.R., NOT IN MY BACKYARD: EXECUTIVE ORDER 12,898 AND TITLE VI AS TOOLS FOR ACHIEVING ENVIRONMENTAL JUSTICE 98–119 (2003).

89. Freeman, *supra* note 48, at 97–98. Collaborative governance may also be useful in other complex decision-making scenarios (for instance, algorithmic decision-making). *See generally* Margot E. Kaminski, *Binary Governance: Lessons from the GDPR’s Approach to Algorithmic Accountability*, 92 S. CAL. L. REV. 1529 (2019).

90. *See generally* Alejandro Esteban Camacho, *Mustering the Missing Voices: A Collaborative Model for Fostering Equality, Community Involvement and Adaptive Planning in Land Use Decisions (Installment One)*, 24 STAN. ENV’T L.J. 3 (2005); Alejandro Esteban Camacho, *Mustering the Missing Voices: A Collaborative Model for Fostering Equality, Community Involvement and Adaptive Planning in Land Use Decisions (Installment Two)*, 24 STAN. ENV’T L.J. 269 (2005).

91. Applegate, *supra* note 48, at 915; *see also* James E. McGuire, *The Dilemma of Public*

negotiation recognize that some collaborative efforts have fallen short of their goals (notably, for developing Habitat Conservation Plans under the Endangered Species Act⁹²).⁹³

Critics of collaborative decision-making point out that such models can be problematic for some communities.⁹⁴ Indeed, collaborative governance can “perpetuate or even exaggerate resource and power imbalances among interested parties” and may even “constitute an expensive additional layer of procedure, since they do not do away with the review-and-comment opportunity of anybody to challenge the final outcome.”⁹⁵ For the unorganized, poorly-resourced, and technically-unsophisticated, especially, collaboration can be fatal.⁹⁶

A second wing suggests the use of citizen advisory groups, proxy advocates, or regulatory contrarians.⁹⁷ These groups can function as *boundary organizations*⁹⁸ to help broker knowledge between technocratic decision-makers and community members.⁹⁹ And they can operate as quasi-independent voices—a potential source of countervailing power.¹⁰⁰ To be sure, augmenting the traditional notice-and-comment process with

Participation in Facility Siting Decisions and the Mediation Alternative, 9 SETON HALL LEGIS. J. 467, 472–73 (1985).

92. 16 U.S.C. §§ 1531–1544.

93. See Camacho, *supra* note 48, at 295–98; see also Lawrence Susskind, Alejandro E. Camacho & Todd Schenk, *A Critical Assessment of Collaborative Adaptive Management in Practice*, 49 J. APPLIED ECOLOGY 47 (2012) (assessing collaborative adaptive management of scarce natural resources).

94. Sheila Foster, *Environmental Justice in an Era of Devolved Collaboration*, 26 HARV. ENV'T L. REV. 459, 497 (2002).

95. Applegate, *supra* note 48, at 918 (footnotes omitted).

96. *Id.* at 917.

97. See *id.* at 901; RAHMAN, *supra* note 63, at 155; Brett McDonnell & Daniel Schwarcz, *Regulatory Contrarians*, 89 N.C. L. REV. 1629, 1629 (2011).

98. See Thomas F. Gieryn, *Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists*, 48 AM. SOCIO. REV. 781, 782 (1983) (describing the boundary-work of scientists as a type of “public science,” in which scientists explain science to the public and political authorities).

99. See, e.g., Karin M. Gustafsson & Rolf Lidskog, *Boundary Organizations and Environmental Governance: Performance, Institutional Design, and Conceptual Development*, 19 CLIMATE RISK MGMT. 1, 1–2 (2018) (describing the concept of boundary organization as specific organizational efforts to mediate between science and policy); see also S. Ziaja, *Role of Knowledge Networks and Boundary Organizations in Coproduction: A Short History of a Decision-Support Tool and Model for Adapting Multiuse Reservoir and Water-Energy Governance to Climate Change in California*, 11 WEATHER, CLIMATE, & SOC'Y 823, 844 (2019) (concluding that coequal status of researchers and community is important for coproduced science).

100. RAHMAN, *supra* note 63, at 155 (recognizing that “quasi-independent voices like ombudsmen within agencies . . . can force decision-makers to address blind spots, challenge assumptions, counteract other forms of disparate influence, and help magnify the voice of particularly underrepresented groups”).

such groups can serve important functions—they may be used effectively, for example, to ensure ongoing compliance with environmental requirements¹⁰¹ (discussed more in section III.B)—but they are not intended to displace traditional public participation. To suggest otherwise, as some scholars acknowledge, could bar community advocates from successfully challenging any final decisions.¹⁰² Proxy advocacy also has limits where community opinions are not necessarily pre-determined or uniform. While a proxy advocacy approach might presume that communities want to maximize pollution reductions regardless of cost, some local positions may in fact be more nuanced or complicated—particularly if employment opportunities are more limited and tied to particular industries.

Finally, environmental justice scholar Eileen Gauna argues that the three governance models create an *environmental justice misfit*, by failing to “effectively incorporate an important form of public participation in decision-making—the participation by communities bearing the greatest environmental risks.”¹⁰³ Indeed, as Arnstein observed, when BIPOC communities—who are disproportionately impacted by environmental harms—advocate for participation, “the American consensus on the fundamental principle [of public participation] explodes into many shades of outright racial, ethnic, ideological, and political opposition.”¹⁰⁴ Thus, Gauna suggests, only by shifting the agency neutrality paradigm to non-neutral intervention on behalf of marginalized communities, “can justice claims surface, survive, and thrive.”¹⁰⁵

Gauna’s recommendation focuses on three avenues of public participation: advisory committees, notice-and-comment decisions, and informal public participation.¹⁰⁶ In each of these avenues, the same vulnerability is called out—inclusion alone is not sufficient; the technical orientation of environmental decision-making disadvantages under-resourced community advocates.¹⁰⁷ “[B]y recognizing that the inaccessible discourse of experts and the short-sighted vision of pluralism serve to disempower and exclude, the agency official can help the environmental justice vision by promoting the equal status of community

101. *Id.* (discussing reforms to institutionalize countervailing power in the monitoring and enforcement stage of regulation).

102. Luke W. Cole, *Macho Law Brains, Public Citizens, and Grassroots Activists: Three Models of Environmental Advocacy*, 14 VA. ENV'T L.J. 687, 702–03 (1995).

103. Gauna, *supra* note 42, at 5.

104. Arnstein, *supra* note 40, at 216.

105. Gauna, *supra* note 42, at 72.

106. *Id.* at 57.

107. *Id.* at 64–65, 69.

participants.”¹⁰⁸ Non-neutrality, Gauna argues, “requires a commitment to equalize resources to educate community residents about applicable legal requirements and technical issues” and would transform the agency into “a promoter of environmental justice.”¹⁰⁹

Common among the suggested alternatives to traditional public participation is a genuine interest in aiding and empowering communities that may want to participate in decisions that impact their lived experiences. Perhaps more importantly, however, none of the suggestions adequately address the underlying power imbalances among stakeholders and decisionmakers, nor would they displace traditional notice-and-comment rulemaking.¹¹⁰ These shortcomings are particularly acute when regulatory decisions are focused on highly technical determinations (like selecting the best pollution controls). And, the next Part highlights, this can have significant impacts on the quality of life and health of marginalized frontline communities.

II. AIR POLLUTION AS AN ENVIRONMENTAL JUSTICE CONCERN

Environmental justice observers often identify the 1982 Warren County, North Carolina protests as the birth of the movement.¹¹¹ Since then, most environmental justice investigations and scholarship have focused on the disproportionate impacts faced by people of color—and Black communities in particular—associated with the siting of hazardous

108. *Id.* at 70–71.

109. *Id.* at 71.

110. In fact, Gauna later wrote that “[o]ne of the lessons that [environmental justice] activists have learned in the last decade is that—however appropriate is the ethical force of their positions—to be effective, they must also engage and participate in the process at its most technical level.” Eileen Gauna, *An Essay on Environmental Justice: The Past, the Present, and Back to the Future*, 42 NAT. RES. J. 701, 709 (2002).

111. Luke W. Cole & Sheila R. Foster, FROM THE GROUND UP: ENVIRONMENTAL RACISM AND THE RISE OF THE ENVIRONMENTAL JUSTICE MOVEMENT 19–33 (2000). In 1982, a predominantly black community staged a protest to keep a hazardous waste landfill—intended to accept cancer-causing polychlorinated biphenyl (PCB)-contaminated soils—away from their homes. Apparently, at the time, federal law exempted the siting of PCB-disposal sites from public input requirements. *See* U.S. GEN. ACCT. OFF., GAO/RCED-83-168, SITING OF HAZARDOUS WASTE LANDFILLS AND THEIR CORRELATION WITH RACIAL AND ECONOMIC STATUS OF SURROUNDING COMMUNITIES (1983). The protest drew attention to the environmental and health burdens born by African American and other marginalized communities across the United States (even if residents were unsuccessful in blocking the landfill). *See* COMM’N FOR RACIAL JUST., UNITED CHURCH OF CHRIST, TOXIC WASTE AND RACE IN THE UNITED STATES: A NATIONAL REPORT ON THE RACIAL AND SOCIO-ECONOMIC CHARACTERISTICS OF COMMUNITIES WITH HAZARDOUS WASTE SITES (1987); U.S. GEN. ACCT. OFF., *supra*; *see also* ENVIRONMENTAL JUSTICE IN POSTWAR AMERICA: A DOCUMENTARY READER 5–10 (Christopher W. Wells ed. 2018).

waste dumps or the cleanup of contaminated sites.¹¹² In 1987, for instance, the United Church of Christ Commission for Racial Justice published the first national study that found a correlation between the number of hazardous waste facilities and the percentage of *nonwhite* community members.¹¹³ Numerous studies have only underscored the findings of the United Church of Christ report and even identified links between government action and discriminatory impacts.¹¹⁴

A. *Air Pollution Health Disparities*

More recently, attention has shifted towards air pollution.¹¹⁵ People of color are disproportionately affected by nearly every category of sources of fine particulate matter, or PM_{2.5}—the largest environmental cause of human mortality in the United States (even controlling for other factors such as their state or income level).¹¹⁶ Fine particles, which are regulated

112. See, e.g., U.S. GEN. ACCT. OFF., *supra* note 111, at 3 (finding that Black communities who lived in states served by EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and six Tribes) were more likely found near offsite hazardous waste landfill sites than other racial or ethnic communities).

113. COMM'N FOR RACIAL JUST., *supra* note 111.

114. See, e.g., DORCETA TAYLOR, TOXIC COMMUNITIES: ENVIRONMENTAL RACISM, INDUSTRIAL POLLUTION, AND RESIDENTIAL MOBILITY 33–46 (2014) (documenting studies on racism and discrimination in siting decisions and discussing skeptics, including Vicki Been, *What's Fairness Got to Do with It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001 (1993)); Paul Mohai & Bunyan Bryant, *Environmental Injustice: Weighing Race and Class as Factors in the Distribution of Environmental Hazards*, 63 U. COLO. L. REV. 921, 931 (1992) (reviewing sixteen such studies); ROBERT D. BULLARD, DUMPING IN DIXIE: RACE, CLASS, AND ENVIRONMENTAL QUALITY 32–36 (3d ed. 2000) (documenting waste facility siting disparities); and Deoohn Ferris, *Communities of Color and Hazardous Waste Cleanup: Expanding Public Participation in the Federal Superfund Program*, 21 FORDHAM URB. L.J. 671, 672–73 (1994) (noting that “more than ninety percent of the population of African Americans live near an uncontrolled toxic waste site” and explaining that “findings not only show that people of color are differentially affected by pollution, but that they can also expect different treatment by the government.”); see also RICHARD ROTHSTEIN, THE COLOR OF LAW: A FORGOTTEN HISTORY OF HOW OUR GOVERNMENT SEGREGATED AMERICA 54–57 (2017) (discussing discriminatory zoning practices and the siting of polluting industry and toxic waste plants in African American communities).

115. Richard L. Revesz, *Air Pollution and Environmental Justice*, 49 ECOLOGY L.Q. ___ (forthcoming 2022).

116. Juliet Eilperin & Darryl Fears, *Deadly Air Pollutant 'Disproportionately and Systematically' Harms Americans of Color, Study Finds*, WASH. POST (Apr. 28, 2021, 2:00 PM), <https://www.washingtonpost.com/climate-environment/2021/04/28/environmental-justice-pollution/> [<https://perma.cc/6V5Y-4JK3>]; Christopher W. Tessum, David A. Paoella, Sarah E. Chambliss, Joshua S. Apte, Jason D. Hill & Julian D. Marshall, *PM_{2.5} Polluters Disproportionately and Systemically Affect People of Color in the United States*, SCI. ADVANCES (Apr. 18, 2021), <https://advances.sciencemag.org/content/7/18/eabf4491> (last visited Apr. 10, 2022). Other air pollutants, such as those associated with childhood development and cancer, are also emitted more around at-risk lower-income communities of color. See Kimberly A. Terrell & Gianna St. Julien,

by the EPA under the Clean Air Act, are at least thirty times smaller than the average human hair and can get deep into your lungs and even into your bloodstream.¹¹⁷ Several studies link particle pollution to premature death, heart attacks and irregular heartbeat, aggravated asthma, and decreased lung function/increased respiratory symptoms.¹¹⁸ Long-term exposure to PM_{2.5} is also a significant factor in higher COVID-19 mortality rates; in fact, one study “found that an increase of just one microgram per cubic meter of air ($\mu\text{g}/\text{m}^3$) of county PM_{2.5} levels corresponded to a 15% increase in that county’s COVID-19 death rate.”¹¹⁹

Some particulate matter is emitted directly into the air as soot (from

Toxic Air Pollution Is Linked to Higher Cancer Rates Among Impoverished Communities in Louisiana, 17 ENV’T RSCH. LETTERS 1 (2022), <https://iopscience.iop.org/article/10.1088/1748-9326/ac4360/pdf> [<https://perma.cc/5TA5-F3FG>]; see also BEN KUNTSMAN, ERIC SCHAEFFER & ALEXANDRA SHAYKEVICH, ENV’T INTEGRITY PROJECT, ENVIRONMENTAL JUSTICE AND REFINERY POLLUTION: BENZENE MONITORING AROUND OIL REFINERIES SHOWED MORE COMMUNITIES AT RISK IN 2020 (2021), <https://environmentalintegrity.org/wp-content/uploads/2021/04/Benzene-Report-embargoed-for-4.29.21-1.pdf> [<https://perma.cc/XB5X-X5VA>]. I am mindful that discourse around pollution and disability can be discriminatory as discussed in disability justice literature. See Agents of Change in Environmental Justice, *Krystal Vasquez’s Push for Disability Inclusion in STEM*, ENV’T HEALTH NEWS (Feb. 21, 2021), <https://www.ehn.org/disability-inclusion-in-stem-2650512380/krystal-vasquez> [<https://perma.cc/M26F-VHV4>]; Catherine Jampel, *Intersections of Disability Justice, Racial Justice and Environmental Justice*, ENV’T SOCIO. (Jan. 11, 2018), <https://par.nsf.gov/servlets/purl/10058562> [<https://perma.cc/SHF9-XD6G>]. I do not intend to ignore ableist critiques; rather, I wish only to point out that there are other pollutants of concern beyond particulates.

