

**WHEN CRISES COLLIDE:
MAPPING THE INTERSECTIONS OF CLIMATE, POLLUTION,
CRIME, AND PUNISHMENT**

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ABSTRACT

Collisions between the climate crisis, environmental degradation, the criminal justice (CJ) system, and crime are increasing in frequency, profoundly affecting a growing number of CJ personnel and the communities they serve across the United States. Despite directly impacting thousands of CJ personnel—such as law enforcement and corrections professionals—little scholarly and official action has been taken to acknowledge or reckon with the risks of climate change and environmental degradation on public safety or the CJ system, nor how some CJ practices themselves facilitate those risks.

This Article joins initial calls to action to scholars and practitioners to incorporate climate and environmental impacts into CJ research and practice. It explores the lines of influence between these ecological crises and the CJ system, examining how each impacts the other. It maps the intersections between the climate and pollution on crime; the impact of enforcement priorities and punishment upon climate policy; the health and safety of people employed by or incarcerated in the CJ system; and how CJ agencies can adapt to climate impacts. By mapping these collisions, we identify a wide array of opportunities to profoundly improve public safety, public health, the environment, and the well-being of CJ personnel and the communities they serve.

INTRODUCTION

Moments after Bert Slone learned the flood was coming, it surrounded his house and washed his truck away.¹ Historic quantities of rain had been pouring on West Virginia, causing devastating flooding.² Slone, the elected jailer of Letcher County, WV, soon learned that the flood knocked out the jail's water, and the jail would have to be evacuated.³ He had to order and coordinate the evacuation remotely and without cellular phone service. He would not be able to physically reach the jail for hours.⁴

A few months earlier, in Boulder County, CO, the Marshall Fire had burned down more than 1,000 homes.⁵ These included the homes of the two candidates for county sheriff, Sheriff's Office Division Chief Curtis Johnson and Louisville, CO, police chief Dave Hayes.⁶ Both were helping coordinate the emergency response to the fire when they learned they had lost their homes.⁷

Disasters like these events in 2022 are examples of collisions between the climate crisis, environmental degradation, the criminal justice ("CJ") system, and crime. These collisions are occurring more and more frequently, in more and more regions, profoundly affecting CJ personnel and the communities they serve.

Despite directly impacting thousands of CJ personnel—such as law enforcement and corrections professionals—these collisions have not been acknowledged, addressed, or reckoned with by most agencies across the CJ system.⁸ For example, casual web searches on many CJ

1 Jared Bennett, *Letcher County Jail Evacuates After Flood Cuts off Running Water*, KY. CTR. FOR INVESTIGATIVE REPORTING (July 29, 2022), <https://kycir.org/2022/07/29/letcher-county-jail-evacuates-after-flood-cuts-off-running-water/>.

2 Jonathan Erdman, *The Most Staggering Facts About the Major Kentucky Flooding*, THE WEATHER CHANNEL (July 29, 2022), <https://weather.com/storms/severe/news/2022-07-28-kentucky-flooding-rain-record-flood-facts>.

3 Bennett, *supra* note 1.

4 *Id.*

5 Janet Oravetz, *What We Know About the Marshall Fire 3 Months Later*, 9 NEWS (Mar. 30, 2022), <https://www.9news.com/article/news/local/wildfire/marshall-fire/marshall-fire-boulder-three-months/73-99a4ada-f829c-4d7e-b9d9-f3ad1ac186a5>.

6 Mitchell Byars, *Boulder County Sheriff's Division Chief Among Those to Lose His Home in Marshall Fire*, DAILY CAMERA (Jan. 10, 2022), <https://www.dailycamera.com/2022/01/10/boulder-county-sheriffs-division-chief-among-those-to-lose-his-home-in-marshall-fire/>.

7 *Id.*

8 The CJ system is generally comprised of law enforcement agencies (such as police and sheriffs' departments), prosecutors and public defense, courts, corrections

agencies' websites of terms such as "climate" and "environment" find zero results related to the ongoing crises. A small number of CJ agencies—as well as a few CJ professional associations—have developed sustainability statements or plans or have promulgated climate adaptation plans to protect their personnel and facilities from climate impacts like heat, fire, and flooding.⁹ Criminal enforcement of environmental law is usually limited to specialized enforcement entities.¹⁰ We found no official documents or statements linking criminal enforcement and punishment (or the lack thereof) with the ecological crises we collectively face. We found only one single publication by a current or former CJ professional addressing intersections between the CJ system and climate and environment.¹¹ Media targeting CJ professionals contain few articles on the topics.

There have been a few strong calls "to bring the issue of climate change into the U.S. criminology and criminal justice narratives," but scholars across the CJ disciplines—e.g., criminology, criminal justice, sociology, economics, and criminal law—have generally ignored "one of the most important topics facing the globe."¹² There are some exceptions, such as a small number of studies showing how global warming and pollution may increase crime or how they impact CJ personnel or justice-

(including jails, prisons, probation, parole, and community corrections), and supportive and specialized personnel (such as forensics, juvenile programs, etc.). While we use the term "system," it is not really a *system* per se but rather a set of many thousands of disparate and often autonomous organizations. See, e.g., *U.S. Criminal Justice System*, CORRECTIONAL OFFICER.ORG, <https://www.correctionalofficer.org/us-criminal-justice-system> (last visited Mar. 11, 2023).

9 See, e.g., U.S. DEP'T OF JUST., CLIMATE ACTION PLAN (2021), <https://www.sustainability.gov/pdfs/doj-2021-cap.pdf>; CAL. DEP'T OF CORR. & REHAB., CLIMATE CHANGE ADAPTATION, <https://www.cdcr.ca.gov/green/wp-content/uploads/sites/176/2020/05/2020-21-1-CHAPTER-ONE-CLIMATE-CHANGE-ADAPTATION.pdf>.

10 See, e.g., *Environment and Natural Resources Division*, U.S. DEP'T OF JUST., <https://www.justice.gov/enrd> (last visited Sept. 1, 2022) (detailing recent developments in prosecutions of environmental crimes and describing division's activities).

11 See David A. Chambers, *Policing and Climate Change*, 26 AUSTL. J. EMERGENCY MGMT. 54 (July 2011).

12 JOHN P. CRANK & LINDA S. JACOBY, CRIME, VIOLENCE, AND GLOBAL WARMING 103 (2014) (exploring a broad range of criminogenic effects of the climate crisis). For other calls to action, see Robert Agnew, *Dire Forecast: A Theoretical Model of the Impact of Climate Change on Crime*, 16 THEORETICAL CRIMINOLOGY 21, 21 (2011) (exploring the mechanisms connecting climate change to increased crime); Laurie L. Levenson, *Climate Change and the Criminal Justice System*, 51 ENV'T LAW 333, 333–36 (2021) (exploring how the crisis may impact the CJ system).

involved people,¹³ and relevant specialist areas include environmental criminal law, natural resources law, and wildlife crime. The burgeoning fields of Green and Climate Criminology explicitly address intersections of climate, environment, crime, and the CJ system, by featuring criticism by scholars proposing that the *immoral* but often *legal* practices that are undermining the earth's climate and ecosystems should be rendered *illegal*.¹⁴ There is also a subfield of criminology called Environmental Criminology, which largely focuses on the criminogenic influence of the built environment, such as how a lack of street lighting can spawn street crime (rather than how the natural environment *per se* can influence crime).¹⁵ However, this nascent body of scholarship has not broken into the mainstream consciousness of traditional criminology to meaningfully influence CJ officials.

In short, little scholarly and official action has been taken to acknowledge the risks of climate change and environmental degradation on public safety or the CJ system. This Article is another call to scholars and practitioners to incorporate climate and environmental impacts into CJ research and practice. It explores the lines of influence between these ecological crises and the CJ system, examining how each impacts the other. It maps the intersections among climate, pollution, and crime; the impact of enforcement priorities and punishment upon climate policy; the health and safety of people employed by or incarcerated in the CJ system; and how CJ agencies can adapt to climate impacts.

This Article analyzes the intersections through several lenses. The first lens is the basic trichotomy of (1) contributions to the climate and environmental crises versus (2) “mitigating” the crises (i.e., rolling back climate change by reducing carbon emissions or sequestering atmospheric carbon in the ground), and (3) “adapting” to the new normal of a changed climate and environment.¹⁶

Section I applies the first two elements of this lens at both the systems level and the operations level to analyze the influence of the CJ

13 See Section II.A, *infra*.

14 See, e.g., ROB WHITE, CLIMATE CHANGE CRIMINOLOGY (2018); MICHAEL J. LYNCH & PAUL B. STRETESKY, EXPLORING GREEN CRIMINOLOGY (2014); RONALD C. KRAMER & ROB WHITE, CARBON CRIMINALS, CLIMATE CRIMES (2020).

15 See generally THE OXFORD HANDBOOK OF ENVIRONMENTAL CRIMINOLOGY (Gerben J.N. Bruinsma & Shane D. Johnson eds., 2018) (exploring the different approaches to environmental criminology and the problem-solving value of these approaches).

16 See generally ASAP Professional Guidance Resources Glossary, AM. SOC'Y OF ADAPTATION PROS. (2021), <https://adaptationprofessionals.org/wp-content/uploads/2021/03/ASAP-Glossary.pdf> (providing terms used within the mitigation and adaptation framework).

system upon climate change and environmental degradation. It shows that, while the CJ system has a broad ability to mitigate these crises, that ability is largely untapped. Instead, the system's practices and manipulation by political elites have contributed to grave ecological harm.

Section II uses two lenses. One is the third piece of the trichotomy: it uses an adaptation-type lens, applying both systems-level and operations-level analyses to map how degradations in the climate and environment pressure CJ system agencies and personnel. Here, we also use another lens, borrowing from the national security literature the concept of climate change as a "threat multiplier" ramping up risks to domestic and international military facilities and personnel.¹⁷ This analysis shows that the CJ system will see an increase in responsibility in terms of rising crime and political disorder, and a need for much more vigorous environmental enforcement and civic collaboration to improve public safety and public health, all the while facing reduced capacities in terms of facilities, personnel, and budgets.

As global warming continues to outpace most scientific models, the time is very ripe to address the various roles the CJ system has played in facilitating the crisis and the roles it could play in alleviating it. Addressing these roles is important for many reasons, including: (1) fundamental issues of justice and equity, such as economic, climate, environmental, social, racial, and democratic justice; (2) public safety, such as preventing violence driven by heat or pollution; and (3) protecting the well-being and effectiveness of CJ system personnel, such as protecting against occupational and safety risks of extreme heat and cold, routine flooding, and emergency response. This Article is among the first efforts to begin comprehensively identifying and mapping these intersections to help CJ agencies address these roles.

CJ leaders should fully explore how CJ practices are intertwined with root causes of global warming, environmental degradation, and crime. Remedying these root causes offers profound opportunities to improve public safety. In addition, CJ leaders should also seek out

17 See, e.g., CTR. FOR NAVAL ANALYSES CORP., NATIONAL SECURITY AND THE THREAT OF CLIMATE CHANGE 44 (2007), https://www.cna.org/cna_files/pdf/National%20Security%20and%20the%20Threat%20of%20Climate%20Change.pdf (finding climate change acts as a threat multiplier by exacerbating instability in already-vulnerable regions of the world); U.S. DEP'T. OF DEF., STRATEGIC SUSTAINABILITY PERFORMANCE PLAN (2015) (identifying climate change adaptation efforts); U.S. DEP'T. OF DEF., DEPARTMENT OF DEFENSE CLIMATE ADAPTATION PLAN (2021) (detailing adaptations to address the national security dangers posed to military facilities and other infrastructure by climate change).

adaptation strategies that reduce the impacts of the ecological crises and improve public safety, public health, community relations, and the well-being of CJ personnel. There is a long menu of strategies CJ leaders and personnel can employ to make it more likely that their personnel and communities are able to thrive in the coming years. We provide a sampling of these strategies throughout this Article, particularly in Section II, which discusses topics in which CJ leaders have more leeway than in Section I. We begin by exploring the influences of CJ policy, practices, and politics on the climate and environment.

I. POLLUTION AND MITIGATION: THE INFLUENCE OF THE CRIMINAL JUSTICE SYSTEM ON THE CLIMATE AND ENVIRONMENT

We begin by exploring how the CJ system contributes to and/or fights against climate change and environmental degradation. We consider first how various component parts of the fragmented CJ system use their powers in ways that have direct and indirect effects. Second, we look at its passive influence when the CJ system does not use these powers. Finally, we consider when CJ agencies are acting within their discretion versus when they are being controlled or constrained by politics and/or political and economic elites. Ultimately, outside of specialized agencies with limited budgets, the CJ system fails to use its powers to enforce existing environmental law, and it uses its general criminal enforcement powers in ways that directly and indirectly reduce the possibility of greater environmental and climate protection and justice.

A. *The CJ System's Powers that (Could) Be*

Federal, state, and local law obviously regulates the use of natural resources and many pollutants, creating civil and criminal penalties for their violation. Many of these civil and criminal laws can be enforced by traditional police and prosecutors. While some aspects of environmental enforcement are technical enough to require specialization, others are not.¹⁸ Despite recommendations to train and engage local police and prosecutors in environmental enforcement, little action has been taken.¹⁹

18 NAT'L INST. OF JUST., U.S. DEP'T OF JUST., ENVIRONMENTAL CRIME PROSECUTION 8–13 (1994) (noting limitations that impede enforcement of environmental laws, including lack of technical expertise and lack of resources).

