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**NAVIGATING THE GREEN PATH: THE GREENHOUSE GAS
REDUCTION FUND AND THE HURDLES TO DEPLOYING
FEDERAL FUNDS**

*Brian Farnen & Max Mrus**

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ABSTRACT

The Greenhouse Gas Reduction Fund (GGRF) represents America's largest step forward to developing a clean energy economy. However, to obtain federal funding, awardees must comply with a multitude of requirements. To awardees, contractors, and developers, these requirements are a quagmire of conditions precedent to federal funding that increase the time and cost of infrastructure projects. To others, the requirements are vehicles for policy goals that can achieve considerable progress toward equity and inclusion. Whether funds are obligated and deployed into projects depends not only on the feasibility of compliance with these requirements, but also the ability of states, developers, contractors, and financiers to navigate and prove their compliance with the GGRF requirements.

This article delves into specifics of the GGRF program, requirements for federal funding under the GGRF, and potential issues that may arise with the implementation of this program and its requirements. Although the GGRF's requirements reflect valuable policy goals, this article suggests that these requirements must be flexible enough to account for the practical realities of compliance. However, in their current state, these requirements may make it more difficult and costly to deploy funds into projects.

INTRODUCTION

To address the existential threat posed by climate change, the U.S. economy must drastically reduce emissions and electrify.¹ The transportation sector, industrial sector, and, most crucially, the electric power sector are all prime targets for decarbonization and electrification, each making up about a quarter of total U.S. greenhouse gas (“GHG”) emissions in 2022.²

But funding this transition requires money—a lot of money, especially for the electric power industry. We need to design, deploy, and operate new

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1. Courtney Lindwall, *Decarbonization: Why We Must Electrify Everything Even Before the Grid is Fully Green*, NRDC (Dec. 1, 2022), <https://www.nrdc.org/stories/why-we-must-electrify-everything-even-grid-fully-green>; DANIEL STEINBERG ET AL., *ELECTRIFICATION & DECARBONIZATION: EXPLORING U.S. ENERGY USE & GREENHOUSE GAS EMISSIONS IN SCENARIOS WITH WIDESPREAD ELECTRIFICATION & POWER SECTOR DECARBONIZATION* (2017).

2. *Greenhouse Gas Emissions: Sources of Greenhouse Gas Emissions*, EPA, <https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions> (last updated Oct. 22, 2024) (explaining that the transportation, electric power, and industrial sectors make up about 28%, 25%, and 23% of the total U.S. GHG emissions, respectively).

equipment and supply chains across the energy sector, from residential- to utility-scale. To achieve net-zero emissions by 2050, the U.S. must invest \$360 billion through 2030 and \$2.4 trillion by 2050 into new transmission lines alone.³ Funding the clean energy transition is no easy task, especially in today's hyperpolarized political reality.

The passage of the Inflation Reduction Act (IRA) in 2022 offers a path forward to funding a transition to a greener economy. Receiving no bipartisan support,⁴ this law invested in domestic energy production, domestic energy manufacturing, and aims to reduce carbon emissions by roughly 40% by 2030.⁵ Put simply, the IRA is the largest investment in reducing carbon pollution in U.S. history.⁶

The IRA also champions clean energy and environmental justice. The IRA extends and expands two tax credits that allow taxpayers to deduct a percentage of the cost of renewable energy systems from their federal taxes: the Investment Tax Credit (ITC)⁷ and the Production Tax Credit (PTC).⁸ Section 48(e) of the IRA offers new access to clean energy tax credits that emphasizes reaching disadvantaged populations and communities with environmental justice concerns. Certain ITC projects may be eligible for bonus credits up to 20% if the projects are built in low-income communities, on Indian land, is a qualified low-income residential building project, or is a

3. ERIC LARSON ET AL., NET-ZERO AMERICA: POTENTIAL PATHWAYS, INFRASTRUCTURE, & IMPACTS, PRINCETON UNIV. (2020); Jacob Knutson, *Why the High Price of Modernizing the U.S. Power Grid Is Worth It*, AXIOS (July 11, 2023), <https://www.axios.com/2023/07/11/us-power-grid-modernize-climate-change>.

4. Melissa Quinn, *Senate Passes Democrats' Sweeping Climate, Health and Tax Bill, Delivering Win for Biden*, CBS NEWS (Aug. 8, 2022, 7:16 PM), <https://www.cbsnews.com/news/inflation-reduction-act-senate-pass-climate-healthcare-tax-bill/> ("The plan, called the Inflation Reduction Act, cleared the upper chamber by a vote of 51 to 50 along party lines, with Vice President Kamala Harris providing the tie-breaking vote in the evenly divided Senate.")

5. *Summary: The Inflation Reduction Act of 2022*, U.S. CONG., https://www.democrats.senate.gov/imo/media/doc/inflation_reduction_act_one_page_summary.pdf (last visited Nov. 1, 2024).

6. Eric Van Nostrand & Arik Levinson, *The Inflation Reduction Act: Pro-Growth Climate Policy*, U.S. DEP'T OF THE TREASURY (Nov. 13, 2023), <https://home.treasury.gov/news/featured-stories/the-inflation-reduction-act-pro-growth-climate-policy>.

7. *Federal Solar Tax Credits for Businesses February 2024*, U.S. DEP'T OF ENERGY & OFF. OF ENERGY EFFICIENCY & RENEWABLE ENERGY (last updated Dec. 2024), <https://www.energy.gov/eere/solar/federal-solar-tax-credits-businesses> ("The [ITC] is a tax credit that reduces the federal income tax liability for a percentage of the cost of a solar system that is installed during the tax year.") [hereinafter *Federal Solar Tax Credits*].

8. *Summary of Inflation Reduction Act Provision Related to Renewable Energy*, EPA, <https://www.epa.gov/green-power-markets/summary-inflation-reduction-act-provisions-related-renewable-energy>; (last visited Nov. 1, 2024); *Federal Solar Tax Credits*, *supra* note 7, at 2 ("The [PTC] is a per kilowatt-hour (kWh) tax credit for electricity generated by solar and other qualifying technologies for the first 10 years of a system's operations It reduces the federal income tax liability and is adjusted annually for inflation.") [hereinafter *Summary of IRA Provision*].

qualified low-income economic benefit project.⁹ In sum, the IRA provides incentives to states and industries that go further in offering actual community benefits.¹⁰

The focus of this article, however, is one program created under the IRA: the Greenhouse Gas Reduction Fund (GGRF). This \$27 billion fund,¹¹ administered through the Environmental Protection Agency (EPA), focuses on deploying clean energy projects using the green bank model,¹² which the

9. *Summary of IRA Provision, supra* note 8.

10. *The Bipartisan Infrastructure Law Advances Environmental Justice*, THE WHITE HOUSE (Nov. 16, 2021), <https://www.whitehouse.gov/briefing-room/statements-releases/2021/11/16/the-bipartisan-infrastructure-law-advances-environmental-justice/> (explaining that the BIL aims at ensuring clean drinking water, targets legacy pollution, and clean public transit); Hannah Perls, *Breaking Down the Environmental Justice Provisions in the 2022 Inflation Reduction Act*, HARV. L. SCH. ENV'T & ENERGY L. PROGRAM (Aug. 12, 2022), <https://eelp.law.harvard.edu/2022/08/ira-ej-provisions/> (detailing that the IRA will direct “billions of dollars to communities based on various EJ-related criteria, including income, energy burden, and demographics”); Evana Said et al., *U.S. Clean Energy Projects Need Public Buy-in. Community Benefits Agreements Can Help*, WORLD RES. INST. (Aug. 31, 2023), <https://www.wri.org/insights/community-benefits-agreements-us-clean-energy#>. The authors detail DOE’s EJ scoring requirements:

The [DOE] now requires developers to submit community benefits plans as part of all BIL and IRA funding opportunities and loan applications. These are evaluated based on four pillars — implementing Justice40; investing in America’s workforce; engaging communities and labor; and advancing diversity, equity, inclusion, and accessibility — and will count for 20% of a project’s overall score during the review process. *Id.*

11. Aditi Srivastava, *The Greenhouse Gas Reduction Fund, Green Banks, & Nature-Based Solutions: An Interview with Matt Carney, Quantified Ventures*, THE CONSERVATION FIN. NETWORK (May 23, 2024), <https://www.conservationfinancenetwork.org/2024/05/23/the-greenhouse-gas-reduction-fund-green-banks-nature-based-solutions-an-interview-with/> (“Programs under the [GGRF], such as NCIF and CCIA, offer loans rather than grants. While this capital is cost-effective, it requires repayment, a shift from the traditional grant funding . . .”); *Grants vs. Loans: What’s the Difference?*, ROCKET LAWYER, <https://www.rocketlawyer.com/business-and-contracts/business-operations/corporate-finance/legal-guide/grants-vs-loans-whats-the-difference> (last visited July 31, 2024) (“Grants are also limited in the amount of financing they can provide. In most cases, grant programs are sponsored by government departments and only a certain amount of funding is available each year. With a loan, you can obtain as much funding as your credit and ability to repay will allow.”); *Financing v Funding: There Is a Difference*, VT. BOND BANK, <https://www.vtbondbank.org/resource/financing-v-funding-there-difference> (last visited July 31, 2024) (“Grant sources are time consuming to access and highly competitive and can obscure the true cost of infrastructure investment.”). In other words, financing programs like the GGRF create a sustainable funding source for future projects instead of having a finite funding source from a grant program.

12. *Three Ways the Inflation Reduction Act Advances Green Banking*, BURR & FORMAN (Aug. 19, 2022), <https://www.burr.com/newsroom/articles/three-ways-the-inflation-reduction-act-advances-green-banking> (“Green banks have momentum and are a proven financial model that uses public . . . funds to mobilize private investment in renewable energy, energy efficiency, and other decarbonization technologies. With the [IRA] now law, more states will form green banks and . . . [can] capitalize on the federal funding and further green projects.”); Ilmi Granoff, *The End of the Beginning for U.S. Green Banks*, ROOSEVELT INST. (Apr. 5, 2024), <https://rooseveltinstitute.org/2024/04/05/the-end-of-the-beginning-for-us-green-banks/> (explaining that public capital can have a “powerful role in steering private capital toward the communities and technologies that need it most. It can take calculated and compensated bets in technologies and markets in which the private sector is slow to act, or by demonstrating the commercial viability of new technologies or business models.”).

Connecticut Green Bank, a quasi-governmental state agency, pioneered in 2011.¹³ The GGRF selected awardees who can leverage this public funding to attract private capital¹⁴ for clean energy and clean air investments.¹⁵ EPA Administrator Michael S. Regan stated, “[T]his program will mobilize billions more in private capital to reduce pollution and improve public health, all while lowering energy costs, increasing energy security, creating good-paying jobs, and boosting economic prosperity in communities across the country.”¹⁶

I. THE GREENHOUSE GAS REDUCTION FUND (GGRF): PROGRAM BASICS

Section 60103 of the IRA¹⁷ created the GGRF and appropriated \$27 billion to the program. The GGRF aims to: “(1) reduce emissions of GHGs and other air pollution; (2) deliver benefits of GHG- and air pollution-reducing projects to American communities, particularly low-income and disadvantaged communities;”¹⁸ and (3) mobilize financing and private

13. *About the Greenhouse Gas Reduction Fund*, EPA, <https://www.epa.gov/greenhouse-gas-reduction-fund/about-greenhouse-gas-reduction-fund> (last updated Aug. 16, 2024); 2011 Conn. Pub. Acts 11-80.

14. This is typically quantified as a balance sheet leverage ratio, which measures the “financial leverage on the balance sheet of a company, or the reliance a company has on creditors to fund its operations.” A high leverage ratio indicates significant reliance on external debt financing sources, while a low leverage ratio indicates that operations are funded mostly with internally generated cash. *Leveraging a Green Bank’s Balance Sheet to Develop More Socioeconomic Projects*, COHNREZNIK (May 6, 2024), <https://www.cohnreznick.com/insights/green-banks-balance-sheet-expansion-tools-overview> (“Green banks can leverage their balance sheets primarily by mobilizing capital from various sources, including the U.S. government, [NGOs], capital markets, and other financial institutions . . . By leveraging their capital, green banks can significantly increase the overall monies flowing to projects and amplify the impact of their investments.”); *Leverage Ratio*, WALL STREET PREP, <https://www.wallstreetprep.com/knowledge/leverage-ratio/> (last updated July 10, 2024); *Connecticut Green Bank FY22 Annual Report*, CONN. GREEN BANK (2022), <https://www.ctgreenbank.com/wp-content/uploads/2023/01/Connecticut-Green-Bank-FY22-Annual-Report-Final-12-27-2022.pdf> (“[The Connecticut Green Bank has] mobilized nearly \$2.3 billion by investing public funds to attract private investment at seven-to-one ratio.”); Ilmi Granoff, *The End of the Beginning for U.S. Green Banks*, ROOSEVELT INST. (Apr. 5, 2024), <https://rooseveltinstitute.org/2024/04/05/the-end-of-the-beginning-for-us-green-banks/> (“Green banks will unlock clean energy financing everywhere.”).

15. *See EPA Announces Initial Program Design of Greenhouse Gas Reduction Fund*, EPA 4 (Feb. 14, 2023), <https://www.epa.gov/newsreleases/epa-announces-initial-program-design-greenhouse-gas-reduction-fund> (“Over the next decade, [green banks] will help us build on current efforts by mobilizing financing and private capital for a range of clean energy projects to decarbonize communities—including low-income and disadvantaged communities—across the United States.”).

16. *Id.* at 2.

17. Clean Air Act, 42 U.S.C. § 7434.

18. *Low Income and Disadvantaged Communities (LIDAC) Climate Action Plan Assessment – ARPA Question + Answer Session*, CITY OF EL PASO, TEX. (June 20, 2024), <https://www.elpasotexas.gov/assets/Documents/CoEP/Community-Development/Climate-Action/LIDAC-NOFA-Q+A-Draft.pdf> (EPA defines low-income and disadvantaged communities as “communities with residents that have low incomes, limited access to resources, and disproportionate exposure to environmental or climate burdens”).

capital to stimulate additional deployment of GHG- and air pollution-reducing projects.¹⁹ EPA intends to distribute GGRF funds through three competitions: the approximately \$14 billion National Clean Investment Fund (NCIF) competition, the \$6 billion Clean Communities Investment Accelerator (CCIA) competition, and the \$7 billion Solar for All competition.²⁰ The enabling statute provides two sets of requirements by creating the following categories: \$19.97 billion for General and Low-Income Assistance and \$7 billion for Zero-Emissions Technologies.²¹

A. General Assistance and Low-Income and Disadvantaged Communities

Under this category, EPA receives a total of \$19.97 billion in appropriations to develop competitive grants for eligible recipients.²² EPA shall use \$11.97 billion to provide general financial and technical assistance.²³ With the remaining \$8 billion, EPA shall provide the same assistance specifically to low-income and disadvantaged communities.²⁴

The statute lays out two pathways for the use of funds. First, eligible recipients may make “direct investment[s].”²⁵ Eligible recipients must also prioritize investment in qualified projects²⁶ that would otherwise lack access to financing.²⁷ Second, eligible recipients may make “indirect

19. *About the Greenhouse Gas Reduction Fund*, *supra* note 13, at 2.

20. *Id.*

21. *EPA’s Implementation Framework for the Greenhouse Reduction Act*, EPA 5 (2023), https://www.epa.gov/system/files/documents/2023-04/GGRF%20Implementation%20Framework_730am.pdf [hereinafter *EPA’s Implementation Framework*].

22. Congress limited the definition of “eligible recipients” to mean a nonprofit organization that: (A) is designed to provide capital, leverage private capital, and provide other forms of financial assistance for the rapid deployment of low- and zero-emission products, technologies, and services; (B) does not take deposits other than deposits from repayments and other revenue received from financial assistance using the grant funds; (C) is funded by public or charitable contributions; and (D) invests in or finances projects alone or in conjunction with other investors. *Id.* at 5–6.

23. 42 U.S.C. § 7434(a)(2).

24. *EPA’s Implementation Framework*, *supra* note 21, at 5; 42 U.S.C. § 7434(a)(3).

25. *See EPA’s Implementation Framework*, *supra* note 21, at 5 (explaining that direct investments are those that use grant funds as financial assistance for qualified projects at the national, regional, state, and local levels. Simply put, a direct investment occurs when a GGRF awardee uses grant money to invest directly into a qualified project. For example, a direct investment would be a green bank’s investment into energy efficiency upgrades in a LIDAC.) *See also* 42 U.S.C. § 7434(b)(1).

26. 42 U.S.C. § 7434(e)(3) (detailing that a qualified project is “any project, activity, or technology that (A) reduces or avoids greenhouse gas emissions or other forms of air pollution in partnership with, and by leveraging investment from, the private sector; or (B) assists communities [] to reduce or avoid greenhouse gas emissions and other forms of air pollution.”)

27. *Id.*; 42 U.S.C. § 7434(b)(1)(B).

investment[s]”²⁸ to provide funding and technical assistance to establish “new, or support[] existing, public, quasi-public, not-for-profit, or nonprofit entities that provide financial assistance to qualified projects.”²⁹ This would occur at the state, local, territorial, or Tribal level or in the District of Columbia, “including community- and low-income-focused lenders and capital providers.”³⁰ EPA had two competitions under this category of funding; one for direct investments (i.e., NCIF) and one for indirect investments (i.e., CCIA).³¹

B. Zero-Emissions Technologies

Under this category, EPA receives \$7 billion to “make competitive grants to states, municipalities, Tribal governments, and eligible recipients to provide subgrants, loans, or other forms of financial assistance and technical assistance to enable low-income and disadvantaged communities to deploy or benefit from zero-emission technologies [], and to carry out other GHG emissions reduction activities.”³² EPA established a third competition (nicknamed Solar for All) through a strong legislative effort from U.S. Senator Bernie Sanders to implement this category of funding, which focuses on distributed solar technologies.³³ This program prioritizes residential and community solar projects, as well as storage technologies and upgrades related to these projects.³⁴

II. FEDERAL MONEY, FEDERAL REQUIREMENTS

Like any federal program, recipients must meet a myriad of requirements to use GGRF funding. But deployment becomes complicated as the goal of the GGRF is to provide financing, not grants and subsidies. Stated another way, when the federal government partially funds a school or other

28. See *EPA’s Implementation Framework*, *supra* note 21, at 5 (describing indirect investments as those that use grant funds to prop up financing institutions, such as green banks or community development financial institutions (“CDFIs”) that then provide financial assistance to qualified projects. In other words, an indirect investment occurs when a GGRF awardee uses grant funds to invest in an institution that can invest in qualified projects. For instance, an indirect investment would be a state government’s investment into the establishment of a green bank that provides financial assistance within that state.); See also 42 U.S.C. § 7434(b)(2).

29. 42 U.S.C. § 7434(b)(2).

30. 42 U.S.C. § 7434(b)(2).

31. *EPA’s Implementation Framework*, *supra* note 21, at 6.

32. *Id.*

33. Kenny Stancil, *EPA, Sanders Launch \$7 Billion Program to Expand Rooftop Solar in Poor Neighborhoods*, COMMON DREAMS (June 28, 2023), <https://www.commondreams.org/news/biden-epa-sanders-7-billion-residential-solar-for-all>.

34. *EPA’s Implementation Framework*, *supra* note 21, at 41.

government project, developers and states understand the strings attached with federal grant awards.³⁵ However, when financing and leveraging private capital is a key policy goal, the baseline program requirements can be a barrier for deployment, as it adds additional requirements on top of existing underwriting and stakeholder engagement processes.

Compliance with federal requirements is a prerequisite to the possibility of funding projects, which is why it is imperative for awardees to understand the requirements and the associated hurdles to compliance. One of the key priorities of the GGRF is using public funding to attract private capital to the green economy. To achieve this priority, both public GGRF award recipients and their private capital partners must be aware of and assume the risk of compliance with the federal requirements. This section details key GGRF requirements, and whether compliance may pose a barrier to the deploying GGRF funds.

A. Build America, Buy America

Congress enacted the Build America Buy America Act (BABA) as part of the Bipartisan Investment Law (BIL) in 2021.³⁶ BABA established a “domestic content procurement preference for all Federal financial assistance obligated for infrastructure projects.”³⁷ Put simply, BABA requires that all iron, steel,³⁸ manufactured products, and construction materials³⁹ used in covered infrastructure projects⁴⁰ are produced in the United States.⁴¹ BABA

35 Cf. *Grants 101: Pre-Award Phase*, grants.gov (last visited Dec. 7, 2024), <https://www.grants.gov/learn-grants/grants-101/pre-award-phase#applicationreviewprocess>, (“[The grant applicant] should spend time analyzing [their] own capabilities as compared to the specific eligibility and technical requirements detailed in the application instructions.”); *Researching Subsidy Programs and Laws*, good jobs first (last visited Dec. 7, 2024), <https://goodjobsfirst.org/researching-subsidy-programs-and-laws/> (explaining that the legislative and administrative processes create subsidy programs and that agencies add administrative rules or operating procedures to these laws to set out how the law will be implemented and what requirements will apply).

36. Off. of Acquisition Mgmt., *Build America Buy America*, U.S. DEP’T OF COM., <https://www.commerce.gov/oam/build-america-buy-america> (last visited July 22, 2024).

37. *Id.*; 2 C.F.R. § 184.3 (2023).

38. All manufacturing processes, from the initial melting stage through the application of coatings, must take place in the U.S. Federal Emergency Management Agency. *Build America, Buy America Act Frequently Asked Questions*, FED. EMERGENCY MGMT. AGENCY, <https://www.fema.gov/fact-sheet/build-america-buy-america-act-frequently-asked-questions-faqs> (last updated Oct. 2, 2024) [hereinafter *BABA FAQs*].

39. *Id.* (“[M]anufactured product[s] [must be] manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States [must be] greater than 55% of the total cost of all components of the manufactured product.”).

40. *DOE’s Implementation of the Buy America Requirement for Infrastructure Projects*, DEP’T OF ENERGY (Nov. 2022), <https://www.energy.gov/sites/default/files/2023-06/DOE%27s%20Implementation%20of%20the%20Buy%20America%20Preference%2011-17.pdf>.

41. *BABA FAQs*, *supra* note 38.

is a key component of U.S. policy to rebuild a domestic manufacturing base—it ensures that as new technology is deployed across the American economy, the benefits of this transition are felt across the supply chain.⁴² By implementing BABA, the U.S. can also increase national security by reducing exposure to supply chain risks, such as the shortages and delays experienced by many Americans during the COVID pandemic.⁴³

BABA applies to “Federal awards where funds are appropriated or otherwise made available for infrastructure projects in the United States, regardless of whether infrastructure is the primary purpose of the Federal award.”⁴⁴ Not all GGRF-funded projects, however, will be considered public infrastructure projects.⁴⁵ Applicable public⁴⁶ infrastructure projects can include everything from transportation infrastructure to drinking and wastewater systems to energy infrastructure.⁴⁷ BABA applies to “articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project.”⁴⁸ It does not apply to tools, equipment, supplies, or other items that are not an “integral part” of the infrastructure, or which are not permanently affixed to the structure.⁴⁹ It also does not apply to residential projects.⁵⁰ GGRF fund recipients may obtain a certification from

42. *Key Provisions in the Build America, Buy America Act Guidance*, the white house (last visited Dec. 7, 2024), https://www.whitehouse.gov/wp-content/uploads/2023/08/QA-BABA-Guidance.Final_.pdf, (“Through industry engagement, complementary initiatives to boost our industrial base, and the use of transparent, targeted waivers, we are working to ensure that [BABA] requirements are integrated with industrial strategies to increase opportunities for domestic producers and fill gaps in our supply chain.”).