117. *Particulate Matter (PM) Basics*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/pm-pollution/particulate-matter-pm-basics> [<https://perma.cc/Q9KX-P4V5>]. Compared to PM_{2.5}, ultrafine particles (PM_{0.1} or UFPs) may pose an even greater risk to human health. And many of the same groups that are at heightened risk to PM_{2.5} are similarly sensitive to UFP exposure. See ELMER DIAZ, KOENRAAD MARIEN, LILLIAN MANAHAN & JULIE FOX, WASH. STATE DEP’T HEALTH, SUMMARY OF HEALTH RESEARCH ON ULTRAFINE PARTICLES (2019), <https://www.doh.wa.gov/Portals/1/Documents/4000/334-454.pdf> [<https://perma.cc/4X4P-XTNK>]. To date, the EPA does not believe a distinct standard for UFPs is scientifically supported, and instead relies on the PM_{2.5} indicator to provide protection for particles that are less than or equal to 2.5 micrometers in diameter. Richard W. Baldauf, Robert B. Devlin, Peter Gehr, Robert Giannelli, Beth Hassett-Sipple, Heejung Jung, Giorgio Martini, Joseph McDonald, Jason D. Sacks & Katherine Walker, *Ultrafine Particle Metrics and Research Considerations: Review of the 2015 UFP Workshop*, 13 INT’L J. ENV’T RSCH. & PUB. HEALTH 1054 (Oct. 28, 2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5129264/> [<https://perma.cc/Z6Z2-VEKL>].

118. *Health and Environmental Effects of Particulate Matter (PM)*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/pm-pollution/health-and-environmental-effects-particulate-matter-pm> [<https://perma.cc/UAG8-J5UQ>].

119. Anaya Bhattacharya, *COVID-19 Reveals Environmental Justice Gaps in National Environmental Policy*, ENV’T L. INST. (Aug. 19, 2020), <https://www.eli.org/vibrant-environment-blog/covid-19-reveals-environmental-justice-gaps-national-environmental-policy> [<https://perma.cc/LB7Y-A3SB>] (citing XIAO WU, RACHEL C. NETHERY, M. BENJAMIN SABATH, DANIELLE BRAUN & FRANCESCA DOMINICI, EXPOSURE TO AIR POLLUTION AND COVID-19 MORTALITY IN THE UNITED STATES (2020), https://projects.iq.harvard.edu/files/covid-pm/files/pm_and_covid_mortality.pdf [<https://perma.cc/RZ8H-NJ3U>]).

cars, trucks, heavy equipment, forest fires, and burning waste), but most of it forms in the atmosphere from gases like sulfates and nitrates (from power generation and vehicle exhaust).¹²⁰ And while particles can be transported hundreds of miles and across state lines,¹²¹ pollution hotspots can also form around heavily trafficked roads and industrial facilities leading to “small ‘microclimates’ that contain levels of deadly pollutants that can far exceed federal standards.”¹²² These hotspots, unsurprisingly, are often home to low-income communities and communities of color.¹²³

Although income is certainly a factor in increased particulate exposure, income differences do not explain away the disproportionate racial impacts of air pollution. Numerous studies have documented “higher-than-average air pollution exposures for racial/ethnic minority populations and lower-income populations in the United States, leading to disparities in attributable health impacts.”¹²⁴ More recently, a December 2021 study found that “racial/ethnic exposure disparities” were not “‘merely’ a reflection of income disparities”¹²⁵ And while the study confirmed that “[r]egulations . . . have achieved substantial reductions in the concentrations of many pollutants,” racial and ethnic exposure disparities continued to persist.¹²⁶

The regulatory framework designed to address air quality in the United

120. U.S. ENV’T PROT. AGENCY, THE PARTICLE POLLUTION REPORT: CURRENT UNDERSTANDING OF AIR QUALITY AND EMISSIONS THROUGH 2003 at 6 (2004), https://www.epa.gov/sites/production/files/2017-11/documents/pp_report_2003.pdf [<https://perma.cc/JH2B-G7EX>].

121. See, e.g., Memorandum from Stephen D. Page, Dir., Off. of Air Quality Plan. & Standards, Env’t Prot. Agency, to Reg’l Air Div. Dirs. et al., Regions 1–10, Env’t Prot. Agency (Mar. 17, 2016), https://www.epa.gov/sites/default/files/2016-08/documents/good-neighbor-memo_implementation.pdf [<https://perma.cc/R79B-84B4>] (identifying pollution links across the country between downwind receptors and upwind contributors).

122. Ann E. Carlson, *The Clean Air Act’s Blind Spot: Microclimates and Hotspot Pollution*, 65 UCLA L. REV. 1036, 1036 (2018). Carlson concludes that one of the most effective strategies to reducing hotspot pollution may be the electrification of the transportation fleet, which appears increasingly likely over the next decade. *Id.* at 1078–81; see also Jeffrey Ball, *The Electrification of the Auto Industry Is Speeding Up—and Shaking Up the Energy Economy*, FORTUNE (Feb. 16, 2021, 2:20 AM), <https://fortune.com/2021/02/16/auto-industry-climate-change-electric-cars-gm-general-motors-exxon-mobil-green/> [<https://perma.cc/8WF3-LF3G>]. Some researchers warn, however, that non-exhaust particulate emissions might increase as a result. See Victor R.J.H. Timmers & Peter A.J. Achten, *Non-Exhaust PM Emissions from Electric Vehicles*, 134 ATMOSPHERIC ENV’T 10, 10 (2016).

123. Carlson, *supra* note 122, at 1047.

124. Jiawen Liu, Lara P. Clark, Matthew J. Bechle, Anjum Hajat, Sun-Young Kim, Allen L. Robinson, Lianne Sheppard, Adam A. Szpiro & Julian D. Marshall, *Disparities in Air Pollution Exposure in the United States by Race/Ethnicity and Income, 1990–2010*, 129 ENV’T HEALTH PERSPS. 127005-1, 127005-1 (2021), <https://ehp.niehs.nih.gov/doi/epdf/10.1289/EHP8584> [<https://perma.cc/A3LQ-2WAD>].

125. *Id.* at 127005-12.

126. *Id.* at 127005-12 to 127005-13.

States is structured around a handful of core principles. In the following sections, I present an overview of federal air quality regulation—summarizing the core principles and programs of the Clean Air Act—and discuss some of the environmental justice implications of Clean Air Act implementation, namely the technocratic nature of pollution control decisions. This Part highlights the importance of public participation in air quality decision-making (including the numerous opportunities for participation). It also underscores the necessity of technical assistance to provide meaningful input to complex air quality decisions.

B. Principles of Clean Air Act Regulation

Federal regulation of air quality and pollution control began in earnest with the Clean Air Act Amendments of 1970.¹²⁷ Previously, federal legislation focused mainly on funding state research and training.¹²⁸ The 1970 Amendments, however, established a comprehensive federal regime for addressing different types and sources of pollution—namely, *criteria* pollutants versus air toxics¹²⁹ and stationary sources (power plants, industrial factories) versus mobile sources (cars, trucks). This regime has largely held through significant amendments to the Clean Air Act in 1977¹³⁰ and 1990¹³¹; although some notable additions include the Regional Haze Program (1977) and the Acid Rain Program (1990).¹³²

127. See William L. Andreen, *Of Fables and Federalism: A Re-Examination of the Historical Rationale for Federal Environmental Regulation*, 42 ENV'T L. 627, 655, 658–59 (2012).

128. Arthur C. Stern, *History of Air Pollution Legislation in the United States*, 32 J. AIR POLLUTION CONTROL ASS'N 44, 48–55 (1982).

129. Criteria pollutants are considered “common air pollutants” because they are found all over the United States and come from a diverse mix of sources (stationary and mobile). *Managing Air Quality – Air Pollutant Types*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/air-quality-management-process/managing-air-quality-air-pollutant-types#com> [https://perma.cc/5RYJ-UALQ]. Air toxics, also known as hazardous air pollutants, are known or suspected to cause cancer or other serious health effects, or adverse environmental effects and are often emitted by specific source categories. *What Are Hazardous Air Pollutants?*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/haps/what-are-hazardous-air-pollutants> [https://perma.cc/723F-VENQ]. The 1970 amendments recognized that some pollutants were neither common nor hazardous, and authorized EPA to take some steps towards their regulation too. See, e.g., *State Plans for the Control of Certain Pollutants from Existing Facilities*, 40 Fed. Reg. 53,340, 53,340 (Nov. 17, 1975) (identifying a “third category” of pollutants that may be harmful to public health or welfare but are not controlled under the criteria pollutant or hazardous air pollutant programs).

130. Pub. L. No. 95-95, 91 Stat. 685.

131. Pub. L. No. 101-549, 104 Stat. 2399.

132. An outlier to this scheme is Title VI of the Clean Air Act, which governs stratospheric ozone protection and helps implement the United States' commitment to the Montreal Protocol. See *Ozone Protection Under Title VI of the Clean Air Act*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/ozone-layer-protection/ozone-protection-under-title-vi-clean-air-act> [https://perma.cc/AT6G-HU47].

As popularly described, the Clean Air Act is organized around the principle of “cooperative federalism.”¹³³ This means that “air pollution control . . . is the primary responsibility of States and local governments,” but that federal leadership “is essential for the development of cooperative Federal, State, regional, and local programs to prevent and control air pollution.”¹³⁴ The core embodiment of this principle is the Clean Air Act’s criteria pollutant program, known as the National Ambient Air Quality Standards (NAAQS) program.

Under the NAAQS program, the EPA identifies pollutants that are present in the “ambient air”¹³⁵ and result from numerous or diverse mobile or stationary sources.¹³⁶ Six such pollutants have been identified so far: carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution (both PM_{2.5} and PM₁₀), and sulfur dioxide.¹³⁷ Once a pollutant is identified, the EPA sets two types of national standards—the *primary standard* is based on protecting public health, and the *secondary standard* is based on protecting welfare (such as decreased visibility and damage to animals, crops, vegetation, and buildings).¹³⁸

After the EPA sets a new NAAQS or revises an existing one, the agency designates areas around the country as meeting (in attainment) or exceeding (in nonattainment) the standard.¹³⁹ After designations take effect, state and local governments must develop implementation plans (called State Implementation Plans, or SIPs) that detail how the areas will attain and maintain the standards by reducing and controlling emissions.¹⁴⁰ These plans are put out for public comment and then submitted to the EPA for review and approval (or disapproval). Consistent

133. See Jonathan Adler & Nathaniel Stewart, *Is the Clean Air Act Unconstitutional? Coercion, Cooperative Federalism and Conditional Spending After NFIB v. Sebelius*, 43 *ECOLOGY L.Q.* 671, 672 (2016).

134. 42 U.S.C. § 7401.

135. 40 C.F.R. § 50.1(e) (2021) (defining “ambient air” as “that portion of the atmosphere, external to buildings, to which the general public has access”).

136. 42 U.S.C. § 7408(a)(1).

137. *NAAQS Table*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/criteria-air-pollutants/naaqs-table> [<https://perma.cc/7XGN-6MAX>].

138. *Id.*

139. *NAAQS Designations Process*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/criteria-air-pollutants/naaqs-designations-process> [<https://perma.cc/LK68-DMFN>]. Some areas may also be “unclassifiable” but are considered in “attainment” for planning purposes. *Id.*

140. *Id.* SIPs generally fall into three categories: state-adopted control measures (either state laws or regulations or source-specific requirements); “non-regulatory” components (such as emissions inventories, monitoring networks, permitting programs, contingency measures, etc.); and additional requirements required under section 110 or Part D of the Clean Air Act. See *Basic Information About Air Quality SIPs*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/sips/basic-information-air-quality-sips> [<https://perma.cc/V7ZW-WCTK>].

with the Administrative Procedure Act, the EPA's proposed action is also put out for public comment before finalization. Finalized actions are reviewable in one of the U.S. Courts of Appeals.¹⁴¹

Though each state retains considerable discretion "to adopt whatever mix of emission limitations it deems best suited to its particular situation,"¹⁴² the Clean Air Act becomes increasingly prescriptive for regulating *major* sources of air pollution (based on the type and amount of emissions) and for areas that fail to show progress towards cleaner air. For example, all SIPs must include a preconstruction permitting program for stationary sources in areas covered by the plan *as necessary to assure* that the NAAQS are achieved.¹⁴³ These programs are generally called *new source review* (NSR) permitting.

There are three types of NSR permitting: Prevention of Significant Deterioration (PSD) permits for new or modified major sources in attainment areas; nonattainment NSR permits for new or modified major sources in nonattainment areas; and minor source permits. PSD permits require installation of the *best available control technology* (BACT),¹⁴⁴ an air quality analysis of current and predicted conditions, and public involvement.¹⁴⁵ Nonattainment NSR permits, meanwhile, require

141. 42 U.S.C. § 7607(b).

142. *Train v. Nat. Res. Def. Council, Inc.*, 421 U.S. 60, 79 (1975). *But see* State Implementation Plans: Response to Petition for Rulemaking; Restatement and Update of EPA's SSM Policy Applicable to SIPs; Findings of Substantial Inadequacy; and SIP Calls to Amend Provisions Applying to Excess Emissions During Periods of Startup, Shutdown and Malfunction, 80 Fed. Reg. 33,840, 33,878 (June 12, 2015) [hereinafter SSM SIP Call] (explaining that "EPA has the statutory responsibility to assure that state SIPs meet the specific requirements of the [Clean Air Act], not merely that they provide for attainment of the NAAQS regardless of whether they meet other mandatory legal requirements").

143. 42 U.S.C. § 7410(a)(2)(C).

144. BACT is based on the maximum degree of control that can be achieved, considering energy, environmental, and economic factors. *See* 42 U.S.C. § 7479(3). The process for identifying BACT is generally conducted through a multi-step, "top-down" analysis. In short, the top-down process calls for all available control measures for a given pollutant to be identified and ranked in descending order of control effectiveness. The permit applicant should first examine the highest-ranked ("top") option. The top-ranked options should be established as BACT unless the permit applicant demonstrates to the satisfaction of the permitting authority that technical considerations, or energy, environmental, or economic impacts justify a conclusion that the top-ranked control strategy is not "achievable" in that case. If the most effective control strategy is eliminated, then the next most effective option should be evaluated, and so on, until an option is selected as BACT. *See* U.S. ENV'T PROT. AGENCY, NEW SOURCE REVIEW WORKSHOP MANUAL: PREVENTION OF SIGNIFICANT DETERIORATION AND NONATTAINMENT AREA PERMITTING (DRAFT) B-2 (1990), <https://www.epa.gov/sites/production/files/2015-07/documents/1990wman.pdf> [<https://perma.cc/ML9R-JH62>].

145. *Prevention of Significant Deterioration Basic Information*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/nsr/prevention-significant-deterioration-basic-information> [<https://perma.cc/3GHM-7BVZ>].

implementation of the *lowest achievable emission rate*¹⁴⁶ and public involvement.¹⁴⁷ Finally, minor sources—those that do not trigger either PSD or nonattainment NSR—are subject to more discretionary state-developed programs.¹⁴⁸ Nevertheless, minor NSR programs must ensure that the construction or modification of these smaller sources will not result in a violation of any control strategies in the SIP or interfere with attainment or maintenance of the NAAQS.¹⁴⁹ All permitting programs authorize the use of air quality modeling.¹⁵⁰

The cooperative, state-driven model of regulation is reflected in other Clean Air Act programs as well. For example, the Regional Haze Program requires states to adopt plans to reduce pollutants that damage visibility in national parks and other protected areas,¹⁵¹ and Clean Air Act section 111(d) requires states to adopt plans to control existing sources of certain pollutants that are not regulated under the NAAQS program or considered a hazardous air pollutant (*i.e.*, an air toxic).¹⁵² In contrast to these programs, air toxics are primarily regulated by the EPA (although states can seek a delegation of EPA's authorities to implement and enforce national emission standards for hazardous air pollutants, *i.e.*, NESHAPs).¹⁵³

All major sources of pollution must obtain an operating permit, called a Title V permit.¹⁵⁴ These permits are renewed every five years and must incorporate all applicable Clean Air Act requirements, including any monitoring, recordkeeping, and reporting requirements, any preconstruction permitting requirements (such as installation of BACT or implementation of LAER), and any applicable national standards (such as

146. That is the lowest rate reflected in the SIP of any State or the most stringent limit achieved in practice for such a source (cost, therefore, is not a factor). *See* 42 U.S.C. § 7501(3).