19 NAT'L INST. OF JUST., U.S. DEP'T OF JUST., LAW ENFORCEMENT RESPONSE TO

To the extent these laws are enforced, specialized agencies or offices in federal, state, and some local governments are the usual enforcers.²⁰ These entities are tasked with protecting the environment and specific natural resources, and regulating their use.²¹ One example is the U.S. Department of Justice’s (“DOJ”) Environment and Natural Resources Division which, supported by the U.S. Environmental Protection Agency (“EPA”) and its specialized investigators, brings civil and criminal actions against polluters and those who commit environmental crimes.²² Another example is the U.S. Coast Guard’s Marine Environmental Protection mission, which focuses on oil discharges and hazardous substances releases in U.S. waters.²³ The offices of state attorneys general provide parallel functions in coordination with state departments of environmental protection and natural resources.²⁴ There are also numerous law enforcement agencies (“LEAs”) that have specific, relevant jurisdictions, including environmental quality enforcement, protecting key natural resources like reservoirs and public

ENVIRONMENTAL CRIME II (1995) (describing historical underenforcement of environmental law that has caused land, air, and water contamination); NAT’L INST. OF JUST., U.S. DEP’T OF JUST., LOCAL PROSECUTION OF ENVIRONMENTAL CRIME xi, xii (1993) (calling for increased attention to environment crime by prosecutors). See also INT’L ASS’N OF CHIEFS OF POLICE, RESOLUTION: SUPPORT FOR ENVIRONMENTAL JUSTICE 8–9 (2012) (urging law enforcement to increase training to recognize environmental crimes and enforce environmental laws).

20 See generally *Basic Information on Enforcement*, U.S. EPA (Nov. 2, 2022), <https://www.epa.gov/enforcement/basic-information-enforcement> (describing types of enforcement actions pursued by the EPA and state agencies).

21 See *Federal and Federal-State Agencies with Jurisdiction by Law or Special Expertise on Environmental Quality Issues*, COUNCIL ON ENV. QUALITY (Jun. 15, 2018) (listing specific environmental jurisdictions of individual federal and federal-state agencies).

22 See generally Env’t & Nat. Res. Div., *About the Division*, U.S. DEP’T OF JUST. (June 1, 2022), <https://www.justice.gov/enrd/about-division> (last visited Mar. 6, 2023) (detailing recent developments in prosecutions of environmental crimes and describing division’s activities); *Basic Information on Enforcement*, *supra* note 20 (describing enforcement and compliance efforts by the EPA).

23 *Office of Marine Environmental Response Policy*, U.S. COAST GUARD, <https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Response-Policy-CG-5R/Office-of-Incident-Management-Preparedness-CG-5RI/Marine-Environmental-Response-CG-MER/> (last visited Sept. 15, 2022).

24 See, e.g., *Environment & Public Health*, CAL. DEP’T OF JUST., OFFICE OF THE ATT’Y GEN., <https://oag.ca.gov/environment> (last visited Sept. 1, 2022); *Protecting the Environment*, ILL. ATT’Y GEN., <https://illinoisattorneygeneral.gov/environment/envdivision.html> (last visited Sept. 14, 2022).

lands,²⁵ enforcing fish and wildlife laws,²⁶ and handling routine public safety and permit issues on public lands.²⁷

The key issue is the extent of enforcement. Typically, enforcement of environmental laws is quite constrained in comparison to the scope of need.²⁸ To some degree, this may be tied to the political party determining enforcement priorities and funding. For example, the EPA's civil and criminal enforcement caseload dropped to the lowest level in a quarter century during the Trump Administration,²⁹ and years of stagnant or shrinking funding for the agency has kept its work slow in the Biden Administration.³⁰ Similarly, the innovative New Jersey Office of the Environmental Prosecutor³¹ was shut down after a change in administration from a Democratic to Republican governor.³²

However, partisanship is not a full explanation. Democratic presidents have routinely refrained from aggressively enforcing environmental laws: the Obama Administration brought fewer criminal

25 See, e.g., *Natural Resources Police*, DEL. DEP'T OF NATURAL RES. & ENV'T CONTROL, <https://dnrec.alpha.delaware.gov/natural-resources-police/> (last visited Sept. 1, 2022); *Natural Resources Police*, WASH. STATE DEP'T OF NATURAL RES., <https://www.dnr.wa.gov/police> (last visited Sept. 1, 2022); *Environmental Conservation Police Officers*, N.Y. DEP'T OF ENV'T CONSERVATION, <https://www.dec.ny.gov/regulations/2437.html> (last visited Sept. 1, 2022).

26 See, e.g., *Texas Game Wardens*, TEX. PARKS & WILDLIFE DEP'T, <https://tpwd.texas.gov/warden/> (last visited Sept. 1, 2022).

27 This is the main responsibility of the U.S. Park Police. See *United States Park Police*, NAT'L PARK SERV., <https://www.nps.gov/subjects/uspp/index.htm> (last visited Sept 1, 2022).

28 David J. Hayes, *The Vanishing Federal Role in Enforcing Our Environmental Laws*, THE REG. REV. (Oct. 12, 2020), <https://www.theregreview.org/2020/10/12/hayes-vanishing-federal-role-enforcing-environmental-laws/>.

29 *Id.*

30 David F. Coursen, *The Terrible Environmental Costs of Stagnant EPA Funding*, THE HILL (May 24, 2021), <https://thehill.com/opinion/energy-environment/555145-the-terrible-environmental-costs-of-stagnant-epa-funding>.

31 See Steven J. Madonna & Kathleen M. Breslin, *The Environmental Prosecutor: New Jersey's Innovative Approach to Environmental Enforcement*, 3 VILL. ENV'T L.J. 47, 62 (1992) (providing an overview of the origins and duties of the Environmental Prosecutor).

32 *The Environmental Prosecutor – Establishing an Environmental Conscience for The Garden State*, N.J. SENATE DEMOCRATS, <https://www.njsendems.org/the-environmental-prosecutor-establishing-an-environmental-conscience-for-the-garden-state/> (last visited Sept. 15, 2022) (noting that the office of the Environmental Prosecutor was created by an executive order by Governor Jim Florio in 1990 and abolished by Governor Christine Todd Whitman). Florio was a Democrat; Whitman was a Republican. *Former Governors – New Jersey*, NAT'L GOVERNORS ASS'N (last visited Mar. 11, 2023), <https://www.nga.org/former-governors/new-jersey/>.

prosecutions than the George W. Bush Administration;³³ Attorney General Merrick Garland has deployed DOJ lawyers to defend new fossil fuel projects and decisions taken during the Trump years;³⁴ and, despite Garland's splashy announcement of the creation of a new Office of Environmental Justice, its requested budget is a paltry \$1.4 million.³⁵ To understand why enforcement efforts and budgets are so limited, we must explore how polluters use their influence on the CJ system.

B. "Follow the Money" Versus "People Power"

Passing robust environmental laws and regulations is often very difficult, and where they are passed, enforcement resources are scant.³⁶ This is largely due to the influence of money in politics.³⁷ Polluters³⁸ spend

³³ *Federal Criminal Environmental Prosecutions Continue to Fall*, TRANSACTIONAL RECORDS ACCESS CLEARINGHOUSE, SYRACUSE UNIV., (Feb. 1, 2018), <https://trac.syr.edu/tracreports/crim/499/>.

³⁴ Dorothy Slater & Hannah Story Brown, *Merrick Garland's Department of Justice Is Perpetuating Climate Destruction*, THE AM. PROSPECT (Dec. 17, 2021), <https://prospect.org/justice/merrick-garlands-department-of-justice-is-perpetuating-climate-destruction/>.

³⁵ Press Release, U.S. Dep't of Just., Just. Dep't Launches Comprehensive Env't Just. Strategy (May 5, 2022), <https://www.justice.gov/opa/pr/justice-department-launches-comprehensive-environmental-justice-strategy>; Daren Gregorian, *Attorney General Garland Launches Office Focused on Environmental Justice*, NBC NEWS (May 5, 2022), <https://www.nbcnews.com/politics/justice-department/justice-department-launches-new-office-focused-environmental-justice-rna27556>.

³⁶ See, e.g., Joshua Basseches et al., *Climate Policy Conflict in the U.S. States: A Critical Review and Way Forward*, CLIMATIC CHANGE, Feb. 16, 2022, at 1–2; Christopher Sellers et al., *EPA Enforcement Still Struggling to Recover Under Biden*, ENV'T DATA & GOVERNANCE INITIATIVE (Feb. 2023) at 6 (showing that the EPA's total environmental enforcement budget for 2022 was 30% below that of 2011); *Bul cf.* Matthew Cox, *Army Is Spending Half a Billion to Train Soldiers to Fight Underground*, MILITARY.COM (June 24, 2018), <https://www.military.com/daily-news/2018/06/24/army-spending-half-billion-train-troops-fight-underground.html> (describing the military's investment of \$572 million training soldiers to fight underground).

³⁷ See Basseches et al., *supra* note 36.

³⁸ We use the term "polluter" broadly for the whole range of companies and organizations whose operations or products pollute, destroy ecosystems, undermine biodiversity, extract or process fossil fuels, emit large quantities of greenhouse gases, use excessive quantities of natural resources, are bad environmental stewards, and do other harms to the climate or environment. We also include their partners and supporters, such as financial and insurance institutions, suppliers, and the various organizations they use to oppose reforms that might raise their costs in order to protect the environment (such as industry associations/lobbyists, law firms, public relations agencies, and so on). Other observers call these various actors "climate criminals" or "carbon criminals." See,

billions of dollars on lobbying, campaign donations, and “greenwashing” public relations initiatives to prevent or water down environmental (and other regulatory) enforcement.³⁹ Fighting against the polluters are grassroots political movements that work to build “people power” versus “money power.” Here is where the CJ system plays a role: police and other CJ agencies are often deployed to chill reformist activism.

Police use a broad range of strategies and tactics to chill activism.⁴⁰ These range from the simple threat of arrest, to intimidation (such as when large numbers of officers—possibly outfitted in riot gear—are deployed in numbers disproportionate to the size of a protest), to the use of aggressive crowd-control tactics (such as sound cannons, low-flying helicopters or drones, tear-gas, kettling, rubber bullets, physical aggression and violence, and even, in a small number instances, lethal violence).⁴¹ Other means of suppressing dissent include infiltrating

e.g., KRAMER & WHITE, *supra* note 14, at 46–51.

- 39 See Tess Riley, *Just 100 Companies Responsible for 71% of Global Emissions, Study Says*, THE GUARDIAN (July 10 2017), <https://www.theguardian.com/sustainable-business/2017/jul/10/100-fossil-fuel-companies-investors-responsible-71-global-emissions-cdp-study-climate-change>; Matthew Taylor & Jonathan Watts, *Revealed: The 20 Firms Behind a Third of All Carbon Emissions*, THE GUARDIAN (Oct. 9, 2019), <https://www.theguardian.com/environment/2019/oct/09/revealed-20-firms-third-carbon-emissions>. See generally Richard Dahl, *Green Washing*, 118 ENV'T HEALTH PERSP. 246, 247 (2010) (providing a definition and overview of “green washing” by corporations).
- 40 These suppression strategies and tactics—as well as many other topics discussed in Section I—also apply to other areas of activism and reform efforts such as, to name three examples, racial and economic justice and anti-war protest.
- 41 Many of these techniques were used during the 2020 protests against the killing of George Floyd. See, *e.g.*, Maggie Prosser, *Local and Federal Law Enforcement Using Intimidation Tactics Against Protesters, State Lawyers Guild Says*, OHIO CAP. J. (Jul. 3, 2020), <https://ohiocapitaljournal.com/2020/07/03/local-and-federal-law-enforcement-using-intimidation-tactics-against-protesters-state-lawyers-guild-says/>; Li Zhou, *“The Protesters Had to Deescalate the Police”: Demonstrators Are the Ones Defusing Violence at Protests*, VOX (Jun. 12, 2020), <https://www.vox.com/2020/6/12/21279619/protesters-police-violence-philadelphia-los-angeles-washington-dc>. Although these protests were not specifically climate or environmental protests, they alerted mainstream environmental groups to the connection between racism, justice, and the climate. See, *e.g.*, Leslie Fields, *Racial Justice Is Environmental Justice*, SIERRA MAG. (May 26, 2021), <https://www.sierraclub.org/sierra/racial-justice-environmental-justice> (detailing the Sierra Club’s shifts in advocacy following the nationwide racial justice protests following Floyd’s death); Hop Hopkins, *Racism Is Killing the Planet*, SIERRA MAG. (Jun. 8, 2020), <https://www.sierraclub.org/sierra/racism-killing-planet> (“An idea—a long-overdue realization—is growing in the environmental movement. It goes something like this: ‘We’ll never stop climate change without ending white supremacy.’”).

activist and union groups, surveilling social media, and investigating and prosecuting activist groups as “terrorists.”⁴² These tactics have been used by local and federal law enforcement, at times backed by industry stakeholders that oppose the reformers’ goals. Examples include responses to animal rights and environmental activism in which protests were likened to “terrorism,”⁴³ climate protest suppression by industry-funded private security and police,⁴⁴ federally sponsored anti-terrorism groups monitoring fossil fuel protests,⁴⁵ and FBI investigations of environmental organizations for domestic terrorism (even after internal investigations by both the DOJ and the FBI deemed such investigations inappropriate).⁴⁶ These strategies reduce the number of people taking to the streets and undermine the public’s perception of the validity of activists’ claims by coloring activists themselves as criminals or terrorists.⁴⁷

The degree of individual choice police leaders and line officers have regarding activism is not entirely clear. What is clearer is the

42 See generally WILL POTTER, *GREEN IS THE NEW RED: AN INSIDER’S ACCOUNT OF A SOCIAL MOVEMENT UNDER SIEGE* (2011).

43 See generally *id.* at 15.

44 *Oil and Water*, THE INTERCEPT, <https://theintercept.com/series/oil-and-water/> (last visited Apr. 18, 2023) (exploring how industry-funded private security efforts suppress climate protest and examining their interplay with police).