43. *BABA Expansion and New Optional Tools*, Dep’t of Hous. and Urban Dev. (Aug. 23, 2024), <https://www.hudexchange.info/news/new-build-america-buy-america-resources-available/> (“BABA aims to bolster America’s domestic manufacturing and supply chain, protect national security, support high-paying jobs, increase community investment, create economic prosperity, and spur innovation.”).

44. 2 C.F.R. § 184.4(a) (2023).

45. 2 C.F.R. § 184.3 (“Infrastructure project means any activity related to the construction, alteration, maintenance, or repair of infrastructure in the United States regardless of whether infrastructure is the primary purpose of the project.”).

46. BABA does not apply to “non-public” infrastructure. *DOE’s Implementation of the Buy America Requirement for Infrastructure Projects*, *supra* note 40. Federal agencies should interpret “infrastructure” broadly. 2 C.F.R. § 184.4(d). When determining if a particular project constitutes “infrastructure,” agencies should consider whether the project serves a public function, whether the project is publicly owned and operated, whether it is privately operated on behalf of the public or is a place of public accommodation. *Id.*

47. For a longer list of what is included in the definition of “infrastructure,” *see* 2 C.F.R. § 184.4(c), (d).

48. *Build America, Buy America Act Frequently Asked Questions*, *supra* note 38.

49. *Id.*

50. *Id.* (“Projects consisting solely of the purchase, construction, or improvement of a private home for personal use (i.e., not serving a public function) do not constitute an infrastructure project.”)

an applicable item manufacturer that the item meets the requirements.⁵¹ Further, BABA has no sunset date; it is a permanent new requirement.⁵²

Federal agencies can waive the Buy America Preference⁵³ in any of the following circumstances: nonavailability,⁵⁴ unreasonable cost,⁵⁵ and public interest.⁵⁶ A federal awarding agency can develop and implement “general applicability” waivers, which can apply generally across multiple federal awards.⁵⁷ BABA “does not apply to expenditures for assistance . . . relating to a major disaster or emergency declared by the President . . . or pre and post disaster or emergency response expenditures.”⁵⁸

B. Implementation Issues: BABA

With minimal federal guidance, coalition groups must fend for themselves on how the waiver process works, the extent of the review period by the EPA before a waiver is granted, and other BABA mechanics. There is little formal guidance available on BABA, which contributes to the uncertainty.⁵⁹ Consequently, program participants have little clue on how to operationalize BABA for domestic steel production which is not yet in a position to transition to the clean energy economy through the GGRF.

51. See *BABA FAQs*, *supra* note 38 (explaining “[a]s an additional step to ensure compliance[,] . . . FEMA award recipients or subrecipients may request a certification letter from the product manufacturer to demonstrate compliance with BABA requirements.”).

52. *Id.*

53. 2 C.F.R. § 184.3 (defining the Buy America Preference as a domestic content procurement preference that “requires the head of each Federal agency to ensure that none of the funds made available for a federal award for an infrastructure project may be obligated unless all of the iron, steel, manufactured products, and construction materials incorporated into the project are produced in the United States.”).

54. *Id.* at § 184.7(a)(2) (“Types of iron, steel, manufactured products, or construction materials are not produced in the United States in sufficient and reasonably available quantities or of a satisfactory quality . . .”).

55. *Id.* at § 184.7(a)(3) (“The inclusion of iron, steel, manufactures products, or construction materials produced in the United States will increase the cost of the overall infrastructure project by more than 25 percent . . .”).

56. *Id.* at § 184.7(a)(1) (“Applying the Buy America Preference would be inconsistent with the public interest . . .”).

57. *Id.* at § 184.7(e).

58. *Id.* at § 184.8(a).

59. Cf. Julie Strupp, *Readers Respond: IJIA is boosting business for many contractors*, *CONSTRUCTION DIVE* (Aug. 11, 2023), <https://www.constructiondive.com/news/readers-respond-ijia-infrastructure-law-help-construction/690584/> (“Another challenge relates to the specific requirements that IJIA work entails. . . ‘Delays by our government regarding definition of what constitutes Made in USA products [poses a challenge].’”); Charlotte Erlich, *Industry leaders address shortfalls of Build America, Buy America provisions*, *UNITED PRESS INT’L* (Feb. 15, 2024), https://www.upi.com/Top_News/US/2024/02/15/build-america-buy-america-hearing/7551708033325/ (“‘We ask suppliers for compliance and receive asterisks on their quotes saying they cannot certify compliance,’ Edmondson said. ‘Put simply, there is uncertainty, and in construction, that means increased costs because contractors must account for that in their bids to mitigate risk.’”).

Now, contractors must prepare for the influx of infrastructure dollars and attempt to “manage ongoing projects that are now suddenly subject to new, onerous domestic preference requirements that have yet to be fully understood by agencies.”⁶⁰ Additionally, there must be structures in place to facilitate implementing and verifying BABA compliance.⁶¹ However, the practical realities of BABA forced many agencies to issue a range of waivers to reflect those realities.⁶² Compliance structures are either not yet in place to implement these requirements or are in a fledgling state.⁶³ Currently, not enough content is domestically produced to keep pace with the deployment of funds into projects.⁶⁴ This push to boost domestic production clashes with the “reality that some materials are not available from U.S. sources in the amount or time required.”⁶⁵ For instance, “many iron, steel, manufactured products, and construction materials are ‘not produced in the United States’ such that they are available for use in all covered infrastructure projects.”⁶⁶ Finally, in some cases, “the goal of increasing domestic content in these projects is outweighed by the administrative burden of implementation and enforcement.”⁶⁷

Following BABA’s passage, many GGRF awardees, subawardees, and contractors were left “without agency guidance as to what, exactly, would be required.”⁶⁸ The timing of guidance is a crucial element as well. Without guidance on complying with BABA (or any other GGRF requirements)

60. Cara Wulf, *Les Misérables – Contractors and Agencies Struggle to Navigate Build America, Buy America Requirements One Year Later*, GOV’T. CONTRACTOR (2022), at 2.

61. Erlich, *supra* note 59(b); Chad Brinkle, *The Build America Buy America Act: Enhancing Domestic Manufacturing and Supply Chain*, THOMAS PUBL’G CO. (July 28, 2023), <https://www.thomasnet.com/insights/build-america-buy-america-act/> (“At the time of writing this article, there is no logo or badge you can show on your website or other official documents to indicate that you are BABA-compliant.”).

62. *Id.* at 4.

63. *Id.*

64. See, e.g., Todd Overman, *Buy America Update: BAA Requirements Make Compliance Complex, Yet Necessary*, BASS, BERRY & SIMS (Aug. 28, 2023), <https://www.bassberrygovcontrade.com/buy-america-update/> (explaining the GAO found that only one domestic firm could produce BAA-compliant valves); David J. Lynch, *Biden’s ‘Buy America’ Bid Runs Into Manufacturing Woes it Aims to Fix*, WASHINGTON POST (Feb. 18, 2023), <https://www.washingtonpost.com/us-policy/2023/02/18/biden-buy-america-roads-bridges/> (“The ‘Buy America’ initiative that President Biden says will promote domestic manufacturing and fuel a blue-collar renaissance is running into a problem: The United States no longer produces many of the items needed to modernize roads, bridges and ports.”).

65. David J. Lynch, *Biden’s ‘Buy America’ Bid Runs into Manufacturing Woes it Aims to Fix*, WASH. POST (Feb. 18, 2023), <https://www.washingtonpost.com/us-policy/2023/02/18/biden-buy-america-roads-bridges/>.

66. Wulf, *supra* note 60, at 4.

67. *Id.*

68. *Id.*

before deploying funds, awardees and subawardees risk the EPA determining that the investments were non-compliant and incurring associated penalties.

Further, agencies themselves are struggling to figure out how to comply. The Department of Education found 32 of its own programs that would be classified as “infrastructure” under BABA.⁶⁹ The Federal Emergency Management Agency (FEMA) found 23 programs.⁷⁰ Finally, in April 2022, the Office of Management and Budget (OMB) issued guidance to federal agencies. However, because of its extraordinary complexity and the conflicts it creates with other domestic-preference laws,⁷¹ the new OMB guidance⁷² may impose “heavy compliance burdens on contractors and suppliers, disrupt existing supply chains, and trigger disputes (through bid protests or otherwise) over states’ prior commitments to open their procurement markets under international trade agreements.”⁷³ Additionally, OMB’s guidance could only take the horse to water, not make it drink. OMB’s guidance still requires agencies to “determine how this guidance is best applied to their infrastructure programs and processes, and consult with OMB, as needed, on establishing criteria, processes, and procedures for applying a Buy America preference and issuing waivers.”⁷⁴ In short, these expanding mandates to use American-made products “has confused federal, state and local governments, and created new levels of bureaucratic waste.”⁷⁵

69. Judge Glock, *Buy American, Build Nothing*, WALL ST. J. (Mar. 25, 2024), <https://www.wsj.com/articles/buy-american-build-nothing-infrastructure-bill-requirements-complicate-construction-941e0694>.

70. *Id.*

71. Christopher Yukins & Kristen Ittig, *OMB Issues Final Build America, Buy America (BABA) Guidance Which May Trigger Compliance, Enforcement and Trade Issues — And Bid Protests*, MONDAQ (Sept. 18, 2023), <https://www.mondaq.com/unitedstates/government-contracts-procurement-ppp/1366952/omb-issues-final-build-america-buy-america-baba-guidance-which-may-trigger-compliance-enforcement-and-trade-issues--and-bid-protests>. The authors discuss the following conflict:

One example of this conflict between new and old laws arose in the infrastructure legislation’s definition of “construction materials.” In traditional federal procurement, the implementing clauses for the Buy American Act defined “construction materials” as “an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work,” or “an item brought to the site preassembled from articles, materials, or supplies.” This could be called the “truck bed” rule—“construction materials” under the older Buy American Act would be those items brought to a construction site on a truck bed. As the discussion below explains, however, OMB’s final BABA guidance defined “construction materials” much more narrowly—though with more stringent requirements, which raises compliance challenges for contractors and suppliers that serve diverse federal, state and local markets. *Id.* (citations omitted).

72. OMB Memorandum M-22-11, *Initial Implementation Guidance on Application of Buy America Preference in Federal Financial Assistance Programs for Infrastructure* (2022).

73. Yukins, *supra* note 71.

74. Wulf, *supra* note 60, at 5.

75. Glock, *supra* note 69, at 1.

Besides issues understanding BABA requirements, there is another issue: China—“the biggest influencer on global steel” production.⁷⁶ China has “approximately 10 times” the steelmaking capacity of the United States.⁷⁷ Much of this capacity derives from China’s “advantages of industrial chain clusters, logistics supply chain advantages, industrial workers advantages . . . [and factories with] the dual advantages of high production efficiency and low production costs.”⁷⁸ China also has a foothold in specialty manufacturing processes that are crucial for BABA compliance. In more niche industries, like steel powder coating, the market power is held outside the United States.⁷⁹ In fact, only 20% of the global powder coating market is in the Americas.⁸⁰ Steel powder coating is only one infinitesimal part of the entire process, but because BABA requires “all manufacturing processes, from the initial melting stage through the application of coatings”⁸¹ to take place in the U.S., everything starts to add up. Further, this becomes a larger issue when more integral parts of the steel and iron manufacturing process, like casting, are consolidated under Asian market power.⁸² Thus, with critical manufacturing processes consolidated outside the U.S., GGRF program participants must have BABA waivers ready until domestic steel production ramps up.

BABA is based on solid policy goals. However, it may be more cumbersome than anticipated and require more direct government support to boost U.S. steel production. From the basics of compliance to global manufacturing market power, there are countless features that make BABA implementation and compliance more difficult. Despite this, BABA carves out exemptions covering instances where, for example, a product may not be

76. Shobhit Seth, *How China Impacts the Global Steel Industry*, INVESTOPEDIA, <https://www.investopedia.com/articles/investing/021716/how-china-impacts-global-steel-industry.asp> (last updated Dec. 29, 2024).

77. *Id.*

78. Felicia Ying, *The Scale of China’s Manufacturing Industry Has Been the World’s No. 1 for 13 Consecutive Years*, LINKEDIN (Apr. 7, 2023), <https://www.linkedin.com/pulse/scale-chinas-manufacturing-industry-has-been-worlds-1-%E6%81%92-%E6%9D%8E>.

79. Ashish Ladha & Aditya Birla, *Emerging Trends in the Powder Coatings Market*, PAINT & COATINGS INDUS. (Aug. 7, 2023), <https://www.pcimags.com/articles/111658-emerging-trends-in-the-powder-coatings-market>.

80. *Id.*

81. 2 C.F.R. § 184.3 (2024).

82. Kiran Pulidindi & Akshay Prakash, *Iron & Steel Casting Market – By Material (Iron, Steel), By Process (Sand Casting, Die Casting), By Application (Automotive, Industrial Machinery, Pipe, Fittings & Valves, Power & Electrical, Sanitary) & Forecast, 2024 – 2032*, GLOB. MKT. INSIGHTS (June 2024), <https://www.gminsights.com/industry-analysis/iron-and-steel-casting-market> (“Asia Pacific dominated the iron & steel casting market in 2023 . . . Countries such as China, India, and Japan are leading contributors to market growth, with substantial investments in construction, automotive, and manufacturing sectors.”).

available domestically.⁸³ Yet, “all the mandates, waivers, and ‘box ticking’” add uncertainty, time, and cost to government procurement and federally-led development.⁸⁴ The Federal Highway Administration projected that “some of the new BABA requirements could cost more than \$700 million a year to implement, although the agency admitted it didn’t calculate the expense of compliance and delays.”⁸⁵ Thus, federal grant requirements require a bit of flexibility to account for the realities on the ground so that money can be obligated and invested into projects.⁸⁶

C. Davis Bacon Act

As a Clean Air Act (CAA) program, GGRF construction activities must comply with the prevailing wage requirements of the Davis Bacon Act (DBA).⁸⁷ The DBA requires “all laborers and mechanics employed by contractors and subcontractors performing construction work under federal contracts in excess of \$2,000 pay their laborers and mechanics not less than the prevailing wage and fringe benefits for the geographic location.”⁸⁸ The DBA is designed to create middle-class jobs with livable wages for blue-collar workers across the country as the U.S. ramps up infrastructure development. Additionally, the DBA protects against unethical contractors undercutting the local workforce, shoddy construction, construction site accidents due to an unskilled and untrained workforce and cost over-runs and delays.⁸⁹

The definition of “construction activities” applies generally; it can include common projects such as installing solar panels and heat pumps, and energy efficiency building retrofits.⁹⁰ However, whether pre-construction

83. See Glock, *supra* note 69.

84. *Id.*; Erhlich, *supra* note 59 (“Put simply, there is uncertainty, and in construction, that means increased costs because contractors must account for that in their bids to mitigate risk.”).

85. Glock, *supra* note 69.

86. Wulf, *supra* note 60, at 4.

87. *EPA’s Implementation Framework*, *supra* note 21, at 8. (“Section 314 of the Clean Air Act requires that construction projects funded under the Clean Air Act comply with the Davis Bacon Act. As a Clean Air Act program, GGRF construction activities will be subject to prevailing wage requirements, where applicable.”).

88. *Id.*

89. *Davis Bacon Act and Prevailing Wage Laws Fact Sheet: Davis-Bacon Prevailing Wage Requirements*, LIUNA LABORER’S INT’L UNION OF N. AM., <https://www.liuna.org/prevailing-wage-and-davis-bacon> (last visited Nov. 16, 2024).

90. *NCIF & CCA FAQs for Selected Applicants*, EPA (June 3, 2024), <https://vjel.vermontlaw.edu/wp-content/uploads/2025/01/NCIF-CCIA-FAQs-for-Selected-Applicants-Farmen-Mrus-Article-Supplement.pdf>.

development work triggers the DBA depends on the nature of that work.⁹¹ The DBA extends beyond commercial projects, too. The DBA statute governing the use of funds under the CAA is broad and extends to all construction projects funded under the GGRF, including single-family residential construction projects.⁹² Four distinct types of construction work exist under DBA: Building, Heavy, Highway, and Residential.⁹³

Reporting requirements under the DBA differ between the construction contractors and the GGRF fund recipients.⁹⁴ The “contracting agency” is required to collect and review the “weekly certified payrolls and ‘Statement of Compliance’ submitted [] by the prime Contractor.”⁹⁵ This review should verify compliance with the DBA, including “ensuring the use of the correct wage rate determination, proper work classification, number of hours worked, and hourly rate of pay for each employee on a project.”⁹⁶ Further, the recipient and any subrecipient are responsible for “maintaining organized, accessible records of all weekly certified payrolls (including the requirement to preserve such records for a minimum of 3 years after project completion).”⁹⁷ Separately, “the Recipient is responsible for aggregating select information⁹⁸ from weekly certified payrolls for all covered projects under its program [] and reporting them to EPA” on a semi-annual basis.⁹⁹

91. *NCIF & CCA FAQs*, *supra* note 90, at 37 (“Pre-construction activities such as environmental assessments, site acquisition, permitting, and engineering and design work do not in and of themselves trigger DBRA. Site preparation activities such as remediation of contaminated soil, abatement of asbestos or lead based paint, demolition, and similar construction activities are subject to DBRA.”).

92. *Id.* (“Some federal grant programs have statutory authority that provides for exclusions to DBRA labor standards on single-family residential construction projects. There are no similar exclusions in Section 314 of the Clean Air Act.”).

93. *Residential Construction*, DEP’T OF LAB. WAGE & HOUR DIV., <https://www.dol.gov/agencies/whd/government-contracts/construction/surveys/residential> (last visited Nov. 16, 2024).

94. *NCIF & CCA FAQs*, *supra* note 90, at 40 (“It is important to draw a distinction between the DBRA reporting that construction Contractors must submit to the ‘contracting agency’ (Recipient or Subrecipient) versus the summary DBRA reporting that the Recipient will submit to their EPA Project Officer on a semi-annual basis as part of the performance reports.”).

95. *Id.*

96. *Id.*

97. *Id.*

98. *Id.* (“Aggregated by month and DBRA construction type (‘Residential’ or ‘Business’): 1. Total number of projects, 2. Total number of workers, 3. Total hours worked, 4. Rate of pay (per worker median), 5. Share of workers above DBA prevailing wage.”).

99. *NCIF & CCA FAQs*, *supra* note 90, at 40.

D. Implementation Issues: DBA

Some critics¹⁰⁰ of the DBA argue that its methodology is outdated and flawed, and results in inflated wage expenses.¹⁰¹ A 2022 industry-funded study¹⁰² estimated that the DBA costs taxpayers \$21 billion per year, increases the cost of construction by 7.2%, and increases construction workforce wages by 20.2%.¹⁰³ Other studies, however, have found more modest increases, and that work productivity gains largely offset costs related to prevailing wage mandates.¹⁰⁴

In addition to direct cost increases due to wage increases, “contractors will incur costs related to administrative compliance with the DBA.”¹⁰⁵ The DBA requires contractors and subcontractors to comply with numerous requirements and to maintain records to verify compliance.¹⁰⁶ Therefore, contractors that want to participate in programs subject to the DBA will incur costs for transition, maintenance and operation, and administration.¹⁰⁷ Such administrative costs may include the following: new payroll systems, payroll

100. See, e.g., William F. Burke & David G. Tuerck, *The Federal Davis-Bacon Act: Mismeasuring the Prevailing Wage*, BEACON HILL INST. (May 16, 2022), <https://www.beaconhill.org/BHISudies/2022/FINAL-BHI-DBA-2022-05-16.pdf>; HAYLEY RAETZ ET AL., THE HARD COSTS OF CONSTRUCTION: RECENT TRENDS IN LABOR AND MATERIAL COSTS FOR APARTMENT BUILDINGS IN CALIFORNIA, UC BERKELEY 2 (Mar. 2020), https://ternercenter.berkeley.edu/wp-content/uploads/pdfs/Hard_Construction_Costs_March_2020.pdf; James Sherk, *Labor Department Can Create Jobs by Calculating Davis-Bacon Rates More Accurately*, HERITAGE FOUND. (Jan. 21, 2017), <https://www.heritage.org/jobs-and-labor/report/labor-department-can-create-jobs-calculating-davis-bacon-rates-more>; *Studies on the Negative Impact of the Davis-Bacon Act and Prevailing Wage Policies*, ASSOCIATED BUILDERS AND CONTRACTORS, <https://www.abc.org/Portals/1/2023/Politics%20Policy/DavisBacon/ABC%20Prevailing%20Wage%20Davis%20Bacon%20Studies%20Summary%20Updated%20January%202023.pdf?ver=MV0choINm20wd5Mr60SxMw%3d%3d×tamp=1673554159098#> (last updated Jan. 2023).

101. Vero Bourg-Meyer, *Davis-Bacon Primer for States Implementing the Greenhouse Gas Reduction Fund Solar for All Program*, CLEAN ENERGY STATES ALL. 16 (Jan. 11, 2024), <https://www.cesa.org/wp-content/uploads/Davis-Bacon-Primer-GGRF-Solar-for-All.pdf>.

102. *DOL Increases Costs for Contractors and Taxpayers with Davis-Bacon Final Rule*, ASSOCIATED BUILDERS AND CONTRACTORS (Aug. 9, 2023), <https://www.abc.org/News-Media/Newsline/dol-increases-costs-for-contractors-and-taxpayers-with-davis-bacon-final-rule#>.

103. Bourg-Meyer, *supra* note 101, at 16.

104. Betony Jones, *Prevailing Wage in Solar Can Deliver Good Jobs While Keeping Growth on Track*, UC BERKELEY LAB. CTR. (Nov. 12, 2020), <https://laborcenter.berkeley.edu/prevailing-wage-in-solar-can-deliver-good-jobs-while-keeping-growth-on-track/>.

105. Bourg-Meyer, *supra* note 101, at 16.

106. The authors discuss the numerous responsibilities of contractors under the DBA: Beyond wages and benefits, DBA requires that contractors and subcontractors comply with weekly payment schedules, maintain payrolls and records that list specific job classifications, wages, and time spent in detail, submit weekly records for all weeks in which contract work is performed and certify payrolls using WHD forms, keep records for three years after the end of a project, periodically review processes and documentation to ensure compliance with applicable prevailing wages, including with subcontractors, and perform audits. *Id.* at 16.

107. Bourg-Meyer, *supra* note 101, at 16.

administrators, reporting analysts, subcontractor auditing systems and processes, and modification of internal policies and employee handbooks.¹⁰⁸

Outside of additional administrative and labor costs, contractor experience is another crucial factor. While compliance with DBA may not be an issue for more experienced contractors with portfolios of larger projects, residential contractors likely do not have the same experience of complying with DBA federal requirements. In fact, it may prove devastating for small contractors working on federal contracts. Testifying before the U.S. House Committee on Small Business, Mario Burgos of Prairie Band LLC stated that the U.S. Department of Labor's (DOL) rulemaking¹⁰⁹ updating the DBA will "only make compliance challenges worse, driving small contractors out of public works projects or even out of business."¹¹⁰ For Burgos and small businesses alike, the ever-changing and ever-increasing federal and state regulatory requirements excessively burden small contractors, forcing some to shut down. Burgos remarked, the DBA "is just the latest example of additional burdens and barriers erected, which make it more difficult for small businesses to participate in the economic investments of the [BIL] . . ." ¹¹¹ And with small businesses comprising over half of the construction industry, the DBA is sure to make waves.¹¹²

Residential projects will face the greatest barrier with the DBA prevailing wage requirements due to project size as well as the fact that smaller, local contractors may not have experience working and complying with the DBA. There is a long history of government contractors and other larger contractors satisfying the DBA requirements to get work done.¹¹³ The next few years will determine whether smaller contractors in the residential sector can get up to speed on DBA compliance. This will determine whether DBA compliance results in a stronger middle class created from well-paying jobs, or a lack of deployment of GGRF funds in the residential market.