147. *Prevention of Significant Deterioration Basic Information*, *supra* note 145.

148. *Minor NSR Basic Information*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/nsr/minor-nsr-basic-information> [<https://perma.cc/A3LN-KPCK>].

149. *Id.*

150. Generally, applications of air quality modeling must be based on approved models, data bases, and other requirements in EPA's Guideline on Air Quality Models, but modifications or substitutions may be authorized upon written approval by the EPA Administrator. 40 C.F.R. § 51.160(f)(1)–(2) (2021). This is discussed further *infra* section II.D.

151. *Regional Haze Program*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/visibility/regional-haze-program> [<https://perma.cc/B9YX-2VQ8>].

152. *See* *Am. Lung Ass'n v. EPA*, 985 F.3d 914, 930–32 (D.C. Cir. 2021).

153. *Delegation of Clean Air Act Authority*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/caa-permitting/delegation-clean-air-act-authority> [<https://perma.cc/Z8LX-KDU5>].

154. *Basic Information About Operating Permits*, U.S. ENV'T PROT. AGENCY, <https://www.epa.gov/title-v-operating-permits/basic-information-about-operating-permits> [<https://perma.cc/LQL8-WHEX>].

NESHAPs).¹⁵⁵ Every state has an EPA-approved Title V permitting program, which means a state or local agency will be the primary permitting authority under Title V.¹⁵⁶ Each time a permit is to be issued (including renewals), permitting authorities are required to solicit public comment before sending the permit to the EPA.¹⁵⁷ The EPA then has forty-five days to object to the permit for failing to comply with any federal requirements, before the public can petition the Administrator of the EPA to block issuance of the permit or revoke it until the permit has been revised to cure the deficiency.¹⁵⁸

The EPA is one of the most active federal regulatory agencies, and Clean Air Act regulations dominate the agency's docket. Based on my review of the Federal Register, over the last ten years, in fact, no less than 57% of proposed EPA rulemakings referenced the Clean Air Act (and most years that figure hovered around 65%).¹⁵⁹ Of those proposals, over 70% also referred to *implementation plans*.¹⁶⁰

Table 1

Year	Publications in the Federal Register		
	Total Proposals	Proposals referencing the "Clean Air Act"	Proposals also referring to "implementation plan"
2010	379	216	155
2011	473	302	232
2012	478	318	273
2013	402	261	222
2014	443	269	211
2015	472	303	256
2016	425	276	235
2017	415	277	222
2018	418	290	231
2019	447	308	247
2020	377	248	213

By contrast, the EPA has estimated that permitting authorities

155. *Id.*

156. *See generally* 40 C.F.R. pt. 70 app. A.

157. 42 U.S.C. § 7661a(b)(6).

158. 42 U.S.C. § 7661d(b).

159. *See* Table 1. Some rules may have merely referenced the Clean Air Act without being promulgated under that act's authority. That number is believed to be very small.

160. *Id.*

process approximately 800 PSD preconstruction permits and 14,700 Title V operating permits each year.¹⁶¹ Minor source preconstruction permits may also be numerous, but less complex: some permits take the form of a simple registration statement whereas others need a more fulsome analysis (*e.g.*, *synthetic* minor sources might include a negotiated cap on emissions and modeling analyses to show that the source is under the *major* source threshold). In short, there are hundreds if not thousands of potentially relevant decisions that communities could engage with—far more than in any other area of environmental regulation.¹⁶²

C. *Air Regulation and Opportunities for Environmental Justice*

To date, despite its immense importance to the lives of many marginalized communities and its relative size within the regulatory landscape, scholars have largely overlooked citizen advocacy in the context of air quality permitting decisions and standard setting. There is a robust literature critiquing and advocating for different participation models in the siting¹⁶³ of hazardous waste sites, by contrast.¹⁶⁴ There is

161. Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514, 31,557–63 (June 3, 2010) (to be codified at 40 C.F.R. pts. 51, 52, 70, 71); *see also* Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 323 (2014).

162. For purposes of comparison, the U.S. Army Corps of Engineers has authorized on average of 63,000 activities per year between 2012 and 2015, but 97% of those were authorized by nationwide and other general permits that do not require public notice (meaning just under 1,900 activities triggered individual permits). NICOLE T. CARTER, CONG. RSCH. SERV., 97-223, THE ARMY CORPS OF ENGINEERS' NATIONWIDE PERMITS PROGRAM: ISSUES AND REGULATORY DEVELOPMENTS 2 (2017). Similarly, according to EPA estimates, about 6,700 major facilities were subject to the Clean Water Act's National Pollutant Discharge Elimination System program (or NPDES permitting) as of September 30, 2007. U.S. ENV'T PROT. AGENCY, OVERVIEW OF THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PROGRAM 16, https://www.waterboards.ca.gov/academy/courses/wqstandards/materials/npdes_permits_compliance/overview.pdf [<https://perma.cc/U22B-Q5V3>].

163. For the sake of clarity, I do not refer to siting decisions as *permitting decisions*, which instead concerns the selection and operation of pollution controls for new and existing sources.

164. *See generally* Luke W. Cole, *The Theory and Reality of Community-Based Environmental Decisionmaking: The Failure of California's Tanner Act and Its Implications for Environmental Justice*, 25 *ECOLOGY L.Q.* 733 (1999); Sheila Foster, *Justice from the Ground Up: Distributive Inequities, Grassroots Resistance, and the Transformative Politics of the Environmental Justice Movement*, 86 *CALIF. L. REV.* 775 (1998); Applegate, *supra* note 48; Cole, *supra* note 102; Bradford C. Mank, *The Two-Headed Dragon of Siting and Cleaning Up Hazardous Waste Dumps: Can Economic Incentives or Mediation Slay the Monster?*, 19 *B.C. ENV'T AFFS. L. REV.* 239 (1991); Peter M. Sandman, *Getting to Maybe: Some Communications Aspects of Siting Hazardous Waste Facilities*, 9 *SETON HALL LEGIS. J.* 437 (1985); James E. McGuire, *The Dilemma of Public Participation in Facility Siting Decisions and the Mediation Alternative*, 9 *SETON HALL LEGIS. J.* 467 (1985); Gail Bingham & Daniel S. Miller, *Prospects for Resolving Hazardous Waste Siting Disputes Through Negotiation*, 17 *NAT. RES. L.* 473 (1984); *see also* RCRA Expanded Public Participation, 60 Fed. Reg. 63,417 (1995) (codified at 40 C.F.R. pts. 9, 124, 270) (requiring earlier opportunities for public

ample evidence and scholarship addressing the under-enforcement of environmental laws affecting marginalized and low-income communities.¹⁶⁵ However, the few scholars that take a closer look at environmental permitting only advocate for greater EPA assessment of environmental justice¹⁶⁶ or otherwise conclude that the majority of heavy polluters are already permitted and can avoid more stringent environmental controls.¹⁶⁷ But what these and other scholars do not do is treat air quality permitting (and control technology determinations more generally) as an area in which empowered citizen involvement could pay important and meaningful dividends.

Perhaps consistent with the evolution of the environmental justice movement, early environmental law scholarship began by focusing “on the need to apply civil rights law to decisions made by government officials” under environmental laws.¹⁶⁸ Legal scholars Richard Lazarus and Steph Tai helped shift the discussion by exploring the extent to which federal and state permitting agencies could either condition environmental permits or deny permits altogether on environmental justice grounds.¹⁶⁹ In *Integrating Environmental Justice into EPA Permitting Authority*, Lazarus and Tai identify three concerns that could be addressed through permit conditions—promoting community enforcement capacity, accounting for risk aggregation, and redressing risk disproportionality.¹⁷⁰ They conclude that “[e]xisting federal laws provide . . . permitting agencies with substantial authority to address environmental justice concerns in their permitting decisions.”¹⁷¹ Indeed, some laws provide direct authority to address fairness and public health concerns; others “simply include broadly worded provisions that provide the permitting

involvement in the permitting of facilities that store, treat, or dispose of hazardous waste under the Resource Conservation and Recovery Act).

165. See, e.g., TAYLOR, *supra* note 114, at 98–122 (discussing disparate enforcement of environmental laws, including penalties for violations and pace of cleanup). See generally Eileen Gauna, *Federal Environmental Citizen Provisions: Obstacles and Incentives on the Road to Environmental Justice*, 22 *ECOLOGY L.Q.* 1 (1995); Richard J. Lazarus, *The Meaning and Promotion of Environmental Justice*, 5 *MD. J. CONTEMP. LEGAL ISSUES* 1 (1994); Marianne Lavelle & Marcia Coyle, *Unequal Protection: The Racial Divide in Environmental Law*, 15 *NAT’L L.J.* S2 (1992); Richard J. Lazarus, *Pursuing “Environmental Justice”: The Distributional Effects of Environmental Protection*, 87 *NW. U. L. REV.* 787 (1993).

166. Richard J. Lazarus & Steph Tai, *Integrating Environmental Justice into EPA Permitting Authority*, 26 *ECOLOGY L.Q.* 617, 618 (1999).

167. See generally Michael B. Gerrard, *The Role of Existing Environmental Laws in the Environmental Justice Movement*, 9 *ST. JOHN’S J. LEGAL COMMENT.* 555 (1994).

168. Lazarus & Tai, *supra* note 166, at 618.

169. *Id.* at 619.

170. *Id.* at 624.

171. *Id.* at 677.

agency with considerable discretion to take the needs of environmental justice communities into account.”¹⁷²

Recognizing that authorities can consider environmental justice in permitting is an important step. In fact, in 2011, the EPA published a roadmap—Plan EJ 2014—for integrating environmental justice into its programs and policies, including environmental permitting.¹⁷³ Yet—according to sociologist Jill Lindsey Harrison—bureaucratic inertia at the EPA (and likely other regulatory agencies) routinely resists, undermines, and disparages environmental justice reform.¹⁷⁴ This reaction is based on beliefs like:

“(1) environmental protection is colorblind, (2) bettering the environment overall . . . improve[s] [it] for everyone, (3) [the] EPA is a science agency while [environmental justice] deals with social issues, and (4) other ‘standard narratives’ rooted generally in American normative societal values or in long-held premises that have shaped the environmental protection field for decades.”¹⁷⁵

“We do ecology, not sociology,” is the standard retort cited by Harrison; “EPA deals with issues of technology,” recounts senior environmental justice advisor Charles Lee.¹⁷⁶

While Congress has failed to authorize expressly EPA’s consideration of environmental justice as a permitting element, state governments have been perhaps more willing to do so. In 2020, for example, New Jersey adopted an historic bill that *requires* the New Jersey Department of Environmental Protection to evaluate environmental and public health impacts from certain classes of facilities on “overburdened” communities

172. *Id.* at 677.

173. See U.S. ENV’T PROT. AGENCY, CONSIDERING ENVIRONMENTAL JUSTICE IN PERMITTING (2011), <https://nepis.epa.gov/Exe/ZyPDF.cgi/P100ETRR.PDF?Dockey=P100ETRR.PDF> [<https://perma.cc/775K-TSL9>].

174. See generally JILL LINDSEY HARRISON, FROM THE INSIDE OUT: THE FIGHT FOR ENVIRONMENTAL JUSTICE WITHIN GOVERNMENT AGENCIES (2019).

175. Charles Lee, *Confronting Disproportionate Impacts and Systemic Racism in Environmental Policy*, 51 ENV’T L. REP. 10207, 10208 (2021).

176. *Id.* at 10209 n.11 (citing Lena Williams, *Race Bias Found in Location of Toxic Dumps*, N.Y. TIMES (Apr. 16, 1987), <https://www.nytimes.com/1987/04/16/us/race-bias-found-in-location-of-toxic-dumps.html> [<https://perma.cc/3H84-9PQL>]). Though currently with the EPA, Charles Lee is also known for his work as the principal author of the 1987 United Church of Christ report that found a correlation between the number of hazardous waste facilities and the percentage of *nonwhite* community members. COMM’N FOR RACIAL JUST., *supra* note 111; Brooks Berndt, “A True Game Changer”: Toxic Wastes and Race 30 Years Later – An Interview with Charles Lee, UNITED CHURCH OF CHRIST: THE POLLINATOR (Sept. 8, 2017), https://www.ucc.org/pollinator_an_interview_with_charles_lee/ [<https://perma.cc/2CV5-D84C>].

when reviewing permit applications.¹⁷⁷ With the new law, New Jersey became the first state “to require mandatory permit denials if an environmental justice analysis determines a new facility will have a disproportionately negative impact on overburdened communities.”¹⁷⁸

Despite the importance of government intervention, “[t]he engine that drives environmental justice is empowered communities, not enlightened officials.”¹⁷⁹ In fact, a central tenet of the environmental justice movement is that “we speak for ourselves.”¹⁸⁰ While Lazarus and Tai’s proposal to support enforcement capacity serves this goal, it is equally important to provide communities with the capability to advocate for better pollution controls or stricter emission limits before permits are issued. That way, overburdened communities can ensure their voices are heard at the critical stages before it becomes necessary to verify compliance (and not assume regulatory officials will take their interests into consideration).

Whereas Lazarus and Tai centered their recommendations on what agencies can do, legal scholar Michael Gerrard recognized that environmental statutes can be very helpful for public opposition to *new* sources of pollution (so long as community members are aware of the opportunity to weigh-in on permitting and siting decisions).¹⁸¹ “For existing facilities,” on the other hand, “the statutes have not been very helpful” because of “grandfathering.”¹⁸² Grandfathering, Gerrard explains, “says that if a facility already has a permit, it can keep it.”¹⁸³ It is therefore “extraordinarily difficult to shut down an existing facility.”¹⁸⁴

Gerrard is mostly correct. Once a permit has been issued, there may be a presumption that a facility can keep operating. But many facilities undergo modifications, some of which can trigger new permitting requirements. This is known in the air world as New Source Review

177. Press Release, N.J. Governor Phil Murphy, Governor Murphy Signs Historic Environmental Justice Legislation (Sept. 18, 2020) [hereinafter Governor Phil Murphy Press Release], <https://www.nj.gov/governor/news/news/562020/20200918a.shtml> [<https://perma.cc/3DE5-N5Z9>].

178. *Id.*

179. Gauna, *supra* note 42, at 70.

180. *See generally* ROBERT D. BULLARD, DANA A. ALSTON & PANOS INSTITUTE, WE SPEAK FOR OURSELVES: SOCIAL JUSTICE, RACE, AND ENVIRONMENT (1990).

181. Gerrard, *supra* note 167, at 560.

182. *Id.* at 560–61. The word “grandfathering,” Gerrard notes, comes from “old laws in the deep south that unless your grandfather voted, you could not either.” *Id.* at 561.

183. *Id.* at 561; *see also* RICHARD L. REVESZ & JACK LIENKE, STRUGGLING FOR AIR: POWER PLANTS AND THE “WAR ON COAL” (2016) (discussing grandfathering more broadly under the Clean Air Act).