45 Will Parrish & Jason Wilson, *Revealed: Anti-Terror Center Helped Police Track Environmental Activities*, THE GUARDIAN (Oct. 2, 2019), <https://www.theguardian.com/us-news/2019/oct/02/oregon-pipelines-protests-monitoring-police-anti-terror-unit> (describing information-sharing between covert law enforcement and the fossil fuel industry).

46 Adam Federman, *Revealed: How the FBI Targeted Environmental Activists in Domestic Terror Investigations*, THE GUARDIAN (Sept. 24, 2019), <https://www.theguardian.com/us-news/2019/sep/23/revealed-how-the-fbi-targeted-environmental-activists-in-domestic-terror-investigations> (detailing the FBI’s investigations of environmental organizations that were alleged to include domestic terrorists).

47 INT’L NETWORK OF CIV. LIBERTIES ORG., “TAKE BACK THE STREETS”: REPRESSION AND CRIMINALIZATION OF PROTEST AROUND THE WORLD 58 (Abby Deshman et al., eds. Oct. 2013), https://www.aclu.org/sites/default/files/assets/global_protest_suppression_report_incl.pdf (describing counterterrorism statutes that “generally have very broad definitions of ‘terrorism’ and ‘terrorists,’ and human rights defenders and regional social groups have noted that individuals are shying away from protesting out of fear that the authorities will subsequently prosecute them under these provisions”); Safia Samee Ali, “Not by Accident”: False “Thug” Narratives Have Long Been Used to Discredit Civil Rights Movements, NBC NEWS.COM (Sept. 27, 2020), <https://www.nbcnews.com/news/us-news/not-accident-false-thug-narratives-have-long-been-used-discredit-n1240509> (detailing the long history of portraying activists for equity and equality as threatening and dangerous).

political influence: in addition to the influence that can be acquired through campaign donations, lobbying, and other means, there are several means through which companies can purchase police and prosecutorial assistance and goodwill. Police foundations offer one option.⁴⁸ Companies have paid police to provide security at protest locations; for example, the Canadian company Enbridge paid Minnesota police departments over \$2 million to provide security against people protesting their proposed Line 3 pipeline,⁴⁹ and Energy Transfer Partners provided North Dakota at least \$15 million to pay local and out-of-state agencies to police the Dakota Access Pipeline protests.⁵⁰

Companies that are concerned about protest often turn to legislatures for help.⁵¹ One of their strategies has been to seek legislation to proactively criminalize protest.⁵² Between January 2017 and March 2023, 264 anti-protest laws were proposed in Congress and state legislatures, thirty-nine of which were enacted.⁵³ Examples of these bills' proposals include creating new crimes, increasing penalties

48 See generally Kevin Walby et al., *Police Foundation Governance and Accountability: Corporate Interlocks and Private, Nonprofit Influence on Public Police*, 20 CRIMINOLOGY & CRIM. JUST. 131 (2018) (exploring police board governance and warning of potentially inappropriate relationships between corporations on police foundations).

49 Kaylana Mueller-Hsia, *How an Oil Company Pays Police to Target Pipeline Protesters*, BRENNAN CTR. FOR JUST. (Oct. 7, 2021), <https://www.brennancenter.org/our-work/analysis-opinion/how-oil-company-pays-police-target-pipeline-protesters>.

50 In a curious irony, the structure allowing out-of-state law enforcement to participate in suppressing climate and environmental protests—the Emergency Management Assistance Compact—was created to facilitate disaster response after major hurricanes. The Republican governor of North Dakota declared a state of emergency due to the Dakota Access pipeline protests, allowing the local sheriff to trigger the Compact. James MacPherson, *Dakota Access Developer Gives \$15M Toward Security Costs*, U.S. NEWS (Sept. 28, 2017), <https://www.usnews.com/news/us/articles/2017-09-28/apnewsbreak-pipeline-firm-gives-15m-toward-security-costs>; NAT'L EMERGENCY MGMT. ASS'N, *THE EMERGENCY MANAGEMENT ASSISTANCE COMPACT: A HISTORY AND ANALYSIS OF THE EVOLUTION OF NATIONAL MUTUAL AID POLICY AND OPERATIONS 1–2* (2014), <https://www.desmog.com/wp-content/uploads/files/EMAC%20History.pdf>; Steve Horn, *This Natural Disaster Assistance Law is Why Other States are Policing Dakota Access Pipeline Protests*, DESMOG (Oct. 27, 2016), <https://www.desmog.com/2016/10/27/emergency-assistance-law-dakota-access-pipeline-out-state-cops/>.

51 Connor Gibson, *The Police Groups and Fossil Fuel Corporations Lobbying to Criminalize Protest*, NONPROFIT Q. (July 5, 2022), <https://nonprofitquarterly.org/the-police-groups-and-fossil-fuel-corporations-lobbying-to-criminalize-protest/>.

52 *Id.* (noting police union support for such legislation).

53 See U.S. *Protest Law Tracker*, INT'L CTR. FOR NOT-FOR-PROFIT L., <https://www.icnl.org/usprotestlawtracker/> (last visited Mar. 6, 2023).

for existing crimes, expanding categories captured by existing crimes (such as what counts as critical infrastructure), raising permit fees for holding protests, denying government benefits to people convicted of protest-related crimes, and withholding federal funding to state or local prosecutor's offices for failure to prosecute protesters.⁵⁴ Horrifyingly, eighteen bills have been introduced to provide immunity to drivers who hit protesters with their cars; Oklahoma, Iowa, and Florida have actually enacted them.⁵⁵

Another strategy is to legislatively label protest as terrorism.⁵⁶ For example, animal industry and corporate advocacy groups advocated for bills in Congress, exploiting 9/11 fears.⁵⁷ Such bills included the Agroterrorism Prevention Act, which would have made activists eligible for the death penalty if someone were to die as a result of activist arson (which fortunately did not pass), and the Animal Enterprise Terrorism Act, which re-labeled animal rights activism as terrorism and expanded criminal penalties for economic interference in a broadened range of animal "enterprises" from research to rodeo.⁵⁸

Yet another strategy is to prevent the public from learning about the harms of polluters' operations by criminalizing efforts to collect information about their harmful practices. So-called "Ag-gag" laws are a powerful example of this approach, which large-scale industrial agriculture corporations have proposed in nearly half of all state legislatures.⁵⁹ Varying from state to state, these laws penalize journalists and activists who record, possess, or distribute photos, video, or audio

54 *Id.*

55 See U.S. Current Trend: Bills Provide Immunity to Drivers Who Hit Protesters, INT'L CTR. FOR NOT-FOR-PROFIT L., <https://www.icnl.org/post/analysis/bills-provide-immunity-to-drivers-who-hit-protesters> (last visited Mar. 6, 2023).

56 See, e.g., Kaylana Mueller-Hsia, *Anti-Protest Laws Threaten Indigenous and Climate Movements*, BRENNAN CTR. FOR JUST. (Mar. 17, 2021), <https://www.brennancenter.org/our-work/analysis-opinion/anti-protest-laws-threaten-indigenous-and-climate-movements> (exploring laws that invoke national security interests to monitor activity by environmental activists).

57 See, e.g., Alleen Brown, *The Green Scare: How a Movement That Never Killed Anyone Became the FBI's No. 1 Domestic Terrorism Threat*, THE INTERCEPT (Mar. 23, 2019), <https://theintercept.com/2019/03/23/ecoterrorism-fbi-animal-rights/>; Matthew Wolfe, *The Rise and Fall of America's Environmentalist Underground*, N.Y. TIMES MAG. (July 13, 2022), <https://www.nytimes.com/2022/05/26/magazine/earth-liberation-front-joseph-mahmoud-dibee.html>.

58 Brown, *supra* note 57; 18 U.S.C. § 43.

59 Kelsey Piper, "Ag-gag Laws" Hide the Cruelty of Factory Farms from the Public. Courts are Striking them Down, VOX (Jan. 11, 2019), <https://www.vox.com/future-perfect/2019/1/11/18176551/ag-gag-laws-factory-farms-explained> (describing "Ag-gag" legislation and an overview of the legal challenges).

of industrial farms. Some of these laws have been found to violate First Amendment protections on speech grounds.⁶⁰

These examples show how criminal laws and CJ agencies are used by economic elites to target specific activist groups. The next Section explores how economic and political elites have used the CJ system in ways that suppress progressive activism and make elections less democratic.

C. *The CJ System Versus “People Power” More Broadly*

In his Pulitzer Prize-winning *Slavery by Another Name*, Douglas A. Blackmon recounts wondering why there was no Black reform movement on the scale of the Abolitionist movement between Reconstruction and the Civil Rights Movement.⁶¹ His thesis is that the CJ system was used by white elites to arrest (in both the sense of stopping and punishing) Black citizenship and activism while also providing white elites with access to the economic boon of free or cheap prison labor.⁶² In other words, the CJ system was used in ways that reduced the risk to political elites’ status quo while skewing the labor market in their favor.

Unfortunately, in its modern form, the CJ system continues to be deployed to disempower certain communities and prevent them from challenging the overall political and economic system.⁶³ The most obvious deployment is to skew elections. Under the guise of election security, ongoing efforts to suppress non-white and student voter turnout include voter caging, deceptive practices, physical intimidation, and threats of legal sanction.⁶⁴ Even election workers are targeted for

60 *Id. See, e.g.*, Jacob Coleman, *ALDF v. Otter: What Does it Mean for Other State’s “Ag-gag” Laws?*, 13 J. FOOD L. & POL’Y 198 (analyzing an “Ag-gag” case and discussing its implications); *Animal Legal Def. Fund v. Wasden*, 878 F.3d 1184, 1194–95 (9th Cir. 2018).

61 DOUGLAS A. BLACKMON, *SLAVERY BY ANOTHER NAME* (2008).

62 *Id.* at 6–7.

63 *See, e.g.*, MICHELLE ALEXANDER, *THE NEW JIM CROW: MASS INCARCERATION IN THE AGE OF COLORBLINDNESS* 1–2 (ed. 2010).

64 Wendy Weiser & Vishal Agraharkar, *Ballot Security and Voter Suppression*, BRENNAN CTR. FOR JUST. (2012), <https://www.brennancenter.org/our-work/research-reports/ballot-security-and-voter-suppression> (describing discriminatory practices taken in the name of ballot security disenfranchise voters); Gabriella Sanchez, *In Florida, the Right to Vote Can Cost You*, BRENNAN CTR. FOR JUST. (Sept. 7, 2022), <https://www.brennancenter.org/our-work/analysis-opinion/florida-right-vote-can-cost-you> (describing new approaches to disenfranchising Floridians registering to vote and facing outstanding fines).

intimidation through the threat of criminal sanctions.⁶⁵ This can be seen as the current chapter of a long history of police intimidation and violence to suppress voting among groups of people who were finally granted the right to vote, such as during Reconstruction and the Civil Rights era.⁶⁶

Less obvious but of great influence is mass incarceration. We now explore how the tangled web of mass incarceration reduces some communities' political and economic power. Many states deny the franchise to people with felony convictions during their prison sentences, while on probation or parole, or for a certain number of years following the end of their sentences, which in total blocked 5.2 million people from voting in 2020.⁶⁷ Explicitly or effectively disenfranchising people with felony convictions (as well as making it hard for immigrants to eventually secure the franchise) may affect the outcomes of elections.⁶⁸

Mass incarceration also supports the political power of groups that have been opposed to climate action through the practice of prison gerrymandering, a legislative districting strategy that shifts power away from BIPOC communities and toward white and rural communities by treating incarcerated people as residents of the legislative districts where prisons are located, rather than of their home districts.⁶⁹ Built upon the racial disparities in prisons, the strategy's conceit is to give geographic regions that usually vote Republican more seats in legislatures, with a concomitant reduction in Democratic representation.⁷⁰

Not only does mass incarceration skew the electoral landscape, but it also reduces civic involvement. An emerging body of scholarship

65 See Will Wilder, Derek Tisler & Wendy R. Weiser, *The Election Sabotage Scheme and How Congress Can Stop It*, BRENNAN CTR. FOR JUST. 5–6 (Nov. 8, 2021), <https://www.brennancenter.org/media/8465/download>.

66 See, e.g., ALEXANDER, *supra* note 63, at 29–45 (exploring police brutality and Black disenfranchisement across time).