108. Bourg-Meyer, *supra* note 101, at 16.

109. 29 C.F.R. pt. 1 (2024); 29 C.F.R. pt. 3 (2024); 29 C.F.R. pt. 5 (2024).

110. *New Davis-Bacon Rule Will Devastate Small Construction Contractors Working on Federal Contracts*, ASSOCIATED BUILDERS & CONTRACTORS (Oct. 19, 2023), <https://www.abc.org/News-Media/News-Releases/abc-new-davis-bacon-rule-will-devastate-small-construction-contractors-working-on-federal-contracts>.

111. *Id.*

112. Christine Tracey, Comment, *An Argument for the Repeal of the Davis-Bacon Act*, 5 J. SMALL & EMERGING BUS. L. 285, 287 (2001).

113. See generally Frank Osborn, *Five Facts on Davis-Bacon Wages Every Contractor Needs to Know*, FOUND. SOFTWARE (Jan. 3, 2019), <https://www.foundationsoft.com/learn/tips-davis-bacon/> ("Contractors who complete this 'Davis-Bacon Wage Survey' provide DOL's primary source of information for making Davis-Bacon wage determinations . . . Therefore, it's in contractors' best interest to return data whenever possible . . ."); *But see What Is the Davis Bacon Act of 1931?*, INTUIT QUICKBOOKS, <https://quickbooks.intuit.com/time-tracking/resources/what-is-davis-bacon-act/> ("There have been over 119,000 reported violations of the Davis Bacon Act over the last 32 years . . .").

E. Disadvantaged Business Enterprises

The requirements of the Disadvantaged Business Enterprises (DBE) program apply to procurement under EPA financial assistance agreements performed in the U.S., “whether by a recipient or its prime contractor, for construction, equipment, services and supplies.”¹¹⁴ Under EPA’s 8%¹¹⁵ and 10%¹¹⁶ statutes, an entity must establish that it is 8–10% “owned and controlled by socially and economically disadvantaged individuals who are of good character and citizens of the United States.”¹¹⁷ To meet these objectives, recipients are required to make six good faith efforts¹¹⁸ whenever procuring construction, equipment, services, and supplies under an EPA financial assistance agreement.¹¹⁹ To document compliance with the six good faith efforts, recipients could provide, for example, use of current bidders/solicitation list or databases that include DBEs; how DBEs were made aware of the solicitation; samples of letters or records of communication with DBEs; sample of advertisement and duration of advertisement; and so on.¹²⁰

114. 40 C.F.R. § 33.102.

115. Codified at 42 U.S.C. § 4370d.

116. Codified at 42 U.S.C. § 7601 note (Disadvantaged Business Concerns).

117. *Disadvantaged Business Enterprise Program Requirements*, EPA, <https://www.epa.gov/grants/disadvantaged-business-enterprise-program-requirements> (“The statute[s] presume[] HBCUs, Black Americans, Hispanic Americans, Native Americans, Women, and Disabled Americans are socially and economically disadvantaged individuals.”) (last updated Sept. 1, 2023).

118. These good faith efforts include the following:

- (1) Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. For Indian Tribal, State, and Local Government recipients, this will include placing DBEs on solicitation lists and soliciting them whenever they are potential sources;
- (2) Make information on forthcoming opportunities available to DBEs, arrange time frames for contracts, and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. This includes, whenever possible, posting solicitations for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date;
- (3) Consider in the contracting process whether firms competing or large contracts could subcontract with DBEs. For Indian Tribal, State, and Local Government recipients, this will include dividing total requirements when economically feasible into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process;
- (4) Encourage contracting with a consortium of DBEs when a contract is too large for one of these firms to handle individually;
- (5) Use the services and assistance of the SBA and the Minority Business Development Agency of the Department of Commerce; and
- (6) If the prime contractor awards subcontracts, require the prime contractor to take the steps in items 1 through 5. *Id.*

119. *Id.*

120. For a more complete list of examples of compliance, see *Frequently Asked Questions for Disadvantaged Business Enterprises*, EPA (last updated Feb. 14, 2024), <https://www.epa.gov/grants/frequently-asked-questions-disadvantaged-business-enterprises#q06>.

Entities that meet the certification criteria under at least one of the EPA statutes¹²¹ are qualified for EPA's DBE program.¹²²

A recipient may apply for a waiver from any of the requirements that are not specifically based on a statute or Executive order by submitting a written request to the Director of the Office of Small and Disadvantaged Business Utilization (OSDBU).¹²³ The request must document "special or exceptional circumstances that make compliance with the requirement impractical, including a specific proposal addressing how the recipient intends to achieve the objectives of this part as described in section 33.101."¹²⁴ The OSDBU Director has the authority to approve a recipient's request¹²⁵ and end a program waiver at any time upon notice to the recipient and require the recipient's compliance.¹²⁶ Further, the Director may extend the waiver if they determine that all requirements continue to be met.¹²⁷

If a recipient fails to comply with any requirements, EPA may take remedial action under 2 CFR § 200.339.¹²⁸ This includes, but is not limited to, "temporarily withholding cash payments pending correct of the deficiency by the recipient, disallowing all or part of the cost of the activity or action not in compliance, wholly or partly suspending or terminating the current award, or withholding further awards for the project or program."¹²⁹

F. Implementation Issues: DBE

Complying with DBE requirements may be easier than other GGRF requirements for grant recipients and contractors, so waivers and enforcement actions will likely be rare occurrences. This is not to say that DBE requirements are unenforceable and unproblematic. For instance, it can be difficult for small businesses to hear about current contracting opportunities, especially those that are not connected to existing contractors or procurement agencies.¹³⁰ Adopting more user-friendly processes and

121. I.e., EPA 8% or 10% statutes.

122. *Frequently Asked Questions for Disadvantaged Business Enterprises*, EPA (last updated Feb. 14, 2024), <https://www.epa.gov/grants/frequently-asked-questions-disadvantaged-business-enterprises#q06> [hereinafter *FAQs for Disadvantaged Businesses*].

123. 40 C.F.R. § 33.103(a) (2024).

124. *Id.* at § 33.104(b).

125. *Id.* at § 33.104(c).

126. *Id.* at § 33.104(d).

127. *Id.*

128. 40 C.F.R. § 33.105.

129. *Id.*

130. Theodos et al., *Removing Barriers to Participation in Local and State Government Procurement and Contracting for Entrepreneurs of Color*, URB. INST. 1, 6 (2024), <https://www.urban.org/sites/default/files/2024->

technology can take time, but are generally worth the investment.¹³¹ Upon failure to meet DBE requirements, EPA may take remedial action under 2 CFR § 200.339.¹³² Therefore, these good faith efforts must be taken seriously, but complying with them is not an insuperable task.

Many states have established programs that focus on getting financing, renewable energy upgrades and benefits, and other support to disadvantaged communities, marginalized groups, and low- to moderate-income families.¹³³ States that already have such programs in place, like Connecticut, may be in a prime position to comply with DBE. States without such programs may find it more difficult to comply with DBE.

G. National Environmental Policy Act

The National Environmental Policy Act (NEPA) was one of the “first laws ever written that establishes the broad national framework for protecting our environment.”¹³⁴ NEPA requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.¹³⁵ Section 102 in Title I of the Act requires federal agencies to prepare detailed statements assessing the environmental impact of and alternatives to major federal actions significantly affecting the environment.¹³⁶

However, Section 7(c) of the Energy Supply and Environmental Coordination Act of 1974¹³⁷ exempts all actions under the CAA from the requirements of NEPA.¹³⁸ As a grant program authorized under the CAA, NEPA will not apply to GGRF projects, unless part of a project is also carried

04/Removing%20Barriers%20to%20Participation%20in%20Local%20and%20State%20Government%20Procurement%20and%20Contracting%20for%20Entrepreneurs%20of%20Color.pdf.

131. Theodos et al, *supra* note 130, at 11 (“[S]everal jurisdictions we interviewed saw higher numbers of MBEs submitting bids, quotes, or proposals as a result.”).

132. 40 C.F.R. § 33.105 (2024); See *FAQs for Disadvantaged Businesses*, *supra* note 122 for examples of EPA remedial measures.

133. *Directory of State Low- and Moderate-Income Clean Energy Programs*, CLEAN ENERGY STATES ALL. (last updated June 2021), <https://www.cesa.org/resource-library/resource/directory-of-state-low-and-moderate-clean-energy-programs/> (listing states such as NJ, CA, CO, MA, ME, and NY).

134. *Summary of the National Environmental Policy Act*, EPA, <https://www.epa.gov/laws-regulations/summary-national-environmental-policy-act> (last updated Sept. 6, 2023).

135. *What Is the National Environmental Policy Act?*, EPA, <https://www.epa.gov/nepa/what-national-environmental-policy-act#> (last updated July 15, 2024).

136. *Id.*

137. Codified at 15 U.S.C. § 793(c)(1).

138. EPA, EPA’S IMPLEMENTATION FRAMEWORK FOR THE GREENHOUSE GAS REDUCTION FUND (2023), https://www.epa.gov/system/files/documents/2023-04/GGRF%20Implementation%20Framework_730am.pdf; 15 U.S.C. § 793(c)(1) (“No action taken under the Clean Air Act shall be deemed a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969.”).

out with funding from another federal agency.¹³⁹ As a result, NEPA should not present any barriers to deployment of GGRF funds.

H. National Historic Preservation Act

The National Historic Preservation Act (NHPA) requires federal agencies to consider the effect¹⁴⁰ of their undertakings¹⁴¹ on historic properties.¹⁴² Specifically, Section 106 of the NHPA aims to “identify historic properties¹⁴³ potentially affected by the undertaking, assess its effects, and seek ways to avoid, minimize, or mitigate any adverse effect¹⁴⁴ to historic properties.”¹⁴⁵

A Section 106 review is required under NEPA for Categorical Exclusions, Environmental Assessments, and Environmental Impact Statements.¹⁴⁶ The review begins by determining whether the proposed undertaking is an activity that could cause effects to historic properties.¹⁴⁷ Projects that involve earth disturbances or construction activities can affect historic properties.¹⁴⁸ These projects must then undergo further review, considering the actions potential for both direct and indirect effects on historic properties and Section 106 consultation.¹⁴⁹ The review will result in one of the following determinations: (1) “no historic properties affected;”

139. EPA, *supra* note 138.

140. 36 C.F.R. § 800.16(i) (2024) (An “effect” is defined as an “alteration to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register.”).

141. 36 C.F.R. § 800.16(y) (2024) (An “undertaking” is defined as “a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.”).

142. 36 C.F.R. § 800.1(a) (2024); *National Historic Preservation Act (NHPA) Section 106*, EPA, <https://www.epa.gov/system/files/documents/2023-07/NHPA-Overview.pdf> (last visited July 24, 2024) [hereinafter *NHPA*].

143. 36 C.F.R. § 800.16(l)(1) (2024) (A “historic property” is defined as the following: “any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.”).

144. 36 C.F.R. § 800.5(a)(1) (2024) (An “adverse effect” is an effect that would “diminish the integrity of the property’s location, design, setting, materials, workmanship, feeling, or association.”).

145. 36 C.F.R. § 800.1(a) (2024); *NHPA*, *supra* note 142(b).

146. *NHPA*, *supra* note 142(b).

147. *Id.*

148. *Id.*

149. *NHPA*, *supra* note 142(b) (explaining that the “alteration or removal of a resource” can be a direct effect of an action and describing that the “introduction of modern intrusions to the viewshed of a resource, such as the addition of a modern facility in a historic district, or other impacts to the scenic values of the resource” can be an indirect effect of an action).

(2) “no adverse effect to historic properties;” or (3) “adverse effect to historic properties.”¹⁵⁰

Grant recipients have two options. Either demonstrate compliance or “assist EPA with complying with Section 106 for a project.”¹⁵¹ Once a recipient decides to apply for an EPA-funded grant, the recipient should collaborate with the EPA to determine the level of involvement in the Section 106 process.¹⁵² The onus is on the recipient to provide EPA with the information “needed to properly characterize impacts.”¹⁵³

I. Implementation Issues: NHPA

Complying with the NHPA will likely not pose a major obstacle to deployment of GGRF funds but will require greater attention in certain regions that have an older building stock. If any undertaking¹⁵⁴ does not affect historical properties, then NHPA requirements will not apply. Regardless, project developers will have to undergo site assessments to determine if NHPA is triggered anyway.

However, the historical particularities of certain regions, namely the Northeast, may make compliance with NHPA more difficult. The Northeast is home to most of the Nation’s old homes.¹⁵⁵ While properties under 50 years old can be listed in the National Register of Historic Places for being “exceptionally important,” most eligible properties are at least 50 years old.¹⁵⁶ Therefore, many Northeastern buildings that want renewable energy or energy efficiency upgrades will likely trigger NHPA review.

A model for effective streamlining exists to prioritize federal fund obligations. The American Recovery and Reinvestment Act (ARRA) marked

150. *NHPA*, *supra* note 142(b).

151. *Id.*

152. *Id.*

153. *Id.*

154. *Id.* (An undertaking is “[a] project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those requiring a Federal permit, license or approval.”).

155. David Heacock, *U.S. Cities with the Largest Share of Homes Built Prior to 1940*, FILTERBUY, <https://filterbuy.com/resources/across-the-nation/cities-with-oldest-homes/#> (last visited Nov. 17, 2024); Coty Perry, *The Median Age of Homes in the United States by Build Year [Data Study]*, Today’s Homeowner, <https://todayshomeowner.com/home-finances/guides/median-home-age-us/> (last updated Apr. 9, 2024) (explaining NY, RI, MA, PA, and CT have the oldest median home age, ranging from 55–60 years old).

156. *National Register of Historic Places FAQs*, NAT’L PARK SERV., <https://www.nps.gov/subjects/nationalregister/faqs.htm#> (last updated Sept. 5, 2024).

the beginning of the fast-tracking era.¹⁵⁷ The government fast-tracked permitting processes to use ARRA funds to “further the goal of rapidly installing renewable energy projects on public lands as part of a concerted effort to promote America’s ‘green energy future.’”¹⁵⁸ The contemporary political and economic environments also contributed to the impetus for fast-tracking. It was the “need for recession recovery [that] created strong reasons for approving projects in short time periods and for spending money as quickly as possible.”¹⁵⁹ The same political and economic rationales exist today. Thus, instead of piecemeal NHPA reviews, projects could be aggregated to be reviewed collectively to quickly assure compliance so funds can be deployed. Such a streamlined review process would allow projects to obtain compliance and not get bogged down in potential “endless feedback loops” of mismanaged Programmatic Agreements.¹⁶⁰

J. Justice40

The GGRF falls under the Justice40 initiative.¹⁶¹ Every GGRF competition “will align with the Justice40 initiative, ensuring that 40% of the overall benefits from the program flow to disadvantage communities.”¹⁶² Applicants will be evaluated by EPA on their “plans and capabilities for deploying this grant funding to improve equity and environmental justice.”¹⁶³ Grantees must also regularly report the benefits they have delivered to low-income and disadvantaged communities.¹⁶⁴ Because of the alignment

157. Nathaniel Logar, Note, *When the Fast Track Hits the Off Ramp: Renewable Energy Permitting and Legal Resistance on Western Public Lands*, 27 COLO. NAT. RES., ENERGY & ENV'T L. REV. 361, 374–375 (2016) (“Under this initiative, the Bureau of Land Management (“BLM”) assigned twenty-four large tracts of land as Solar Energy Study Areas to be evaluated for environmental sensitivity and renewable resources suitability. The aggregated tracts of land were then permitted under an expedited process.”)

158. *Id.* at 374 (quoting Press Release, Bureau of Land Mgmt., *BLM Concentrating on Renewable Energy Projects That Could Meet Stimulus Funding Deadline* (Dec. 29, 2009), <http://www.blm.gov/wo/st/en/info/newsroom/2009/december/0.html>).

159. *Id.* at 385.

160. Glenn Darrington, *Programmatic Agreements—Streamlining the Section 106 Process Guide*, POWER ENGRS (May 30, 2019), <https://cdn2.hubspot.net/hubfs/4836571/Prismic%20Files/Currents%20Spring%202019/Sect.%20106%20Process%20final.pdf>; 36 C.F.R. § 800.14(b) (explaining Programmatic Agreements “govern the implementation of a particular program or the resolution of adverse effects from certain complex project situations or multiple undertakings.”).

161. *EPA’s Implementation Framework*, *supra* note 21, at 8–9.

162. *Id.*

163. *EPA’s Implementation Framework*, *supra* note 21, at 8–9.

164. *See id.* (“EPA expects to define ‘low-income and disadvantaged communities’ as inclusive of geographically defined disadvantaged communities identified through the Climate and Economic Justice Screen Tool (CEJST), and inclusive of the limited supplemental set of census block groups that are at or

between GGRF programs and Justice40 goals, this requirement should not pose any barriers to deployment of GGRF funds. However, it is unclear whether there are enough shovel-ready projects in these target areas to facilitate deploying GGRF funds. Thus, worthy policy goals must be balanced with the practicalities of GGRF fund deployment.

III. EXTERNAL PRESSURES ON THE GGRF

The GGRF's success depends not only on its participants' ability to navigate and comply with the numerous requirements, but also on political and judicial externalities. Namely, the 2024 presidential election and the overruling of *Chevron*.¹⁶⁵ These two externalities will affect the GGRF to some degree, adding more uncertainty and complication.

A. 2024 Presidential Election

Any federal election can shift program oversight as new administrations implement their priorities. However, the 2024 presidential election brings a level of uncertainty with regards to programs like the GGRF. With diverging climate and energy goals between Democrats and Republicans, President Donald Trump's election may heavily influence the degree of governmental support for clean energy policy.

President Trump's advisors have indicated that dismantling the IRA sits at the top of his agenda.¹⁶⁶ However, a wholesale repeal of the IRA may be unlikely due to its success and the bipartisan support of non-GGRF components in the IRA such as investment tax credits.¹⁶⁷ As more and more renewables projects, mineral processing facilities, battery plants, and electric vehicle factories bring jobs and tax revenue to Republican-majority states, "the politics around clean energy are shifting."¹⁶⁸

above the ninetieth percentile for EJ Screen's Supplement Indexes."). *See also* Said et al., *supra* note 10 ("The [DOE] now requires developers to submit community benefits plans as part of all BIL and IRA funding opportunities and loan applications . . . If a developer is selected to receive funding, its CBP will be part of the contractual agreement.").

165. *Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837 (1984).

166. James Temple, *Trump Wants to Unravel Biden's Landmark Climate Law. Here Is What's Most at Risk*, MIT TECH. REV. (Feb. 26, 2024), <https://www.technologyreview.com/2024/02/26/1088921/trump-wants-to-unravel-bidens-landmark-climate-law-here-is-whats-most-at-risk/>.

167. Temple, *supra* note 166 ("By some accounts, the law has helped spur hundreds of billions of dollars in private investment into projects that could create nearly 200,000 jobs—and get this: eight of the ten congressional districts set to receive the biggest clean-energy investments announced in recent quarters are led by Republicans . . .").

168. *Id.*

However, given the outcome of the 2024 election,¹⁶⁹ Republicans will have the political power to effect change come Inauguration Day. Further, President Trump's nominee for EPA administrator, Lee Zeldin,¹⁷⁰ could make GGRF requirements more burdensome if it is a priority. Despite this, if the Department of Energy (DOE) and EPA worked fast enough, GGRF funds could be spent or obligated before the new administration makes the requirements more burdensome.¹⁷¹ EPA must also cement protections on air, climate, and water to avoid a Republican-led Congress and White House from burying those rules. Rules not completed by early 2024 could be overruled by the inbound administration under the Congressional Review Act.¹⁷² Ultimately, only time will tell whether President Trump's second term will affect EPA in obligating GGRF funds.

B. *The Chevron Deference Issue*

The *Chevron* decision marked a massive victory for the regulatory state and established the start of forty years of environmental and administrative precedent. Courts and scholars cited *Chevron* over “19,000 times, making it the third-most cited civil case ever.”¹⁷³ However, legal scholars saw the writing on the wall that the current Supreme Court would continue to limit and eventually overturn the long-standing precedent.¹⁷⁴

Overruling *Chevron*¹⁷⁵ has incredibly expansive implications, especially for environmental and energy arenas. ClearView Energy Partners analysts

169. Tracy Grant & Brian Duignan, *United States presidential election of 2024*, BRITANNICA (last updated Nov. 25, 2024), <https://www.britannica.com/event/United-States-presidential-election-of-2024#ref397331> (summarizing Trump's victory over Harris in the 2024 presidential election); Riley Beggin, *Trump's dream scenario: Republicans win control of House and Senate in Congress sweep*, USA TODAY (Nov. 13, 2024), <https://www.usatoday.com/story/news/politics/elections/2024/11/13/republicans-win-house-senate-2024/7573440007/> (describing Republicans winning control of Congress in the 2024 election).

170. Elena Moore, *Trump picks former Rep. Lee Zeldin to be his EPA administrator*, NPR (Nov. 11, 2024), <https://www.npr.org/2024/11/11/nx-s1-5187039/trump-lee-zeldin-epa-environment>.

171. Temple, *supra* note 166.

172. Kevin Bogardus, *'Maximum Urgency and De Facto Risk' – EPA Braces for 2024*, POLITICO: E&E NEWS (Jan. 12, 2024), <https://www.eenews.net/articles/maximum-urgency-and-de-facto-risk-epa-braces-for-2024/>.

173. John P. Elwood et al., *Chevron Overturned: What Does It Mean for Life Sciences Companies?*, ARNOLD & PORTER (July 1, 2024), <https://www.arnoldporter.com/en/perspectives/advisories/2024/06/chevron-overturned#>.

174. See, e.g., Kristin E. Hickman & Aaron L. Nielson, *Narrowing Chevron's Domain*, 70 DUKE L. J. 931 (Feb. 2021); Nathan Richardson, *Deference Is Dead (Long Live Chevron)*, 73 RUTGERS U. L. REV. 441 (2021); Kristin E. Hickman & Aaron L. Nielson, *The Future of Chevron Deference*, 70 DUKE L. J. 1015 (Feb. 2021).

175. In *Loper Bright Enterprises v. Raimondo*, the Supreme Court held that the Administrative Procedure Act (“APA”) requires courts to exercise their *independent judgment* in deciding whether an

suggest *Loper Bright* may have “significant implications for U.S. energy infrastructure on its own.”¹⁷⁶ *Chevron* provided a degree of certainty to investors about the durability of new agency rules. But without *Chevron*, investors may be wary to invest, and regulated entities “may forego early compliance with anticipated or pending regulations.”¹⁷⁷ Most importantly, a regulated entity’s “interpretation of a statute could be given just as much weight as the agencies.”¹⁷⁸ Additionally, litigation timelines may be extended because “judges will no longer be able to rely on agency expertise when writing decisions on often technical and complex issues.”¹⁷⁹

Thus, investors and developers face uncertainty not only from the baseline of federal requirements and compliance with them, but also from the 2024 presidential election and from recent Supreme Court decisions. While neither the election nor Supreme Court decisions should pose an immediate threat to GGRF requirements and funding, these pressure points must still be kept in mind.

CONCLUSION

The IRA is already having significant impacts on clean-energy finance and development. The GGRF is positioned to have similar impacts. Billions of dollars are primed for deployment into shovel-ready projects. However, to get shovels in the ground, program participants must successfully navigate and comply with GGRF requirements.