184. Gerrard, *supra* note 167, at 561.

(NSR).¹⁸⁵ NSR permitting programs can be used to require new control technologies (such as BACT or LAER). But even where a state-issued NSR decision goes unchallenged, the EPA has long maintained that issuing or renewing a Title V operating permit requires an assessment of whether the underlying NSR preconstruction permit satisfies all of the requirements of the Clean Air Act.¹⁸⁶ In other words, just because a facility has a permit, that does not mean advocates cannot later challenge the permit's legality and sufficiency (and in a recent case, that challenge came twenty years later).¹⁸⁷

In other examples, the Clean Air Act imposes new substantive requirements on existing facilities depending on the type or severity of certain pollution problems (regardless of whether there has been a major modification at the facility). These checks on existing facilities may be uniquely important for environmental justice communities, providing an opportunity to address pollution problems after the effects of a facility have been observed. I will highlight three such programs.

The first, which received significant attention in recent years, falls under Clean Air Act section 111(d).¹⁸⁸ Under section 111(d), state environmental agencies must develop plans for regulating existing sources of certain pollutants after the EPA Administrator determines what the *best system of emission reduction* is for controlling those pollutants from particular source categories. While infrequently used, both the Obama and Trump Administrations invoked section 111(d) to regulate carbon dioxide emissions from existing power plants;¹⁸⁹ the Biden

185. *Learn About New Source Review*, ENV'T. PROT. AGENCY, <https://www.epa.gov/nsr/learn-about-new-source-review> [<https://perma.cc/6DQE-L8WK>].

186. *Sierra Club v. EPA*, 964 F.3d 882, 896 (10th Cir. 2020) (rejecting the Trump Administration EPA's attempt to stop its practice of "second-guessing" state-issued preconstruction permits). A Fifth Circuit case decided on slightly different justifications deferred to the EPA's view, *see Env't Integrity Project v. EPA*, 969 F.3d 529 (5th Cir. 2020), but the Biden Administration's EPA is expected to revert to the agency's *long-standing practice*.

187. *Sierra Club*, 964 F.3d at 889 ("PacifiCorp argues that the Sierra Club caused its own injury by failing to act for over twenty years. We reject this argument.")

188. I refer to Clean Air Act section numbers commonly used by environmental practitioners instead of the U.S. Code numbers, in part because the Clean Air Act has not been formally codified by Congress into the U.S. Code. *See United States Code*, OFF. L. REVISION COUNS., <https://uscode.house.gov/> [<https://perma.cc/AUT7-U57J>] (noting that Title 42 has not been enacted as positive law). Section 111, as enacted and amended by Congress, for instance, is reflected at 42 U.S.C. § 7411; generally, there is no difference between what was signed into law and what is in the U.S. Code, except for one sentence in section 111(d). *See Am. Lung Ass'n v. EPA*, 985 F.3d 914, 977–89 (D.C. Cir. 2021).

189. *See Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 80 Fed. Reg. 64,662 (Oct. 23, 2015) (to be codified at 40 C.F.R. pt. 60); *Repeal of the Clean Power Plan*, 84 Fed. Reg. 32,520 (Jul. 8, 2019) (to be codified at 40 C.F.R. pt. 60).

Administration is expected to as well.¹⁹⁰ Meanwhile, the Biden Administration intends to use section 111(d) to regulate methane emissions from existing oil and natural gas sources.¹⁹¹ While the substance and debate of these rules are outside the scope of this Article, the provision is a prominent example of imposing new requirements on existing sources.

The second and third examples are less likely to be featured in political campaigns but are more frequently used. Under the NAAQS program (the second example), the Clean Air Act sets timetables for increasingly stringent regulatory action for persistent air pollution areas. For example, ozone nonattainment areas that are classified as *marginal* nonattainment (the lowest classification) must impose *reasonably available control technology* (RACT) on certain existing sources in the area.¹⁹² In *moderate* ozone nonattainment areas (the next classification), RACT is expanded to additional existing sources of volatile organic compounds (a precursor to the formation of ground-level ozone).¹⁹³ Each subsequent ozone classification also reduces the numerical threshold for triggering NSR.¹⁹⁴ All of these requirements are imposed through SIPs and thus federally enforceable.

Finally, the Clean Air Act's Regional Haze Program (the third example) is designed to protect air quality in national parks and wilderness areas. As with section 111(d) and the NAAQS program, states are charged with taking the "first cut" at developing and implementing air quality protection plans to reduce pollution that causes visibility

190. U.S. Env't Prot. Agency, *Emission Guidelines for Greenhouse Gas Emissions from Fossil Fuel-Fired Existing Electric Generating Units*, OFF. OF INFO. & REGUL. AFFS.: OFF. OF MGMT. AND BUDGET, <https://www.reginfo.gov/public/do/eAgendaViewRule?publd=202104&RIN=2060-AV10> [https://perma.cc/RM34-PZPS] ("On January 19, 2021, the D.C. Circuit Court issued an opinion vacating the Affordable Clean Energy Rule (found at 40 CFR part 60, subpart UUUUa) - the previously applicable emission guidelines setting forth greenhouse gas (GHG) reductions from existing electric generating units (i.e. EGUs). The EPA is working on a new set of emission guidelines to establish a BSER for existing fossil fuel-fired EGUs to direct States in regulating GHGs within their borders.").

191. *See EPA Rule List – Fall 2021*, REGINFO.GOV, https://www.reginfo.gov/public/do/eAgendaMain?operation=OPERATION_GET_AGENCY_RULE_LIST¤tPub=true&agencyCode=&showStage=active&agencyCd=2000 [https://perma.cc/5C9H-4R3T].

192. 42 U.S.C. § 7511a(a)(2)(A).

193. *Id.* § 7511a(b)(2).

194. *Compare* 42 U.S.C. § 7511a(c) (lowering the threshold for sources in a Serious Area to "50 tons per year of volatile organic compounds"), *with id.* § 7511a(d) (lowering the threshold for sources in a Severe Area to "25 tons per year of volatile organic compounds"), *and id.* § 7511a(e) (lowering the threshold for sources in an Extreme Area to "10 tons per year of volatile organic compounds").

impairment.¹⁹⁵ A key component of this program is the requirement to install and operate the *best available retrofit technology*¹⁹⁶, or BART, for qualifying older, existing sources of visibility impairment.

Although these three programs do not require existing sources to shut down, they can change the economic viability of older, dirtier sources of pollution.¹⁹⁷ Faced with a requirement to install and operate expensive new pollution controls, some sources opt to retire. This concept has been used with great success by the Sierra Club's Beyond Coal campaign. As of 2015, for example, the campaign claims to have closed down 189 coal-fired power plants.¹⁹⁸ If environmental justice communities are equipped with their own technical expertise, they can achieve similar outcomes or negotiate alternative solutions (like just transitions) based on self-determined positions.

D. *Air Regulation and the Need for Community Empowerment*

Most environmental regulatory decisions are based on highly-technical analyses that obfuscate rather than illuminate complex determinations.¹⁹⁹ While expanding opportunities for public participation may be intended to reinforce pluralist principles, that goal is undermined by the inability of lay-persons to comprehend technical decision-making.²⁰⁰ And when

195. *Am. Elec. Power Co. v. Connecticut*, 564 U.S. 410, 428 (2011) (citing 42 U.S.C. §§ 7411(c)(1), (d)(1)–(2)).

196. *See* 42 U.S.C. § 7491(b)(2)(A).

197. When new requirements are developed or triggered (for example, under any of these programs), sources must also update their Title V operating permits. And at numerous points throughout this process, the public has a right to participation. But in order to be meaningful, the public must be empowered with the expertise to weigh-in on highly technocratic decisions.

198. Michael Grunwald, *Inside the War on Coal*, POLITICO (May 26, 2015, 11:45 PM), <https://www.politico.com/agenda/story/2015/05/inside-war-on-coal-000002/> [<https://perma.cc/284D-LXQS>]; *see also* Rebecca Bratspies, *Shutting Down Poletti: Human Rights Lessons from Environmental Victories*, 36 WIS. INT'L L.J. 247, 263 (2019) (discussing a community coalition's intervention in various administrative proceedings to "present briefing, testimony, and exhibits" that gave leverage used to negotiate the shutdown of an old and "dirty" power plant (internal citations omitted)).

199. *See* Wendy E. Wagner, *The Science Charade in Toxic Risk Regulation*, 95 COLUM. L. REV. 1613, 1656 (1995) ("Agencies are thus able to find refuge from APA-generated public debates by layering rulemakings with scientific terminology and citations. This resort to scientific obfuscation will limit the pool of commenters to those with at least modest fluency in the scientific and technical jargon characteristic of a particular standard."). *See generally* Steph Tai, *Three Asymmetries of Informed Environmental Decisionmaking*, 78 TEMP. L. REV. 659 (2005).

200. Legal scholar Steph Tai refers to this information/capacity gap between the lay public and well-funded organizations (who may also be proffering information to influence agency decision-making) as one of three asymmetries of informed decision-making. Tai, *supra* note 199, at 688–92. The other two asymmetries are participatory timing (*i.e.*, when in the process the public can comment on a proposal) and available outcomes (delay or obstruction seems to be the most available means for a party to influence an agency). *Id.* at 692–97.

lay-persons try to participate, administrative law allows agencies to privilege those with knowledge, competence, and qualification.²⁰¹ The question then is whether people have the specialized knowledge needed to contribute meaningfully to complex environmental policy decisions—a John Dewey Paradox.²⁰²

Even though environmental decisions are increasingly embedded in the technocratic languages of environmental impact assessments, cost-benefit analyses, technology assessments, and risk-benefit analyses, there is “no such thing as a purely technical decision.”²⁰³ In fact, experts routinely “make many social choices that transcend the standard explanation of what constitutes scientific objectivity.”²⁰⁴ Although environmental groups play a central role “in interpreting and making available technical environmental information to citizens,”²⁰⁵ the long history of exclusion by those same organizations²⁰⁶ undermines the confidence in marginalized and under-represented communities that those groups represent diverse interests. Further, some communities may not oppose all sources of pollution if there are no alternative economic opportunities available.²⁰⁷ Nevertheless, “legal mandates for science-based planning and for public participation” often come into conflict and processes that are otherwise “required to be transparent and open can instead become opaque and

201. See, e.g., Michel Foucault, *The Subject and Power*, 8 CRITICAL INQUIRY 777 (1982) (discussing struggles against the privileges of knowledge). But see Sheila Jasanoff, *The Vanishing Square: Civic Learning in the Internet Age*, HASTINGS CTR. REP. S5, S8 (2021), <https://onlinelibrary.wiley.com/doi/epdf/10.1002/hast.1222> (last visited Apr. 4, 2022) (arguing that freedom of information and right-to-know laws gave concerned American citizens “unparalleled access to the expert judgments underlying state decision-making”).

202. FRANK FISCHER, CITIZENS, EXPERTS, AND THE ENVIRONMENT: THE POLITICS OF LOCAL KNOWLEDGE 22 (2000) (explaining that John Dewey’s book, *The Public and Its Problems*, identified a paradox with the growth in public participation in the political realm and “the rise of bureaucratic organization and technical expertise”). Of course, even highly educated individuals may not be able to grapple with the specific technical questions that are raised in environmental permitting. They typically do have, however, the means to hire not only competent legal counsel but technical experts to weigh in on decisions that may affect their communities.

203. *Id.* at 43.

204. *Id.* at 104.

205. *Id.* at 113.

206. Dominic Scicchitano, *No Trespassing: The U.S. Environmental Movement’s Long History of Exclusion* (July 27, 2020), <https://www.eli.org/vibrant-environment-blog/no-trespassing-us-environmental-movements-long-history-exclusion> [<https://perma.cc/SZP7-GT3D>]; see also UNEQUAL PROTECTION: ENVIRONMENTAL JUSTICE AND COMMUNITIES OF COLOR xi–xii (Robert D. Bullard ed., 1994).

207. See Brigham Daniels, Michalyn Steele & Lisa Grow Sun, *Just Environmentalism*, 37 YALE L. & POL’Y REV. 1, 35 (2018) (noting some communities may be conflicted or opposed to environmental measures).

closed.”²⁰⁸ As Fine and Owen observed, this conflict is acute in the Clean Air Act.

Under the Clean Air Act, science-based planning often relies on complex simulation models.²⁰⁹ Such “models use mathematical and numerical techniques to simulate the physical and chemical processes that affect air pollutants as they disperse and react in the atmosphere.”²¹⁰ Air quality models are used by the EPA and state, local, and tribal air agencies “to both identify source contributions to air quality problems and assist in the design of effective strategies to reduce harmful air pollutants.”²¹¹ They are often used, for example, “during the permitting process to verify that a new source will not exceed ambient air quality standards or, if necessary, determine appropriate additional control requirements.”²¹² For instance, even after a level of control is determined through application of control technology (like BACT), air quality modeling may show that BACT will not sufficiently control or prevent violations of the NAAQS. In such cases, permitting authorities could require even more stringent control options as a result of modeling information.²¹³

In accordance with the Clean Air Act, the EPA provides modeling guidance and support on the selection and use of air quality models in regulatory settings (like SIP development and air permitting).²¹⁴ EPA’s Guideline on Air Quality Models “provides a common basis for estimating the air quality concentrations of criteria pollutants used in assessing control strategies and developing emissions limits.”²¹⁵ EPA’s Guideline includes a list of preferred and recommended models,²¹⁶ and

208. James D. Fine & Dave Owen, *Technocracy and Democracy: Conflicts Between Models and Participation in Environmental Law and Planning*, 56 HASTINGS L.J. 901, 903 (2005).

209. In fact, modeling and algorithm-based tools may be critical for some environmental decisions (particularly those related to climate change planning). See generally Sonya Ziaja, *How Algorithm Assisted Decision Making Is Influencing Environmental Law and Climate Adaptation*, 48 ECOLOGY L.Q. 899 (2021).

210. *Air Quality Models*, ENV’T PROT. AGENCY, <https://www.epa.gov/scram/air-quality-models> [https://perma.cc/EB6S-PMVJ].

211. *Id.*

212. *Id.*

213. See, e.g., Memorandum from Stephen D. Page, Dir., Off. of Air Quality Planning & Standards, to Reg’l Air Div. Dirs. 7 (Aug. 23, 2010) (on file with author) (explaining that it may be appropriate to adopt more stringent controls (beyond the level identified through application of BACT alone) when modeling information reveals adverse air quality impacts).

214. *Modeling Guidance and Support*, ENV’T PROT. AGENCY, <https://www.epa.gov/scram/modeling-guidance-and-support> [https://perma.cc/2LJ9-WEK9]; see also 40 C.F.R. pt. 51, app. W(a) (2021).

215. 40 C.F.R. pt. 51, app. W(a).

216. *Air Quality Dispersion Modeling: Preferred and Recommended Models*, ENV’T PROT. AGENCY, <https://www.epa.gov/scram/air-quality-dispersion-modeling-preferred-and-recommended-models> [https://perma.cc/2LJ9-WEK9].

provides procedures for selecting alternative models and agreeing to modeling protocol.²¹⁷

Generally, selection of appropriate models and the development of modeling protocol should not be controversial and often is not of significant interest to laypersons—but the agency’s modeling choices can impact permitting decisions in very significant ways. In fact, meetings are typically only held between “preparing and reviewing parties [*i.e.*, the permit applicant and the permitting agency] to define the procedures to be followed, the data to be collected, the model to be used, and the analysis of the source and concentration data” to be performed.²¹⁸ These meetings are not subject to public participation, nor even advertised to the public. But within these discussions, significant decisions can be negotiated. For example, a recent EPA guidance document, “Additional Methods, Determinations, and Analyses to Modify Air Quality Data Beyond Exceptional Events,” would allow permitting authorities to “exclude[e], select[, or adjust[.]” air monitoring data purportedly “influenced by an atypical, extreme, or unrepresentative event in preparing required air quality analyses” in PSD permitting and Regional Haze planning.²¹⁹ Ordinarily, the Clean Air Act requires that the public weigh in on the exclusion of such data influenced by “exceptional events,”²²⁰ but here permit applicants and permitting authorities can agree to ignore data they deem unsuitable for consideration behind closed doors. Of course, the final permitting or regulatory decisions are subject to judicial review, but “[t]he choice of appropriate data sets for the air quality analysis is an issue largely left to the discretion of the permitting authority.”²²¹

Models are critical for environmental decision-making, but they tend to be misunderstood²²² and can even be difficult for model-savvy

217. *Air Quality Analysis Checklist*, ENV’T PROT. AGENCY, https://www.epa.gov/sites/production/files/2020-09/documents/air_quality_analysis_checklist-revised_20161220.pdf [<https://perma.cc/AAL5-Y6LL>].