67 See, e.g., Jean Chung & Kevin Muhitch, *Voting Rights in the Era of Mass Incarceration: A Primer*, THE SENT'G PROJECT 1 (July 2021), <https://www.sentencingproject.org/app/uploads/2022/08/Voting-Rights-in-the-Era-of-Mass-Incarceration-A-Primer.pdf>.

68 See generally SASHA ABRAMSKY, CONNED: HOW MILLIONS WENT TO PRISON, LOST THE VOTE, AND HELPED SEND GEORGE W. BUSH TO THE WHITE HOUSE (2006).

69 See Brent Staples, *The Census: Phantom Constituents*, N.Y. TIMES (Feb. 6, 2009), <https://archive.nytimes.com/theboard.blogs.nytimes.com/2009/02/06/the-census-phantom-constituents/>.

70 See, e.g., *id.*; Lauren McCaughy & Ari Sen, "Prison Gerrymandering": How Inmates Are Helping the Texas GOP Maintain Its Power, DALL. MORNING NEWS (Dec. 15, 2021), <https://www.dallasnews.com/news/investigations/2021/12/15/prison-gerrymandering-how-inmates-are-helping-the-texas-gop-maintain-its-power/>.

links “exposure to the criminal justice system to individuals’ and communities’ withdrawal from civic life—through declining political participation”⁷¹

Mass incarceration also limits community economic power through the artificial suppression of wages.⁷² Mass incarceration has long been manipulated to provide cheap labor, both through prison labor and by skewing the labor market for people who have reentered society.⁷³ Many people are unable to find jobs, education, housing, or other opportunities to work due to an arrest or a conviction.⁷⁴ Mass incarceration even suppresses participation in labor organizations: Adam Reich and Seth Prins found that “exposure to the criminal justice system is associated with reduced workplace collective action because it enhances employers’ power over workers and thus impacts the structure of the low-wage labor market in ways that further disadvantage those already most marginalized.”⁷⁵ This directly benefits polluters and their peers by reducing labor costs and indirectly through reducing the economic and political power of workers’ communities.

While observers often note that the suppression of BIPOC voting is used to the political benefit of Republicans and their supporters, we posit that it may also affect politics within the Democratic Party.⁷⁶ As a result of the success of the so-called Republican “war on unions,” Democrats during the Clinton Administration sought out Wall Street and corporate funding to replace lost union campaign funds (their so-called “Triangulation” policy).⁷⁷ Because attending to corporate donors may help replace lost union fundraising, the mass incarceration

71 Adam D. Reich & Seth J. Prins, *The Disciplining Effect of Mass Incarceration on Labor Organization*, 125 AM. J. SOCIO. 1303, 1304 (2020).

72 See, e.g., Leah Wang & Wanda Bertram, *New Data on Formerly Incarcerated People’s Employment Reveal Labor Market Injustices*, PRISON POL’Y INITIATIVE (Feb. 8, 2022), <https://www.prisonpolicy.org/blog/2022/02/08/employment/>.

73 See, e.g., *id.* (finding that the collateral consequences of criminal conviction (a) limit justice-involved individuals’ employment options to less desirable jobs and (b) artificially suppresses wages).

74 Quintin Williams & Cesraëa Rumpf, *What’s After Good?: The Burden of Post-Incarceration Life*, J. QUALITATIVE CRIM. JUST. & CRIMINOLOGY, Apr. 1, 2020, at 1–2, <https://www.qualitativecriminology.com/pub/v8i3p2/release/4>.

75 Reich & Prins, *supra* note 71, at 1304.

76 See, e.g., ALEXANDER, *supra* note 63, at 29–45 (exploring police brutality and Black disenfranchisement across time); MICHAEL WALDMAN, *THE FIGHT TO VOTE* (2016) (providing examples of police intimidation and violence).

77 See generally JAMES KWAK, *TAKE BACK OUR PARTY: RESTORING THE DEMOCRATIC LEGACY* (2020) (broadly discussing triangulation by the Democratic party due to shifting union political leanings); Brent Cebul, *Supply-Side Liberalism: Fiscal Crisis, Post-Industrial Policy, and the Rise of the New Democrats*, 2 MOD. AM. HIST. 139 (2019).

strategies discussed above might reduce the presumptive influence of affected communities within the Democratic Party. The artificially reduced number of votes, legislative seats, campaign donations, and degree of political and economic power among these presumably Democratic constituencies may contribute to the Democratic Party's continuing hesitance to embrace more policies supported by the party's non-corporate rank-and-file and left flank.⁷⁸

D. How Tough-On-Crime Politics Hides Sacrifice Zones

The electoral politics of crime contribute greatly to mass incarceration.⁷⁹ This is seen most obviously in how it encourages a race to extremes among candidates and officials—of any party—who want to avoid being labelled as “soft” on crime.⁸⁰ Appearing “tough” on crime rewards retributive positioning. This feeds legislation and policies contributing to mass incarceration, with influences on the environment and climate as described in Section I.C above. Fearmongering is a standard element of this style of politics, which has been shown to reduce constituents' empathy for others' pain.⁸¹ We argue that this reduction in empathy has a downstream effect, reducing awareness of environmental harm among political and economic elites.

These politics generalize individuals and entire groups in ways that tend to be racist.⁸² The bogeymen selected for political posturing are ostensibly labeled “criminals,” “drug dealers,” “illegal aliens,” and

78 See Scott Waldman, *What Changed—and What Didn't—in Democrats' Climate Platform*, *Sci. Am.* (Aug. 19, 2020), <https://www.scientificamerican.com/article/what-changed-and-what-didnt-in-democrats-climate-platform/>; *What the Inflation Reduction Act Means for Climate*, *EARTHJUSTICE* (Aug. 16, 2022), <https://earthjustice.org/brief/2022/what-the-inflation-reduction-act-means-for-climate> (analyzing climate provisions of the Inflation Reduction Act and acknowledging provisions shaped by centrist Democrat influences).

79 See Udi Ofer, *Politicians' Tough-on-Crime Messaging Could Have Devastating Consequences*, *TIME* (Nov. 3, 2022), <https://time.com/6227704/politicians-crime-messaging-mass-incarceration/>; Cheyenne Morales Harty, *The Causes and Effects of Get Tough: A Look at How Tough-on Crime Policies Rose to the Agenda and an Examination of Their Effects on Prison Populations and Crime* 2, 13–14 (2012) (M.A. thesis, University of South Florida) (on file at University of South Florida Digital Commons).

80 Harty, *supra* note 79 at 13–14.

81 See generally Matt T. Richins et al., *Incidental Fear Reduces Empathy for an Out-Group's Pain*, 21 *EMOTION* 536, 536–42 (2021).

82 See Calvin John Smiley & David Fakunle, *From “Brute” to “Thug:” The Demonization and Criminalization of Unarmed Black Male Victims in America*, 26 *J. HUM. BEH. SOC. ENV'T* 350, 350 (2016).

other epithets—but visually they are labelled by their skin color as Black or Brown.⁸³ This extends the dehumanization from the ostensible bogeymen to BIPOC people more generally.⁸⁴ Further, the BIPOC “bad guys” are often presented as individualistic, intentional, and incorrigible, thereby deserving more punishment and less support.⁸⁵ When put to use as a political “dog whistle,” BIPOC communities are painted as inherently criminal (with “cultures” of criminality and poverty), which implies that they are morally unworthy of a stronger social safety net, truly equal opportunities, or a clean and healthy environment.⁸⁶

This facilitates the continuing disproportionate treatment of BIPOC geographies as “sacrifice zones.”⁸⁷ Defined as “low-income and racialized communities shouldering more than their fair share of environmental harms related to pollution, contamination, toxic waste and heavy industry[.]” areas with large BIPOC populations or lower political or economic power are often targeted to site ecologically harmful facilities and operations that more affluent and powerful communities would deem to be locally unwanted land uses (“LULUs”).⁸⁸

83 *Id.*

84 See Kenneth Dowler, *Dual Realities?: Criminality, Victimization, and the Presentation of Race on Local Television News*, 27 J. CRIM. & JUST. 79, 79–80 (2004).

85 See, e.g., Nazgol Ghandnoosh, *Race and Punishment: Racial Perceptions of Crime and Support for Punitive Policies*, SENT'ING PROJECT 32 (2014), <https://www.sentencingproject.org/app/uploads/2022/08/Race-and-Punishment.pdf> (“Researchers have shown that those who attribute crime to individual dispositions are more punitive and less supportive of rehabilitation than those who emphasize environment factors.”). This facilitates misinformation and fearmongering campaigns, such as the infamous “superpredator” myth of the 1990s. See Carroll Bogert, *Analysis: How the Media Created a ‘Superpredator’ Myth that Harmed a Generation of Black Youth*, NBC NEWS (Nov. 20, 2020), <https://www.nbcnews.com/news/us-news/analysis-how-media-created-superpredator-myth-harmed-generation-black-youth-n1248101>.

86 See, e.g., Ghandnoosh, *supra* note 85, at 30–32 (linking racial animus, punitive attitudes, and white attitudes toward affirmative action).

87 See, e.g. Reynard Loki, *‘Sacrifice zones’: How People of Color are Targets of Environmental Racism*, NATION OF CHANGE (Apr. 7, 2021), <https://www.nationofchange.org/2021/04/07/sacrifice-zones-how-people-of-color-are-targets-of-environmental-racism/> (“Designated by corporations and policymakers, these areas are a product of environmental racism, the systemic social, economic and political structures—including weak laws, lack of enforcement, corporate negligence and less access to health care—that place disproportionate environmental health burdens on specific communities based on race and ethnicity.”).

88 See, e.g., Paul Mohai & Robin Saha, *Which Came First, People or Pollution? Assessing the Disparate Siting and Post-Siting Demographic Change Hypotheses of Environmental Injustice*, ENVIRON. RSCH. LETTERS, Nov. 18, 2015, at 1–2; Dayna Nadine Scott & Adrian A. Smith, *“Sacrifice Zones” in the Green Energy Economy: Toward an Environmental*

The predatory use of sacrifice zones is a key enabler of the ongoing climate and ecological crises because communities with more clout rarely tolerate these ecological dangers in their own backyards.

Dehumanizing BIPOC communities facilitates the use of sacrifice zones by hiding them and their harms from the eyes and hearts of many white people and others who have power and influence. There are several elements to this: recall that Section I.B showed how labeling environmental activists as criminals or terrorists undermines activists' ability to educate the public about environmental and climate harms. The dehumanization of BIPOC communities through the politics of crime extends the effect of this labelling to entire communities. Dehumanization thereby contributes to the unfortunate yet all-too-common trend of failing to listen to and take seriously the thoughts, opinions, experiences, or recommendations of people impacted by injustice (a concept called "epistemic injustice").⁸⁹ Dehumanization also primes people to accept misinformation and misdirection campaigns by opponents of reform (such as those denying the existence of problems, blaming reform and reformers for other problems, or disproportionately highlighting quotes by BIPOC people that support the interests of opponents of reform).⁹⁰ In addition, the moralized view of criminals as incorrigible facilitates a notion that these communities are unworthy of just and equal treatment. Dehumanization can thereby prompt people who *do* hear about the injustices *not* to care. Together, these effects partially explain the traditional low prioritization of the goals of the environmental and climate justice ("ECJ") movement among mainstream environmental groups,⁹¹ as well as the limited elite awareness of or concerns about sacrifice zones and their harms.

Justice Framework, 62 MCGILL L.J. 861, 866 (2017).

- 89 See generally MIRANDA FRICKER, *EPISTEMIC INJUSTICE: POWER AND THE ETHICS OF KNOWING* 1–9 (2007); Brandon del Pozo & Josiah D. Rich, *Addressing Racism in Medicine Requires Tackling the Broader Problem of Epistemic Injustice*, 21 AM. J. BIOETHICS 91 (2021).
- 90 See, e.g., NAOMI ORESKES & ERIK CONWAY, *MERCHANTS OF DOUBT: HOW A HANDFUL OF SCIENTISTS OBSCURED THE TRUTH ON ISSUES FROM TOBACCO SMOKE TO GLOBAL WARMING* (2010) (exploring industry-connected scientists' work to obscure harms related to smoking and environmental harms and the role of doubt in perpetuating these harms); Jean-Daniel Collomb, *The Ideology of Climate Change Denial in the United States*, 9 EUR. J. AM. STUD. 1, 1–12 (examining the power of political ideology and culture in perpetuating climate denialism in the U.S.).
- 91 See Zach Colman, *Environmental Groups' Greatest Obstacle May Not Be Republican Opposition*, POLITICO MAG. (Feb. 5, 2021), <https://www.politico.com/news/magazine/2021/02/05/environmental-movement-racial-reckoning-green-diversity-465501>.

E. Operational Harms to the Climate and Environment

Pivoting from a systems-level to an operations-level analysis shows several vectors through which the CJ system directly harms local environments and contributes to greenhouse gas (“GHG”) emissions. Two examples suffice here: carceral facilities and drug law enforcement.