Whether the GGRF can match other IRA provisions’ success depends primarily on three factors. First, states, developers, contractors, and financiers must be able to navigate federal requirements to deploy money. Second, GGRF requirements must feasibly allow participants to comply without drastically increasing material, labor, and administrative costs. Finally, this feasibility must not exclude disadvantaged groups from participating and receiving direct benefits. If these three factors align, then America can achieve significant progress in the campaign toward securing a clean energy economy.

agency has acted within its statutory authority, and courts *may not defer* to an agency interpretation of the law simply because a statute is ambiguous. As a result, *Chevron* was overruled. *Loper Bright Enterprises v. Raimondo*, 144 S. Ct. 2244 (2024) (emphasis added).

176. Ethan Howland, *Supreme Court’s Chevron, Corner Post Decisions Could Delay Energy Investments, Spur Litigation: Analysts*, UTILITY DIVE (July 2, 2024), <https://www.utilitydive.com/news/supreme-court-chevron-corner-post-energy-sector-ferc-transmission/720413/>.

177. *Id.*

178. *Id.*

179. *Id.*

**THE TOXIC DIVIDE: INTERNATIONAL WASTE DUMPING
AND THE FIGHT FOR ENVIRONMENTAL EQUITY**

*Christine Paul**

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INTRODUCTION

Environmental justice is a dynamic concept that draws on civil rights and environmental law principles, along with economic and social justice notions. Environmental injustice disproportionately exposes racially marginalized groups to pollutants from industry, toxic waste, poor land management, natural resource extraction, climate-related harms, and limits access to clean water.¹ The term environmental injustice also describes relationships between industrialized and developing nations; eco-racism threatens all people's health, overall well-being, and safety.²

Marginalized groups suffered environmental discrimination for decades in the United States before environmental justice and environmentalism became a topic of discussion. A study conducted by the United Church of Christ's Commission for Racial Justice (the Commission) pushed environmental justice to the forefront of the U.S.'s national conversation in 1987.³ The Commission detailed a correlation between race and the location of hazardous waste materials throughout communities across the United States.⁴ Since then, numerous studies and reports emphasized that communities of color and low-income areas continue to have higher exposure rates to air pollution, hazardous waste dumping, and poor land management compared to their white, non-Hispanic counterparts.⁵ Despite these critical studies and changing administrations, U.S. policies inadequately addressed or incorporated environmental justice principles.

I. HISTORY OF DOMESTIC ENVIRONMENTAL DISCRIMINATION

The U.S. has an extensive history of domestic environmental discrimination. In 1971, the U.S. Council on Environmental Quality recognized a disproportionate link between environmental pollutants and

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1. Rachel Morello-Frosch & Osagie K. Obasogie, *The Climate Gap and the Color Line—Racial Health Inequities and Climate Change*, 388 NEW ENG. J. MED. 943, 945 (2023).

2. *Id.*

3. COMM'N FOR RACIAL JUST., UNITED CHURCH OF CHRIST, TOXIC WASTE & RACE IN THE UNITED STATES: A NAT'L REP. ON RACIAL & SOCIO-ECON. CHARACTERISTICS OF CMTYS. WITH HAZARDOUS WASTE SITES, xiii (1987).

4. *Id.*

5. Robert D. Bullard, *Race and Environmental Justice in the United States*, 18 YALE J. INT'L L. 319, 320 (1993).

minorities, but did not address this causal link until 1978.⁶ The environmental justice movement fully formed for the first time in the United States in 1978 when state officials decided to transport and bury toxic, contaminated soil in Afton, Warren County, North Carolina.⁷ State legislation, the Department of Environment and Natural Resources, and the Environmental Protection Agency (EPA) Region 4 designated Warren County as the waste's final transfer site.⁸ The waste consisted of polychlorinated biphenyls (PCBs), a known danger to human health.⁹ North Carolina proceeded to illegally transfer approximately 30,000 gallons of toxic waste without citizens' knowledge along its roads in 1982.¹⁰ Despite citizen outrage and a lawsuit by the National Association for the Advancement of Colored People (NAACP), the state transferred the toxic waste from the highway-side to a landfill in Warren County.¹¹ It took the state nearly 20 years to address the adverse effects of the contaminated material on the surrounding communities' health after authorities found leakage into local wells.¹²

The question of whether pollution levels in minority communities were disproportionately higher than their white counterparts regained legislative attention in 1990, and the EPA established an Environmental Equity Taskforce (EET).¹³ EET's goal was to investigate whether "minorities experienced differences in exposure to waste, [the] incidence of disease associated with pollutions, [and] protection from regulatory standards aimed at a 'representative' consumer or worker enforcement that may vary by neighborhood."¹⁴ EET found that communities of color suffer "greater than average" exposure to many pollutants, toxic waste, and lead; however, it concluded that there was little evidence to suggest that environmental causes

6. Christopher C. Ahlers, *Race, Ethnicity, and Air Pollution: New Directions in Environmental Justice*, 46 LEWIS & CLARK ENV'T L. 713, 731 (2016).

7. *Environmental Justice History*, U.S. DEP'T OF ENERGY, OFF. OF LEGACY MGMT., <https://www.energy.gov/lm/services/environmental-justice/environmental-justice-history> (last visited Dec. 8, 2024); see Matt Reinmann, *The EPA Chose This County for a Toxic Dump Because its Residents Were 'Few, Black, and Poor'*, TIMELINE (Apr. 3, 2017), <https://web.archive.org/web/20210208055314/https://timeline.com/warren-county-dumping-race-4d8fe8de06cb> (describing the Warren County landfill and the community's opposition).

8. Bullard, *supra* note 5, at 327-329.

9. *Id.* at 328.

10. *Environmental Justice History*, *supra* note 7.; Reinmann, *supra* note 7.

11. Bullard, *supra* note 5, at 328.

12. Will Atwater, *From Dumped on to Praised: New Documentary Reveals How Warren County Gave Birth to a Movement*, N.C. HEALTH NEWS (May 15, 2024), <https://www.northcarolinahealthnews.org/2024/05/15/from-dumped-on-to-praised-new-documentary-reveals-how-warren-county-gave-birth-to-a-movement/>.

13. James T. Hamilton, *Testing for Environmental Racism: Prejudice, Profits, Political Power?*, 14 J. POL'Y ANALYSIS & MGMT. 107, 108 (1995).

14. *Id.*

increased minority mortality rates, and the EPA did not give sufficient attention to matters of environmental equity.¹⁵ The EET Chair stated that this lack of attention was due solely to economic factors and rejected systemic racism as a factor.¹⁶ Following the EPA's assessment, Representative John Lewis introduced the Environmental Justice Act in 1993, a bill "designed to establish a program to assure non-discriminatory compliance with all environmental, health, and safety laws to ensure equal protection of public health."¹⁷ Unfortunately, this bill died in Congress.¹⁸

Since then, studies have shown that hazardous waste and industrial facilities emitting dangerous chemicals into the air are placed within communities of predominantly Hispanic, Native American, and Black citizens.¹⁹ For example, in 2017, the NAACP, the Clean Air Task Force, and the National Medical Association released a study showing that African Americans were exposed to 38% more polluted air compared to White Americans.²⁰ Further studies link these causes to increased cancer rates, congenital disabilities, childhood leukemia, respiratory problems, and shortened lifespans.²¹

II. INTERNATIONAL ENVIRONMENTAL DISCRIMINATION

The same relationships that outline domestic environmental justice are paralleled on an international scale, and there is a similarly inequitable distribution of environmental hazards around the world. The rise of economic globalization, multinational corporations, and liberalized trade rules all play a key role in shifting environmental pollution from industrialized to developing countries.²²

Incidences of environmental racism are not isolated to the domestic African American population. Rather, eco-racism extends to all corners of the global community—especially when examining transboundary waste

15. Hamilton, *supra* note 13.

16. *Id.*

17. Claire L. Hasler, *The Proposed Environmental Justice Act: "I Have a (Green) Dream."* 17 U. PUGET SOUND L. REV. 417, 445 (1994); *See also*, Environmental Justice Act of 1992, H.R. 2105, 103rd Cong. (1993-1994).

18. Hasler, *supra* note 17, at 418.

19. Bullard, *supra* note 5, at 329-341.

20. LESLEY FLEISCHMAN & MARCUS FRANKLIN, FUMES ACROSS THE FENCE-LINE: THE HEALTH IMPACTS OF AIR POLLUTION FROM OIL & GAS FACILITIES ON AFRICAN AMERICAN CMTYS. 6 (2017).

21. *See* U.S. DEP'T OF HEALTH & HUMAN SERVS., NAT'L STAKEHOLDER STRATEGY FOR ACHIEVING HEALTH EQUITY 3 (2009).

22. *CPR Perspective: International Environmental Justice and Climate Change*, CTR. FOR PROGRESSIVE REFORM, (Mar. 1, 2003), <https://progressivereform.org/publications/perspintlenvironjustice/> [hereinafter *CPR Perspective*].

transfer.²³ Governments and corporations from developed nations create hazardous waste within their home country and dispose of these byproducts in developing countries in Africa, South America, and Asia.²⁴ Waste disposal is costlier and more strictly regulated in developed countries than in developing countries.²⁵ Countries that take the waste often have inadequate waste disposal facilities, insufficient enforcement mechanisms, and inadequate personnel.²⁶ In the face of environmental racism, developed countries use poverty and race as convenience factors when deciding where to discard their waste. Low-income and low-education communities suffer from a lack of resources, leading to low participation and political representation.²⁷

Lax enforcement and weak environmental regulations force developing countries to make trade-offs between environmental protection and economic prosperity. The underlying factors in the decision to ship waste across international seas and borders are: (1) availability of cheap land; (2) lack of opposition by the host country; (3) poverty; and (4) lack of mobility and regulation.²⁸ In other cases, reporters state, “[s]ome waste comes disguised as charity.”²⁹ Researchers have recorded incidents in which countries mislabeled waste as humanitarian aid.³⁰ This occurs more often with hospital waste than anything else.³¹ When barrels of chemicals and medical waste are deposited in developing neighborhoods, locals may not have the necessary education and expertise to distinguish between toxic waste and possible medical aid. Corporations and countries save money when they do not have to negotiate with a community that cannot effectively resist.³² Within developing countries, neighborhoods consisting of middle-class or wealthier families are spared.³³ These communities possess more resources, time, money, and political leverage than the poorer members of society. Not wanting to deal with increased public discourse and disposal opposition,

23. *CPR Perspective*, *supra* note 22.

24. *Id.*

25. *Id.*

26. *Id.*

27. Morello-Frosch, *supra* note 1 at 943; See also Lauren Bushnell, *Educational Disparities Among Racial and Ethnic Minority Youth in the United States*, BALLARD BRIEF (2021), <https://ballardbrief.byu.edu/issue-briefs/educational-disparities-among-racial-and-ethnic-minority-youth-in-the-united-states>.

28. Rozelia S. Park, *An Examination of International Environmental Racism Through the Lens of Transboundary Movement of Hazardous Wastes*, 5 *IND. J. OF GLOB. LEGAL STUD.* 659, 662 (1998).

29. *Id.* at 670.

30. *Id.*

31. *Id.*

32. *Id.* at 679.

33. Park, *supra* note 28, at 663.

corporations choose the path of least resistance when designating the location of a new facility.

III. INTERNATIONAL INCIDENTS SPARK PUBLIC OUTCRY

In August of 1986, the *Khian Sea*, a cargo ship carrying 15,000 tons of toxic incinerator ash generated by the City of Philadelphia, headed for its destination in the Bahamas.³⁴ However, when it arrived, the Bahamian government refused to give the ship permission to dock.³⁵ This also occurred in the Dominican Republic, Honduras, and Bermuda, among others.³⁶ The ship subsequently sailed for another 16 months before dumping 4,000 tons of waste on the Western coast of Haiti under the guise of “topsoil fertilizer.”³⁷ When the government realized the true nature of the waste, it insisted that the ship re-board its cargo—but it was too late.³⁸ The crew, again, tried to unload the rest of the toxic cargo before being allowed to dock at the port of Singapore for repairs.³⁹ The *Khian Sea* later arrived without any cargo, and the crew refused to disclose where they disposed of the waste.⁴⁰ Under threat of legal action, the *Khian Sea*’s captain finally admitted that the crew dumped the ship’s contents in the Indian and Atlantic Oceans.⁴¹ The captain never defined specific disposal boundaries, and no government ordered studies on the effects of the illegal dumping of hazardous waste on the Indian and Atlantic Oceans.⁴²

Another similar incident occurred in August 2006, when the cargo ship *Probo Koala*, originating from the Netherlands, deposited 500 cubic meters

34. Park, *supra* note 28, at 669.

35. *Id.*

36. *The Ship that Dumped America’s Waste*, WITNESS HISTORY (Nov. 13, 2018), <https://www.bbc.co.uk/programmes/p06rm27x>; See also, Mike Clary, *Wanted: Final Resting Place for Huge Trash Pile*, L.A. TIMES (Mar. 18, 2001), <https://www.latimes.com/archives/la-xpm-2001-mar-18-mn-39435-story.html>; Jim Detjen, *2 Khian Sea Officials Convicted of Perjury*, PHILLY.COM (June 4, 1993), https://web.archive.org/web/20140116131538/http://articles.philly.com/1993-06-04/news/25972595_1_khian-sea-john-patrick-dowd-coastal-carriers.

37. *The Ship that Dumped America’s Waste*, WITNESS HISTORY (Nov. 13, 2018), <https://www.bbc.co.uk/programmes/p06rm27x>.

38. *Id.*

39. Jim Detjen, *2 Khian Sea Officials Convicted of Perjury*, PHILLY.COM (June 4, 1993), https://web.archive.org/web/20140116131538/http://articles.philly.com/1993-06-04/news/25972595_1_khian-sea-john-patrick-dowd-coastal-carriers.

40. *Id.*

41. Mark Jaffe, *Garbage Barge (Khian Sea)*, ENCYCLOPEDIA OF GREATER PHILA. (2016), <https://philadelphiaencyclopedia.org/essays/garbage-barge-khian-sea/>.

42. Jaffe, *supra* note 41; See also Simone M. Müller, *The Toxic Ship: The Voyage of the Khian Sea and the Global Waste Trade*, U. WASH. PRESS (2023), <http://www.jstor.org/stable/jj.8362578>.

of toxic waste in Abidjan, Côte d'Ivoire.⁴³ The waste was later dumped amongst 18 different sites within the city.⁴⁴ According to official estimates, 15 residents died, 69 were hospitalized, and over 100,000 individuals sought medical treatment due to the effects of the toxic waste.⁴⁵ Unlike the *Khian Sea* incident, the residents in Abidjan still suffer recordable effects of this hazardous waste disposal, such as headaches, skin lesions, and respiratory issues.⁴⁶ Many residents can no longer access free medication and care since the immediate free programs have ended.⁴⁷ Only 63% of registered victims received compensation under a 2007 settlement with the Ivorian government and Trafigura, the Dutch-contracted company responsible for operating the *Probo Koala*.⁴⁸ In addition to suffering the physical effects, Abidjan remained in the dark regarding the presence of toxic materials in its water supply and surrounding food chain.⁴⁹ The inadequate response to these incidents questions the international communities' willingness to tackle environmental health and regulation on a global scale, especially when examining populations of color.

IV. TOXIC WASTE OVERVIEW

Waste generation and disposal are becoming increasingly relevant issues as the world's population increases. There is an unmistakable correlation between population growth and the amount of waste generated per capita.⁵⁰ Industrialized countries, such as the United States or China, generate more waste per capita than less developed countries like Nigeria or Haiti.⁵¹ Waste is generated at different stages of industry and is classified based on different characterizations.⁵² Some waste is more hazardous or toxic than others, and these classifications ensure that waste is handled and disposed of

43. *Trafigura: A Toxic Journey*, AMNESTY INT'L (Apr. 11, 2016), <https://www.amnesty.org/en/latest/news/2016/04/trafigura-a-toxic-journey/>. Note that one cubic meter of liquid waste is roughly equivalent to one ton.

44. Rob White, *Toxic Cities: Globalizing the Problem of Waste*, 35 SOC. JUST. 107, 109 (2008-09).

45. *Id.*

46. *Trafigura: A Toxic Journey*, *supra* note 43; *See also Toxic Wastes Caused Deaths, Illnesses in Cote d'Ivoire*, U.N. NEWS (Sept 16, 2009), <https://news.un.org/en/story/2009/09/312652>.

47. *Trafigura: A Toxic Journey*, *supra* note 43 (describing the facts surrounding the Trafigura incident in Côte d'Ivoire).

48. *Côte d'Ivoire: 10 Years On, Survivors of Toxic Waste Dumping 'Remain in the Dark,' Say U.N. Rights Experts*, U.N. NEWS (Aug. 17, 2016), <https://news.un.org/en/story/2016/08/536822-cote-divoire-10-years-survivors-toxic-waste-dumping-remain-dark-say-un-rights> (describing the resulting environmental effects on Abidjan).

49. *Id.*

50. White, *supra* note 44, at 114.

51. S. Gozie Ogbodo, *Environmental Protection in Nigeria: Two Decades After the Koko Incident*, 15 ANN. SURV. INT'L & COMPAR. L. 1, 5 (2009).

52. *Id.*

appropriately and safely.⁵³ The United Nations defines hazardous waste as “[a]ny waste or combination of wastes with the potential to damage human health, living organisms, or the environment.”⁵⁴ Hazardous wastes generally “require special handling and disposal procedures regulated by national and international laws.”⁵⁵ Hazardous waste is mainly generated by chemical manufacturing, waste treatment and disposal, and manufacturing iron, steel, petroleum, and coal products.⁵⁶ Everyday products also generate hazardous waste, such as paint, electronics, batteries, and cosmetics.⁵⁷

Because hazardous waste can be found in various physical states, there is not a universal way to dispose of the waste. Historically, people disposed of solid hazardous wastes in a regular landfill, resulting in hazardous waste seepage.⁵⁸ Seepage would eventually contaminate natural water systems.⁵⁹ In industrialized countries, there are regulations to monitor proper hazardous waste disposal and prevent groundwater contamination.⁶⁰ Such processes include isolation, incineration, or recycling.⁶¹ More than 400 million tons of hazardous wastes are produced internationally, the bulk of which is generated by industrialized nations.⁶² For example, the U.S. produces more than 250 million tons of hazardous waste each year.⁶³ Mining companies alone dump 180 million tons of hazardous waste into waterways, including oceans, rivers, and lakes.⁶⁴ Annually, the U.S. produces an average of more than 1,700 pounds of waste—including plastic, food, and hazardous byproducts—per person.⁶⁵ Five percent of the world’s population generates 40% of the

53. 42 U.S.C. § 6927.

54. *Hazardous Waste*, U.N. ENV’T, <https://globalpact.informea.org/glossary/hazardous-waste> (last visited Dec. 9, 2024).

55. *Id.*

56. *Hazardous Waste Statistics: Tonnes of Hazardous Waste Thrown Out*, THE WORLD COUNTS, <https://www.theworldcounts.com/challenges/planet-earth/waste/hazardous-waste-statistics> (last visited Dec. 19, 2024).

57. *Hazardous Waste Facts*, THE WORLD COUNTS, <https://www.theworldcounts.com/stories/hazardous-waste-facts> (last visited Dec. 19, 2024).

58. Rachana Malviya & Rubina Chaudhary, *Factors Affecting Hazardous Waste Solidification/Stabilization: A Review*, 137 J. HAZARDOUS MATERIALS 267, 267 (2006).

59. *Id.* at 274.

60. *Learn the Basics of Hazardous Waste*, EPA (Apr. 11, 2024), <https://www.epa.gov/hw/learn-basics-hazardous-waste>.

61. *Hazardous Waste Facts*, *supra* note 57.

62. *Hazardous Waste Statistics*, *supra* note 56.

63. *Id.*

64. Payal Sampat, *Over 180M Tons of Toxic Waste Dumped Into World’s Oceans, Rivers, and Lakes Each Year*, EARTH ISLAND J. (Feb. 28, 2012), https://www.earthisland.org/journal/index.php/articles/entry/over_180m_tons_of_toxic_waste_dumped_into_worlds_oceans_rivers_and_lakes_ea.

65. *Shocking Waste Generation and Recycling Statistics Revealed: U.S. in the Top 10 Highest Risk Countries*, ACTENVIRO (Aug. 14, 2015), <https://www.actenviro.com/recycling-statistics/>; *See Hazardous*

world's waste, whereas developing countries only generate approximately 1%.⁶⁶

V. RELEVANT TREATIES AND THEIR WEAKNESSES

Multilateral environmental agreements (MEAs) are a means to address and promote international environmental justice. The Basel, Bamako, and Stockholm Conventions are three MEAs incorporating the principles of environmental justice; however, incidents like the illegal dumping of hazardous waste undermine the effectiveness of these agreements.⁶⁷

A. The Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal

The Basel Convention on the Control of Transboundary Movements of Hazardous Waste and Their Disposal (Basel Convention) is an international treaty designed to address the transport of hazardous waste between industrialized and developing countries after the *Khian Sea* incident.⁶⁸ The Basel Convention, established in 1989, prevents the shipment and disposal of hazardous waste from industrial to developing countries.⁶⁹ This international treaty establishes a procedure of strict conditions, such as requiring receiving countries to explicitly consent to any transboundary movement of hazardous waste into their borders.⁷⁰ The Basel Convention applies to toxic, corrosive, infectious, explosive, and flammable waste.⁷¹ The

Waste Statistics to Know in 2021, HAZARDOUS WASTE HAULERS ENV'T, <https://www.hwenvironmental.com/facts-and-statistics-about-waste/> (last visited Dec. 19, 2024) (sharing other waste statistics with hyperlinks to direct sources).

66. See *Waste Export Control: Hearing on H.R. 2525 Before the Subcomm. on Transportation and Hazardous Materials of the House Comm. on Energy and Commerce*, 101st Cong. 156 (1989) (statement of Rep. John Conyers) (describing how the U.S.'s highly unequal hazardous waste production negatively impacts the world).

67. Lisa Widawsky, *In My Backyard: How Enabling Hazardous Waste Trade to Developing Nations Can Improve the Basel Convention's Ability to Achieve Environmental Justice*, 38 ENV'T L. 577, 586 (2008).

68. Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal, Mar. 22, 1989, 1673 U.N.T.S. 126 at 17 ("Environmentally sound management of hazardous wastes or other wastes," which it defines as "taking all practicable steps to ensure that hazardous wastes or other wastes are managed in a manner which will protect human health and the environment against the adverse effects which may result from such wastes." The Basel Convention differentiates between "hazardous wastes," and "other wastes," and asserts jurisdiction over certain wastes from both categories specified in the annexes to the Basel Convention. Hazardous wastes covered by the Basel Convention are those that are "toxic, poisonous, explosive, corrosive, flammable, ecotoxic, and infectious.") [hereinafter *The Basel Convention*].

69. *The Basel Convention*, *supra* note 68, at 15.

70. *Id.*

71. *The Basel Convention*, *supra* note 68, at 15.