218. 40 C.F.R. pt. 51, app. W, § 9.2.1(a).

219. See Memorandum from Richard Wayland, Dir., Air Quality Assessment Div. & Anna Marie Wood, Dir., Air Quality Pol’y Div., to Reg’l Air Div. Dirs., 1, 3 (Apr. 4, 2019), https://www.epa.gov/sites/production/files/2019-04/documents/clarification_memo_on_data_modification_methods.pdf [<https://perma.cc/PV67-XHB6>].

220. See 42 U.S.C. § 7619(b)(3)(B)(iii).

221. *In re Footprint Power Salem Harbor Dev.*, LP, 16 E.A.D. 546, 576–78 (EAB 2014) (quoting *In re Knauf Fiberglass GmbH*, 8 E.A.D. 121, 147 (EAB 1999)); see also Wendy Wagner, Katherine Barnes & Lisa Peters, *Rulemaking in the Shade: An Empirical Study of EPA’s Air Toxic Emission Standards*, 63 ADMIN. L. REV. 99 (2011) (explaining that rule development is often informed by early engagement with stakeholders, well before the notice-and-comment process even begins).

222. Wendy Wagner, Elizabeth Fisher & Pasky Pascual, *Misunderstanding Models in Environmental and Public Health Regulation*, 18 N.Y.U. ENV’T L.J. 293 (2010).

individuals to comprehend²²³—accordingly, courts afford great deference to agencies’ modeling decisions. To be sure, models can sometimes help summarize and visualize data in ways that are not otherwise possible.²²⁴ But the reality, of course, is that “computational models are fragile and contestable.”²²⁵ Nevertheless, courts recognize that the EPA has “undoubted power to use predictive models,”²²⁶ but that “their scientific nature does not easily lend itself to judicial review.”²²⁷ In fact, challengers “cannot undermine” the EPA’s models “simply by pointing to variables not taken into account that might conceivably have pulled the analysis’s sting.”²²⁸ They must show how that failure “would have a significant effect” on the outcome.²²⁹ “That the model does not fit every application perfectly is no criticism; a model is meant to simplify reality in order to make it tractable.”²³⁰ Accordingly, courts will vacate an agency’s decision only if “the agency’s conclusions drawn from [a] model are unreasonable.”²³¹

Because many environmental decisions are complex and difficult to comprehend (and potentially just as difficult to challenge in court), trust in our permitting authorities and regulatory institutions is essential. But concerns about regulatory capture (the theory that agencies may come to be dominated by the interests they regulate and not by the public interest) can erode that trust.²³² “The problem of regulatory capture,” according to

223. Fine & Owen, *supra* note 208, at 905. Models can also be used to mislead. In January 2016, opponents of the Clean Power Plan filed an unprecedented request to the U.S. Supreme Court to stay the rule pending review in the D.C. Circuit based in part on claims that the rule would “trigger[] the premature closure of coal-fired power plants and coal mines across the country.” See Application of Utility and Allied Parties for Immediate Stay of Final Agency Action Pending Appellate Review, Basin Elec. Power Co-op v. EPA, 577 U.S. 1126 (2016) (No. 15A776), 2016 WL 344477 (claiming also that “EPA’s own modeling predicts the immediate closure of 20% of the Southern Company’s existing coal-fired fleet”). *But see* Supplemental Declaration of Reid P. Harvey, West Virginia v. EPA, 577 U.S. 1126 (2016) (No. 15A773), https://www.edf.org/sites/default/files/content/epa_sc_reply_brief_reduced_size.pdf (responding to assertions “that the modeling for the [Clean Power Plan] somehow demonstrates that irreparable harm will occur, particularly in the form of power plant retirements during the pendency of litigation”).

224. See generally Dave Owen, *Mapping, Modeling, and the Fragmentation of Environmental Law*, 2013 UTAH L. REV. 219.

225. Wagner et al., *supra* note 222, at 295.

226. Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 535 (D.C. Cir. 1983).

227. Appalachian Power Co. v. EPA, 135 F.3d 791, 802 (D.C. Cir. 1998).

228. *Id.* at 805 (internal quotations and citations omitted).

229. *Id.*

230. Chem. Mfrs. Ass’n v. EPA, 28 F.3d 1259, 1264 (D.C. Cir. 1994).

231. West Virginia v. EPA, 362 F.3d 861, 868 (D.C. Cir. 2004).

232. See, e.g., Wendy Wagner et al., *supra* note 221, at 105 (noting increasing concern about “‘regulatory capture,’ which generally (but not always) referred to the deployment of various financial

Rahman, “has been a consistent challenge to the modern regulatory state,” and has led to “mechanisms to insulate regulators from political influence, or techniques to rationalize agency decision-making.”²³³ To *capture-proof* our institutions, some scholars have argued, requires a return to managerialism.²³⁴ New Chicago School economists, for example, advocated for greater “cost-benefit analysis” to provide “object proof and legitimation” to regulatory decisions.²³⁵

Whereas numerous scholars have proposed methods to escape “regulatory capture,”²³⁶ and there may even be legal responses to do so,²³⁷ a more pernicious phenomenon is “cognitive capture,” under which “regulators become incapable of thinking in terms other than that of the industry.”²³⁸ Recently, whistleblowers at the Colorado Air Pollution Control Division alleged that a “long-time bureaucrat ordered modelers not to analyze potential pollution violations and created a culture of approving permits ‘at all costs.’”²³⁹ Budget and personnel cuts across agencies would only exacerbate the problem—with fewer resources and greater workloads, individual regulators may be more willing to accept technology recommendations or modeling analyses prepared by permit applicants. In a 2019 report, the Environmental Integrity Project found that thirty states reduced funding for their environmental agencies’ pollution control programs and forty states reduced staffing levels over fiscal years 2008 through 2018.²⁴⁰ With staffing cuts as pervasive as this,

inducements (i.e., the prospect of future employment, gifts, or bribes) by regulated parties to co-opt individual regulators” (internal citations omitted)).

233. RAHMAN, *supra* note 63, at 24–25.

234. *Id.* at 44 (citing Sheila Jasanoff, *Constitutional Moments in Governing Science and Technology*, 17 SCIENCE & ENG’G ETHICS 621, 632 (2011)).

235. RAHMAN, *supra* note 63, at 44.

236. See, e.g., Lawrence G. Baxter, *Understanding Regulatory Capture: An Academic Perspective from the United States*, in MAKING GOOD FINANCIAL REGULATION: TOWARDS A POLICY RESPONSE TO REGULATORY CAPTURE 53 (Stefano Pagliari ed., 2012) (recommending adequate regulatory capacity, meaningful transparency, meaningful access by stakeholders, external checks, and internal checks to address regulatory capture); see also PREVENTING REGULATORY CAPTURE: SPECIAL INTEREST INFLUENCE AND HOW TO LIMIT IT 2 (Daniel Carpenter & David A. Moss eds., 2014).

237. Sheldon Whitehouse, *Legal Responses to Regulatory Capture*, AM. CONST. SOC. ‘Y (Nov. 9, 2018), <https://www.acslaw.org/expertforum/blog-post-for-the-american-constitution-society-legal-responses-to-regulatory-capture/> [<https://perma.cc/QRV2-62SV>].

238. Brett McDonnell & Daniel Schwarcz, *Regulatory Contrarians*, 89 N.C. L. REV. 1629, 1644 n.63 (2011) (internal quotations omitted).

239. Sam Brasch & Miguel Otárola, *Whistleblowers Claim the State’s Top Air Regulator Had Them Falsify Data. Now Environmental Groups Want Him Dismissed*, CPR NEWS (Apr. 2, 2021, 9:34 AM), <https://www.cpr.org/2021/04/01/whistleblowers-claim-the-states-top-air-regulator-had-them-falsify-data-now-environmental-groups-want-him-dismissed/> [<https://perma.cc/8YU5-VM2G>].

240. ENV’T INTEGRITY PROJECT, THE THIN GREEN LINE: CUTS IN STATE POLLUTION CONTROL

it is increasingly important to ensure that public participation can serve as a meaningful check on both regulatory and cognitive capture.

Though our environmental laws may have been “pluralist-created and pluralist-driven,”²⁴¹ environmental decision-making is increasingly technocratic. Even courts have “shifted judicial doctrines policing administrative action toward an ‘expertise-forcing’ framework, requiring more and more detailed cost-benefit analyses and scientific foundations for justifying regulatory actions.”²⁴² Meaningful involvement in environmental decision-making therefore cannot rest simply on extra process and more outreach—it must include technical assistance for those communities that are disproportionately affected so that they may more effectively engage on technical decisions that could determine the *acceptable* amount of pollution they will ultimately have to bear.

III. ENHANCED PARTICIPATION: SUPPORTING TECHNICAL ADVOCACY

The prior Part laid the groundwork for why technical capacity and advocacy is important—indeed, necessary—in pollution control decisions, particularly those related to air quality. Nonetheless, efforts to expand opportunities for public participation have fallen short because they fail to support technical capacity building in those communities that are disproportionately impacted by air pollution. This Part introduces a model for providing that very support (inspired in part by experience under other environmental laws, like Superfund). By doing so, the model can inject substance into the procedural right to participation and enhance meaningful involvement beyond merely doing more community outreach. It thus offers a capacity-based approach to analyzing procedural justice—by recognizing, at least for technocratic decisions, that public participation is only meaningful (and fair) if the public has the capability to provide comments that agencies cannot ignore.

AGENCIES THREATEN PUBLIC HEALTH (2019), <https://environmentalintegrity.org/wp-content/uploads/2019/12/The-Thin-Green-Line-report-12.5.19.pdf> [<https://perma.cc/PQ63-UNNR>].

241. Gauna, *supra* note 42, at 24.

242. RAHMAN, *supra* note 63, at 44 (citing Jody Freeman & Adrian Vermeule, Massachusetts v. EPA: *From Politics to Expertise*, 2007 SUP. CT. REV. 51, 52 (2007)); *see also* Lisa Heizerling, *The Power Canons*, 58 WM. & MARY L. REV. 1933, 1962–69 (2017) (discussing *Michigan v. EPA*, 576 U.S. 743 (2015) and noting agreement between the majority opinion and dissent that Agencies may not impose regulatory costs without taking those costs into account, unless Congress expressly signals otherwise).

A. *Superfund's Technical Advisory Grants and the Lower Duwamish Waterway*

Superfund's Technical Advisory Grant (TAG)²⁴³ program is a useful model for meaningful community involvement that may translate to other areas of environmental regulation. In 1980, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act²⁴⁴—better known as Superfund—to address the dangers of abandoned or uncontrolled hazardous waste dumps. Superfund governs the cleanup of contaminated sites by requiring “potentially responsible part[ies]” to either cleanup contamination or reimburse the government for EPA-led cleanup work.²⁴⁵ While the EPA relies on affected communities to inform its cleanup decision-making, the volumes of technical information related to cleanup efforts can be a significant barrier to adequate public input.²⁴⁶ Accordingly, in 1986, Congress amended the Superfund program to create the EPA's TAG program.²⁴⁷

TAGs are awarded to qualifying non-profit community groups²⁴⁸ to contract with independent advisors to help those groups understand

243. The Superfund grant program is not the only *enhanced* participation process available under environmental laws. For instance, the EPA issued “expanded public participation” regulations under the Resource Conservation and Recovery Act to provide “earlier opportunities for public involvement” in the permitting process and “expand[ed] public access to information throughout the permitting process and the operational lives” of hazardous waste storage, treatment, and disposal facilities. RCRA Expanded Public Participation, 60 Fed. Reg. 63,417 (Dec. 11, 1995) (to be codified at 40 C.F.R. pts. 9, 124, 270). Under the Surface Mining Control and Reclamation Act, citizens can request an informal conference to discuss objections to a permit, 30 C.F.R. § 773.6(c) (2021), and are allowed to call for *and participate* in inspections of mine property, 30 C.F.R. § 721.13(b) (2021). But no other environmental law provides funding for independent technical support to engage in agency decision-making.

244. See CERCLA, Pub. L. No. 96-510, 94 Stat. 2767 (1980) (codified as amended in 42 U.S.C. §§ 9601–9675).

245. *Superfund Liability*, ENV'T PROT. AGENCY, <https://www.epa.gov/enforcement/superfund-liability> [<https://perma.cc/PL4H-ENKY>].

246. Nathan Teske, *A Tale of Two TAGs: Dialogue and Democracy in the Superfund Program*, 44 AM. BEHAVIORAL SCIENTIST 664, 664–65 (2000).

247. *Id.* at 666. Prior to the TAG program, the Environmental Research, Development, and Demonstration Authorization Act of 1978 (ERDDA) appropriated funds to the EPA to issue grants across the country to support and encourage participation “by qualified citizens groups in determining how scientific, technological, and social trends and changes affect the future environment and quality of life of an area, and for setting goals and identifying measures for improvement.” Environmental Research, Development, and Demonstration Authorization Act of 1979, Pub. L. No. 95-477, § 4(d)(2), 92 Stat. 1507, 1509 (codified at 42 U.S.C. § 4368). Like TAGs, ERDDA limited funding for groups at \$50,000 per year and prohibited them from using the money for litigation. But unlike TAGs, ERDDA steered away from “single-issue advocates.” H.R. REP. NO. 95-1593, at 11 (1978). Some states also have limited technical assistance programs, such as Massachusetts's toxic waste facility siting statute. See MASS. GEN. LAWS ch. 21D, § 11 (2020).

248. 40 C.F.R. § 35.4020 (2021) (defining eligibility criteria for community groups).

technical information about a Superfund site. Importantly, TAGs can be used to interpret technical information *and* “comment on site-related information and decisions.”²⁴⁹ Although TAGs cannot be used to underwrite legal actions or be used to pay attorney fees,²⁵⁰ “any information developed through grant assistance may be used . . . in a court of law.”²⁵¹ Between 1988 and 2019, a total of 307 TAGs have been awarded.²⁵² And, as of December 2019, there are forty-four active TAGs.²⁵³ One such TAG is for the Duwamish River Cleanup Coalition/Technical Advisory Group based in Seattle, Washington.²⁵⁴

The lower Duwamish River is an urban estuary—located south of downtown Seattle—with a long history of human alteration and industrialization.²⁵⁵ Up until the 1850s, the land around the Duwamish River was largely forested and occupied by indigenous communities, including ancestors of the federally-recognized Muckleshoot and Suquamish Tribes and the Duwamish Tribe.²⁵⁶ For these people, the river served as a transit corridor, spiritual haven, and harvesting and fishing ground.²⁵⁷ But with the treaties of 1854²⁵⁸ and 1855,²⁵⁹ indigenous groups and tribes of the Puget Sound region were relocated to reservations and displaced by Euro-American settlers. These settlers then began to clear the forests and dredge and straighten the Duwamish River to “enhance”

249. *Id.* § 35.4005. TAGs are also only available for Superfund sites. Other funds are available for technical assistance across environmental programs, but they cannot be used for advocacy (such as public comments). The EPA’s Technical Assistance Services for Communities (TASC) program “help[s] communities better understand the science, regulations and policies of environmental issues and EPA actions,” but TASC resources cannot be used for “[a]ctivities that advocate for a particular constituency, position or outcome.” See *Technical Assistance Services for Communities (TASC) Program*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/superfund/technical-assistance-services-communities-tasc-program> [<https://perma.cc/TSH6-TEJW>].