Prisons and jails can be seen as sacrifice zones themselves, from their operations and sometimes from their locations, with harms to air and water quality leading to health harms not just at each facility, but also for surrounding communities.⁹² Irresponsible management of waste and sewage has generated numerous lawsuits and citations.⁹³ Many carceral facilities have been shown to contaminate water sources, air, and land, as well as forest and wildlife habitats; all these environmental harms in turn harm the health of people.⁹⁴ For example, the EPA’s Prison Initiative inspections found prisons “in the Mid-Atlantic region [to be] plagued with violations. Violations included air and water pollution, inadequate hazardous waste management and failing spill control prevention for toxic materials.”⁹⁵ Yet, shockingly, at least as of 2016, the Federal Bureau of Prisons had never even considered the environmental impact upon incarcerated people in its Environmental Impact Statements for new prison construction projects.⁹⁶

Julius McGee and colleagues found that mass incarceration is itself a significant, direct contributor to GHGs as measured through the linkage between increases in a state’s incarceration rates and increases in its industrial emissions.⁹⁷ They conclude that jail and prison growth

92 Kimberly M. S. Cartier, *An Unfought Geoscience Battle in U.S. Prisons*, *Eos* (Nov. 10, 2020), <https://eos.org/features/an-unfought-geoscience-battle-in-u-s-prisons>; Candice Bernd et al., *America’s Toxic Prisons*, *EARTH ISLAND J.* (2017), <https://earthisland.org/journal/americas-toxic-prisons/>.

93 See Dashka Slater, *Prison Ecology*, *SIERRA CLUB MAG.* (Oct. 5, 2015), <http://www.sierraclub.org/sierra/2015-6-november-december/grapple/prison-ecology> (describing the pollution caused by prisons, including dumping of wastes into public waterways).

94 Seth J. Prins & Brett Story, *Connecting the Dots Between Mass Incarceration, Health Inequity, and Climate Change*, 110 *AM. J. PUB. HEALTH* S35, S35–36 (2020).

95 Panagioti Tsolkas, *Mass Incarceration vs. Rural Appalachia*, *EARTH ISLAND J.* (Aug. 24, 2015), https://www.earthisland.org/journal/index.php/articles/entry/mass-incarceration_vs._rural_appalachia/.

96 Nathalie Prescott, *Prisoner (In)Consideration in Environmental Justice Analyses*, *GEO. ENV’T L. REV.* (2016), <https://gielr.wordpress.com/2016/05/31/prisoner-inconsideration-in-environmental-justice-analyses>.

97 Julius A. McGee et al., *Locked into Emissions: How Mass Incarceration Contributes to Climate Change*, 8 *SOC. CURRENTS* 326, 336–37 (2020).

are the key drivers to higher emissions levels, because development and maintenance requires greater energy to source materials used for industrial expansion, build the industrial complex, and operate it.⁹⁸

Many of these problems can be remedied through improved practices. Nascent sustainability efforts might reduce pollution and GHG emissions, should the efforts be scaled up within and across agencies. For instance, incorporating more energy-efficient heating, cooling, and lighting; transitioning to electric vehicles and solar power; reducing usage of toxic chemicals; and promoting responsible waste management would help reduce the negative environmental impacts of many jails and prisons.⁹⁹ Meaningful improvements require a long-term commitment of dedicated funding, staffing, prioritization, and technical assistance.

Drug law and enforcement have also triggered climate and ecological harm. Domestically, research shows that the current state-by-state approach to legalizing cannabis has inadvertently created new climate and environmental problems.¹⁰⁰ Licit cannabis production is confined to legalized states, no matter how appropriate or inappropriate their climate and ecosystems may be for cannabis agriculture. In states where cannabis cultivation is ecologically unsuitable, there is significant water waste and excess carbon emissions due to the energy demands of indoor cultivation.¹⁰¹ Some of these problems might be avoided by simply growing cannabis in sensible locales and then shipping it to other states, but federal law continues to prohibit the interstate transport of cannabis.¹⁰²

Internationally, the United States funds and facilitates drug crop eradication efforts abroad.¹⁰³ These efforts often involve aerial spray

98 *Id.*

99 Electric vehicles (“EVs”) as police cruisers not only avoid tailpipe emissions but obviate the need to keep internal combustion engines running while parked in order to keep their computers and technology powered on and protect naloxone (the opioid overdose antidote) from temperature extremes. The transition to EVs may take longer to reach less-well-funded agencies, their personnel, and others who spend time on the road traveling to CJ facilities, such as people under community supervision and or people visiting loved ones in prisons that have been located in rural areas far from the urban and suburban homes of justice-involved individuals and their families.

100 Robert A. Mikos, *Interstate Commerce in Cannabis*, 101 B.U. L. REV. 857, 859–60 n.6 (2021).

101 Summers et al., *The Greenhouse Gas Emissions of Indoor Cannabis Production in the United States*, 4 NATURE SUSTAINABILITY 644, 644–48 (2021).

102 Mikos, *supra* note 100.

103 KENDRA MCSWEENEY, *THE IMPACT OF DRUG POLICY ON THE ENVIRONMENT* 6–7 (2015),

campaigns using potent chemical herbicides like glyphosate to target cannabis, coca, and opium poppy fields.¹⁰⁴ These efforts have harmed essential food sources and livelihoods for local communities.¹⁰⁵ They have not, however, deterred drug production.¹⁰⁶

Instead, narcotics traffickers have responded to eradication efforts with a classic displacement or balloon effect by moving their efforts elsewhere, triggering new ecological harms.¹⁰⁷ Narco-traffickers often move their operations into vulnerable or protected forests or other ecosystems.¹⁰⁸ They degrade these ecosystems by cutting down trees and clearing vegetation in order to grow drug crops (using polluting agricultural chemicals) and to build trafficking infrastructure, such as airstrips and smuggling routes.¹⁰⁹ Other harmful land uses include clear-cutting to create illegal cattle farms and logging operations as money laundering schemes.¹¹⁰ Not only do these practices degrade the

<https://www.opensocietyfoundations.org/uploads/e205c307-c17b-437b-bc35-cfb703bce4f2/impact-drug-policy-environment-20151208.pdf>

104 *Id.*; UNITED NATIONS OFF. ON DRUGS & CRIME, COCA CULTIVATION IN THE ANDEAN REGION: A SURVEY OF BOLIVIA, COLUMBIA & PERU 43–44 (2006), https://www.unodc.org/pdf/andean/Andean_report_Part2.pdf; Luciano Grillo et al., *Addressing Socio-Environmental Challenges and Unintended Consequences of Peruvian Drug Policy: An Analysis in Two Former Cocalero Valleys*, 3 J. ILLICIT ECON. & DEV. 97, 97 (2021).

105 *See, e.g.*, CAROLINA NAVARRETE-FRÍAS, CONG. RSCH. SERV., DRUG CROP ERADICATION AND ALTERNATIVE DEVELOPMENT IN THE ANDES 18 (Nov. 18, 2005), https://www.everycrsreport.com/files/20051118_RL33163_fffd90b57747d5ca59ec7286e5876ffb5445e090.pdf (“[T]here are numerous reports of spray drift affecting licit crops and forestland.”). This has prompted migration to urban areas and then often northward to the United States. SARAH BERMEO & DAVID LEBLANG, DUKE SANFORD CENTER FOR INTERNATIONAL DEVELOPMENT, HONDURAS MIGRATION: CLIMATE CHANGE, VIOLENCE, & ASSISTANCE at 1 (2021). On the possible system impacts of migration affecting the domestic CJ system, see Section 2.3.1 below.

106 McSWEENEY, *supra* note 103, at 5.

107 *Id.* at 7.

108 *Id.* at 7–8.

109 *Id.* at 8 (noting that chemicals like sulfuric acid, ammonia, acetone, kerosene, and others are utilized to grow drug crops.); TRANSFORM DRUG POL’Y FOUND., THE WAR ON DRUGS: CAUSING DEFORESTATION AND POLLUTION (2013), <https://transformdrugs.org/assets/files/PDFs/count-the-costs-environment.pdf>.

110 Beth Tellman et al., *Illicit Drivers of Land Use Change: Narcotrafficking and Forest Loss in Central America*, 63 GLOBAL ENV’T CHANGE, 102092, 2020, at 2–3; Louise Osborne, *Drug-driven Environmental Devastation*, DEUTSCHE WELLE (Feb. 23, 2016), <https://www.dw.com/en/drug-driven-environmental-devastation/a-19066168>. *Cf.* Karina Benessaiah & Jesse Sayles, *Drug Trafficking’s Effects on Coastal Ecosystems*, 343 SCIENCE 1430, 1430 (2014) (discussing how fisherfolk involved in the drug trade have also engaged in “narco-capitalization” projects that threaten to damage coastal ecosystems).

environment but they also release carbon dioxide into the atmosphere that had been sequestered in forests, long-rooted plants, and soils.¹¹¹ Such harms can be seen clearly in Central America, where pushing cocaine traffickers into more remote forests is a leading driver of deforestation and habitat loss.¹¹²

F. Opportunities for the CJ System to Help

There are many ways the CJ system is harming the climate and environment, but also many ways it can help. Even though politics limits the scope of discretion afforded to CJ leaders and personnel, they *do* have some discretion. There are many actions that individual CJ personnel and leaders can choose to take to enforce environmental law and collaborate with communities. For instance, encouraging and training local law enforcement officers (LEOs) to enforce civil and criminal environmental law—and showing the value of doing so—might make a meaningful difference. Amidst widespread public criticism of the CJ agencies for over-policing BIPOC communities, shifting resources toward environmental enforcement could remedy the problem of underpolicing polluters. This would make a major contribution toward ECJ, racial, and social justice goals; improve public safety; and improve the health, safety, and well-being of the communities they serve and their own personnel.

Ultimately, climate change and environmental degradation present many growing challenges—some on the horizon, and some already here—for CJ agencies, their personnel, and public safety more generally. Addressing these requires adapting to a new normal; this is an area where CJ leaders have the most discretion.

II. ADAPTING TO A THREAT MULTIPLIER: WHAT THE CLIMATE AND ENVIRONMENTAL CRISES MEAN FOR PUBLIC SAFETY AND THE CRIMINAL JUSTICE SYSTEM

111 Jerry Melillo & Elizabeth Gribkoff, *Soil-Based Carbon Sequestration*, MIT CLIMATE PORTAL (Apr. 15, 2021), <https://climate.mit.edu/explainers/soil-based-carbon-sequestration>.

112 Jennifer A. Devine et al., *Narco-Degradation: Cocaine Trafficking's Environmental Impacts in Central America's Protected Areas*, 144 WORLD DEV. (SPECIAL ISSUE) 1–2 (2021) (“[N]arco-trafficking accelerates the conversion of natural resources into commodities (such as land, lumber, minerals, and fauna), their extraction, and entry into legal and illegal markets.”).

Simply put, “Climate adaptation is the flipside of mitigation. If mitigation seeks to prevent the environment from changing, adaptation seeks to help people live in a changed environment.”¹¹³ What will changing environments mean for crime, public safety, and the CJ system? This Section identifies several ways that the ecological crises will add new quantities of crime, violence, and disorder.

The CJ system is not immune to the effects of climate change: it faces both pre-existing responsibilities and new challenges. The “threat multiplier” concept is useful here. As first described in an early analysis of the national security risks of climate change:

[C]limate change will exacerbate . . . problems . . . and add to the problems of effective governance. Unlike most conventional security threats that involve a single entity acting in specific ways at different points in time, climate change has the potential to result in multiple chronic conditions, occurring . . . within the same time frame.¹¹⁴

Climate change is a threat multiplier to both the CJ system and public safety. Our model of how this threat multiplier operates in the CJ context takes the current state of public safety challenges and responsive and supportive systems, *adds* new public safety challenges, and *subtracts* capabilities due to increasing vulnerabilities.¹¹⁵

The adaptation frame offers a lens for identifying strategies to protect and improve the capability of the CJ system and society overall to address current and new public safety challenges, while also limiting the scope of climate-induced fragility. Robust and equitable adaptation strategies offer opportunities to reduce the threat multiplication factor.

First, this dual-frame analysis explores how reducing pollution could reduce current crime and disorder. Second, it explores how climate change may spawn new sources of crime and disorder. Third, through preliminary mapping of how climate change will increase pressures on the CJ personnel, facilities, and funding, it explores how climate change will undermine CJ system capacities. Throughout, we offer a sample of possible suggestions for how to adapt to these various problems in ways that support the health and safety of CJ personnel and the communities

113 Joe McCarthy, *What Is Climate Adaptation and Why Is It Key to Our Survival?*, GLOB. CITIZEN (Feb. 5, 2021), <https://www.globalcitizen.org/en/content/what-is-climate-adaptation/>.

114 CTR. FOR NAVAL ANALYSES CORP., *supra* note 17, at 22.

115 *Id.* at 43.

they serve.

A. *The Influence of Pollution on Crime*

Under the threat multiplier lens, pollution contributes to existing problems as well as new and growing problems. Pollution harms people today, and it fuels climate change, loss of biodiversity, and mounting ecological degradation that harms people tomorrow. From a public safety perspective, this means pollution is fueling crime today as well as more crime tomorrow. This Section explores how pollution fuels crime today. The remainder of Section II explores how it will undermine public safety tomorrow.