Basel Convention does not address radioactive waste; in May 2019, new amendments improved control of plastic waste as regulated material.⁷² Finally, the Basel Convention mandates that nations decrease the amount of waste individual countries generate while maintaining their management close to home.⁷³

Aiming to protect human health and the environment against the generation, management, and movement of waste, parties to the treaty adopted the Basel Convention in 1989.⁷⁴ It first came into force in 1992, and currently boasts 53 countries joining as signatories and 191 countries as parties.⁷⁵ Under the Basel Convention, parties have specific obligations centered on disseminating information. The Basel Convention requires that a receiving country give notice and written confirmation prior to exporting any waste.⁷⁶ The exporting country must notify the receiving country and any transit countries of the proposed shipment of waste.⁷⁷ Accordingly, waste transport can only occur once the receiving country grants consent.⁷⁸ Once consent is given, the waste transport must be accompanied by an international movement document until it reaches its final destination.⁷⁹ The Basel Convention also requires signatories to share national definitions of hazardous waste in addition to those listed in the Annexes of the Basel Convention.⁸⁰

The Basel Convention also regulates any decision to restrict or prohibit imports or exports of hazardous waste. Importantly, the Basel Convention contains two major restrictions on waste transport. The first restriction requires that exports of waste occur only under the following circumstances: (1) if the exporting country does not have sufficient disposal or recycling capacity;⁸¹ (2) if the exporting country does not have disposal and recycling facilities that can manage the waste in an environmentally sound manner;⁸²

72. *Basel Convention Plastic Waste Amendments*, BASEL CONVENTION & U.N. ENV'T PROGRAMME, <https://www.basel.int/Implementation/Plasticwaste/Amendments/Overview/tabid/8426/Default.aspx> (last visited, Jan. 9, 2025).

73. *Id.*

74. The Basel Convention, *supra* note 68, at 26.

75. *Parties to the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal*, BASEL CONVENTION & U.N. ENV'T PROGRAMME, <https://www.basel.int/Countries/StatusofRatifications/PartiesSignatories/tabid/4499/Default.aspx#enote1> (last visited Jan. 9, 2025).

76. The Basel Convention, *supra* note 68, at 26.

77. *Id.* at 25–26.

78. *Id.*

79. *Id.* at 23.

80. *Id.* at 34.

81. *Id.* at 28.

82. The Basel Convention, *supra* note 68, at 17.

or (3) if the waste is required as a raw material for recycling or recovery industries in the importing country.⁸³

The U.S. has signed, but not ratified the Basel Convention, making it a notable Non-Party.⁸⁴ The Basel Convention restricts hazardous waste trade between Parties and Non-Parties without certain agreements in place.⁸⁵ The U.S. has several such agreements that allow it to ship hazardous waste to Party countries.⁸⁶ The Organization for Economic Cooperation and Development (OECD) Council also regulates transboundary hazardous waste between OECD member countries through its own governing system.⁸⁷ This allows the OECD countries to continue trading in waste with countries like the United States that have not ratified the Basel Convention.⁸⁸

Article 4 of the Basel Convention creates a mechanism to decrease the waste generated within national boundaries.⁸⁹ The Basel Convention calls for countries to keep waste within their boundaries and as close as possible to their source of generation, providing incentives for waste reduction and pollution prevention.⁹⁰

B. The Bamako Convention

In January 1991, 12 nations of the African Union (formerly Organization of African Unity) negotiated the Bamako Convention in response to Article 11 of the Basel Convention.⁹¹ Article 11 encourages parties to enter into bilateral, multilateral, and regional agreements on hazardous waste to help achieve the Basel Convention's objectives.⁹² The Bamako Convention, which came into force in 1998, aims to protect the health of populations and the environment of African countries by banning the import of all hazardous and radioactive waste.⁹³ The Bamako Convention was a direct result of the

83. *Id.*

84. *Basel Convention on Hazardous Waste*, OFF. ENV'T QUALITY, <https://www.state.gov/key-topics-office-of-environmental-quality-and-transboundary-issues/basel-convention-on-hazardous-wastes/> (last visited Jan. 9, 2025).

85. *Id.*

86. *Id.*

87. *Id.*; *Transboundary Movements of Waste*, ORG. FOR ECON. COOP. & DEV., <https://www.oecd.org/en/data/tools/transboundary-movements-of-waste.html> (last visited Jan. 9, 2025).

88. *Transboundary Movements of Waste*, ORG. FOR ECON. COOP. & DEV., <https://www.oecd.org/en/data/tools/transboundary-movements-of-waste.html> (last visited Jan. 9, 2025).

89. The Basel Convention, *supra* note 68, at 14–18.

90. *Id.* at 15.

91. Chukwuka N. Eze, *The Bamako Convention on the Ban of the Import into Africa and the Control of the Transboundary Movement and Management of Hazardous Wastes within Africa: A Milestone in Environmental Protection?*, 15 AFRICAN J. INT'L & COMPAR. L. 208, 211 (2007).

92. The Basel Convention, *supra* note 68, at 27.

93. Eze, *supra* note 91, at 211, 222.

Basel Convention's failure to prohibit hazardous waste trade to developing countries, especially when most developed nations export to African nations.⁹⁴

The Bamako Convention is similar to the Basel Convention, except that the Bamako Convention contains stronger language prohibiting all imports of hazardous waste, and does not make exceptions for certain hazardous waste, contained in the Basel Convention.⁹⁵ The Bamako Convention covers more kinds of waste than the Basel Convention by including radioactive wastes and any waste with a listed hazardous characteristic. The Bamako Convention also covers national definitions of hazardous waste.⁹⁶

The Bamako Convention provides that participating countries should ban importing and dumping hazardous and radioactive waste.⁹⁷ For the intra-African waste trade, parties must minimize transboundary waste movement and only move hazardous waste with the consent of the importing and transit countries, among other controls.⁹⁸ Parties must also reduce the production of hazardous waste and cooperate to ensure that waste is treated and disposed of in an environmentally sound manner.⁹⁹ Finally, the Bamako Convention aims to improve and ensure rational environmental management within the African continent and promote cooperation between African nations.¹⁰⁰

C. The Stockholm Convention on Persistent Organic Pollutants

The Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention) is an international environmental treaty, signed in 2001 and ratified in 2004, to eliminate the production, use, and transport of Persistent Organic Pollutants (POPs).¹⁰¹ POPs are toxic chemical substances that persist in the environment and bioaccumulate through the food web.¹⁰² Like hazardous waste, POPs pose a threat to human health and the environment.¹⁰³

94. Eze, *supra* note 91, at 213.

95. *Id.* at 217 (showing how hazardous waste may include waste such as radioactive materials).

96. *Bamako Convention: Preventing Africa From Becoming a Dumping Ground for Toxic Wastes*, U.N. ENV'T PROGRAMME (Jan. 30, 2018), <https://www.unep.org/news-and-stories/press-release/bamako-convention-preventing-africa-becoming-dumping-ground-toxic>.

97. *Id.*

98. *Id.*

99. Eze, *supra* note 91, at 227.

100. *Id.* at 223.

101. Stockholm Convention on Persistent Organic Pollutants art. 3, May 23, 2001, 2256 U.N.T.S. 119.

102. Stockholm Convention on Persistent Organic Pollutants (POPs), U.N., <https://pops.int/TheConvention/Overview/tabid/3351/Default.aspx> (last visited Nov. 30, 2024).

103. *Our Focus: Safeguarding Environment Implementation Multilateral Environmental Agreements*, U.N. INDUS. DEV. ORG., <https://www.unido.org/our-focus-safeguarding-environment>.

Under the Stockholm Convention, there is a process to review and regulate POPs that pose a particular threat when transported internationally.¹⁰⁴ POPs must be disposed of in an environmentally safe way to prevent further harm to living things and the environment.¹⁰⁵ The general provisions of the Stockholm Convention mandate that developed countries provide financial assistance and resources to developing nations to decrease the amount and types of internationally used POPs.¹⁰⁶ Currently, the Stockholm Convention bans 12 POPs.¹⁰⁷ Additional goals of the Stockholm Convention include: transitioning to safer alternatives; targeting additional POPs for action; cleaning old stockpiles and equipment containing POPs; and working together internationally for a POPs-free future.¹⁰⁸

VI. LOOPHOLES AND ILLEGAL WASTE DISPOSAL—THE BASEL CONVENTION BAN AMENDMENT

Each treaty described above states that illegal hazardous waste transport violates their terms, but none contain any enforcement provisions or means to hold violators accountable. Article 12 of the Basel Convention directs parties to adopt protocols that establish liability rules and procedures for damage resulting from hazardous waste transport across borders.¹⁰⁹

After initially adopting the Basel Convention, developing countries and environmental organizations argued that it did not go far enough to protect the environment and developing nations.¹¹⁰ Some also noted the Basel Convention's failure to incorporate a mechanism to hold violators responsible.¹¹¹ Many nations and nongovernmental organizations argued for a total ban on all hazardous waste shipments to developing countries.¹¹² Because the Basel Convention provided certain exceptions to recycled products, many waste contractors and individual actors exploited the system

implementation-multilateral-environmental-agreements/stockholm-convention (last visited Oct. 19, 2024).

104. *Id.*

105. M. Porta & E. Zumeta, Editorial, *Implementing the Stockholm Treaty on Persistent Organic Pollutants*, 59 OCCUPATIONAL & ENV'T MED. 651, 651–52 (2002).

106. *Id.*

107. *The 12 Initial POPs Under the Stockholm Convention*, STOCKHOLM CONVENTION, <https://www.pops.int/TheConvention/ThePOPs/The12InitialPOPs/tabid/296/Default.aspx> (last visited Oct. 12, 2024).

108. Stockholm Convention on Persistent Organic Pollutants, *supra* note 101, at art. 4, 5, 6.

109. The Basel Convention, *supra* note 68, at 27.

110. Widawsky, *supra* note 67, at 610–11 (noting that in 1995 the Basel Ban Amendment, which banned the exportation of hazardous waste from developed countries to developing countries, was adopted and accepted by 86 countries and the European Union).

111. Widawsky, *supra* note 67, at 610–11.

112. *Id.* at 587.

by justifying all hazardous waste exports as recycled materials that could be safely disposed of elsewhere.¹¹³ This became one of the major factors leading to the signing and ratification of regional agreements, such as the Bamako Convention.

In the Basel Convention, nations have the right to restrict the importation of hazardous waste into their borders for any reason.¹¹⁴ The Basel Convention further obligates exporting nations to prohibit waste movements when an importing nation has not given express consent.¹¹⁵ By granting developing nations the right to reject hazardous waste shipments, the Basel Convention sought to alleviate the pressure developing nations felt to accept waste. This is especially important as most developing nations lack the infrastructure to manage that waste in an environmentally sound manner.¹¹⁶ Ideally, this empowers developing nations to have the final say in accepting hazardous waste movements, thus reducing the environmental burdens developing nations assume. However, these provisions fail if developed nations can still take advantage of lesser-powered developing nations, or individuals can act unpunished.

The Basel Convention establishes a mechanism to address illegal hazardous waste trafficking, including any non-compliant transboundary movement of hazardous waste.¹¹⁷ The Basel Convention requires each Party to take appropriate legal and administrative measures to prevent and punish any illegal activity inconsistent with its provisions.¹¹⁸ Article 9 requires each Party to introduce national legislation and to provide an annual national report detailing all movement of hazardous waste.¹¹⁹

In addition to enacting national legislation, the Basel Convention attempts to establish subsidiaries within its body to further address the illegal hazardous waste trade. The Basel Convention's Mechanism for Promoting the Implementation and Compliance of the Basel Convention (Compliance Committee) first convened in 2003.¹²⁰ The Basel Convention established the Compliance Committee as a body that was "non-confrontational," "non-

113. The Basel Convention, *supra* note 68, at 17–18; Jeffrey M. Gaba, *Exporting Waste: Regulation of the Export of Hazardous Wastes from the United States*, 36 W. & M. ENVTL. L. & POL'Y REV. 405, 417–18 (2012).

114. Gaba, *supra* note 113, at 419.

115. The Basel Convention, *supra* note 68, at 20.

116. *Id.* at 27.

117. *Id.* at 23–25. This includes complying with the notification and consent requirements of the Convention by all states concerned, with consent obtained fraudulently, in a way that does not conform to the documents accompanying such movement, or in a way that results in "deliberate disposal (e.g. dumping) of hazardous wastes or other wastes in contravention of this Convention." *Id.* at 24.

118. Widawsky, *supra* note 67, at 592.

119. *Id.*

120. Widawsky, *supra* note 67.

binding,” and “preventive in nature,” to “review collected information to monitor compliance and assist parties with achieving compliance.”¹²¹ Along with these “preventive mechanisms, the Basel Convention also adopted the Basel Protocol on Liability and Compensation for Damage Resulting from Transboundary Movements of Wastes and Their Disposal in 1999.”¹²² This protocol was intended to help parties, especially developing nations, address violations.¹²³ However, the Basel Convention fails to ensure proper participation and enforcement against illegal hazardous waste transport without a binding mechanism.

In March 1994, parties to the Basel Convention passed the Basel Convention Ban Amendment, in part to address these irregularities.¹²⁴ The Basel Convention prohibited parties listed in Annex VII (members of OECD, the E.U., and Liechtenstein) from all transboundary hazardous waste movements to non-OECD countries.¹²⁵ Despite all good intentions, the Basel Convention Ban Amendment failed to include a system of criminal liability to hold illegal hazardous waste transporters accountable.¹²⁶ Companies and individuals can work around Basel Convention provisions, and without proper deterrence, this will deteriorate developing nations’ capacity to address human and environmental health.

VII. CASE STUDIES

Inadequate solid and hazardous waste management facilities in developing countries result in indiscriminate disposal and unsanitary environments, threatening human health. The tragedies associated with ineffective transboundary waste regulation emphasize the Basel Convention’s failure to protect developing nations from environmental catastrophes. Thirty-two years after its proposal, the Basel Convention has not addressed its purpose and failures effectively. The following is a description of three case studies examining the possible mechanism, or lack

121. Widawsky, *supra* note 67, at 592.

122. *Id.*

123. *Id.*

124. *The Basel Convention Ban Amendment*, BASEL CONVENTION, <http://www.basel.int/Implementation/LegalMatters/BanAmendment/Overview/tabid/1484/Default.aspx> (last visited Dec. 31, 2024).

125. *Id.*

126. The Basel Convention, *supra* note 68. The Convention has partnered with the Environment Network for Optimizing Regulatory Compliance on Illegal Traffic (ENFORCE), a network of experts, to promote compliance with the provisions the Basel Convention related to combatting and preventing illegal traffic of hazardous waste. *Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal*, U.N., <https://www.basel.int/Implementation/LegalMatters/IllegalTraffic/Meetings/ENFORCE8Brussels2024/tabid/9702/Default.aspx> (last visited Jan. 12, 2025).

thereof, that could aid these nations in effectively managing and refusing imports of hazardous waste.

A. Nigeria

In 1988, the small fishing village of Koko, Nigeria, made international headlines when it became known that two Italian firms had arranged to store 18,000 drums of hazardous waste with Koko residents.¹²⁷ The firms disguised the containers as building materials and offloaded them into a local man's vacant backyard for \$100 per month.¹²⁸ Local students discovered leaks and correlating health effects on the community and alerted the Daily Times, a Nigerian government-run newspaper.¹²⁹ Investigators later found Italian importer Gianfranco Raffaelli, living in Nigeria.¹³⁰ The investigators determined that Raffaelli was responsible for making payments to the local farmer, and he routinely diverted ships from their legal destinations to smaller port cities, like Koko, where cargo inspections were lax.¹³¹ The Nigerian government worked with Italy to hold the Italian firm responsible and mandated removal of the waste from Koko.¹³² After the 1988 Koko waste disaster, Nigeria needed to establish agencies dedicated to preventing further environmental harm. That same year, the Nigerian president signed the Federal Environmental Protection Agency (FEPA) into law.¹³³ FEPA became the country's environmental watchdog and was later incorporated into the Ministry of the Environment.¹³⁴

Nigeria charges specific institutions with implementing, executing, and enforcing legislation and environmental law regulations.¹³⁵ However, these

127. See Stephanie Buck, *In the 1980s, Italy Paid a Nigerian Town \$100 a Month to Store Toxic Waste—And it's Happening Again*, TIMELINE (May 26, 2017), <https://medium.com/timeline/koko-nigeria-italy-toxic-waste-159a6487b5aa> (explaining that the drums contained chemicals such as PCBs and asbestos fibers).

128. See *id.* (explaining how the local farmer was unsuspecting and misled to believe the contents of the drums were harmless).

129. See *id.* (explaining that the students found the leaks); see also Claudio De Majo, *Italy's Poison Ships: How an International Trade of Hazardous Waste Sparked a Grassroots Struggle for Environmental Justice*, ARCADIA (2020) (describing the leaks and the contamination).

130. Buck, *supra* note 127.

131. *Id.*

132. *Id.*

133. See *Federal Environmental Protection Agency Act*, U.N. ENV'T PROGRAMME, <https://leap.unep.org/en/countries/ng/national-legislation/federal-environmental-protection-agency-act> (last visited Dec. 31, 2024) (documenting the enactment of the Federal Environmental Protection Agency Act in Nigeria).

134. National Environmental Standards and Regulations Enforcement Agency (Establishment) Act (2007) Cap. (25) (Nigeria) [hereinafter NESREA].

135. See NESREA, *supra* note 134 (establishing environmental regulations and standards in the country).

institutions are not adequately empowered to implement and execute policies or enforce environmental laws, especially regarding hazardous waste. In addition to creating FEPA, the Nigerian government passed the Harmful Waste Special Criminal Provisions Act of 1988, addressing illegal hazardous waste dumping.¹³⁶ Also found within the Ministry's structure, the National Environmental Standards and Regulations Enforcement Agency (NESREA) is the environmental agency responsible for managing concerns over hazardous waste.¹³⁷ Established by the Federal Government of Nigeria in 2007, NESREA ensures Nigerians have access to a clean and healthy environment.¹³⁸ During NESREA's creation, the National Assembly of Nigeria cited the need for "protection . . . of the environment, biodiversity conservation and sustainable development of Nigeria's natural resources."¹³⁹ As a regulator, NESREA develops and enforces relevant environmental regulations and standards, and implements various environmental programs.¹⁴⁰ For example, NESREA works with multiple stakeholders to address illegal electronic waste imports.¹⁴¹ NESREA is responsible for discovering ships containing electronic waste.¹⁴²

To avoid another Koko disaster, Nigeria's Ministry of the Environment must have an interest in preventing illegal hazardous waste imports. Although tasked with protecting human health and the environment, the Nigerian Ministry currently lacks legislation that effectively accomplishes this goal. Human and environmental health are threatened without laws in place and policy mechanisms that can address illegal waste imports. The Ministry of the Environment should assign NESREA to discover illegal hazardous waste and return shipments to ports of origin, as it does with electronic waste.

Legislation meant to *protect* people and the environment from the dangerous consequences of hazardous waste exposure is meaningless without effective enforcement agencies and mechanisms. Nigeria's Ministry of the Environment could expand its enforcement power by taking advantage

136. Harmful Waste (Special Criminal Provisions, etc.) Act (1988) Cap. (42) (Nigeria). *See also*, Ogbodo, *supra* note 51, at 2. (In 1990, the Harmful Waste Act ("the Act") was passed. The Act prohibits purchasing, selling, transporting, depositing, or storing harmful waste. Violators of the Act are held strictly liable, and their punishment can range from a fine, restoration of the polluted environment, or life imprisonment).

137. Ogbodo, *supra* note 51, at 12–13; NESREA, *supra* note 134, § 1(7)(c).

138. NESREA, *supra* note 134 (The agency is a function of the federal Ministry of Environment and is headed by the Director General, who also serves as the chief executive officer).

139. NESREA, *supra* note 134, § 1(2).

140. *NESREA as a Regulator*, NAT'L ENV'T STANDARDS & REGULS. ENV'T AGENCY, <https://www.nesrea.gov.ng/our-activities/nesrea-as-a-regulator/> (last visited Oct. 21, 2024).

141. *Id.*

142. *Id.*

of NESREA employees to discover and address illegal hazardous waste imports. This would be a major development in how Nigeria manages illegal action in both large-scale corporations and individual actors.

The Nigerian Criminal Code includes provisions dedicated to certain environmental issues. These provisions include actions against those who pollute waterways and manufacture goods with white phosphorous.¹⁴³ As globalization increases the hazardous waste transport problem, the Nigerian Criminal Code may be the most appropriate mechanism to hold individuals who illegally accept hazardous waste responsible.

The Koko incident was a rude awakening for the Nigerian government and neighboring African countries. However, further action is necessary to safeguard against illegal hazardous waste disposal and possible exposure. The Nigerian government must make considerable efforts to address hazardous waste threats to both human and environmental health.

B. Côte D'Ivoire (Ivory Coast)

In 2006, a cargo ship called *Probo Koala* dumped 500 tons of toxic waste in Abidjan, Côte d'Ivoire.¹⁴⁴ Trafigura, an Anglo-Dutch commodity trading company, dumped the hazardous waste at 18 sites around the city, along with many other unknown locations.¹⁴⁵ This was the result of Trafigura's decision not to dispose of the toxic waste in the Netherlands because the cost of proper disposal there totaled \$620,000, compared to the \$17,000 it cost in Côte d'Ivoire.¹⁴⁶ Trafigura never admitted any wrongdoing, despite paying the Ivorian government close to \$198 million.¹⁴⁷

Côte d'Ivoire petitioned the United Nations Environment Programme (UNEP) following the incident in Abidjan.¹⁴⁸ The UNEP subsequently established the Special Trust Fund for Côte d'Ivoire and petitioned parties to donate and contribute financial support to implement an emergency plan to address the waste disposal disaster.¹⁴⁹ The UNEP Post Conflict and Disaster

143. Ogbodo, *supra*, note 51, at 1.

144. Press Release, United Nations Human Rights Office of the High Commissioner, Ten Years On, the Survivors of Illegal Toxic Waste Dumping in Côte d'Ivoire Remain in the Dark (Aug. 17, 2016) (on file with author) [hereinafter Press Release].

145. *Id.*

146. *Id.*

147. *Trafigura Finalizes Ivory Coast Toxic Waste Payout*, REUTERS (Sept. 23, 2009, 12:52 PM), <https://www.reuters.com/article/business/environment/trafigura-finalizes-ivory-coast-toxic-waste-payout-idUSTRE58M2VO/>.

148. *Côte d'Ivoire: Post-Conflict Environmental Assessment*, U.N. ENV'T PROGRAMME (Nov. 29, 2015), <https://www.unep.org/resources/assessment/cote-divoire-post-conflict-environmental-assessment-0>.

149. Vincent Jugault, *Implementation of Decision VIII/I on Côte d'Ivoire*, U.N. ENV'T PROGRAMME, <http://www.basel.int/Portals/4/Basel%20Convention/docs/pub/leaflets/270508.pdf>.

Management Branch subsequently coordinated with the Côte d'Ivoire Ministry of Environment (the Ministry) to develop Abidjan's hazardous waste management plan.¹⁵⁰ In 1981, Côte d'Ivoire established its Ministry of Environment and Sustainable Development, responsible for "implementing and monitoring the government's policy on environmental protection, urban sanitation, and sustainable development."¹⁵¹ There is no information available regarding the Ministry's legislative, regulatory, or enforcement capabilities; logistically however, the Ministry is the most appropriate institution to handle such matters. Like Nigeria's NESREA, the Côte d'Ivoire Ministry must manage hazardous waste and enforce against both international and domestic bad actors.

C. Haiti

In the late 1980s, the *Khian Sea* dumped 4,000 tons of toxic incinerator ash from Philadelphia onto a beach in Gonaive, Haiti.¹⁵² After ten years of protest and advocacy, Haiti, the U.S. State Department, the City of Philadelphia, and the New York City Trade Waste Commission removed the ash and sent it back to the United States.¹⁵³ Despite the victory, Philadelphia only contributed \$50,000 to the cleanup, leaving the Haitian government to cover the rest.¹⁵⁴ The costs of the resulting health detriments cannot be accounted for, especially considering the deaths of some of the workers contracted to transport the waste in Haiti.¹⁵⁵ Like Nigeria and Côte d'Ivoire, Haiti proactively amended its constitution to include a provision banning all waste imports following the *Khian Sea* disaster.¹⁵⁶

150. Jugault, *supra* note 149.

151. *Côte d'Ivoire – Ministry of the Environment and Sustainable Development*, U.N. ENV'T PROGRAMME GLOB. ALL. FOR BLDG. & CONSTR., <https://globalabc.org/members/our-members/ministry-environment-and-sustainable-development-cote-divoire-ministre-de>, (last visited Oct. 18, 2024).