250. 40 C.F.R. § 35.4075.

251. H.R. REP. NO. 99-962, at 231 (1986).

252. *Superfund: Technical Assistance Grant (TAG) Program*, ENV’T PROT. AGENCY, <https://www.epa.gov/superfund/technical-assistance-grant-tag-program> [<https://perma.cc/2XEG-XSKQ>].

253. *Id.*

254. In the interests of disclosure, the author helped represent the Port of Seattle (a member of the Lower Duwamish Waterway Group) on Duwamish-related matters from 2013–2014. Nothing in this Article relies on any non-public information.

255. U.S. ENV’T PROT. AGENCY, ENVIRONMENTAL JUSTICE ANALYSIS FOR THE LOWER DUWAMISH WATERWAY SUPERFUND CLEANUP 7 (2013), https://d10k7k7mywg42z.cloudfront.net/assets/512fbf027a507244640002ea/ej_analysis_ldw_feb_2013.pdf [<https://perma.cc/WDM5-YBPJ>] [hereinafter *Environmental Justice Analysis*].

256. *Id.* at 14.

257. *Id.* at 8.

258. See Treaty of Medicine Creek, Dec. 26, 1954, 10 Stat. 1132.

259. See Treaty of Point Elliott, Jan. 22, 1855, 12 Stat. 927.

navigability.²⁶⁰ After channelization, the area surrounding the Duwamish River became further developed by industry—ranging from wood products to marinas and aircraft parts manufacturing (e.g., Boeing Company Plant 1 was established in 1917).²⁶¹ With the onset of World War I, shipyards and aircraft and cement manufacturing became increasingly important (along with metal fabrication and equipment manufacturing).²⁶² Several of these industries created “legacy” contamination issues that are deposited in the sediments throughout the lower Duwamish River—a five-and-a-half mile stretch of which was added to EPA’s Superfund priorities list in 2001.²⁶³

Presently, the Duwamish Valley includes some of Seattle’s lowest-income and one of the city’s most ethnically diverse neighborhoods.²⁶⁴ The population is forty-two percent foreign-born, forty percent Latinx, and more than seventy percent people of color, including Asian, Pacific Islander, Hispanic, African American, and Native American.²⁶⁵ Almost seventy-two percent of residents live far below the Federal poverty line—the highest percentage of any area in King County.²⁶⁶ Life expectancy in the valley is eight years shorter than averages for the City of Seattle and King County, and thirteen years shorter than more affluent, predominantly white Seattle neighborhoods.²⁶⁷ It is no surprise that these communities are also exposed to significant environmental health concerns and inequities,

including proximity to the Lower Duwamish Waterway Superfund site (one of the most toxic hazardous waste sites in the nation), access to only [forty] square feet of green space per resident . . . , and air pollution from a disproportionate number of polluting industries as well as surrounding major highways.²⁶⁸

Compounding these inequities, Duwamish Valley residents “have historically lacked access to, and influence on, decision-makers” who can “shape the futures of their communities.”²⁶⁹

After the Lower Duwamish Waterway Superfund site was listed in

260. *Environmental Justice Analysis*, *supra* note 255, at 8.

261. *Id.* at 9.

262. *Id.*

263. *Id.* at 7.

264. *Why Is Our Work Important?*, DUWAMISH RIVER CLEANUP COAL., <https://www.drcc.org/our-work-matters> [<https://perma.cc/5WG2-F832>].

265. *Id.*

266. *Id.*

267. *Id.*

268. *Id.*

269. *Id.*

2001, community members formed the Duwamish River Cleanup Coalition/Technical Advisory Group (the Coalition) to receive a TAG from the EPA. The Coalition “represents an alliance of community, tribal, environmental, and small business groups affected by ongoing pollution and cleanup plans” for the Lower Duwamish Waterway.²⁷⁰ Its mission is to “elevate[] the voice[s] of those impacted by the Duwamish River pollution and other environmental injustices for a clean, healthy, equitable environment for people and wildlife.”²⁷¹ And in that effort, the Coalition “has provided a bridge between EPA and the community, and it has been key in communicating information about EPA actions and how they will impact the community.”²⁷² Equally important, the Coalition has been regularly involved in the cleanup effort for the Lower Duwamish Waterway Superfund site. In fact, according to Coalition Superfund Manager and Duwamish Tribal Council Member James Rasmussen, cleanup decisions were all strengthened when the Coalition was involved.²⁷³ In one example, the Coalition challenged an engineering evaluation/cost analysis that was based on “industrial-level cleanup requirements” for the Terminal 117 early action area by advocating for an “unrestricted use” designation.²⁷⁴ As a result, the EPA directed the Port of Seattle and the City of Seattle to revise the engineering and cost analyses, and the Port of Seattle committed to restoring nearby habitat after the early action area was cleaned up.²⁷⁵ Further, the EPA added twenty-one acres to the final cleanup decision and an additional 170,000 cubic yards (about forty acres) of dredging, or permanent contaminant sediment removal.²⁷⁶ These changes were due in part to the Coalition’s ability to hire technical advisors²⁷⁷ and assist in the preparation of an independent Health Impact

270. *Id.*

271. *About Us: Our Mission*, DUWAMISH RIVER CLEANUP COAL., <https://www.drcc.org/our-mission> [<https://perma.cc/5WG2-F832>].

272. *Environmental Justice Analysis*, *supra* note 255, at 65.

273. *Videos, Presentations, and Articles: October 27, 2020 Interview with James Rasmussen—Duwamish River Cleanup & History*, DUWAMISH RIVER CLEANUP COAL., at 8:00–8:25, <https://www.drcc.org/new-page-9> [<https://perma.cc/3S4W-82N9>]. James Rasmussen is a founding member of the Coalition and its Superfund manager and represents the Duwamish Tribe on the Coalition’s Advisory Council.

274. *Early Action Areas*, DUWAMISH RIVER CLEANUP COAL., <https://www.drcc.org/new-page-46> [<https://perma.cc/RG7A-D3HT>].

275. *Id.*

276. U.S. ENV’T PROT. AGENCY, RECORD OF DECISION: LOWER DUWAMISH WATERWAY SUPERFUND SITE 118 (2014), <https://semspub.epa.gov/work/10/715975.pdf> [<https://perma.cc/948G-SWZN>] [hereinafter *Record of Decision*].

277. U.S. ENV’T PROT. AGENCY, LOWER DUWAMISH WATERWAY SUPERFUND SITE COMMUNITY INVOLVEMENT PLAN 26 (2016), <https://semspub.epa.gov/work/10/100033896.pdf> [<https://perma.cc/3HZ4-D7ZZ>].

Assessment.²⁷⁸

The Health Impact Assessment, co-authored by Just Health Action (a health equity non-profit) and the Coalition, found that a range of health exposures and impacts disproportionately affect people in the Duwamish Valley.²⁷⁹ Recognizing these impacts, the Port of Seattle launched a pilot project in 2017 with Duwamish Valley community members and Just Health Action to focus on improving engagement with near-Port communities that experience environmental justice issues.²⁸⁰ Following two years of work, the Port of Seattle approved the Duwamish Valley Community Equity Program to make permanent the pilot project and “promote community partnerships, healthy environments and communities, and economic prosperity.”²⁸¹

The Lower Duwamish Waterway Superfund site is unique though because it produced the first-ever stand-alone Environmental Justice Analysis for a CERCLA decision. In fact, the study was prepared at the request of the Coalition and other community members because the EPA agreed it “would help define the most significant issues of concern and provide a direct route for community input into the decision-making process to improve cleanup outcomes and reduce exposure for the affected populations.”²⁸² The study resulted in six recommendations²⁸³—five of which were adopted in EPA’s final cleanup decision (known as the Record of Decision); the most notable recommendation called for a Fishers Study.²⁸⁴ Most of the human health risks at the Lower Duwamish Waterway Superfund site are associated with chemical contaminants (PCBs, arsenic, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), etc.) in river sediment, fish, and shellfish.²⁸⁵ Accordingly, state and local health advisories recommend against consumption of crab, shellfish, and fish (except salmon) from the Lower Duwamish Waterway.²⁸⁶ The Fishers Study²⁸⁷—which had significant design and implementation input from

278. *Id.* at 3.

279. *Cumulative Health Impacts Analysis (CHIA)*, DUWAMISH RIVER CLEANUP COAL., <https://www.drcc.org/chia> [<https://perma.cc/ZW38-ZGFG>].

280. *See* U.S. ENV’T PROT. AGENCY, CASE STUDY: SEATTLE PILOT (2020), <https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P100ZN83.pdf> [<https://perma.cc/RJ23-XPSW>].

281. *Duwamish Valley Community Equity Program*, PORT OF SEATTLE, <https://www.portseattle.org/duwamishvalley> [<https://perma.cc/4C9D-436Y>].

282. *Environmental Justice Analysis*, *supra* note 255, at 6.

283. *Id.* at 69.

284. *Record of Decision*, *supra* note 276, at 132.

285. *Environmental Justice Analysis*, *supra* note 255, at 7–8.

286. *Id.* at 34.

287. LOWER DUWAMISH WATERWAY GRP., LOWER DUWAMISH WATERWAY FISHERS STUDY

the Coalition—revealed that fishers who eat the polluted “resident fish” are primarily non-White and non-English speaking individuals and that the health advisories were “not effective” in reaching all people.²⁸⁸ As a result, EPA and Public Health Seattle-King County established a joint community-based program to promote healthy seafood consumption before, during, and after the cleanup.²⁸⁹ This was accomplished through “the training and engagement of more than [twenty] ‘Community Health Advocates,’ who help explain technical information and promote safe fish consumption within their own communities.”²⁹⁰

Even though a *final decision* was issued by EPA, the Coalition still monitors implementation of the cleanup. This includes reviewing EPA sampling throughout the Superfund site and commenting on proposals to change the Record of Decision.²⁹¹ The Coalition also continues to be served by its technical advisor, Linn Gould, and, in turn, continues to educate and advocate for Duwamish Valley communities.²⁹² The TAG program thus has promoted ongoing community involvement for those most affected by the contamination in the Lower Duwamish Waterway Superfund site.

B. *Critical Reviews of TAGs*

The Duwamish case study is just one example of a successful TAG. But the program can be improved. In 1994, environmental lawyer Deeohn Ferris argued that “the grant application process is intself [sic] an impediment to communities who seek the grants.”²⁹³ Ferris, summarizing GAO testimony before a House subcommittee, notes concerns raised “about administrative barriers that limit the number of communities that

DATA REPORT (2016), <https://semsub.epa.gov/work/10/100036528.pdf> [<https://perma.cc/4YF9-T86G>].

288. U.S. ENV’T PROT. AGENCY, FISHING IN THE DUWAMISH RIVER: WHAT DID WE LEARN AND WHAT DO WE DO NEXT? 2 (2017), <https://semsub.epa.gov/work/10/100046881.pdf> [<https://perma.cc/S7DK-8X88>].

289. *Lower Duwamish Waterway Seattle, WA*, U.S. ENV’T PROT. AGENCY, <https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.cleanup&id=1002020> [<https://perma.cc/VG8Q-AADT>].

290. CLIFFORD VILLA, NADIA AHMAD, REBECCA BRATSPIES, ROGER LIN, CLIFFORD RECHTSCHAFFEN, EILEEN GAUNA & CATHERINE O’NEILL, ENVIRONMENTAL JUSTICE 320 (3d. ed. 2020).

291. *Comments on the Explanation of Significant Differences*, DUWAMISH RIVER CLEANUP COAL. (Apr. 21, 2021), <https://www.drcc.org/esd> [<https://perma.cc/W8HN-FQTN>].

292. *Id.*

293. Deeohn Ferris, *Communities of Color and Hazardous Waste Cleanup: Expanding Public Participation in the Federal Superfund Program*, 21 FORDHAM URB. L.J. 671, 678 (1994).

receive grants and prevent communities from effectively using them.”²⁹⁴ This is highlighted by the limited number of awarded TAGs as “compared to the universe of potentially eligible communities (neighborhoods affected by one or more of the 1275 NPL sites.)”²⁹⁵ Ferris recommends that the grant process be simplified and expedited, and she also recommends that EPA be required to work with communities to create Community Working Groups.²⁹⁶

“Recognizing that there were many barriers to community participation,” writes Larry Zaragoza of EPA’s Office of Superfund Remediation and Technology Innovation, “EPA’s Superfund community involvement program has developed tools to identify and remove barriers to participate in the cleanup process.”²⁹⁷ In 1995, for instance, EPA created the Community Advisory Group (CAG) program. A CAG is made up of representatives of the community and “is designed to serve as the focal point for the exchange of information among the local community” and regulatory agencies involved in the cleanup of a Superfund site.²⁹⁸ CAG membership is intended to be diverse, and may include TAG recipients (in fact, the EPA encourages CAGs to request TAG funding or partner with an existing TAG recipient).²⁹⁹ Though the concept of CAGs was not new (there have been task forces, advisory groups, etc., formed at many sites), the CAG program formalized the facilitation of inclusive stakeholder participation.³⁰⁰ Numerous guides have also been published to aid community groups seeking a TAG.³⁰¹ Since then, several EPA studies confirmed that community involvement through TAGs and CAGs “made a significant contribution to the cleanup effort, led to a better product and increased public confidence in the project, and ultimately led

294. *Id.* at 679.

295. *Id.*

296. *Id.* at 679–83.

297. Larry J. Zaragoza, *The Environmental Protection Agency’s Use of Community Involvement to Engage Communities at Superfund Sites*, 16 INT’L J. ENV’T RSCH. & PUB. HEALTH 21, 26 (2019).

298. *Superfund Community Advisory Groups*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/superfund/superfund-community-advisory-groups> [<https://perma.cc/7ZN6-6995>].

299. U.S. ENV’T. PROT. AGENCY, GUIDANCE FOR COMMUNITY ADVISORY GROUPS AT SUPERFUND SITES 17 (1996), <https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=10001XJB.TXT> [<https://perma.cc/NBT2-XYNX>].

300. SUZANNE WELLS, SUPERFUND’S COMMUNITY INVOLVEMENT PROGRAM: BUILDING A SUSTAINABLE PROGRAM 170 (2002) (on file with author).