In addition to pollution that violates civil and criminal environmental laws, *legal* air pollution (especially via fine particulate matter) has been causally linked to an increase in violent criminal activity.¹¹⁶ One analysis found that particulate pollution predicted at least six categories of crime: murder and non-negligent manslaughter, forcible rape, robbery, aggravated assault, burglary, and motor vehicle theft.¹¹⁷ Subsequent experiments established a “causal effect of psychologically experiencing a polluted . . . environment on unethical behavior.”¹¹⁸ While the exact causation is not fully established, studies have suggested several psychological and physiological means through which particulate pollution contributes to violent crime in the short-term.¹¹⁹ In the long-term, studies point to the predicate role of pollution in undermining learning, thereby impacting life opportunities.¹²⁰

116 Jesse Burkhardt et al., *The Effect of Pollution on Crime: Evidence from Data on Particulate Matter and Ozone*, 98 J. ENV'T ECON. & MGMT., Nov. 2019, at 7. See also Evan Herrnstadt et al., *Air Pollution and Criminal Activity: Microgeographic Evidence from Chicago*, 13 AM. ECON. J. 70, 70 (2021) (“On days when the wind blows orthogonally to the interstate, we find that violent crime increases by 1.9 percent on the downwind side. The effects we find are unique to violent crimes—we find no effect of pollution on the commission of property crime.”).

117 Jackson G. Lu et al., *Polluted Morality: Air Pollution Predicts Criminal Activity and Unethical Behavior*, 29 PSYCHOL. SCI. 340, 340 (2018).

118 *Id.*

119 See, e.g., Shiyang Gong, et al., *Polluted Psyche: Is the Effect of Air Pollution on Unethical Behavior More Physiological or Psychological?* 31 PSYCH. SCI. 1040, 1040 (2020) (“Physiologically, air pollutants can ‘trigger anxiety by increasing oxidative stress and systemic inflammation’ . . . psychologically, perceived air pollution can make people anxious about their health and future.” (citations omitted)); Arjun Bedi, et al., *Particle Pollution and Cognition: Evidence from Sensitive Cognitive Tests in Brazil*, 8 J. ASS'N. ENV'T & RES. ECONS. 443, 445 (2021) (finding that exposure to fine particulate matter reduced fluid reasoning skills).

120 See, e.g., Xin Zhang, Xi Chen & Xiaobo Zhang, *The Impact of Exposure to Air Pollution*

Similarly, numerous studies have established the “lead-crime hypothesis,” connecting childhood and adolescent exposure to lead with future criminal activity.¹²¹

There is a significant environmental justice issue here. Recall the discussion of sacrifice zones in Section I.D. LULUs such as industrial facilities, fossil fuel processing plants, waste processing facilities, landfills, trucking and distribution centers, trucking routes, and even highways built through existing neighborhoods, are disproportionately located in BIPOC communities, irrespective of income level.¹²² These communities are hit hardest by the litany of well-documented health harms from air pollution, including heart disease, lung cancer and asthma, mental health problems, substance misuse and addiction, suicidality, and death.¹²³ Children are at particular risk¹²⁴ for these harms that are endemic in the United States; as of 2019, the nation ranks seventh worldwide for pollution-related deaths.¹²⁵

on Cognitive Performance, PROC. NAT'L ACAD. SCI. 9193, 9193–96 (2018) (finding cognitive performance would likely improve if Chinese pollution was cut to meet EPA standards); Valentina Duque & Michael Gilraine, *Coal Use, Air Pollution, and Student Performance*, J. PUB. ECON., Sep. 2022, at 1–2 (finding that “every one million megawatt hours of coal-fired power production decreases mathematics scores in schools within ten kilometers by 0.02s” and that “the decline in coal use over the past decade reduced the black-white test score gap by 0.023s in the Midwest”).

121 See, e.g., Jennifer L. Doleac, *New Evidence that Lead Exposure Increases Crime*, BROOKINGS (June 1, 2017), <https://www.brookings.edu/blog/up-front/2017/06/01/new-evidence-that-lead-exposure-increases-crime/> (finding that increased lead exposure was tied to increased crime, controlling for indicators that potentially contribute to crime, such as poor nutrition and healthcare); Stephen B. Billings & Kevin T. Schnepel, *Life after Lead: Effects of Early Interventions for Children Exposed to Lead*, 10 AM. ECON. J.: APPLIED ECON. 315, 327–29 (2018) (finding that children provided interventions to reduce lead exposure had fewer behavioral issues, such as suspensions, absences, and violent crime arrests).

122 See, e.g., Christopher W. Tessum, *PM_{2.5} Polluters Disproportionately and Systematically Affect People of Color in the United States*, 7 SCI. ADVANCES, 2021; Mohai & Saha, *supra* note 88; Burkhardt et al., *supra* note 116.

123 See e.g., Tessum, *supra* note 122; *Disparities in the Impact of Air Pollution*, AM. LUNG. ASSOC. (Nov. 17, 2022), <https://www.lung.org/clean-air/outdoors/who-is-at-risk/disparities>; Marlene Cimon, *Air Pollution Could Be Making You Anxious, Depressed – and Violent*, NEXUS MEDIA NEWS (Feb. 10, 2020), <https://nexusmedianews.com/air-pollution-could-be-making-you-anxious-depressed-and-violent-cf55c61b2033/>.

124 Shava Cureton, *Environmental Victims: Environmental Injustice Issues that Threaten the Health of Children Living in Poverty*, 26 REVS. ON ENV'T HEALTH 141 (2011).

125 Some 55% of domestic pollution deaths are caused by air pollution, largely due to vehicles, heavy industry, and (increasingly) forest fires. It is estimated that air pollution causes 10 million deaths worldwide every year. *Pollution and Health Metrics: Global, Regional, and Country Analysis*, GLOB. ALLIANCE ON HEALTH & POLLUTION

Law enforcement leaders should note that tackling this environmental justice challenge would also improve public safety.¹²⁶ Active police support for reducing pollution could be a very valuable investment in reducing crime, improving public health, and improving community relations. The CJ system can dial back these criminogenic impacts through multiple strategies. One such strategy is, of course, to enforce environmental law with more vigor. Police and prosecutors could work with local communities to identify problematic pollution sources and target them for further investigation and civil or criminal enforcement. Settlements in civil suits could be a useful and just source of agency funding.

Climate adaptation policy often involves rebuilding or reorganizing built landscape to make it more resilient.¹²⁷ Police agencies could embrace this approach proactively, using their bully pulpits to support initiatives that have public safety, climate, and environmental benefits. The menu of adaptation strategies is bountiful. For instance, transportation—which comprises 27% of American GHG emissions¹²⁸—offers numerous policy options that CJ leaders could promote to adapt to climate change. They might urge a transition to greener transportation not just to reduce GHG emissions but also for its public safety benefits. For example, expanding public transportation and safe bike lanes provides many public safety benefits, such as improving access to employment, helping probationers get to their required meetings, helping defendants attend court, and protecting LEOs and the public from vehicular hazards.¹²⁹ Another example might involve routing truck

2, 2, 49 (Dec. 2019), https://gahp.net/wp-content/uploads/2019/12/PollutionandHealthMetrics-final-12_18_2019.pdf (ranking nations for pollution deaths). See David Wallace-Wells, *Ten Million a Year*, LONDON REV. BOOKS (Dec. 2, 2021), <https://www.lrb.co.uk/the-paper/v43/n23/david-wallace-wells/ten-million-a-year>.

126 See, e.g., Burkhardt et al., *supra* note 116.

127 See, e.g., Franz-Josef Ulm & Ipek Bensus Manav, *Climate-Resilient Infrastructure*, MIT CLIMATE PORTAL (Sept. 20, 2021), <https://climate.mit.edu/explainers/climate-resilient-infrastructure>.

128 *Fast Facts on Transportation Greenhouse Gas Emissions*, EPA, <https://www.epa.gov/greenvehicles/fast-facts-transportation-greenhouse-gas-emissions> (July 14, 2022).

129 See, e.g., Hannah Natanson, *Parolees and Probationers Struggled to Get Around – Until a Charity Provided Bikes*, BOSTON GLOBE (Dec. 1, 2019), <https://www.bostonglobe.com/news/nation/2019/12/01/parolees-and-probationers-struggled-get-around-until-charity-provided-bikes/DGMGg6kJaf5BYVf0kDWsII/story.html> (estimating that “close to 2,000 people serving parole or probation sentences . . . in the tri-county area. . . At least half of them struggle to find reliable transportation . . . given that most cannot afford cars.”); *Law Enforcement Officer Motor Vehicle*

traffic away from schools, homes, churches and other houses of religion, or routes that demand extensive idling and low-gear revving.¹³⁰ Multiple studies have found that crime rates fell when lead was removed from gasoline.¹³¹

Another strategy would even be to increase tree canopy appropriate to a local climate in areas lacking trees, because leaves can catch airborne particulate pollution before it enters people's lungs.¹³² This could also help improve stormwater management, which could in turn reduce flash flooding, thereby reducing risks to officers and other first responders. Planting trees also reduces the urban heat island effect, thereby reducing crime induced by heat—concepts to which we turn in the next Section.

B. *The Influence of Global Warming on Crime*

Climate change undermines public safety. Studies show a link between heat and increased aggression, substantiating the common perception that hot days see more street crime, domestic violence, mental health crises, and calls for emergency services.¹³³ Theories as to the cause of this linkage identify heat as a contributor to increased

Safety, NATL. INST. OCCUPL. SAFETY & HEALTH (Aug. 22, 2022), <https://www.cdc.gov/niosh/topics/leo/default.html> (“From 2011-2020, 454 officers died due to motor vehicle related incidents (struck by and crashes) – 33% of all line-of-duty deaths (excluding COVID-19 deaths).”).

130 See Ji Luo, Matthew J. Barth, & Kanok Boriboonsomsin, *Vehicle Routing to Mitigate Human Exposure to Traffic-Related Air Pollutants*, 21 INT'L CONF. ON INTELL. TRANSP. Sys. 2765, 2769–70 (2018).

131 Kevin Drum, *Lead: America's Real Criminal Element*, MOTHER JONES (Jan. 2013), <https://www.motherjones.com/environment/2016/02/lead-exposure-gasoline-crime-increase-children-health/>. See generally Janet Currie & Reed Walker, *Traffic Congestion and Infant Health: Evidence from E-Zpass*, 3 AM. ECON. J.: APPLIED ECON. 65, 66–86 (2011) (finding that replacing highway toll plazas with EZ-Pass systems reduced travel time and tailpipe emissions with a resulting reduction in the incidence of prematurity and low birth weight within 2km of a toll plaza by 6.7-9.16% and 8.5-11.3% respectively, with larger effects for African Americans, smokers, and those close to toll plazas).

132 Seyed Mahdi Heshmatol Vaezin et al., *The Effectiveness of Urban Trees in Reducing Airborne Particulate Matter by Dry Deposition in Tehran, Iran*, 193 ENV'T MONITORING ASSESSMENT 1, 2–10 (2021); Barbara A. Maher et al., *Impact of Roadside Tree Lines on Indoor Concentrations of Traffic-Derived Particulate Matter*, 47 ENV'T SCI & TECH. 13737, 13739–41 (2013).

133 See, e.g., Marshall Burke et al., *Climate and Conflict*, 7 ANN. REV. ECON. 577, 584–585, 590, 604 (2015); Augusta A. Williams et al., *The Influence of Extreme Heat on Police and Fire Department Services in 23 U.S. Cities*, 4 GEOHEALTH, no. 11, Nov. 2020, at 562, 565.

arousal, irritability, and negative or hostile thoughts, as well as to decreased sleep, cognitive function, and self-regulation.¹³⁴

Several studies draw the connection between heat and violence. For example, one study noted how higher temperature increases the probability of violent retaliation in sporting events.¹³⁵ Trevor Houser estimates that “nationally-averaged crime rates will rise 1.7–5.4% (with a median of 3%) by the end of this century.”¹³⁶ In their meta-analyses, Marshall Burke and colleagues estimate a median 4% increase in interpersonal violence (and a 14% increase in the risk of intergroup violence) per standard deviation change in climate variables and that contemporaneous temperature has a 11.3% effect per standard deviation on interpersonal violence.¹³⁷ In raw numbers, Matthew Ranson predicts that global warming will lead to an additional 35,000 murders, 216,000 rape cases, and 1.6 million aggravated assaults in the United States by the end of this century.¹³⁸ Ryan Harp and Kristopher Karnauskas predict 3.2 million additional violent crimes in the United States due to global warming.¹³⁹

Linking these projections to the threat multiplier concept shows how critical breakdowns in the economic, social, or political fabric may catalyze yet more crime. Dennis Mares warns that even if “the strength of the relationship between temperature anomalies and crime may appear relatively mild, considering potential future warming, climate change may come to have a significant impact on crime rates.”¹⁴⁰ In other words, as warming models continue to project higher temperatures, and climate impacts appear to be racing toward critical tipping points, these

134 SUSAN CLAYTON ET AL., MENTAL HEALTH AND OUR CHANGING CLIMATE: IMPACTS, INEQUITIES, RESPONSES 34 (2021), <https://ecoamerica.org/wp-content/uploads/2021/11/mental-health-climate-change-2021-ea-apa.pdf>.

135 Richard P. Larrick et al., *Temper, Temperature, and Temptation: Heat-Related Retaliation in Baseball*, 22 PSYCH. SCI. 423, 424–26 (2011).