152. Aaron Freeman, *Trashing Haiti*, MULTINATIONAL MONITOR (June 1995), https://multinationalmonitor.org/hyper/issues/1995/03/mm0395_06.html.

153. *Id.*; see Bruce E. Beans, *The Waste that Didn't Make Haste*, WASH. POST (July 16, 2002), <https://www.washingtonpost.com/archive/politics/2002/07/17/the-waste-that-didnt-make-haste/2bb768b5-9e65-49a3-b2b2-45448251745f/> (describing how the waste transported from Haiti to Philadelphia).

154. *Id.*

155. Danielle Knight, *ENVIRONMENT-HAITI: U.S. Toxic Waste to Be Returned to Sender*, INTER PRESS SERV. NEWS AGENCY, <http://www.ipsnews.net/1998/11/environment-haiti-us-toxic-waste-to-be-returned-to-sender/> (last visited Oct. 21, 2024).

156. *Haiti 1987* (rev. 2012), CONSTITUTE, https://www.constituteproject.org/constitution/Haiti_20121987 (last visited Jan. 12, 2025).

In 1994, the Haitian government established the Ministry of the Environment.¹⁵⁷ The Haitian Ministry is responsible for “formulating and enforcing” the Government’s policy on environmental management, promoting sustainable development, and promoting environmental conservation.¹⁵⁸ Haitian officials are currently prioritizing other climate-related harms and natural disaster impacts over addressing illegal hazardous waste imports.¹⁵⁹ Regardless, Haiti must establish a regulatory body responsible for implementing, executing, and enforcing environmental law and regulations. The Haitian government and relevant stakeholders must prioritize these issues and others affecting the Haitian people and the environment.

VIII. REGULATIONS OF HAZARDOUS WASTE IN THE UNITED STATES

The international hazardous waste trade is controversial, even in the United States. Although the U.S. separates itself from the international conversation on hazardous waste transport, the federal government regulates the export of hazardous waste through the EPA.¹⁶⁰ The EPA has issued complex regulations establishing domestic provisions on hazardous waste exports under the Resource Conservation and Recovery Act (RCRA).¹⁶¹ RCRA prohibits hazardous waste exports unless exporters comply with either a set of congressionally-defined notice and consent requirements or any international agreements that exist between the U.S. and the receiving country.¹⁶² The U.S. is a party to three such international agreements:

157. *Ministry of the Environment (Haiti)*, DEV. AID, <https://www.developmentaid.org/donors/view/156975/ministry-of-the-environment-haiti-ministere-de-lenvironnement-haiti> (last visited Oct. 21, 2024).

158. *Id.*

159. *UN Summit Puts Global Spotlight on Land Degradation*, U.N. ENV’T PROGRAMME, <https://www.unep.org/news-and-stories/story/un-summit-puts-global-spotlight-land-degradation> (last visited Jan. 12, 2025); *See also Global response to drought takes center stage at U.N. land conference in Riyadh*, U.N. SUSTAINABLE DEV. GOALS (Dec. 3, 2024), <https://www.un.org/sustainabledevelopment/blog/2024/12/cop16-un-land-conference-opening-pr/#>.

160. *Summary of the Resource Conservation and Recovery Act*, EPA, <https://www.epa.gov/laws-regulations/summary-resource-conservation-and-recovery-act> (last visited Jan. 2, 2025).

161. RCRA is the U.S.’s primary law governing the disposal of solid and hazardous waste. RCRA was signed into law on October 21, 1976, to address the increasing problems the nation faced with respect to municipal and industrial waste. RCRA was an amendment to the Solid Waste Disposal Act of 1965, which was the first statute that specifically focused on improving solid waste disposal methods. Resource Conservation & Recovery Act of 2011, 42 U.S.C. §§ 6901–6992.

162. 42 U.S.C. § 6938(a).

bilateral agreements with both Canada and Mexico, and the OECD Decision governing the transboundary movement of hazardous wastes.¹⁶³

RCRA does not regulate what may be commonly considered hazardous waste.¹⁶⁴ Rather, Subtitle C of RCRA imposes regulatory requirements only on those materials that meet both EPA's regulatory definitions of "solid waste" and "hazardous waste."¹⁶⁵ Under RCRA, EPA defines solid waste as materials sent to a landfill.¹⁶⁶ Subtitle C also requires solid waste to be "hazardous" to warrant regulation.¹⁶⁷ Solid waste may be classified as hazardous if listed by the EPA, or if it exhibits hazardous characteristics.¹⁶⁸

Subtitle C imposes specific requirements on hazardous waste management. First, any producer of hazardous waste must determine if their material is regulated.¹⁶⁹ Second, a hazardous waste manifest document must accompany any hazardous waste transportation.¹⁷⁰ Third, there are some limited requirements on hazardous waste transporters.¹⁷¹ Fourth, most cases require that hazardous wastes must be disposed of or treated at facilities that have a federal hazardous waste permit.¹⁷²

The EPA reports that the U.S. has bilateral agreements to export hazardous waste to only two countries: Canada and Mexico.¹⁷³ The Canada-U.S. and Mexico-U.S. agreements establish a notice and consent system for transboundary shipments of hazardous waste for "treatment, storage or disposal," similar to the Basel Convention.¹⁷⁴ Notification must be provided to the designated government authority at least 30 days prior to shipment.¹⁷⁵ The Mexico-U.S. agreement specifically defines hazardous waste transport

163. *International Agreements on Transboundary Shipments of Hazardous Waste*, U.S. EPA, <https://www.epa.gov/hwgenerators/international-agreements-transboundary-shipments-hazardous-waste#bilateral> (Sep. 26, 2024) [hereinafter *International Agreements*].

164. 42 U.S.C. §§ 6901–6992.

165. *Id.* § 6921; See generally Jeffrey Paul Luster, *The Domestic and International Legal Implications of Exporting Hazardous Waste: Exporting Naval Vessels for Scrapping*, 7 ENV'T L. 75 (2000).

166. 42 U.S.C. § 6924.

167. *Id.* § 6903(5).

168. Luster, *supra* note 165, at 111.

169. Gaba, *supra* note 113, at 412.

170. *Id.*

171. *Id.*

172. *Id.*

173. *International Agreements*, *supra* note 163.

174. The Canada Agreement is the Agreement between the Government of Canada and the Government of the United States Concerning the Transboundary Movement of Hazardous Waste. The Mexico Agreement is the Agreement of Cooperation between the United States of America and the United Mexican States Regarding the Transboundary Shipments of Hazardous Wastes and Hazardous Substance. *International Agreements*, *supra* note 163.

175. *International Agreements*, *supra* note 163.

to include recycling, reuse, and other utilization in addition to disposal, treatment, and storage.¹⁷⁶

The Basel Convention prohibits the U.S. from shipping hazardous waste to any countries that are party to the Basel Convention because the U.S. is not party to the agreement.¹⁷⁷ The other parties may not consent to hazardous waste shipments from the U.S. unless pursuant to an international agreement that satisfies the requirements of Article 11 of the Basel Convention.¹⁷⁸ The EPA established that the OECD Decision and the Canada and Mexico Agreements satisfy these requirements.¹⁷⁹

Importantly, although the U.S. has not ratified the Basel Convention, the Senate did consent to ratification in 1992.¹⁸⁰ The only necessary step to complete ratification is for the Executive Branch to submit the appropriate documentation.¹⁸¹ Many believe the U.S. has not adopted the Basel Convention because of the perceived statutory changes to RCRA.¹⁸² Some argue that not ratifying the Basel Convention may better serve U.S. control of the international trade in hazardous waste.¹⁸³ Regardless of the U.S.'s ratification of the Basel Convention, the EPA must be transparent with all hazardous waste exports.

IX. RE-EVALUATING INTERNATIONAL WASTE TRANSPORT

Western countries and their respective companies have a history of paying other nations to allow toxic waste disposal.¹⁸⁴ Due to economic challenges, some African countries have been financially induced to accept shipments of waste from the industrialized countries. Often, the payments are several times the country's annual gross domestic product (GDP), the

176. *International Agreements*, *supra* note 163.

177. *Id.*

178. The Basel Convention, *supra* note 68, at 27.

179. *International Agreements*, *supra* note 163.

180. See *Basel Convention on Hazardous Waste*, U.S. DEP'T OF STATE, <https://www.state.gov/key-topics-office-of-environmental-quality-and-transboundary-issues/basel-convention-on-hazardous-wastes/> (last visited Jan. 12, 2025) (explaining that the U.S. signed the Basel Convention in 1990. The U.S. Senate advised and consented to ratification in 1992, but Congress did not provide the necessary statutory authority needed to implement the convention).

181. See *Becoming a Party*, BASEL CONVENTION, <https://www.basel.int/procedures/becomingaparty/tabid/1280/default.aspx#> (last visited Jan. 12, 2025) (explaining the requirements to become a party to the Basel Convention).

182. Mary Tiemann, CONG. RSCH. SERV., 98-638 ENR, *Waste Trade and the Basel Convention: Background and Update* (1998).

183. *Id.*

184. See Ruth Michaelson, 'Waste Colonialism': World Grapples with West's Unwanted Plastic, *Guardian* (Dec. 31, 2021 7:58 AM), <https://www.theguardian.com/environment/2021/dec/31/waste-colonialism-countries-grapple-with-wests-unwanted-plastic#> (explaining how plastic waste from western nations gets disposed of in other countries).

monetary or market value of all final goods and services produced in the country.¹⁸⁵

Geological factors limit many European countries' capacity to build hazardous waste processing/recycling facilities, leading them to export hazardous waste to developing countries.¹⁸⁶ For example, the Netherlands bans landfills.¹⁸⁷ This is no excuse to profit off developing countries and their environmental vulnerabilities. The global community must be able to operate equitably to achieve environmental justice. Parties to the Basel Convention should change the ineffective provisions to protect developing nations from bearing the brunt of environmental harms, especially concerning hazardous waste transport.

The U.N. can provide the support necessary to ensure countries equitably manage their hazardous waste. As a regulatory body, the U.N. protects human rights, delivers humanitarian aid, supports sustainable development and climate action, maintains international peace and security, and upholds international law.¹⁸⁸ The U.N. is the appropriate avenue to address international hazardous waste transport because the U.N.'s work touches every corner of the world and focuses on a broad range of fundamental issues.¹⁸⁹ The U.N. has the capacity to build bridges and offer meaningful financial support to developing countries so that they and their citizens do not resort to illegal means to support themselves. The U.N. can issue reports and recommendations regarding international environmental relationships between industrialized and developing countries. The U.N. can establish an international environmental tribunal to enforce international environmental law. This would allow small countries to hold large corporations accountable and criminally liable for their violations. Ultimately, having a clean and healthy environment is a human right, and it is imperative that everyone is afforded that right.¹⁹⁰

185. Harry Anderson et al., *The Global Poison Trade*, NEWSWEEK 66 (Nov. 7, 1988) (explaining how a top government official in Guinea-Bissau justified his country's acceptance of importing toxic wastes by stating "we need the money.").

186. See generally Chunbo Zhang et al., *An Overview of the Waste Hierarchy Framework for Analyzing the Circularity in Construction and Demolition Waste Management in Europe*, 803 SCI. TOTAL ENV'T 1 (2022) (discussing waste generation in Europe).

187. *Rules for Dumping Sites*, NETH. ENTER. AGENCY (Aug. 2, 2022), <https://business.gov.nl/regulation/dumping-sites/>.

188. *Our Work*, U.N., <https://www.un.org/en/our-work> (last visited Oct. 18, 2024) (explaining how the United Nations builds a more sustainable world).

189. *The U.N. in General*, U.N. INFO. SERV. VIENNA, <https://unis.unvienna.org/unis/en/topics/the-un-in-general.html> (last visited Jan. 13, 2025).

190. *Access to a Healthy Environment, Declared a Human Right by U.N. Rights Council*, U.N. NEWS (Oct. 8, 2021), <https://news.un.org/en/story/2021/10/1102582>.

CONCLUSION

Inadequate solid and hazardous waste management facilities in developing countries result in indiscriminate disposal and unsanitary environments, threatening human health and the environment. The challenges that Nigeria, Côte d'Ivoire, and Haiti face when managing hazardous waste imports into their boundaries represent similar challenges other developing countries face. This article's proposed solutions aim to tackle the internal pressures and difficulties developing countries face. Hopefully, these countries can realize those solutions with guided international support.

**COME HOME OR HIGH WATER: HOW NATIONAL FLOOD
INSURANCE REQUIREMENTS ARE CREATING REDLINING
2.0**

*Savannah Collins**

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ABSTRACT

For those living in vulnerable areas—over 40% of the United States population—the need for reinforcing homes against sea-level rise and flooding disasters is growing. Damages are costly and often unattainable for people recovering from a prior storm. With insurance companies pulling out of disaster-prone areas at an alarming rate, residents are losing ways to protect themselves against the financial impact a single storm can have. The federal government has recognized the increasing need for climate resilient homes and has provided funding to meet this need. However, this funding is tied directly to having flood insurance—often prohibitively expensive or impossible to obtain.

Additionally, with this burdensome requirement, the federal government is imposing barriers to climate adaptations that further compound the effects of redlining. Consistent disenfranchisement and unsafe building practices in flood plains have left residents of color at an increasing disadvantage in the face of climate change. Relocation, while one solution to climate change, is not yet feasible or even desirable for some communities. Therefore, the federal government must address habitability in current homes. This Note concludes that habitability and resilience to flooding must be accessible to everyone, and takings claims are a tool to make climate resiliency grants more accessible.

PRECIS

Twenty-eight natural disasters plagued the United States in 2023, each inflicting damages of over \$1 billion and killing 492 people in total.¹ In 2022, “16% of [] displaced adults never returned home” and 12% were “out of their home for more than six months.”² In the next 30 years, the amount of sea-level rise will be equivalent to the rise from the entire previous century.³ This rapid rise in sea level will affect an estimated 4.2 million people by 2100.⁴ For those living in vulnerable areas—almost 40% of the United States

1. Nat'l Ctrs. for Env't Info., *U.S. Billion-Dollar Weather and Climate Disasters*, NOAA, <https://www.ncei.noaa.gov/access/billions/> (last visited Dec. 14, 2024).

2. Thomas Frank & E&E News, *Disasters Displaced More Than 3 Million Americans in 2022*, SCI. AM. (Feb. 6, 2023), <https://www.scientificamerican.com/article/disasters-displaced-more-than-3-million-americans-in-2022/>.

3. *U.S. Coastline to See Up to a Foot of Sea Level Rise by 2050*, NOAA (Feb. 15, 2022), <https://www.noaa.gov/news-release/us-coastline-to-see-up-to-foot-of-sea-level-rise-by-2050>.

4. *Examining Sea Level Rise Expose for Future Populations*, NOAA OFF. OF COASTAL MGMT., <https://coast.noaa.gov/digitalcoast/stories/population-risk.html> (last visited Jan. 7, 2025).

population—the need for reinforcing homes against sea-level rise and flooding disasters is growing.⁵ Individuals recovering from previous storms often cannot afford the costs associated with recovery. With insurance companies pulling out of disaster-prone areas at an alarming rate, residents are losing ways to protect themselves against the financial impact a single storm can have. The new reality of yearly flooding disasters compounds the financial impacts.⁶

In response to the increasing risk of sea level rise and disasters, the federal government has made climate-resilient housing a top priority.⁷ The Department of Housing and Urban Development (HUD) has received \$1 billion to invest affordable, energy-efficient, and climate-resilient housing.⁸ This federal initiative builds on the disaster-relief funding following Hurricane Sandy in 2012. This funding enabled HUD to award money to cities to do infrastructure work on the ground in highly vulnerable areas.⁹

Generally, federally-funded disaster recovery programs enable community organizations to provide aid. The federal government launched the National Disaster Resilience Competition in 2014 to help cities and states with disaster recovery. Recipients received training, tools, and funding to help recover from natural disasters and mitigate issues moving forward.¹⁰ Of the thirteen recipients of this grant money, this Note will focus on the City of New Orleans. Specifically, this Note examines the programs the New Orleans Redevelopment Authority (NORA) has used to build a more climate-resilient city. NORA is a unique organization because it uses federal and state funding, and coordinates with the communities it serves to provide funding to help the community.¹¹ Analyzing a community organization that receives federal funding for disaster recovery and resiliency shows how community organizations use funding on the ground.

5. *Economics and Demographics*, NOAA OFF. FOR COASTAL MGMT. DIGITAL COAST, <https://coast.noaa.gov/states/fast-facts/economics-and-demographics.html#> (last updated Oct. 4, 2024); Alexis Rankin, *Climate Can Affect Housing Costs, Communities*, CTR. FOR CLIMATE AND ENERGY SOLS. (Apr. 1, 2021), <https://www.c2es.org/2021/04/climate-can-affect-housing-costs-communities/>.

6. Aimee Picchi, *Homes in Parts of the U.S. Are “Essentially Uninsurable” Due to Rising Climate Change Risks*, CBS NEWS (Sep. 20, 2023), <https://www.cbsnews.com/news/insurance-policy-california-florida-uninsurable-climate-change-first-street/>.

7. *Fact Sheet: Biden-Harris Administration Hosts First-Ever White House Climate Resilience Summit and Releases National Climate Resilience Framework*, WHITE HOUSE (Sep. 28, 2023), <https://www.whitehouse.gov/briefing-room/statements-releases/2023/09/28/fact-sheet-biden-harris-administration-hosts-first-ever-white-house-climate-resilience-summit-and-releases-national-climate-resilience-framework/>.

8. THE WHITE HOUSE, BUILDING A CLEAN ENERGY ECONOMY: A GUIDEBOOK TO THE INFLATION REDUCTION ACT’S INVESTMENTS IN CLEAN ENERGY AND CLIMATE ACTION 113 (2d version, 2023).

9. *National Disaster Resilience*, U.S. DEP’T OF HOUS. AND URB. DEV. (last updated Feb. 23, 2024), https://www.hud.gov/program_offices/comm_planning/cdbg-dr/ndr.

10. *Id.*

11. NEW ORLEANS REDEVELOPMENT AUTH., <https://noraworks.org/> (last visited Nov. 17, 2024).

This Note will discuss how overly burdensome flood insurance requirements impose barriers to climate adaptations and propose a takings action to make climate resiliency grants more accessible.¹² Relocation is one solution to climate change, but it is not yet feasible or even desirable for some communities, so habitability in current homes must be addressed in the meantime. Part I lays out the current state of redlining and housing in floodplains; the National Flood Insurance Program and its restrictions; and the available pathways to make climate resilience more accessible. Part II analyzes the requirements of a takings claim, connects takings claims to the work of NORA, then discusses why a takings claim would be more successful than an equal protection claim. Part III highlights how states would benefit from dropping flood insurance requirements; notes federal options to avoid takings claims in the future; and illustrates one example of a city-level response to flooding. This Note concludes that habitability and resilience to flooding must be accessible to everyone, and takings claims are a tool to get there.

I. REDLINING, FLOODING, & AVAILABLE FEDERAL TOOLS

Understanding the impact of climate change-exacerbated flooding on coastal communities requires discussion of the redlining practices that led the United States to this point. Redlining forced Black and brown people to live in undesirable and even unsafe parts of town, including in floodplains. On top of this practice, floodplain development created cheap—but dangerous—housing options residents could not afford to leave. The federal government created the National Flood Insurance Program to address risk in flood-prone areas, with varying degrees of success in the age of climate change. Additional legislation enabled agencies to run programs that minimize damage to these homes. However, these programs are fallible and inequitable, and this Note highlights one option to remedy problems applicants might face.

12. Other law review articles have recognized the importance of climate displacement, redlining effects without suggested solutions, criticized the notion this is an issue of public choice when considering the buy-in of politicians into climate resilience. Kelly Carson, *The Water is Coming: How Policies for Internally Displaced Persons Can Shape the U.S. Response to Sea Level Rise and the Redistribution of the American Population*, 72 HASTINGS L. J. 1279, 1281 (2021); Shelby D. Green, *The Intentional Community: Toward Inclusion and Climate-Cognizance*, 62 WASHBURN L. J. 243, 257 (2023); Donald T. Hornstein, *Public Investment in Climate Resiliency: Lessons from the Law and Economics of Natural Disasters*, 49 ECOLOGY L. Q. 137, 182–89 (2022).

A. Redlining and Its Implications Today

Resilient housing in the face of climate change cannot be achieved without first addressing the discriminatory history of redlining in the United States. Redlining is the practice of historic housing discrimination that leads to segregated—and often disadvantaged—communities.¹³ Redlining persists to this day and continues to leave communities of color out to dry.¹⁴ Beginning in 1921, then Secretary of Commerce Herbert Hoover created the Advisory Committee on Zoning.¹⁵ The Committee—“composed of outspoken segregationists”—wrote a manual on zoning encouraging racially homogenous neighborhoods.¹⁶ Various members of this committee served in other official capacities that directly influenced real estate practices.¹⁷ In the late 1930s, real estate and public actors created color-coded maps indicating “riskiness” of an area for housing development and mortgages.¹⁸ An area’s “riskiness” was directly proportional to the number of people of color in that location.¹⁹ The higher the population, the higher the assigned “risk.”²⁰ Increased “risk” led to decreases in investment, both through mortgages and public funding.²¹ Redlining’s origin as a federally promoted practice has had long-lasting judicial effects.

The Court has accepted the habitual use of racially neutral language with segregationist motives that became the norm in the 1930s. Advisory Committee on Zoning members promoted zoning laws throughout the nation which did not explicitly mention race.²² Racially discriminatory zoning laws persisted through the end of the twentieth century.²³ In *Village of Arlington Heights*, despite legislative history to the contrary, the Court held that an ordinance denying multi-family housing units was not discriminatory.²⁴ A nonprofit real estate developer proposed to make more housing available for

13. RICHARD ROTHSTEIN, *THE COLOR OF LAW* 39–57, (Liveright Publ’g Co. 2017).

14. *Id.*

15. *Id.* at 51.

16. *Id.*

17. *Id.* at 52. (referencing members of the committee who served in leadership positions on the National Association of Real Estate Boards, like Irving B. Hiatt, who helped publish a realtor code of ethics that stated a realtor should “never be instrumental” in introducing a person of a different race into a neighborhood where they are not already present).

18. *The Ghosts of Housing Discrimination Reach Beyond Redlining*, THE URB. INST. (Mar. 15, 2023), <https://www.urban.org/features/ghosts-housing-discrimination-reach-beyond-redlining>.

19. *Id.*

20. *Id.*

21. *Id.*

22. ROTHSTEIN, *supra* note 13, at 52.

23. *Id.*

24. *Vill. of Arlington Heights v. Metro. Hous. Dev. Corp.*, 429 U.S. 252, 270–71 (1977). The Court found that disapproving housing would increase the number of Black residents and further integrate the apartment complex because it would produce a “measurable drop in property value.” *Id.* at 257–58.