301. See *Superfund: Technical Assistance Grant (TAG) Program*, *supra* note 21; see also Terri Nichols, *Lessons Learned in the Superfund Process: A Guide for Community Advisory Groups* (2018) (Master’s thesis, University of Montana), <https://scholarworks.umt.edu/cgi/viewcontent.cgi?article=12234&context=etd> [<https://perma.cc/WB9K-NGY3>]

to better decisions.”³⁰²

Independent researchers have also found that technical advisors “increase trust and credibility” in decision-making.”³⁰³ Technical advisors could not only increase public trust in the process (an important aspect of procedural justice), but remove power imbalances by leveling the field for community involvement in decision-making.³⁰⁴ Overall, TAGs help “alleviate problems with trust, credibility, communications, differences in power in the decision-making process, and overall satisfaction with the participation process.”³⁰⁵ Technical advisors, in particular, improved communication and served as both advocate and translator “with the ability to interpret technical information and translate community preferences into the technical language of the agency representatives.”³⁰⁶ Of course, TAGs alone “do[] not ensure democracy at Superfund sites.”³⁰⁷ Trust between the community and decision-makers, in addition to EPA’s willingness to listen³⁰⁸ are crucial factors for successful public participation. But as long as “formal equality” remains elusive, the TAG program can “enhance the leverage of [public] participants and provide a potential check on other, more powerful actors.”³⁰⁹

IV. BUTTRESSING TECHNICAL ADVOCACY IN POLLUTION CONTROL DECISION-MAKING

Numerous scholars have stressed the importance of public participation to democratic governance and highlighted the benefits of robust public engagement.³¹⁰ In short, public participation serves an important balancing function—a form of countervailing power which is at the heart of democratic institutional design. The idea is at least theoretically straightforward when it comes to electoral politics—on election day, voters can support specific initiatives or vote out poorly performing politicians.

With respect to administrative governance, however, public power is

302. WELLS, *supra* note 300, at 172.

303. Lance R. Cooper, Who Participates and Why? What Do They Expect and What Do They Accomplish? An Evaluation of the Superfund Technical Assistance Grant (TAG) Program 163 (2017) (Ph.D. dissertation, Syracuse University), <https://surface.syr.edu/cgi/viewcontent.cgi?article=1752&context=etd> [<https://perma.cc/J5MR-JGZL>].

304. *Id.*

305. *Id.* at 162.

306. *Id.* at 162–63.

307. Teske, *supra* note 246, at 676.

308. *Id.*

309. *Id.* at 677.

310. *See supra* Part I.

wrapped up in the ability to challenge final agency actions—there are no up-down votes for issuing permits or procedures for removing career bureaucrats simply because a decision is unpopular. Yet the trend in administrative governance to simply increase opportunities for public input—from more listening sessions to longer comment periods fails to address the power disparities that have led to unbalanced administrative decision-making.³¹¹ In some ways, this tracks the pluralist approach that is embedded in our environmental laws.

Nonetheless, implementing environmental laws is still grounded in essential technocratic decisions.³¹² Accordingly, technical capacity is critical for effective environmental advocacy. As discussed above, some scholars have suggested a collaborative/negotiated model for decision-making or the creation of proxy advocates. These models could work well in some environmental or land-use settings.³¹³ They may be a misfit, however, for narrower, technical decisions like control technology selection and SIP development. Expertise forcing provisions, like control technology determinations, rely on the professionalism and expertise of regulators to protect against interest-group capture, but statutory definitions give decision-makers cover to ignore broader suggestions.³¹⁴

311. For instance, the Colorado Department of Public Health and Environment acknowledged community concerns over the Suncor Refinery and promised to take steps to “better understand, respond to, and address these concerns where possible.” E-mail from Colo. Dep’t of Pub. Health and Env’t, Air Pollution Control Div., to Jonathan Skinner-Thompson (Dec. 18, 2020, 10:05 AM) (on file with author). These steps include supplementing the formal public comment process with additional listening and discussion sessions, such as “small community conversations (for people living near the Suncor refinery).” SUNCOR PERMIT RENEWAL: PUBLIC INPUT OPPORTUNITIES, *supra* note 4. CDPHE will also accept comments in English or Spanish and submissions even can be made outside the formal public comment period. It is not clear, however, whether comments submitted outside of the formal public comment period would require a written response or be included in the permit record, potentially disenfranchising interested participants.

312. For example, control technology reviews require decision-makers to identify the *best available control technology*; the *best available retrofit technology*, the *best system of emission reduction*, and the *maximum achievable control technology* (among others). See *supra* section II.B–.D. This can mean a scrubber—which captures pollutants in the gases from burning coal—must be installed and operated at 70%, 80%, or 90% efficiency (depending on cost considerations). *Id.* Similarly, new pollution sources need to model air quality impacts so as not to degrade air in our national parks and other protected areas (not just local air pollution). *Id.* But these models rely on complicated programs that are generally not well understood and require decisions on what data inputs to include or exclude.

313. See, e.g., Mark Squillace, *Meaningful Engagement in Public Lands Decision Making*, 59 ROCKY MTN. MIN. L. INST. 21-1, 21-34 to 21-35 (2017) (advocating for a civic-minded approach to land and natural resource management).

314. Although, at least when the EPA wants to, the agency has successfully introduced compliance alternatives into otherwise restrictive definitions, for example, the CSAPR “better-than-BART” (*i.e.*, cap-and-trade) alternative to installation of the best available retrofit technology. Util. Air Regul. Grp. v. EPA, 885 F.3d 714 (D.C. Cir. 2018) (upholding EPA’s rule authorizing states “to treat CSAPR compliance as a better-than-BART alternative”).

Further, with budget-shortfalls and staffing limitations, state agencies—which are often the primary permitting authorities—may be more inclined to rely on applicant-developed recommendations and modeling. Modeling protocols, moreover, are agreed to outside of public scrutiny and are often inaccessible to laypersons until well after those decisions have already been made (if ever).

Empowering communities to speak for themselves requires technical expertise. While the TAG experience can be a good starting point, it may not fully translate to the Clean Air Act permitting and SIP development context. As noted above, there are only forty-four active TAGs in the country. But there may be hundreds or thousands of SIP and permitting actions processed each year. Not all of those will affect disproportionately impacted communities, nor will they all implicate control technology reviews or other similarly consequential decisions. Accordingly, this section addresses the implementation of a technical support program for such decisions by focusing on the who and how.

The CLEAN Future Act, a recently proposed bill in the U.S. House of Representatives, offers one method to narrow focus. The proposed bill “[f]ollows the successful example of Technical Assistance Grants (TAG) available through the Superfund program to empower communities on the fenceline of petrochemical facilities to participate, with the help of independent experts, in decisions impacting their health and safety.”³¹⁵ Specifically, the bill authorizes the EPA Administrator to award grants “to participate in decisions impacting the health and safety of their communities in connection with an actual or potential release of a covered hazardous air pollutant.”³¹⁶ In other words, the bill uses refineries and hazardous air pollutants as a proxy for identifying relevant communities. But this is unsatisfactory. Many other sources, such as power plants, other industrial sources, and mobile sources, are significant contributors to pollution impacts on environmental justice communities.³¹⁷ And hazardous air pollutants are just a subset of the pollution problems; common pollutants, including deadly particulates, are equally important and are more readily addressed through SIPs and other regulatory programs.³¹⁸

315. COMM. ON ENERGY & COM., SUMMARY OF THE CLIMATE LEADERSHIP AND ENVIRONMENTAL ACTION FOR OUR NATION’S (CLEAN) FUTURE ACT 19 (2021), <https://energycommerce.house.gov/sites/democrats.energycommerce.house.gov/files/documents/Section-by-Section%20of%20CLEAN%20Future%20Act%20117th.pdf> [<https://perma.cc/QQ69-J6B2>].

316. CLEAN Future Act, H.R. 1512, 117th Cong. § 602 (2021).

317. See Tessum, *supra* note 116, at 2.

318. *E.g., id.* at 1; Ihab Mikati, Adam F. Benson, Thomas J. Luben, Jason D Sacks & Jennifer Richmond-Bryant, *Disparities in Distribution of Particulate Matter Emission Sources by Race and Poverty Status*, 108 AM. J. PUB. HEALTH 480, 480 (2018).

As an alternative to the approach proposed in the CLEAN Future bill, I recommend building on New Jersey’s screening thresholds to help identify the most vulnerable communities among us. In 2009, the New Jersey Department of Environmental Protection issued the report “Strategies for Addressing Cumulative Impacts in Environmental Justice Communities.”³¹⁹ The report recognized a correlation between cumulative environmental impacts and socio-economic indicators, including income status and race or ethnicity, and recommended using socio-economic indicators to identify vulnerable populations.³²⁰ In light of the correlation, New Jersey’s S. 232/A.B. 2212 established screening thresholds for recognizing “overburdened” communities—*i.e.*, communities in which (1) at least thirty-five percent of households qualify as low-income households; (2) at least forty percent of residents are designated as “minority” or tribal communities; or (3) at least forty percent of households have limited English proficiency.³²¹ Using this information, the New Jersey law prohibits regulators from issuing a permit to facilities that “will have a disproportionately negative impact on overburdened communities.”³²²

While demographic indicators alone may be sufficient to identify the most at-risk communities, geographic information system (GIS) technology, such as EPA’s EJSCREEN and other second-generation environmental justice mapping tools (like California’s CalEnviroScreen), can help visualize the geographic distribution of population vulnerability factors *and* pollution burden.³²³ EPA’s Charles Lee proposes using this information to articulate “an empirically based definition” of disproportionate impacts, which—he points out—“has eluded [environmental justice] advocates, scholars, policymakers, and practitioners since the issuance of Executive Order No. 12898 in 1994.”³²⁴ Lee believes officials can use the definition to better integrate environmental justice into government programs by (1) identifying, characterizing, and integrating disproportionate impacts and (2) enhancing meaningful community engagement.³²⁵ Without this

319. CUMULATIVE IMPACTS SUBCOMM., ENV’T JUST. ADVISORY COUNCIL, STRATEGIES FOR ADDRESSING CUMULATIVE IMPACTS IN ENVIRONMENTAL JUSTICE COMMUNITIES (2009), https://www.nj.gov/dep/ej/docs/ejac_impacts_report200903.pdf [<https://perma.cc/G7WM-7GVR>].

320. *Id.* at 2, 18 (recognizing that many low-income and people of communities in New Jersey face significant environmental and health problems as a result of cumulative pollution impacts).

321. P.L. 2020, ch. 92, C.13:1D-158(2), <https://www.nj.gov/dep/ej/docs/ej-law.pdf> [<https://perma.cc/B3U2-ES4N>].

322. Press Release, N.J. Governor Phil Murphy, *supra* note 177.

323. Lee, *supra* note 175, at 10212.

324. *Id.*

325. *Id.* at 10213.

understanding, community outreach “devolves into a perfunctory ‘box to be checked’ exercise.”³²⁶ Using GIS mapping tools, on the other hand, can help grant-makers and legislatures identify the most at-risk communities in need of technical assistance.

In addition to proactively identifying the most at-risk communities through GIS mapping, I recommend leveraging environmental-enforcement actions to prioritize communities that are suffering from unauthorized pollution levels. Former legal scholar Patrice Simms (now with Earthjustice) argued that community empowerment partnerships could be integrated into Supplemental Environmental Projects (SEPs), which are an enforcement tool used to mitigate monetary penalties in exchange for environmentally beneficial projects.³²⁷ These partnerships, Simms explains, could:

- (1) help to identify ongoing or anticipated environmental enforcement cases . . . ;
- (2) identify and engage potentially affected stakeholder communities . . . ;
- (3) provide or facilitate technical assistance to community organizations in the formulation of SEP proposals; and
- (4) assist with engagement and advocacy . . . in connection with specific environmental enforcement proceedings or initiatives.³²⁸

My proposal dovetails with Simms’ by using SEPs to build community technical capacity by adopting a *polluter pays* approach to funding technical assistance. In this way, sources that are already subject to an enforcement action would be responsible for empowering local communities—facilitating a transfer of power from polluter to impacted community.³²⁹

As with the Superfund experience, it would be appropriate to limit the availability of funds to registered community groups that are not affiliated with a national organization or academic institution (to ensure limited funds are directed to communities without existing support). And it would be appropriate to limit technical support funding to capacity building or regulatory advocacy (*i.e.*, not for lawsuits or other legal actions or for attorney fees). But like Superfund TAGs, my proposal would allow groups to rely on technical material developed before litigation (such as technical analyses submitted with a public comment) to challenge a final

326. *Id.* at 10218.

327. Patrice L. Simms, *Leveraging Supplemental Environmental Projects: Toward an Integrated Strategy for Empowering Environmental Justice Communities*, 47 ENV’T L. REP. 10511, 10521 (2017).

328. *Id.* at 10526.

329. This might also mitigate critiques that government should not provide grants to certain communities (over others) or *fund opposition* work.

agency action.

Cultivating participation, of course, requires more than just money for hiring technical experts.³³⁰ As with the Superfund TAG program, providing communities with resources for technical consultants is just part of the solution. Drawing from the EPA's Community Advisory Group program, and recommendations for the use of proxy advocates (discussed *supra* section I.B.), pollution control advisory groups should be convened to educate community members and advocate on their behalf.

Pollution control advisory groups would serve multiple purposes to enhance meaningful participation. For example, these groups would relieve individual community members of having to stay informed and active in the dozens or hundreds of decisions that may impact their lives. Over time, these groups can build institutional expertise on certain topics and gain legitimacy before decision-makers.

These same groups should also be tasked with on-going monitoring and compliance verification (as was suggested by Lazarus and Tai). Even after the installation of advanced pollution controls, some sources may request exemptions for startup, shutdown, or malfunction/maintenance periods.³³¹ Or they might stop operating their controls after installation. Or sources will report hundreds of "deviations" from their permit terms and conditions that may or may not be considered violations subject to enforcement actions.³³² Ensuring that these controls continue to operate at peak efficacy requires continuous vigilance. But interpreting compliance reports and monitoring data can be indecipherable or confusing. "Environmental compliance is a sociological problem, not a technical one," explained Jane Williams, of California Communities Against

330. Freeman, *supra* note 48, at 81.

331. The legality of such requests is disputed. In the SIP context, the EPA has taken different positions depending on the Administration. *Compare* State Implementation Plans; Response to Petition for Rulemaking, 80 Fed. Reg. 33840 (June 12, 2015) (to be codified at 40 C.F.R. pt. 52), with Memorandum from Andrew R. Wheeler, Adm'r of the Env't. Prot. Agency, to Reg'l Adm'rs 1-10 (Oct. 9, 2020), https://www.epa.gov/sites/production/files/2020-10/documents/placeholder_0.pdf [<https://perma.cc/PNA4-WA6W>]. For setting NESHAPs, however, the D.C. Circuit has said that such exemptions are not authorized under the Clean Air Act. *Sierra Club v. EPA*, 551 F.3d 1019, 1021 (D.C. Cir. 2008).

332. *See* Letter from Wes McNeil, Env't. Team Lead, Suncor, to Matt Burgett, Colo. Dept. of Pub. Health and Env't. (Aug. 26, 2019), https://pdf.wildearthguardians.org/support_docs/Jan-June%202019%20Semiannual-West.pdf [<https://perma.cc/ZYM3-4SED>] (including Annual Compliance Report July 1, 2018 – June 30 and 2019 Semi-Annual Deviation Report – January 1, 2019 – June 30, 2019 for Plants 1 & 3); Letter from Wes McNeil, Env't. Team Lead, Suncor, to Matt Burgett, Colo. Dept. of Pub. Health and Env't. (Aug. 26, 2019), https://pdf.wildearthguardians.org/support_docs/Jan-June%202019%20Semiannual-East.pdf [<https://perma.cc/48M9-ANR7>] (including Annual Compliance Report July 1, 2018 – June 30 and 2019 Semi-Annual Deviation Report – January 1, 2019 – June 30, 2019 for Plant 2).

Toxics.³³³ “Once we told a source that we were shutting down some nearby monitors, but, in reality, we didn’t. After that, we started seeing immediate spikes in pollution. Continuous fence-line monitoring is the best tool we currently have.”³³⁴ Establishing pollution control advisory groups that are supported by technical advisors in disproportionately impacted communities can be one more tool to verify on-going compliance even in the face of state agency budget shortfalls and staffing cuts.