136 Burke et al., *supra* note 133, at 610 (citing TREVOR HOUSER ET AL., ECONOMIC RISKS OF CLIMATE CHANGE: AN ECONOMIC PROSPECTUS (Colum. Univ. Press, 2015)). See also Xiaofeng Hu et al., *Impact of Climate Variability and Change on Crime Rates in Tangshan, China*, 609 SCI. TOTAL ENV'T 1041, 1047 (2017) (finding spikes in violent and property crime from heat, and also notably correlated rising humidity with a $9.5 \pm 5.3\%$ increase in rape and a $2.6 \pm 2.1\%$ increase in minimally violent robbery).

137 Burke et al., *supra* note 133, at 610.

138 Matthew Ranson, *Crime, Weather, and Climate Change* 14 (Harvard Kennedy School, Working Paper No. 8, 2012).

139 Ryan D. Harp & Kristopher B. Karnauskas, *Global Warming to Increase Violent Crime in the United States*, 15 ENV'T RSCH. LETTERS, Mar. 3, 2020, at 1.

140 Dennis Mares, *Climate Change and Crime: Monthly Temperature and Precipitation Anomalies and Crime Rates in St. Louis, MO 1990-2009*, 59 CRIME, LAW & SOC. CHANGE 185, 185 (2013).

studies will likely underestimate future increases in crime.

Climate risk models offer heuristic approaches for exploring how global warming may increase crime. At least two climate risk models specifically focus on crime: Thomas Homer-Dixon's conceptual model (as interpreted by John Crank and Linda Jacoby) predicts that individual-level criminal activity, organized and gang crime, terrorism or insurgency, ethnic conflicts, and crime by state elites or the state itself will increase through the mediating factors of increased migration, social strain and inequality, constrained economic activity, and justice system hardening.¹⁴¹

Similarly, Robert Agnew predicts that "climate change will promote crime by increasing strain, reducing social control, weakening social support, fostering beliefs and values favorable to crime, contributing to traits conducive to crime, increasing certain opportunities for crime, and creating social conflict."¹⁴² These effects will manifest through four primary channels: resource scarcity, increased social divisions, weakened states (in which challenger groups may assert authority or foment conflict), and increased poverty.¹⁴³

CJ agencies would be well advised to use these models to explore how heat and other climate impacts are threat multipliers for public safety. Scenario planning efforts such as conduct tabletop exercises are critical (so long as they do not limit themselves to overly conservative climate models). Increasing crime will strain CJ system capabilities,¹⁴⁴ and police and CJ agencies will need to adapt. Adaptation should not be ignored in favor of merely "grinning and bearing it," nor should it be used as a pretext for prison expansion or other "armed lifeboat" approaches that do not deliver broad public safety and justice benefits.

Instead, the need for adaptation presents an opportunity for creative crime reduction initiatives. Departments should explore opportunities to cut the cord between heat and crime. There is a well-established disparity in temperatures within cities between neighborhoods with natural cooling (through grass, trees, water features, and other amenities) and those that—due to poverty, racism, and "redlining"—are urban heat islands.¹⁴⁵ These neighborhoods may also have disparities in

141 CRANK & JACOBY, *supra* note 12, at 91–103.

142 Agnew, *supra* note 12, at 22.

143 CRANK & JACOBY, *supra* note 12, at 104.

144 Levenson, *supra* note 12, at 340–45 (exploring how the crisis may impact the CJ system).

145 Jeremy S. Hoffman et al., *The Effects of Historical Housing Policies on Resident Exposure to Intra-Urban Heat: A Study of 108 US Urban Areas*, 8 CLIMATE (SPECIAL ISSUE) 1–2 (2020).

air-conditioning. Thus, the most vulnerable communities will likely be hit hardest by both heat and heat-related crimes. Kilian Heilmann and colleagues found the most acute associations between heat and crime to occur in the neighborhoods that are the poorest and hottest: “a 4.39% increase in crimes on days between 75F and 89F, and a[n] 8.33% increase on days above 90F.”¹⁴⁶ This creates an opportunity for the CJ system to identify and help those communities with new strategies.

One promising approach would be to work with these local communities to support the development of high-quality, well-maintained green spaces for mutual benefit. Many studies show that the presence of green spaces and vegetation, particularly in urban settings, has positive influences on social interactions and is associated with less violent behavior and lower crime rates.¹⁴⁷ Programs that increase the amount of urban green space and neighborhood development demonstrate significant reductions in burglaries, assaults, and violent crimes.¹⁴⁸ Even small green spaces have been shown to reduce crime, receiving a “promising” rating by the National Institute of Justice Crime Solutions program.¹⁴⁹ Public housing residents with nearby vegetation report 25% fewer acts of domestic violence.¹⁵⁰ Public housing buildings with more vegetation have 52% fewer total crimes, 48% fewer property crimes, and 56% fewer violent crimes than buildings with less vegetation.¹⁵¹ Residents living in more barren buildings with less

146 Kilian Heilmann, et al., *The Urban Crime and Heat Gradient in High and Low Poverty Areas*, J. PUB. ECON., May 2021, at 23. The largest association was with domestic and intimate violence rather than non-violent property crimes. *Id.* at 29.

147 Kathleen L. Wolf, *Crime & Public Safety*, GREEN CITIES: GOOD HEALTH (June 28, 2010), https://depts.washington.edu/hhwb/Thm_Crime.html; Ruth F. Hunter et al., *Environmental, Health, Wellbeing, Social and Equity Effects of Urban Green Space Interventions: A Meta-narrative Evidence Synthesis*, ENV'T INT'L, Sept. 2019, at 10–11, 15–16; Kathryn Gilstad-Hayden et al., *Research Note: Greater Tree Canopy Cover is Associated with Lower Rates of Both Violent and Property Crime in New Haven, CT*, 143 LANDSCAPE & URB. PLAN. 248, 252 (2015).

148 Michelle Kondo et al., *Effects of Greening and Community Reuse of Vacant Lots on Crime*, 53 URB. STUD. 3279, 3289–93 (2016); *Chicago's 606: Abandoned Rail to Crime Reducing Trail*, VIBRANT CITIES LAB, <https://www.vibrantcitieslab.com/case-studies/4190/>; Justin E. Heinze et al., *Busy Streets Theory: The Effects of Community-engaged Greening on Violence*, 62 AM. J. CMTY. PSYCH. 101, 101 (2018).

149 *Program Profile: Pennsylvania Horticultural Society's Vacant Lot Greening Program*, NAT'L INST. JUST. (Nov. 29, 2021), <https://crimesolutions.ojp.gov/ratedprograms/741>.

150 Frances E. Kuo & William C. Sullivan, *Aggression and Violence in the Inner City: Effects of Environment via Mental Fatigue*, 33 ENV'T & BEHAV. 543, 560 (2001); Frances E. Kuo & William C. Sullivan, *Environment and Crime in the Inner City: Does Vegetation Reduce Crime?*, 33 ENV'T & BEHAV. 343, 355 (2011).

151 See Kuo & Sullivan, *Aggression and Violence*, *supra* note 150 at 560; Kuo & Sullivan,

vegetation reported more aggression, violence, and mental fatigue,¹⁵² whereas green spaces have also shown to increase perceived safety of neighborhood residents.¹⁵³ Not only is crime negatively correlated with green spaces, quality green spaces can also motivate communities to protect and care for their neighborhood spaces¹⁵⁴ and deter potential criminals by showing community cohesion and involvement.¹⁵⁵

For police and CJ agencies that advocate for high-quality green spaces, this is a win-win strategy, benefiting both CJ agencies and the communities they serve.¹⁵⁶ It presents a high-yield opportunity to build community relations through an investment of political capital *but not* agency budget. The benefits of heat reduction will redound to the occupational safety and health of police and CJ personnel on patrol, who will suffer less heat stress, less heat stroke, and less heat-related violence.¹⁵⁷ Well-designed green spaces and better land management can reduce the problem of flooding after rains, thereby improving safety and transportation for officers and community members. If these efforts include trees and plants with deep roots, they will also contribute to climate mitigation by sequestering carbon. Adaptation provides many opportunities to improve public safety and health; this is just one.

C. Exacerbating and Creating Problems and Vulnerabilities

Environment and Crime, *supra* note 150, at 355.

- 152 Kathleen Wolf, *Crime & Public Safety*, GREEN CITIES: GOOD HEALTH, https://depts.washington.edu/hhwb/Thm_Crime.html. See Kuo & Sullivan, *Aggression and Violence*, *supra* note 150 at 557; Kuo & Sullivan, *Environment and Crime*, *supra* note 150, at 360.
- 153 Marit Jansson et al., *Perceived Personal Safety in Relation to Urban Woodland Vegetation - A Review*, 12 URB. FORESTRY & URB. GREENING 127, 131 (2013).
- 154 Mardelle Shepley et al., *The Impact of Green Space on Violent Crime in Urban Environments: An Evidence Synthesis*, 16 INT'L J. ENV'T RSCH. & PUB. HEALTH 5119 (2019).
- 155 See Heinze et al., *supra* note 148, at 106; Austin Troy et al., *The Relationship Between Residential Yard Management and Neighborhood Crime: An Analysis from Baltimore City and County*, 147 LANDSCAPE & URB. PLAN. 78 (2016).
- 156 This would require law enforcement to address their skepticism toward parks, which are sometimes viewed as venues for criminal activity, illegal drug use and litter, sex work, and unhoused populations. Constructive collaboration with local communities to address these concerns tend to be most productive if they include the voices of the full range of people who would use the space, including people who use drugs, sex workers, and unhoused people. Earnest collaboration to pursue these win-win strategies might help CJ agencies (particularly police) earn community trust and repair frayed bridges.
- 157 We discuss the impacts of heat on other CJ personnel, CJ system facilities, and people who are incarcerated in Section II.C., *infra*.

1. Political Instability and Violence

While previous sections have discussed specific examples of climate harms, this Section follows Mares's warning that even if "the strength of the relationship between temperature anomalies and crime may appear relatively mild, considering potential future warming, climate change may come to have a significant impact on crime rates" by exploring how climate may likely undermine systems more broadly, further increasing crime and violence.¹⁵⁸ Overlapping risks include the destabilizing effects of climate change, including extreme heat or cold, drought, flooding, crop failure, food insecurity, infrastructure collapse, increased morbidity and mortality, and mass migration (just to name a few).¹⁵⁹ As with all climate effects, they should be interpreted cumulatively across all climatic impacts as well as other contextual impacts and risk factors.¹⁶⁰ These will put stress on our political and financial systems, increase politically-motivated violence, increase the number of hate crimes, and increase the threat of non-state armed groups.¹⁶¹ Indeed, we are already seeing these effects.

In addition to prompting more crime, heat leads to more political unrest.¹⁶² One study found that the frequency of riots increased with temperatures up through approximately eighty-five degrees Fahrenheit.¹⁶³ Heat is closely connected to drought, which increases instability and violence and may lead to increases in crime.¹⁶⁴ Land disputes in the American West tied to water rights in the face of perennial droughts have already resulted in right-wing and industry

158 Mares, *supra* note 140, at 185.

159 See generally CRANK & JACOBY, *supra* note 12 (describing several examples of destabilization).

160 See ENV'T PROT. AGENCY, CUMULATIVE IMPACTS RESEARCH: RECOMMENDATIONS FOR EPA'S OFFICE OF RESEARCH & DEVELOPMENT (2022), https://www.epa.gov/system/files/documents/2022-09/Cumulative%20Impacts%20Research%20Final%20Report_FINAL-EPA%20600-R-22-014a.pdf/.

161 See, e.g., CRANK & JACOBY, *supra* note 12; KATHARINA NETT & LUKAS RÜTTINGER, CLIMATE DIPLOMACY, INSURGENCY, TERRORISM & ORGANISED CRIME IN A WARMING CLIMATE (2016), https://climate-diplomacy.org/sites/default/files/2020-10/CD%20Report_Insurgency_170724_web.pdf.

162 Ellen G. Cohn, *Weather and Crime*, 30 BRITISH J. CRIMINOLOGY 51, 53 (1990).

163 *Id.*

164 See Colby Galliher & Ishita Krishan, *Federal Intervention, Conflict and Drought in the American West*, LAWFARE (Dec. 6, 2021), <https://www.lawfareblog.com/federal-intervention-conflict-and-drought-american-west>.

rebellions and bombings of federal offices.¹⁶⁵

Heat and drought are also linked to migration, which can reshape the context of public safety and policing.¹⁶⁶ Brazil offers a notable example: the *favelas* of Rio de Janeiro are predominantly populated by people fleeing agricultural regions of the country that suffered desertification as a result of climate change.¹⁶⁷ As national security planners already know, using foreign experiences as hypotheticals offers opportunities to learn from real-world events, their downstream effects, and their operational challenges. CJ agencies—as well as emergency management agencies and many others—should do the same. While using the experiences of countries that are quite dissimilar from the United States may be uncommon and even uncomfortable in *domestic* planning, foreign experiences offer scenarios that may aid adaptive planning.

Climate migration is also used as fuel for xenophobic politics and violence. Xenophobia is an ancient tool in the dark arts of authoritarian politics.¹⁶⁸ Since climate and environmental concerns are often anathema to the target audiences of xenophobic politics, such rhetoric usually focuses on othering the migrants themselves.¹⁶⁹ Using a similar variety of stereotyping as discussed in Section I.D, painting migrants as criminals arriving in “hordes” is a gambit to create fear and promote their dehumanization in order to advance the political interests of opponents of climate action.