Black residents.²⁵ After a public debate, the city commission denied the proposal based on a general objection to rezoning the area from single family to multi-family units.²⁶ The Court refused to find discriminatory impact “absent a pattern as stark as” *Yick Wo v. Hopkins*, and held there was no discriminatory purpose.²⁷ The practice of redlining is legally rooted, exists to this day, and has major implications for current community capacity.²⁸

Redlining disempowered communities of color and left homeowners unable to access external funding to make their homes more resilient and therefore more valuable. Redlined properties were subsequently undervalued, which directly affected the ability to grow generational wealth.²⁹ Inability to grow generational wealth hinders the homeowners’ ability to invest in climate-resilient housing modifications, leaving them vulnerable to increasing flooding and sea-level rise. Just one inch of flood water can cost over \$25,000 in damage so lack of access to ways to protect a home can be devastating.³⁰ Furthermore, in communities like the Lower Ninth Ward where the majority of homeowners are Black, the damage stemmed from the effects of redlining and not from a lack of financial stability.³¹ In the context of climate change and climate resiliency, this means homeowners are less likely to financially recover after natural disasters, let alone prepare for future impacts. Racist housing practices and overzealous floodplain development have left many people deeply vulnerable to the intensifying effects of climate change.

B. Floodplains and Housing Problems

Increased floodplain development has laid the foundation for growing climate change issues in housing. Floodplains are “level land that may be submerged by floodwaters” and are typically located near a body of water.³²

25. *Vill. of Arlington Heights*, 429 U.S. at 258.

26. *Id.* at 257–58.

27. *Id.* at 266 (citing *Yick Wo v. Hopkins*, 118 U.S. 356, 373-374 (1886)) (referencing a landmark case where San Francisco required permits for wooden laundries—almost completely ran by Chinese laundries—and then denied permits to Chinese laundry owners, using an “evil eye and unequal hand.”); *id.* at 270-271.

28. ROTHSTEIN, *supra* note 13.

29. PBS Newshour, *See a Look at the Nation’s First Cash Reparations Program*, PBS (June 22, 2023), <https://www.pbs.org/video/reparations-1687466985/> (recognizing a cash reparations program that most recipients use to pay home costs or for home repairs to help build generational wealth through financial security).

30. *13 Fast Flood Facts to Share with Your Clients*, FEMA (Oct. 2022), <https://agents.floodsmart.gov/articles/13-fast-flood-facts>.

31. Rebekah Green et al., *Impediments to Recovery in New Orleans’ Upper and Lower Ninth Ward: One Year After Hurricane Katrina*, 31 *DISASTERS* 311, 316 (2007); Telephone Interview with Colette Pichon Battle, Vision & Initiatives Partner, Taproot Earth (Feb. 24, 2024).

32. *Floodplain*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/floodplain> (last visited Nov. 17, 2024).

Undeveloped property in a floodplain is cheaper for developers to purchase than highly desirable waterfront or water-adjacent property.³³ Although counterintuitive, these developments are typically permitted as long as any building is constructed above the high-water level. Developers have responded by adding fill dirt to floodplains, creating an unstable base, and destroying the natural flood mitigation in the process.³⁴ Building artificially higher homes then sends water runoff into lower-lying communities, often made up of people of color and low-income individuals.³⁵ Even if redlined communities are not living directly in the floodplain, the effects of further development can still lead to damage.

A significant portion of the population lives in low-lying floodplains with serious consequences due to a century of unquenchable thirst to build, regardless of safety. Between 2000 and 2016, there was more population growth in floodplains than outside of them.³⁶ What were 1-in-100-year floods will now occur every 50 years or less.³⁷ People cannot afford to move out of this housing to a higher elevation, and by extension, to safety. Additionally, a “significant decline” in home building has greatly restricted the available stock to move into.³⁸ Consequently, the housing shortage combined with an increased demand outside of the need for housing to escape flood-prone areas has caused home prices to skyrocket.³⁹ Unable to move out of these areas, people have no choice but to stay and buy flood insurance to access recovery funds.

C. Federal Government Responses to Flooding

The United States has a long history of enacting laws aimed at minimizing future risk of flooding.⁴⁰ The first legislatures in both Louisiana and Mississippi created “specialized units of local government” to address flood control among counties and parishes.⁴¹ The U.S. has responded to the

33. Laurie Mazur, *Fill, Build and Flood: Dangerous Development in Flood-Prone Areas*, U.S. NEWS & WORLD REP. (Oct. 8, 2019, 12:44 PM), <https://www.usnews.com/news/healthiest-communities/articles/2019-10-08/commentary-the-danger-of-development-in-flood-prone-areas>.

34. *Id.*

35. *Id.*

36. *Id.*

37. *The 8th National Risk Assessment: The Precipitation Problem*, FIRST ST. FOUND. (June 26, 2023), <https://report.firststreet.org/8th-National-Risk-Assessment-The-Precipitation-Problem.pdf>.

38. Ryan Boykin, *The Great Recession's Impact on the Housing Market*, INVESTOPEDIA (Aug. 31, 2023), <https://www.investopedia.com/investing/great-recessions-impact-housing-market/>.

39. *Id.*

40. See Christine A. Klein & Sandra B. Zellmer, *Mississippi River Stories: Lessons from a Century of Unnatural Disasters*, 60 SMU L. REV. 1471, 1473–83 (2007) (discussing the impact of natural disasters on flood legislation).

41. *Id.* at 1479.

need for flood control in mixed ways.⁴² Indifferent and incompetent actions led to major damage and an intentional leadership change. A hands-off approach left individuals footing the bill for these “acts of God” which, combined with unsuccessful federal flood control attempts, led to many great floods in the 1920s.⁴³ The federal government began playing a larger role in citizens’ lives during this era because it could provide the structure and support to fix persistent issues like flooding. The federal government must recognize the increased risk of flooding from climate change and adjust its programs to meet this reality.

The government created the National Flood Insurance Program (NFIP) in response to the increased flooding from building in floodplains. The NFIP underwrites flood insurance coverage only in communities that adopt and enforce floodplain regulations that meet or exceed NFIP criteria.⁴⁴ This stringent requirement replaces older buildings so they will experience little or no flood damage.⁴⁵ If a community does not fulfill its NFIP obligations and construction occurs in violation of the NFIP regulations, one or more things will happen:⁴⁶ the new buildings will be subject to flood damage, the insurance on these buildings may increase without NFIP subsidy, or the Federal Emergency Management Agency (FEMA) will sanction the community to incentivize compliance.⁴⁷ Sanctions include: reclassification under the Community Rating System, probation, or suspension from the program. If suspended from the program, buildings become ineligible for funding from federal grants or loans administered by federal agencies in flood hazard areas.⁴⁸ Organizations and municipalities receiving funding are thus incentivized to follow these requirements.

While intended to help, this program now harms individuals who are too financially burdened to move. The NFIP was updated in 2023 to better reflect current needs, known as Risk Rating 2.0. NFIP Risk Rating 2.0 is supposed to provide more equitable flood insurance pricing based on individual risk, eliminating the need for individuals to pay for vacation homes in the area. Risk Rating 2.0, aimed at stopping development in floodplains and moving people out who are at greater risk of damage, has caused rates to increase in

42. See Klein & Zellmer, *supra* note 40, at 1473-1483 (discussing federal U.S. responses to flooding around the Mississippi River and the nation).

43. *Id.* at 1483.

44. NAT’L FLOOD INSURANCE PROGRAM (NFIP): FLOODPLAIN MGMT. REQUIREMENTS, FEMA 2-8 (2005).

45. *Id.*

46. *Id.*

47. *Id.*

48. *Id.*

some places by as much as 700%.⁴⁹ Importantly, the formula for calculating rates is not available anywhere. Last year, ten states joined together to sue the Department of Homeland Security for lack of transparency.⁵⁰ This suit is currently pending and has largely stalled.⁵¹ Furthermore, congressional action has also stalled, with only Gulf Coast representatives and senators supporting subsidies for rising premiums.⁵² Despite inaction on this front, there has been some momentum with legislative action regarding climate change.

D. The Inflation Reduction Act and Its Applications

In addition to the NFIP, major climate change legislation changes the potential scope of response from the federal government—and the potential for takings. The federal government generally responds slowly to climate change needs, but now agencies have tools to respond. Passed in 2022, the Inflation Reduction Act (IRA) is the largest piece of climate change and environmental legislation in United States history.⁵³ The IRA provides new funding and reallocates previous funding to agencies to respond to the effects of climate change.⁵⁴ Under the IRA’s framework, agencies disperse money at their own discretion.⁵⁵ Agencies must use part of their funds to aid environmental justice communities with climate change and environmental problems, in compliance with the Executive Order turned law: Justice40.⁵⁶

49. Thomas Frank, *The Fight Against Rising Flood Insurance Rates Stalled in 2023*, CLIMATEWIRE (Dec. 19, 2023, 6:14 AM), <https://subscriber.politicopro.com/article/eenews/2023/12/19/the-fight-against-rising-flood-insurance-rates-stalled-in-2023-00132346>.

50. *Louisiana v. Mayorkas*, No. 2:23-cv-01839 (E.D. La., June 1, 2023).

51. See Clark Mindock, *Louisiana Asks Court to Temporarily Block Biden Flood Insurance Rate Hike*, REUTERS (June 15, 2023), <https://www.reuters.com/legal/government/louisiana-asks-court-temporarily-block-biden-flood-insurance-rate-hike-2023-06-15/> (detailing the lack of movement in the case since the initial filing).

52. *Id.*

53. *Inflation Reduction Act Guidebook*, WHITE HOUSE, <https://www.whitehouse.gov/cleanenergy/inflation-reduction-act-guidebook/> (last visited Nov. 17, 2024).

54. *Id.*

55. *Id.*

56. *Id.*; Exec. Order No. 14,008, 86 Fed. Reg. 7,619 (Jan. 27, 2021). Environmental justice is the “just treatment and meaningful involvement of all people, regardless of income, race, color, national origin, Tribal affiliation, or disability, in agency decision-making and other Federal activities that affect human health and the environment so that people: are fully protected from disproportionate and adverse human health and environmental effects (including risks) and hazards, including those related to climate change, the cumulative impacts of environmental and other burdens, and the legacy of racism or other structural or systemic barriers; and have equitable access to a healthy, sustainable, and resilient environment in which to live, play, work, learn, grow, worship, and engage in cultural and subsistence practices.” *Environmental Justice*, EPA, <https://www.epa.gov/environmentaljustice> (last visited May 15, 2024).

Justice40 is a first-of-its-kind tool to address environmental justice issues at the agency level.⁵⁷ This initiative began as an executive order later bolstered by the IRA, Bipartisan Infrastructure Law, and the American Rescue Plan.⁵⁸ Executive Order 14008, known as Justice40, directs that “40% of overall benefits of certain Federal investments [should] flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution.”⁵⁹ Agencies are now required to use the Climate and Economic Justice Screening Tool to identify communities that can benefit from their Justice40 programs.⁶⁰ This tool measures burdens in eight categories: climate change, energy, health, housing, legacy pollution, transportation, water and wastewater, and workforce development.⁶¹ Once identified, agencies can use the data to implement their programs in these communities.

The Environmental Protection Agency (EPA) and HUD have different IRA-funded programs to address climate resilience and communities.⁶² EPA’s Environmental and Climate Justice Block Grant is focused on flood resilience and adaptation projects benefitting disadvantaged communities.⁶³ The Community Development Block Grant (CDBG) is a program under HUD to help rebuild disaster-impacted areas and provide starter money to recover in the long-term.⁶⁴ CDBGs focus primarily on local infrastructure and look to ensure benefits are not replicated.⁶⁵ The CDBG program launched the National Disaster Resilience Competition.⁶⁶ This was a one-time competition to award grant money to 13 recipients to help recover from

57. *Justice40: A Whole-of-Government Initiative*, WHITE HOUSE, <https://www.whitehouse.gov/environmentaljustice/justice40/> (last visited Nov. 17, 2024).

58. *Id.*

59. *Id.*

60. EXEC. OFF. OF THE PRESIDENT, M-23-09, Memorandum for the Heads of Executive Departments and Agencies (2023), https://www.whitehouse.gov/wp-content/uploads/2023/01/M-23-09_Signed_CEQ_CPO.pdf.

61. *About, CLIMATE AND ECON. JUST. SCREENING TOOL*, <https://screeningtool.geoplatform.gov/en/about#> (last visited Dec. 14, 2024). Notably, although not key to the analysis in this Note, the Climate and Economic Justice Screening Tool maps out only federally recognized Tribes, leaving non-recognized communities at a potential disadvantage. *Id.*

62. Hannah Peris, *Breaking Down the Environmental Justice Provisions in the 2022 Inflation Reduction Act*, ENV’T & ENERGY L. PROGRAM, (Aug. 12, 2022), <https://eelp.law.harvard.edu/2022/08/ira-ej-provisions/>; HUD Announces 24 Programs to Join Biden-Harris Administration Justice40 Initiative, HUD (July 15, 2022), https://www.hud.gov/press/press_releases_media_advisories/hud_no_22_132.

63. *Inflation Reduction Act Environmental and Climate Justice Program*, EPA, <https://www.epa.gov/inflation-reduction-act/inflation-reduction-act-environmental-and-climate-justice-program> (last visited Nov. 17, 2024).

64. *Community Development Block Grant Disaster Recovery Grant Funds*, HUD, https://www.hud.gov/program_offices/comm_planning/cdbg-dr (last visited Nov. 17, 2024).

65. *National Disaster Resilience*, HUD, https://www.hud.gov/program_offices/comm_planning/cdbg-dr/ndr (last visited Nov. 17, 2024).

66. *Id.*

major storms in 2011, 2012, and 2013.⁶⁷ This program requires flood insurance to receive federal funding and includes strict repercussions on funding if the grantee does not comply.⁶⁸ These requirements burden funding applicants and may lead to more damage, both physically and financially. In response, applicants may bring a takings claim to remedy such damage.

E. Takings Jurisprudence

When the federal government acts under statutes like the IRA and deprives a person of property without due process, a citizen may bring a takings claim. The Takings Clause of the Fifth Amendment states: “Nor shall private property be taken for public use, without just compensation.”⁶⁹ A Takings Clause claim requires a two-step analysis.⁷⁰ First, a cognizable property interest must be established.⁷¹ Second, if such an interest is established, the court determines if it has been taken.⁷² In establishing a cognizable property interest, the court looks for “crucial indicia of a property right.”⁷³ The court further determines if the use of the property was within the owner’s title as part of their property rights.⁷⁴ A court must decide whether there is an “essential nexus” between a legitimate state interest and the condition imposed by the government.⁷⁵ If so, then the requirements of the condition placed on the landowner must be roughly proportionate to the public impact.⁷⁶ The court will decide whether the regulation has gone “too far,” depriving an individual of their right to the property.⁷⁷ Furthermore, the regulation must not deny the landowner of economically viable use of their land.⁷⁸ Finally, to establish a taking, the government must have taken affirmative action.⁷⁹

67. *National Disaster Resilience*, HUD, https://www.hud.gov/program_offices/comm_planning/cdbg-dr/ndr (last visited Nov. 17, 2024).

68. Notice of National Disaster Resilience Competition Grant Requirements, 81 Fed. Reg. 36557, 36578 (June 7, 2016).

69. U.S. CONST. amend. V, cl. 5.

70. *Acceptance Ins. v. United States*, 583 F.3d 849, 854 (Fed. Cir. 2009).

71. *Id.*

72. *Id.*

73. *Placer Mining Co. v. United States*, 98 Fed. Cl. 681, 686 (2011) (quoting *Conti v. United States*, 291 F.3d 1334, 1342 (Fed. Cir. 2002)).

74. *Placer Mining Co. v. United States*, 98 Fed. Cl. 681, 686 (2011) (quoting *M & J Coal Co. v. United States*, 47 F.3d 1148 (Fed. Cir. 1995)).

75. *See Nollan v. California Coastal Comm’n*, 483 U.S. 825, 837 (1987) (applying the Takings Clause analysis to a permit condition regulating the use of a property).

76. *Dolan v. City of Tigard*, 512 U.S. 374, 391 (1994).

77. *Penn. Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922).

78. *Id.*

79. *Harris Cnty. Flood Control Dist. v. Kerr*, 499 S.W.3d 793, 799 (Tex. 2016).

The Supreme Court has held that “government-induced flooding of a limited duration may be compensable” under the Takings Clause.⁸⁰ The repeated, temporary flooding of a forested area by the Army Corps of Engineers was found on remand to constitute a physical taking and was therefore not exempt from a takings claim.⁸¹ *Arkansas Game* added this distinction to the four factors for considering a claim for flood takings previously set out by the Court.⁸² First, the court must consider the duration of the invasion.⁸³ Second, it must examine the degree to which the invasion was intended or foreseeable.⁸⁴ Third, the court must look at the character of the land at issue and the owner’s reasonable “investment-backed expectations” regarding the land’s use.⁸⁵ Finally, it must look at the severity of the interference.⁸⁶ Additionally, *St. Bernard Parish* requires plaintiffs to show the damage to their property was worse than it would have been absent any government involvement.⁸⁷ A takings claim is a tool to obtain compensation for government action, including in the circumstances of flooding.

II. TAKING BACK HABITABILITY: NEW ORLEANS AS A CASE STUDY

Despite uncontrollable factors, like historic redlining and exacerbated flooding from climate change, residents can control the resiliency of their homes through a takings action. While redlined and overburdened communities might have some form of relief through the Fourteenth Amendment, claims involving property rights have a clearer path to success. Takings claims can provide coastal citizens, such as those in New Orleans, with a route to hold the government accountable for property flooding resulting in financial deprivations. *Arkansas Game & Fish Comm’n v. United States* established that “government-induced flooding of limited duration may be compensable.”⁸⁸ Depriving already cash-strapped individuals of a way to access HUD-funded grants restricts individuals from ensuring they have a safe home in the face of climate change. Rising sea levels plus increased flooding events guarantees increased flood damage. A takings claim provides a form of relief for these individuals, which can then lead to

80. Ark. Game & Fish Comm’n v. United States, 568 U.S. 23 (2012); Ark. Game & Fish Comm’n v. United States, 736 F.3d 1364, 1375 (2013).

81. Ark. Game & Fish Comm’n, 568 U.S. at 38.

82. *Id.* at 38.

83. *Id.* at 38-39.

84. *Id.* at 39.

85. *Id.*

86. Ark. Game & Fish Comm’n, 568 U.S. at 39.

87. St. Bernard Parish Gov’t v. United States, 887 F.3d 1354, 1362-63 (Fed. Cir. 2018).

88. Ark. Game & Fish Comm’n v. United States, 568 U.S. 23, 34 (2012).

a federal-level change. But first, recovery aid must be available through an organization such as NORA.

A. The New Orleans Redevelopment Authority and the Community Adaptation Program

NORA is a public agency, partnered with the Office of Resilience and Sustainability within the New Orleans government, focused on mitigation and adaptation since Hurricanes Katrina and Rita.⁸⁹ Following Hurricanes Katrina and Rita, the state of Louisiana provided funds to hurricane victims to rebuild their homes through the Road Home Program.⁹⁰ The Road Home Program offered residents three options: use a grant from the state and rebuild their property; sell their property to the state and leave; or do a land swap with the state to relocate within New Orleans.⁹¹ The land swap left the State of Louisiana with more properties than it could manage, so it turned to NORA to return these properties to commercial use.⁹²

NORA then implemented programs to build green infrastructure while also creating wealth amongst its clients by helping them purchase blighted properties around them.⁹³ NORA is a recipient of the 2014 HUD National Disaster Resilience Competition grant.⁹⁴ This grant has funded the Community Adaptation Program, which began as the Gentilly Resilience District.⁹⁵ The City of New Orleans has proposed expanding this program to the entire city, dependent on funding.⁹⁶ Currently, the program is still confined to the Gentilly neighborhood.⁹⁷ The grants are for climate resiliency projects for homes but have largely been used to create more permeable driveways.⁹⁸ Permeable surfaces are critical in New Orleans as the city sits

89. NEW ORLEANS REDEVELOPMENT AUTH., <https://noraworks.org/> (last visited Dec. 9, 2024).

90. David Hammer, *Behind the Key Decision That Left Many Poor Homeowners Without Enough Money to Rebuild After Katrina*, PROPUBLICA (Dec. 13, 2022), <https://www.propublica.org/article/why-louisiana-road-home-program-based-grants-on-home-values>.

91. *Recovery Snapshot: Louisiana Road Home—Homeowner Compensation and Initiatives*, HUD, https://www.hud.gov/sites/documents/DOC_22578.PDF (last visited Dec. 9, 2024).

92. *About New Orleans Redevelopment Authority*, NEW ORLEANS REDEVELOPMENT AUTH., <https://noraworks.org/about#history> (last visited Dec. 9, 2024).

93. *Id.*

94. *Community Adaptation Program*, NEW ORLEANS REDEVELOPMENT AUTH., <https://noraworks.org/programs/land/community> (last visited Dec. 9, 2024).

95. *NORA/60 2024-2028 Strategic Plan*, NEW ORLEANS REDEVELOPMENT AUTH. 6 (2023), <https://noraworks.org/images/NORA-StrategicPlan-2023.pdf>.

96. *Id.*

97. *Id.*

98. Anna Staropoli, *Resilience Playbook in Gentilly Offers Model for Flood-Prone Cities*, NEW ORLEANS REDEVELOPMENT AUTH. (June 7, 2023), <https://noraworks.org/news/160-resilience-playbook-in-gentilly-offers-model-for-flood-prone-cities>.

below the water table on a normal day, let alone when there is flooding from a natural disaster or large amounts of rainfall.⁹⁹

The requirements for the Community Adaptation Program grant funding are: (1) the applicant must own and reside in the property listed on the application, and (2) household income is low to moderate under the HUD definition.¹⁰⁰ Despite this seemingly low bar, NORA heavily considers whether an applicant has flood insurance.¹⁰¹ Flood insurance protects the organization and assures NORA that the grant recipient has a strong safety net aside from the improvements under the program.¹⁰² While this program has seen great success, the flood insurance requirement poses a great barrier to individuals trying to stay rooted in their homes and communities. Despite an opportunity to protect their homes, applicants are also burdened by insurance requirements they cannot meet when flood insurance is unaffordable or otherwise inaccessible.

B. Standing as a Threshold Issue

As a preliminary matter for a takings claim against HUD, the homeowners who apply for the Community Adaptation Program must have standing. *Lujan v. Defenders of Wildlife* established three elements required to have standing to bring an action. First, the plaintiff must have suffered an “injury in fact” that invaded a “legally protected interest” of the party that is “concrete and particularized” and “actual or imminent.”¹⁰³ Second, there must be a causal connection between the injury and the defendant’s conduct that is “fairly . . . trace[able]” and not the result of a party’s actions outside of the court.¹⁰⁴ Third, it must be likely that court action can redress the injury.¹⁰⁵

Applicants for the Community Adaptation Program meet all three requirements of standing. Applicants who would be denied for lack of flood

99. See Missy Wilkinson, *Managing Water with Permeable Paving Benefits Owner and the Neighborhood*, NOLA.COM (Sept. 4, 2019), https://www.nola.com/entertainment_life/home_garden/managing-water-with-permeable-paving-benefits-owner-and-the-neighborhood/article_3300f630-cb76-11e9-9567-b3e72635fd58.html (highlighting a resident’s approach to protecting property through permeable surfaces).

100. *Community Adaptation Program FAQs*, NEW ORLEANS REDEVELOPMENT AUTH., <https://noraworks.org/images/FAQs.pdf> (last visited Dec. 9, 2024).

101. *Community Adaptation Program Pre-Application and Additional Information*, NEW ORLEANS REDEVELOPMENT AUTH., (APR. 27, 2023) https://noraworks.org/images/CAP_App_0427232_Flattendd.pdf.