Finally, my proposal is predicated on communities knowing the importance of their voices in environmental decision-making. While studies show that technical capacity grants are made to nearly a quarter of all environmental justice grant awards (second only to informational grants),³³⁵ they could be an even greater share if community groups recognize the importance of technical capacity in environmental decision-making. Thus, it is imperative that the availability of grants be supported by a public education campaign. To start, the EPA and state agencies that purport to value environmental justice must educate impacted communities on the importance of their input and the availability of technical assistance. That is, telling the community that they can get involved should be combined with information about how best to be involved. This could be accomplished through the establishment of an environmental justice ombud in each of the EPA’s regional offices (and with relevant state agencies). Once community concerns are known, the ombud could identify the relevant permitting actions or SIPs those community members should consider commenting on. This will help communities prioritize the most relevant decisions in which to participate.

Independent organizations can also help broaden the reach of that message. The Center for Urban Environmental Reform, for instance, released comic books (written by legal scholar Rebecca Bratspies) to “help[] communities identify and seize their moment to participate in environmental decisionmaking.”³³⁶ These outside organizations could have lasting value should the EPA’s outreach efforts fizzle with time or change from Administration to Administration.

333. Interview with Jane Williams, Executive Director, California Communities Against Toxics (June 9, 2021).

334. *Id.*

335. Troy D. Abel & Mark Stephan, *Tools of Environmental Justice and Meaningful Involvement*, 10 ENV’T. PRAC. 152, 157 (2008).

336. CHARLIE LA GRECA & REBECCA BRATSPIES, ENVIRONMENTAL JUSTICE CHRONICLES: BOOK 1, MAYAH’S LOT, at ii (2015), http://cuer.law.cuny.edu/wp-content/uploads/2020/01/MayahEJ_Digest.reduced%20final%20version.pdf [https://perma.cc/BE9B-8JRF]; see also CHARLIE LA GRECA & REBECCA BRATSPIES, ENVIRONMENTAL JUSTICE CHRONICLES: BOOK 2, BINA’S PLANT (2015), <https://cuer.law.cuny.edu/wp-content/uploads/2020/07/binas%20plant%20reduced%20size.pdf> [https://perma.cc/ZR36-A8HE].

Community outreach and information sharing may be important for regulatory transparency. But they rest at the lower rungs of meaningful participation. To be an effective participant in most environmental decision-making—that is, to have meaningful input—technical capacity is not only important but necessary. In fact, it may be more important than having legal counsel when it comes to challenging technocratic decisions, like selecting and implementing pollution controls.³³⁷ Thus, if we wish for people to have a real opportunity to participate in decisions that may affect their environment or health, we must not only seek out the involvement of those potentially affected but ensure that they have the capacity—that is independent technical expertise and support—to participate meaningfully in those decisions. In this way, we can ensure that procedural justice gains meaning and lifts the most at-risk communities closer to the highest rung of Arnstein’s ladder.

A. *Technical Capacity and the Promise of Procedural Justice*

Today, environmental justice voices are being elevated throughout the country. In January 2021, the White House established an Environmental Justice Advisory Council to “bring greater visibility to [environmental justice] across the federal government” and will provide advice and recommendations “on a whole-of-government approach” to environmental justice.³³⁸ In May 2021, the EPA—using its rarely-invoked Clean Air Act section 303 authority—ordered Limetree Bay to stop operations at its St. Croix, U.S. Virgin Islands refinery, which is located in a community disproportionately affected by environmental burdens.³³⁹

337. For instance, recently the Colorado Air Quality Control Commission set up a program to match pro bono counsel with disproportionately impacted community groups interested in greenhouse gas rulemakings. However, under Colorado law, *party* participants in rulemakings are required to present technical and economic analyses to support their recommendations. When asked if the Commission would make funds available to hire experts to prepare such analyses, then-Director of Environmental Programs at the Colorado Department of Public Health and Environment, John Putnam, responded “great question and great idea. Right now, we do not have budget from the Legislature to do that, but we are interested in exploring options to improve capacity.” Air Quality Control Comm’n for the Colo. Bar Ass’n, Env’t L. Section, Colo. Dep’t of Pub. Health & Env’t, Zoom Webinar on Giving Voice to Disproportionately Impacted Communities (Jan. 7, 2021) (on file with the author) (comment of John Putnam, Dir. of Env’t. Programs).

338. *Environmental Justice: White House Environmental Justice Advisory Council*, U.S. ENV’T PROT. AGENCY, <https://www.epa.gov/environmentaljustice/white-house-environmental-justice-advisory-council#whejacoverview> [<https://perma.cc/C3RA-5P2Q>].

339. Press Release, Env’t Prot. Agency, EPA Uses Emergency Powers to Protect St. Croix Communities and Orders Limetree Bay Refinery to Pause Operations (May 14, 2021), <https://www.epa.gov/newsreleases/epa-uses-emergency-powers-protect-st-croix-communities-and-orders-limetree-bay-refinery> [<https://perma.cc/Q9YK-LVUU>]. It was the fourth time in the EPA’s history that the agency had taken such a step (the previous three times came in 1971, 1994, and 1997).

Numerous states have proposed or enacted environmental justice regulations and policies.³⁴⁰ New Jersey became the first state to require consideration of “cumulative impact[s]” in permitting decisions (and similar requirements are pending in Congress as well³⁴¹).³⁴² Researchers are confirming long suspected correlations between pollution and race.³⁴³ And Big Green groups—the heavily-staffed and well-funded national non-profits—are diversifying leadership³⁴⁴ and demonstrating a clearer commitment to the urban issues that were once ignored. The times are indeed changing.

Yet the renewed push for inclusion of disproportionately impacted communities in environmental decision-making is also falling back on pluralist inclinations. More outreach and opportunities to participate in the regulatory process *alone* will not, at this Article contends, correct the underlying vulnerabilities faced by low-income communities and communities of color. Rather, those efforts will leave these communities no better than before, or worse, cause them to lose faith in the process and abandon participation altogether. As Arnstein and Gauana previously warned, the pluralist model for inclusion does not address the structural barriers erected against marginalized communities.³⁴⁵

Sean Reilly, *EPA Orders Emergency Halt at Troubled Refinery*, E&E NEWS (May 14, 2021, 4:34 PM), <https://www.eenews.net/stories/1063732657/> [<https://perma.cc/V59V-Y7DB>]. The refinery has since filed for bankruptcy. Sean Reilly, *Troubled Refinery Bankrupt After EPA Shutdown*, GREENWIRE (July 13, 2021, 1:50 PM), <https://www.eenews.net/greenwire/2021/07/13/stories/1063737027> [<https://perma.cc/JUL3-5MCC>].

340. Abby Blocker, *State Trends in Environmental Justice Legislation*, WASTE 360 (June 8, 2021), <https://www.waste360.com/legislation-regulation/state-trends-environmental-justice-legislation> [<https://perma.cc/D3GV-8TCF>].

341. Yvette Cabrera, *A Groundbreaking Environmental Justice Bill Is Poised to Become Law*, GRIST (Mar. 19, 2021), <https://grist.org/equity/democrats-congress-environmental-justice-tammy-duckworth/> [<https://perma.cc/M4ZV-R66Z>].

342. Press Release, N.J. Governor Phil Murphy, *supra* note 177.

343. *See supra* note 114.

344. *See generally* GREEN 2.0: 2021 NGO & FOUNDATION TRANSPARENCY REPORT CARD 4 (2021), <https://diversegreen.org/wp-content/uploads/2021/11/2021-ngo-foundation-transparency-report-card.pdf> [<https://perma.cc/5UXN-CNBW>].

345. Though correlations between pollution burdens and race are well documented, *see id.*, technical assistance funds need not be distributed solely on the basis of race. Indeed, such a program could invite unwanted litigation risks. *See, e.g.*, Michael Levenson, *Judge Blocks \$4 Billion U.S. Debt Relief Program for Minority Farmers*, N.Y. TIMES (June 23, 2021), <https://www.nytimes.com/2021/06/23/us/politics/biden-debt-relief-black-farmers.html> [<https://perma.cc/T297-GWS9>] (discussing legal injunction secured by a white farmer challenging a loan forgiveness program for “socially disadvantaged farmers”—defined as those who are Black, American Indian/Alaska Native, Hispanic, Asian and Pacific Islander—which was intended to address a long history of racial injustice in American farming). Instead, the racial makeup of an area is just one indicator of an overburdened environmental justice community (others may include income levels, education levels, and English language abilities).

These structural barriers, moreover, are reinforced by core principles of administrative law: (1) comments must be relevant and significant in order to require consideration by decision-makers; and (2) legal arguments must be based on issues that were raised with reasonable specificity during the comment process. In other words, absent effective commenting, the opportunity to challenge an otherwise deficient decision simply does not exist. And the communities that are directly impacted by that decision are left powerless in the eyes of the agency and the courts. This Article does not argue that core administrative principles must be reconsidered—there may be important efficiencies to allowing agencies to ignore vague or irrelevant issues (and in providing agencies with some certainty that issues will not be raised for the first time in litigation).³⁴⁶ Rather, it seeks to underscore the need for effective and empowered participation.

Improving the participatory process for frontline environmental justice communities will not remove all of the structural barriers to meaningful participation. Nor will it satisfy advocates who call for a more transformative approach to realizing environmental justice.³⁴⁷ But I contend that it can serve to deepen deliberative democracy by giving voice to communities who seek to engage in environmental decisions but lack the capacity to do so on equal footing with the regulated community and environmental decision-makers.

Recognizing that many environmental decisions (such as permitting and standards setting) are increasingly complex and technocratic, this Article offers a capacity-based approach to assessing procedural justice. That is, if we aspire to the *meaningful involvement* of environmental justice communities in environmental decision-making, we must consider whether those communities can truly influence a regulatory decision. Only then can the promise of procedural justice be substantively meaningful for environmental justice communities.

CONCLUSION

In Winter 2021, the Colorado Department of Public Health and Environment invited public comment on one of Suncor's Title V permits (for Plant 2). The second permit (covering Plants 1 & 3) will be reviewed later and may address Suncor's request to raise pollution limits for

346. That said, perhaps courts or agencies could adopt rules that treat comments by unrepresented individuals as *pro se* litigants—giving them every benefit of the doubt.

347. See DAVID NAGUIB PELLOW, WHAT IS CRITICAL ENVIRONMENTAL JUSTICE? 18–30 (2018).

hydrogen cyanide, a deadly gas.³⁴⁸ In Summer 2021, CDPHE also announced proposed revisions to address haze pollution, which could trigger stricter emission limits for the Suncor Refinery.³⁴⁹ Thus, despite being a nearly ninety-year-old facility, there are still opportunities for the public to request better pollution controls, enhanced monitoring requirements, or even to shut it down.³⁵⁰

Indeed, a coalition of conservation and local environmental justice groups recently hired an independent expert to model emissions from the Suncor Refinery.³⁵¹ Due in part to their advocacy, state regulators preliminarily approved more aggressive pollution limits—warning greater technological controls (proposed by the coalition) would be required if the proposed limits are not achieved five years earlier than originally anticipated.³⁵² And then, on March 25, 2022, the EPA notified CDPHE—in a rare statement—that the Agency objected to a portion of the Plant 2 renewal permit.³⁵³ The EPA explained that CDPHE’s determinations to exempt three flaring sources were improper and CDPHE would need to revise the permit, provide the public with another opportunity to review and comment, and submit a new proposed permit to the EPA for review.³⁵⁴

Empowering environmental justice communities with technical

348. *Suncor Air Permit*, PUB. EMPS. FOR ENV’T RESP. (June 4, 2021), <https://www.peer.org/colorado-air-pollution-suncor/> [<https://perma.cc/5JF7-TZN7>].

349. E-mail from Lauren McDonnell, Climate Change Outreach Planner, Colo. Dep’t of Pub. Health & Env’t, to Jonathan Skinner-Thompson (Aug. 5, 2021, 4:42 PM) (on file with author).

350. Bruce Finley, *Battle Over Suncor Oil Refinery Intensifies as State Weighs Permit Renewal, Metro Denver Residents Demand Closure*, DENVER POST (May 5, 2021, 6:00 AM), <https://www.denverpost.com/2021/05/05/suncor-refinery-permit-renewal-public-hearings> [<https://perma.cc/AA35-9BMJ>].

351. LINDSEY MEYERS, AIR DISPERSION MODELING ANALYSIS FOR VERIFYING COMPLIANCE OF PERMITTED EMISSIONS WITH THE ONE-HOUSE SO₂ AND NO₂ NAAQS: SUNCOR REFINERY 3 (2021), <https://peer.org/wp-content/uploads/2021/05/LMeyers-Suncor-Report.pdf> [<https://perma.cc/9DWG-UKC8>]. The analysis revealed that Suncor’s previously permitted limits would cause exceedances of the one-hour sulfur dioxide and nitrogen dioxide NAAQS. *Id.* at 18. In other words, Suncor’s permitted limits were too weak and needed to be strengthened (or its permit should be denied). *Id.* at 19.

352. Michael Booth, *Suncor Must Make Pollution Cuts to Meet New Haze Rules Protecting Colorado Park Views*, COLO. SUN (Dec. 2, 2021, 4:08 AM), <https://coloradosun.com/2021/12/02/suncor-pollution-cuts-regional-haze-rocky-mountain-national-park/> [<https://perma.cc/WE2L-LXVP>].

353. See Letter from KC Baker, Regional Administrator, to Shaun McGrath, Dir. of Env’t Health and Prot., Colo. Dep’t of Pub. Health and Env’t (Mar. 25, 2022), <https://www.epa.gov/system/files/documents/2022-03/epa-suncor-plant-2-title-v-objection-letter-2022-03-25.pdf> [<https://perma.cc/YQN4-HKYZ>].

354. *Id.*

expertise tackles multiple dimensions of environmental justice.³⁵⁵ It not only gives substance to the principle of *meaningful involvement*, but it serves distributive, corrective, and structural justice principles as well. To the extent that expert-backed community advocacy results in strengthened pollution limitations, those communities will increase life expectancies and enjoy a better quality of life than before. Tying technical assistance funding to SEPs ensures that polluters pay for non-compliance with environmental laws. And, finally, providing technical assistance will help communities overcome structural barriers embodied in administrative law and judicial review.

Efforts to broaden and deepen participation must recognize the context in which public input is requested. By doing so, we can close the gap between procedural and substantive justice—and make public input meaningful to not only decision-makers but to the communities whose voices are often ignored.

355. Over twenty years ago, legal scholar Robert Kuehn proposed four dimensions to assess environmental justice progress: distributive, corrective, social, and procedural justice. Kuehn, *supra* note 31, at 10681. Distributive justice is not redistribution; it is “equal protection for all and the elimination of environmental hazards . . . [D]istributive justice is achieved through a lowering of risks, not a shifting or equalizing of existing risks.” *Id.* at 10684. Corrective justice concerns how damages are addressed and is embodied in the *polluter pays* principle. Social justice includes fairness in the economic and cultural effects of environmental decisions. Procedural justice is “the right to be treated as an equal.” *Id.* at 10688. Since then, EPA advisor Charles Lee suggests two more elements should be considered: recognitional justice and structural justice. Lee, *supra* note 175, at 10209 (citing additions by David Schlosberg and Ana Baptista). Recognitional justice, summarizes Lee, “speaks to the social norms, language, and mores that mediate our relations with those who are denigrated and less well-off.” *Id.* Structural justice, finally, brings in concepts that are deeply rooted in issues of race and structural processes that perpetuate racism through government decisions. Together, these elements provide a useful analytical framework for identifying and addressing environmental justice. But at this point, according to Lee, environmental justice practice has “stagnated at the point of merely doing more community outreach,” and is “largely lacking” in the other elements of justice. *Id.* at 10218.