102. See generally Michael Smerkanich, *Floods Happen: The Importance of Flood Insurance for Homeowners*, WTW (Sep. 3, 2024), <https://www.wtwco.com/en-us/insights/2024/09/floods-happen-the-importance-of-flood-insurance-for-homeowners> (discussing the financial stability that can come with flood insurance).

103. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992).

104. *Id.*

105. *Id.*

insurance can prove they have suffered an “injury in fact” from HUD. Not being able to receive the grant money to install permeable pavers and other water management options will cause further water damage to their homes. Because the New Orleans area has a history of redlining that impacts home values, these applicants are unlikely to be financially secure enough to afford to retrofit their properties. Therefore, a causal connection can be established between the government action of redlining and the impact on the value of these homes. Finally, a court removing the barrier of needing cost-prohibitive flood insurance would redress the issue. Based on these elements, New Orleans residents applying for this program will have standing to bring a takings claim.

C. Applying *Arkansas Game & Fish Standard*

The Court in *Arkansas Game & Fish* laid out an instructive standard to evaluate takings claims for temporary flooding and held that seasonally recurring flooding constitutes a taking.¹⁰⁶ A taking occurs where “superinduced additions of water [invade real estate] so as to effectually . . . impair its usefulness.”¹⁰⁷ To establish a claim for takings under the *Arkansas Game* model, a court looks to five elements: (1) the time or duration of the impact; (2) foreseeability of the result of the government’s actions; (3) severity of invasion; (4) character of the land at issue; and (5) landowner’s reasonable investment-backed expectations.¹⁰⁸ Based on the *Arkansas Game* standard, the NORA applicants who would be denied for lack of flood insurance have a strong case for a takings claim.

First, the increasing probability of high-tide or “sunny-day” flooding likely satisfies the time and duration requirement, as New Orleans will experience more flooding.¹⁰⁹ NOAA projected Grand Isle, Louisiana to have between four and eight high-tide flooding days in 2022.¹¹⁰ In 2050, 200-245

106. *Ark. Game & Fish Comm’n v. United States*, 568 U.S. 23, 38–40 (2012); *See also* *United States v. Cress*, 243 U.S. 316, 328 (1917) (“But it is the character of the invasion, not the amount of damage resulting from it, so long as the damage is substantial, that determines the question whether it is a taking. . . . Where the government by the construction of a dam or other public works so (sic) floods lands belonging to an individual as to substantially destroy their value, there is a taking within the scope of the 5th Amendment”) (quoting *United States v. Lynah*, 188 U.S. 445, 470 (1903)).

107. *Pumpelly v. Green Bay Co.*, 80 U.S. 166, 181 (1872).

108. *Ark. Game & Fish Comm’n*, 568 U.S. at 38–40.

109. *What is high tide flooding?*, NOAA, <https://oceanservice.noaa.gov/facts/high-tide-flooding.html> (last visited Nov. 17, 2024) (defining high-tide flooding, also known as sunny day flooding, as “occur[ing] when sea level rise combines with local factors to push water levels above the normal high tide mark”).

110. *Annual High Tide Flooding Outlook*, TIDES & CURRENTS, <https://tidesandcurrents.noaa.gov/high-tide-flooding/annual-outlook.html> (last visited Dec. 1, 2024) (select 2022 for the year then find Grand Isle, La.).

days are projected for high-tide flooding.¹¹¹ While Grand Isle is on the outer edge of New Orleans, this trend indicates the increased likelihood of sunny-day flooding in the greater New Orleans area. It is uncertain whether climate change will cause more landfall from hurricanes. However, the U.S. Global Change Research Program and the Intergovernmental Panel on Climate Change project there will be higher wind speeds and heavier rains.¹¹² Therefore, consistently higher and more frequent levels of flooding and rainfall are generally expected in all situations.

Second, considering foreseeability, the United States government is well aware of the danger of flooding for homes in New Orleans. On average, there is a single billion-dollar disaster every three weeks.¹¹³ The compounding impacts from climate change—including other socioeconomic stressors like poverty and lack of adequate housing—especially affect overburdened communities.¹¹⁴ The government already recognizes that climate change disproportionately impacts environmental justice communities. Therefore, HUD likely knows how much more prone New Orleans is to flood damage now than in the past. Even the Congressional Budget Office calculated expected increases in federal spending on hurricane damage due to climate change.¹¹⁵ The Congressional Budget Office has estimated federal spending on hurricane damage will increase by \$6 billion by 2050.¹¹⁶ Additionally, the costs of damage from these hurricanes will go from \$28 billion to \$39 billion.¹¹⁷ The federal government is plainly aware of the expected cost of future flooding and damage from hurricanes.

Third, regarding the severity of invasion, the continual flooding of the applicants' properties constitutes a severe invasion. Continued invasions in "sufficient number and for a sufficient time" can prove a taking.¹¹⁸ Repeated low-level flooding can damage infrastructure. A study by the NYC EJ

111. *Annual High Tide Flooding Outlook*, TIDES & CURRENTS, <https://tidesandcurrents.noaa.gov/high-tide-flooding/annual-outlook.html> (last visited Dec. 1, 2024) (select 2022 for the year then find Grand Isle, La.).

112. *Climate Change Indicators: Tropical Cyclone Activity*, EPA, <https://www.epa.gov/climate-indicators/climate-change-indicators-tropical-cyclone-activity> (last updated June 27, 2024).

113. ALLISON R. CRIMMINS ET AL., U.S. GLOB. CHANGE RSCH. PROGRAM, *Overview: Understanding Risks, Impacts, and Responses*, in THE FIFTH NAT'L CLIMATE ASSESSMENT 17 (2023), https://nca2023.globalchange.gov/downloads/NCA5_2023_FullReport.pdf ("Between 2018 and 2022, the U.S. experienced 89 billion-dollar events ... including ... 6 floods, 52 severe storms, [and] 18 tropical cyclones[.]").

114. *Id.*

115. See *Potential Increases in Hurricane Damage in the United States: Implications for the Federal Budget*, CONG. BUDGET OFF. 1 (June 2, 2016), <https://www.cbo.gov/publication/51518> (detailing the Congressional Budget Office's estimate of "the magnitude of the increases in hurricane damage and the associated amounts of federal aid if historical patterns [of climate change] hold").

116. *Id.* at 2.

117. *Id.*

118. *Portsmouth Harbor Land & Hotel Co. v. United States*, 260 U.S. 327, 329-330 (1922) ("Every successive trespass adds to the force of the evidence.").

Climate Resilience Board found building materials exposed to chronic tidal flooding “may retain moisture.”¹¹⁹ This can cause mold, leading to respiratory diseases.¹²⁰ When New Orleans homes experience chronic tidal flooding on top of decades of damage from Hurricanes Katrina and Rita, residents are likely to experience continuous damage to their home and health complications arising from perpetual dampness.

Fourth, the Court has measured the character of the land-at-issue element by looking at characteristics such as the land’s elevation and location.¹²¹ Despite, or perhaps because of, a 300-year period of development, New Orleans is shaped like a bowl.¹²² The floodwalls on either side protect the city from the Mississippi River and Lake Pontchartrain.¹²³ The entire city is below the average annual highwater of the Mississippi River and roughly a third is below Lake Pontchartrain.¹²⁴ New Orleans is predisposed to flooding, yet filled with residential homes. Most are primary residences, not secondary residences. This composition of residences adds to the character of the land for a takings claim because individuals have a direct stake in their land.

Fifth, and finally, the analysis for the landowner’s reasonable investment-backed expectations is straightforward. The landowners *live* here. They stay in New Orleans despite extreme events, repairing their homes and trying to become more resilient to climate change. These landowners are trying to make their land more permeable by applying to NORA’s program. They are not passive homeowners but are actively trying to make their homes and land more habitable when facing increased potential for damage.

D. The St. Bernard Parish Problem

Despite the validity of a takings claim, courts have dragged their feet in recognizing the impacts of climate change flood damage in the legal field. In 1965, Congress authorized the Army Corps of Engineers to construct levees and basins along the Mississippi River-Gulf Outlet (MRGO) to control flooding resulting from hurricanes.¹²⁵ In 2005, Hurricane Katrina brought catastrophic flooding to St. Bernard Parish and the Lower Ninth Ward areas,

119. *Chronic Tidal Flooding*, NYC MAYOR’S OFF. OF CLIMATE & ENV’T JUST., <https://climate.cityofnewyork.us/challenges/chronic-tidal-flooding/> (last visited Dec. 1, 2024).

120. *Id.*

121. *Ark. Game & Fish Comm’n v. United States*, 568 U.S. 23, 39 (2012).

122. TIM BRALOWER & DIANE MAYGARDEN, PENN. STATE UNIV., *Module 1 Lab B: City Profile of New Orleans, Louisiana, USA*, in *EARTH 107N - COASTAL PROCESSES, HAZARDS, AND SOCIETY*, <https://www.e-education.psu.edu/earth107/node/867> (last visited Nov. 17, 2024).

123. *Id.*

124. *Id.*

125. *St. Bernard Parish Gov’t v. United States*, 887 F.3d 1354, 1358 (Fed. Cir. 2018).

exacerbated by “the largest storm surge elevations” in U.S. history.¹²⁶ The Federal Claims Court found a causal link between the increased storm surge in the area and the construction and subsequent lack of maintenance to the MRGO.¹²⁷ In fact, the court in the 2015 proceeding found the environmental effects of the Corps action and inaction foreseeable at least by 2004.¹²⁸ However, the 2018 court, when faced with a clear connection between government action and deprivation of a property right, decided “the failure of the government to properly maintain the channel” could not be the basis of a takings claim when it should have been made in torts.¹²⁹ Now, plaintiffs must show the damage to the property was worse than the damage that would have occurred absent any government involvement.¹³⁰

The NFIP requirement is a direct government action—unlike in *St. Bernard Parish* where the court found a distinct *lack* of action—which therefore meets the action component of takings. According to *St. Bernard Parish*, a property loss is only compensable as a taking where the invasion is the “direct, natural, or probable result of authorized government action.”¹³¹ Rather than taking affirmative action, the Army Corps of Engineers failed to repair the erosion around the banks, which caused the channel to widen.¹³² The court maintained this view on takings from the 1920s requiring direct action from the government for liability.¹³³ However, such an argument no longer stands in the time of climate change.

Recent litigation following Hurricane Harvey in Houston recognized cognizable property interests in the face of climate change.¹³⁴ Following a rainfall of 50 inches in three days, substantial flooding affected residents upstream of a dam.¹³⁵ The Army Corps of Engineers released the dam to relieve this flooding.¹³⁶ This action by the Corps to relieve upstream residents caused flooding to downstream parties as well.¹³⁷ Despite this action, the court still chose not to consider the takings claim.¹³⁸ The United States government has published information expecting flooding and extreme events to increase. Applicants’ homes that were denied supportive funding

126. *St. Bernard Parish*, 887 F.3d at 1358 (quoting *In re Katrina Canal Breaches Consol. Litig.*, 647 F.Supp.2d 644, 678 (E.D. La. 2009)).

127. *St. Bernard Parish Gov’t v. United States*, 121 Fed. Cl. 687, 741 (2015).

128. *Id.* at 723.

129. *St. Bernard Parish*, 887 F.3d at 1358–59.

130. *Id.*

131. *Id.* at 1360.

132. *Id.*

133. *Sanguinetti v. United States*, 264 U.S. 146, 147–49 (1924).

134. *Milton v. United States*, 36 F.4th 1154 (Fed. Cir. 2022).

135. Jake Bittle, *THE GREAT DISPLACEMENT* 156 (Simon & Schuster 2023).

136. *Milton v. United States*, 36 F.4th 1154, 1158 (Fed. Cir. 2022).

137. *Id.*

138. *Id.* at 1162-63.

will almost certainly flood in the future. It is undeniable that increasing exposure to floodwater is inevitable.

Depriving aid because of these flood insurance requirements will only exacerbate the consequences from climate-driven extreme flooding. While individuals could predict the seasonally recurring flooding prior to the CDBG-funded program, individuals could not have predicted the increasing severity of climate-driven flooding when they chose to live in their homes. The government's direct actions have exacerbated the issue. Although not an explicit right, depriving people of funding opportunities greatly impacts homeowners' ability to keep their homes in the face of increased flooding. It is not acceptable to argue that holding the government responsible for this taking will stop them from taking action to protect the public interests in the future.¹³⁹ The *St. Bernard Parish* ruling was therefore incorrect and may mislead rulings on government takings claims for flooding in the future.

E. An Equal Protection Claim Would Fail

Relying on a 14th Amendment discrimination claim to correct how the government awards funding would only lead to failure because the Supreme Court rarely finds a law discriminatory.¹⁴⁰ To successfully bring a claim that a law is discriminatory, the Court requires a showing of both clear discriminatory intent and discriminatory impact.¹⁴¹ The Court will uphold facially neutral laws with a discriminatory impact if the decision to discriminate was made in spite of, not because of, its impacts.¹⁴² The Court established three ways of demonstrating discriminatory purpose: (1) if there is extreme enough discriminatory impact, a court may infer purpose; (2) the historical background of the government act or statute or general history of the states; and (3) the legislative or administrative history.¹⁴³ If the plaintiff cannot prove a discriminatory purpose, then the government does not need to offer a facially neutral explanation for the disparate impact. Rather, the government simply needs to show that the action is rationally related to a legitimate government purpose.¹⁴⁴

Proving discriminatory impact, even when apparent, is difficult in practice. The Court requires proof of discriminatory intent by those who

139. J. Scott Pippin & Mandi Moroz, *But Flooding Is Different: Takings Liability for Flooding in the Era of Climate Change*, 50 ELR 10920, 10921 (2020).

140. *Table of Laws Held Unconstitutional in Whole or in Part by the Supreme Court*, CONST. ANNOTATED, <https://constitution.congress.gov/resources/unconstitutional-laws/> (last visited Dec. 2, 2024).

141. *Washington v. Davis*, 426 U.S. 229, 238 (1976).

142. *Personnel Adm'r of Mass. v. Feeney*, 442 U.S. 256, 279 (1979).

143. *Village of Arlington Heights v. Metro. Hous. Dev. Corp.*, 429 U.S. 252, 265–68 (1977).

144. *See Palmer v. Thompson*, 403 U.S. 217, 227 (1971) (holding even if the government meets rational basis, they still must provide a reason).

implemented the facially neutral law.¹⁴⁵ When faced with a statistically backed pattern of structural racism showing Black men were more likely to be sentenced to death than white men, the Court found no discrimination, despite clear discriminatory impact.¹⁴⁶ The Court recognized a discriminatory pattern that directly impacted Black men and disregarded the discriminatory impact.

Here, the regulation is facially neutral as the statute states that a grant recipient “must obtain and maintain” flood insurance to receive funding.¹⁴⁷ And Congress surely meant to protect people and everyone’s financial interests with this requirement. Although the impact from home loss may seem extreme enough to find discriminatory intent, the Court has rarely held a law discriminatory under this method. Based on the well-documented history of redlining and the federal government’s active role in discriminatory housing practices, an Equal Protection Claim holds some degree of possibility. However, even when the federal government recognizes discriminatory practices by agencies, white individuals who believe they are now on uneven footing often challenge the corrective legislation.¹⁴⁸

Here, the discriminatory impact can potentially cost people their lives and homes. People who are systematically discriminated against through other laws are now losing their homes because they cannot afford the sky-high premiums required to receive federal assistance. This is a facially neutral law with a discriminatory impact, but the courts will likely not recognize this. So, an equal protection claim would almost surely fail. Therefore, applicants should instead consider a takings claim.

III. A CHANCE TO FIX CLIMATE REDLINING NOW

A. Impacts on States and Individuals

While the NFIP Risk Rating 2.0 program more accurately reflects flood risk, it indirectly burdens homes and communities of color in areas at greater risk. Addressing the federal government’s liability under the IRA and Justice40 initiatives to not require flood insurance is important to minimize

145. *Pers. Adm’r of Mass. v. Feeney*, 442 U.S. 256, 279 (1979).

146. *McCleskey v. Kemp*, 481 U.S. 279, 292–93 (1987).

147. Notice of National Disaster Resilience Competition Grant Requirements, 81 Fed. Reg. 36558, 36578.

148. *See Pigford v. Glickman*, 185 F.R.D. 82, 85 (D.D.C. 1999) (using the word “disadvantaged” allowed white farmers to challenge corrective legislation meant to fix a well-established practice of denying farm loans to Black farmers). The IRA similarly uses the word “disadvantaged” to identify environmental justice communities with only one definition for disadvantaged community, stating the Secretary of Energy determines if a community is “economically, socially, or environmentally disadvantaged.” 42 U.S.C. § 18795(d)(1).

the strain on federal and state spending. Over the past 30 years, FEMA spent \$347 billion in disaster relief funding.¹⁴⁹ This equates to “roughly \$12 billion” per year.¹⁵⁰ Supplemental disaster recovery spending increased since Hurricane Katrina in 2005.¹⁵¹ Congress struggles to resolve if and how it will increase FEMA’s budget in the face of increasing disasters. Dropping the flood insurance requirement that stops individuals from strengthening their homes will help minimize the effects of a disaster by allowing individual homeowners to adapt and prepare rather than merely react and recover after each storm.

States specifically suffer without federal funding for individuals as the state ends up footing the bill when FEMA does not fully meet the needs of an impacted community. Ten states and multiple counties and municipalities are suing the Department of Homeland Security for FEMA’s new methodology to determine NFIP rates: Risk Rating 2.0 – Equity in Action. Plaintiffs claim FEMA did not follow “substantive and procedural requirement[s],” leaving applicants and local governing bodies to wonder how the steep increases in coverage came to be.¹⁵² Under the new Risk Rating 2.0, one zip code in New Orleans will see an increase in policies from \$797 per year to \$1,368 per year.¹⁵³ Gentilly, New Orleans—the location of the Gentilly Resilience District—will see a hike in coverage from \$797 per year to \$1,429 per year.¹⁵⁴ Just in the last two years, more than 20 insurance companies have left Louisiana.¹⁵⁵ Insurance is becoming increasingly difficult to find in the private sector, let alone NFIP-backed companies.

B. Takings Claims in the Face of Climate Change

Homeowners bringing successful takings claims against HUD’s requirements could lead to further takings claims where government action condemns homeowners to stay in homes that cannot be made more resilient. Then the federal government would either face further litigation or have to change the bar for aid. To prevent this, communities could use Justice40 and IRA legislation as a baseline to get funding out to community-based

149. *FEMA’s Disaster Relief Fund: Budgetary History and Projections*, CONG. BUDGET OFF. (Nov. 2022), <https://www.cbo.gov/publication/58840>.

150. *Id.*

151. *Id.*

152. Complaint at 7, *Louisiana v. Mayorkas*, 2:23-cv-01839 (E.D. La. June 1, 2023).

153. *Cost of Flood Insurance for Single-Family Homes under NFIP’s Pricing Approach*, FEMA, <https://www.fema.gov/flood-insurance/work-with-nfip/risk-rating/single-family-home> (last visited Nov. 17, 2024) (download Example 2, 3, and 4 data, then look at zip code 70117 under the Exhibit 3 tab).

154. *Id.* (look at zip code 70122 under Exhibit 3 tab).

155. *At Least 20 Insurance Companies Leave Louisiana in Past 2 Years Due to ‘High Climate Risk’*, ABC13 (July 18, 2023), <https://abc13.com/farmers-insurance-companies-leaving-states-aaa-what-are-high-climate-risk/13518796/>.

organizations. Homeowners can then use funding to retrofit homes for increased sunny-day flooding and sea level rise until communities can relocate.

Rather than relying on one federal program to address this issue, the government should adopt an intersectional approach, since climate change is an intersectional issue.¹⁵⁶ If HUD removes the flood insurance requirement, HUD could instead combine with the available EPA programs to build up the resiliency of the community. For example, HUD could use the Environmental and Climate Justice Community Change Grants to directly target communities that have been subject to “historical disinvestments.” However, this program will not be available to communities in incorporated areas. It would provide aid for tribes in Alaska, tribes elsewhere, territories, disadvantaged unincorporated communities, and U.S.-Southern border communities.

A better option, which has already awarded a similar group with a similar purpose, would be the Environmental Justice Government-to-Government Program. This program encourages government agencies to work with organizations on the ground. One of the recipients, 2CMississippi, is converting abandoned, blighted properties into parks for flood mitigation through green infrastructure.¹⁵⁷ This is extremely similar to NORA’s work. Additionally, it is one of the tenants of good practice in the environmental justice field for practitioners to work with the organizations on the ground to better understand the aid they need.

C. Alternative Responses: New York City

Rather than taking a litigation route, cities can instead make climate justice plans. For example, New York City created the Mayor’s Office of Climate and Environmental Justice to respond to the major effects of climate change specific to coastal cities.¹⁵⁸ This office created a map of the city based on the social vulnerabilities of communities.¹⁵⁹ Beginning from this granular level allows the city to respond to issues rooted in systemic racism that require a more nuanced approach.

156. Skyler Jackson & Cam Humphrey, *Yale Experts Explain Intersectionality and Climate Change*, YALE SUSTAINABILITY (July 28, 2022), <https://sustainability.yale.edu/explainers/yale-experts-explain-intersectionality-and-climate-change>.

157. *2021 Environmental Justice Small Grants Program: Project Summaries by EPA Region*, EPA (2021), https://www.epa.gov/system/files/documents/2021-12/2021-selected-ejsg-project-descriptions_0.pdf.

158. NYC MAYOR’S OFF. OF CLIMATE & ENV’T JUST., <https://climate.cityofnewyork.us/> (last visited Nov. 17, 2024).

159. EJNYC Full Data Explorer, NYC MAYOR’S OFF. OF CLIMATE & ENV’T JUST., <https://experience.arcgis.com/experience/6a3da7b920f248af961554bdf01d668b/page/Data-Explorer/> (last visited Nov. 17, 2024).

In addition to this map, the Office of Climate and Environmental Justice created an interactive platform that provides transparent information on the increased risk of flooding in redlined and yellow-lined neighborhoods.¹⁶⁰ This platform lists solutions for residents to adopt or invest to help reduce the likelihood of flood damage to their homes.¹⁶¹ Each section explains how some options will lower flood insurance or home insurance premiums.¹⁶² However, one suggestion that stands out as unlikely to be useful on a larger scale is abandoning the first floor of a multi-floor home.¹⁶³ This suggestion is offered as an example of how a family could take steps to make their home more flood resilient without extra funding; however, this suggestion would place strain on most families because they would lose property value and sustain damage to the structure overall. While not every option is feasible for all families, having one spot that provides pathways forward to climate resilience is an excellent step towards protecting coastal populations.

CONCLUSION

The government's requirement that homeowners purchase flood insurance, though the options are scarce or exorbitantly priced, makes it incredibly difficult for many to live in coastal residences. Takings claims can combat this barrier and make habitability and climate resilience a reality for more people. Communities are already working to remain where they live, so funding should be more accessible. It has yet to be seen how the insurance industry will respond to the increased risks of climate change. Until then, the federal programs meant to help at-risk communities should not rely on the availability of this unstable industry.

160. *Understanding Redlining*, CONSUMER FIN. PROT. BUREAU, https://files.consumerfinance.gov/f/documents/cfpb_building_block_activities_understanding-redlining_handout.pdf (last visited Jan. 13, 2025) “Yellow-lined” refers to an area that was considered “in decline.” *Id.*

161. *Flood Retrofits: Protect Your Property*, FLOODHELPNY, <https://floodhelpny.org/en/flood-retrofits> (last visited Nov. 17, 2024).

162. *Id.*

163. *Id.* (select “Abandon your first floor—Learn More” option).