When climate change or the environment are directly mentioned in xenophobic political contexts, they are often weaponized to oppose immigration. One tactic is to frame immigration as a national security threat.¹⁷⁰ Another is to cynically claim that environmental conservation is the purpose for preventing migration, falsely contending that migrants, rather than people in the middle and upper classes, are the ones guilty of

165 *Id.*

166 CHRISTIAN PARENTI, TROPIC OF CHAOS 157–78 (2011).

167 *Id.*

168 *See, e.g.*, Nicholas T. Davis & Steven Miller, *Racism and Authoritarianism Go Hand in Hand*, VOX (July 18, 2018), <https://www.vox.com/mischiefs-of-faction/2018/7/2/17524960/racism-authoritarianism-hand-in-hand>; *Refugees and Other Migrants Do Not Lose Their Rights by Crossing Borders*, U.N. OFF. HIGH COMR. HUM. RIGHTS (June 20, 2018), <https://www.ohchr.org/en/stories/2018/06/refugees-and-other-migrants-do-not-lose-their-rights-crossing-borders>.

169 Davis & Miller, *supra* note 168.

170 *See, e.g.*, *Migrant Caravans - National Security Threat*, CTR. FOR IMMIGR. STUD., <https://cis.org/Immigration-Topic/Migrant-Caravans-National-Security-Threat> (last visited Sept. 14, 2022).

overconsumption and developing untouched ecosystems.¹⁷¹ This, along with the bogus concept of the “great replacement theory”—namely that immigrants will “replace” whites—is a basis of eco-fascism.¹⁷² The El Paso Wal-Mart and Christchurch, New Zealand mass shooters used eco-fascist ideology as justification for their hate crimes atrocities.¹⁷³

These examples present serious concern, which will grow as global climate migration has been predicted to increase dramatically.¹⁷⁴ Given the craven weaponization of migration for political profit, the fears it stokes among people with grievances (legitimate and illegitimate), and risk factors such as widespread gun possession and misinformation, there are ample reasons to be concerned about the quality of future governance and the maintenance of the rule of law.

2. Challenging the Resilience of CJ Personnel

Climate change brings many new stresses and uncertainties to CJ personnel, their families, and the communities they serve. These compound the occupational safety and health risks many LEOs and other CJ personnel already face. Acknowledging the threat multiplier effect and critical need for adaptation is critical. In this Section, we will explore one example among many of how climate change may challenge CJ personnel resilience: heat.

Heat adds challenges far beyond catalyzing violence (as discussed in Section II.B). Heat exposure is a significant health risk for personnel on outdoor patrol or working in spaces without air conditioning.¹⁷⁵ High temperatures are correlated with increasing rates of violent incidents within correctional facilities: Anita Mukherjee and Nicholas J. Sanders found that “unsafe heat index levels” raised “daily violent interactions

171 Tristan Bove, *Ecofascism: How the Far-Right Weaponises Environmentalism*, EARTH.ORG (May 28, 2021), <https://earth.org/ecofascism/>.

172 Ruxandra Guidi, *Eco-Fascism, Uncovered*, SIERRA MAG. (Dec. 27, 2022), <https://www.sierraclub.org/sierra/4-november-december/feature/eco-fascism-uncovered-el-paso-texas>.

173 Bove, *supra* note 171.

174 KATHLEEN NEWLAND, MIGRATION POL’Y INST., CLIMATE CHANGE & MIGRATION DYNAMICS 2-3 (2011), <https://www.migrationpolicy.org/sites/default/files/publications/climatechange-2011.pdf>; NICHOLAS STERN, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE 57 (2006), http://mudancasclimaticas.cptec.inpe.br/~rnmclima/pdfs/destaques/sternreview_report_complete.pdf.

175 See, e.g., Ameer Raval et al., *Effects of Occupational Heat Exposure on Traffic Police Workers in Ahmedabad, Gujarat*, 22 INDIAN J. OCCUPATIONAL & ENV’T MED. 144 (2018) (describing the impacts of heat exposure on traffic police in India).

by 20%, and the probability of any violence by 18%.¹⁷⁶ Unfortunately, a surprisingly large proportion of state prisons do not provide air conditioning in areas where incarcerated people are housed.¹⁷⁷

Heat also reduces decision-making, health, and well-being.¹⁷⁸ It may undermine the quality of decision-making in stressful situations, potentially exposing CJ agencies to litigation and public relations problems.¹⁷⁹ Heat and other climate impacts will likely bring a range of physical and mental occupational health concerns as an unwanted result—whether in critical moments or slowly accreting in the background.

Creativity is required to adapt to climate-induced strains on personnel resilience. The Occupational Safety and Health Administration has been working to promulgate a new rule on heat (in the face of significant industry opposition), but it is unclear whether federal efforts to regulate occupational safety and health standards will apply to police and CJ personnel or incarcerated people.¹⁸⁰ Training and research on adaptive strategies, as well as even more effective ways to develop resilience, are necessary to protect the health, safety, effectiveness, and wellbeing of CJ personnel. Departments that pursue creative adaptation strategies effectively should see value in terms of protecting their personnel and avoiding exposure to litigation. If they engage in adaptation strategies that benefit personnel as well as the communities they serve (such as those mentioned in Sections II.A and

176 Anita Mukherjee & Nicholas J. Sanders, *The Causal Effect of Heat on Violence: Social Implications of Unmitigated Heat Among the Incarcerated* (Nat'l Bureau of Econ. Rsch., Working Paper No. 28987, 2021).

177 Jeanine Santucci & Maria Aguilar, *Most US States Don't Have Universal Air Conditioning in Prisons. Climate Change, Heat Waves Are Making it 'Torture'*, USA TODAY (Sept. 12, 2022), <https://www.usatoday.com/story/news/nation/2022/09/12/prisons-air-conditioning-climate-change-heat-waves/10158499002/?gnt-cfr=1>; Alexi Jones, *Cruel and Unusual Punishment: When States Don't Provide Air Conditioning in Prison*, PRISON POL'Y INITIATIVE (June 18, 2019), <https://www.prisonpolicy.org/blog/2019/06/18/air-conditioning/>.

178 GALLUP, CLIMATE CHANGE AND WELLBEING AROUND THE WORLD (2022), <https://www.gallup.com/analytics/397940/climate-change-and-wellbeing.aspx>.

179 Aldert Vrij et al., *Aggression of Police Officers as a Function of Temperature: An Experiment with the Fire Arms Training System*, 4 J. COMTY. & APPLIED SOC. PSYCH. 365 (1994) (finding that police officers are more likely to draw and fire their weapons at an assailant during a training simulation conducted at hot temperature).

180 *Heat Injury and Illness Prevention in Outdoor and Indoor Work Settings Rulemaking*, U.S. DEP'T OF LABOR, OSHA, <https://www.osha.gov/heat-exposure/rulemaking> (last visited Sept. 13, 2022). See also Sam Pearson, *Police Departments Struggle to Keep Cops Cool as Temperatures Rise*, BLOOMBERG L. (Sept. 5, 2018), <https://news.bloomberglaw.com/safety/police-departments-struggle-to-keep-cops-cool-as-temperatures-rise>.

II.B above), they may also help improve community relations, public health, and public safety.

3. Vulnerable Facilities and the People Housed Inside Them

Heat and other climate impacts also connect to the issue of increasingly vulnerable facilities.¹⁸¹ High temperatures take a toll on built infrastructure and the people working and housed inside.¹⁸² Drought subjects facilities and their localities to fire risk and shortfalls in water availability for consumption, sanitation, and other uses.¹⁸³ Wildfires, even when they do not physically threaten facilities, can dangerously undermine air quality.¹⁸⁴ Floods create evacuation challenges and can destroy facilities.¹⁸⁵ These are just a sampling of the climate and environmental risks facing CJ facilities and those housed inside them.

Extreme temperatures increase risks to health and well-being.¹⁸⁶ Many prisons are constructed out of heat-retaining materials which amplify the risk of heat-related illnesses for incarcerated people (as well as correctional personnel working outside temperature-controlled areas of prisons).¹⁸⁷ Certain health conditions, psychotropic medications, and old age can render people more vulnerable to heat-related harms; a high and growing proportion of incarcerated people are affected by

181 See MICHAEL CONNOLLY & DAVID FELDMAN, NATL. INST. CORRECTIONS, RESILIENCE IN CORRECTIONS: A PROACTIVE APPROACH TO CHANGING CONDITIONS 4–5 (2014).

182 See generally DANIEL W. E. HOLT, SABIN CTR. FOR CLIMATE CHANGE L., COLUM. L. SCH., HEAT IN US PRISONS AND JAILS: CORRECTIONS AND THE CHALLENGE OF CLIMATE CHANGE (Aug. 2015), <https://climate.law.columbia.edu/sites/default/files/content/docs/Holt-2015-08-Heat-in-US-Prisons-and-Jails.pdf>.

183 See, e.g., *Wildfire Management*, NAT. INTEGRATED DROUGHT INFO. SYS., <https://www.drought.gov/sectors/wildfire-management> (last visited Mar. 12, 2023).

184 *Id.*

185 Matthew Clarke, *In the Eye of the Storm: When Hurricanes Impact Prisons and Jails*, PRISON LEGAL NEWS (May 17, 2018), <https://www.prisonlegalnews.org/news/2018/may/17/eye-storm-when-hurricanes-impact-prisons-and-jails/> (providing examples of evacuations due to hurricanes); David Reutter, *Plaquemines Parish Jail Grand-Opening Faces Shuttered Wasteful Cells*, PRISON LEGAL NEWS (Aug. 4, 2016), <https://www.prisonlegalnews.org/news/2016/aug/4/plaquemines-parish-jail-grand-opening-faces-shuttered-wasteful-cells/> (“Hurricane Katrina destroyed the 800 plus bed Plaquemines Parish Detention Center. . .”).

186 Njideka C. Motanya & Pamela Valera, *Public Health Management, Climate Change, and Incarceration: What Is the Connection?*, 22 J. PUB. HEALTH MGMT. PRAC. E20, E20-E21 (2016).

187 Kim Kelly, *The Climate Disaster Inside America’s Prisons*, NEW REPUBLIC (Sep. 18, 2019), <https://newrepublic.com/amp/article/155092/climate-disaster-inside-americas-prisons>; Jones, *supra* note 177.

one or more of these factors, leaving them more vulnerable to heat.¹⁸⁸ Individuals in prison are disproportionately likely to have pre-existing and chronic conditions such as diabetes, obesity, or asthma that affect the body's ability to regulate heat.¹⁸⁹ Exposure to extreme temperatures can cause immediate and fatal health problems such as dehydration, heat stroke, or hyperthermia, as well as long-term health issues affecting people's kidneys, lungs, heart, and brain; incarcerated people are already dying of excessive heat.¹⁹⁰ While some state prisons keep temperatures within a livable range, many fail to do so, confining those incarcerated to live without air conditioning where temperatures exceed 100 degrees for days at a time, and the *indoor* heat index has hit 150 degrees.¹⁹¹

These health problems are exacerbated by concerns about pollution. As noted in Section I.E, many facilities do not have an unblemished record in terms of pollution. In addition, many facilities are located dangerously close to (or even on top of) industrial or fossil fuel extraction, processing sites, or toxic waste sites.¹⁹² While building these facilities in such locations may have seemed fiscally prudent or politically-sound, they saddle institutions with increased health risk for the people housed inside.

Unfortunately, no national standards exist for the regulation of air circulation and temperature control within correctional facilities, leaving it up to varying state and local approaches on what is an acceptable and "comfortable" temperature level.¹⁹³ Many states have not implemented protective measures against heat for fear of looking

188 Maurice Chammah, "Cooking Them to Death": *The Lethal Toll of Hot Prisons*, THE MARSHALL PROJECT (Oct. 11, 2017), <https://www.themarshallproject.org/2017/10/11/cooking-them-to-death-the-lethal-toll-of-hot-prisons>.

189 Paloma Wu & D. Korbin Felder, *Hell and High Water: How Climate Change Can Harm Prison Residents and Jail Residents, and Why COVID-19 Conditions Suggests Most Federal Courts Will Wait-And-See When Asked to Intervene*, 49 FORDHAM URB. L.J. 259, 273 (2022) (noting that pre-existing conditions like these are often linked to pollution in home neighborhoods, leading to cumulative environmental and climate health harms to people).

190 Jones, *supra* note 177.

191 HOLT, *supra* note 182, at 75.

192 See, e.g., Prins & Story, *supra* note 94, at S35; David Pellow & Jasmine Vazin, *The Intersection of Race, Immigration Status, and Environmental Justice*, SUSTAINABILITY, July 2019, at 3; Emily C. Gribble & David N. Pellow, *Climate Change and Incarcerated Populations: Confronting Environmental and Climate Injustices Behind Bars*, 49 FORDHAM URB. L.J. 341, 350-51 (2022); Nadia B. Ahmad, *Climate Cages: Connecting Migration, the Carceral State, Extinction Rebellion, and the Coronavirus Through Cicero and 21 Savage*, 66 LOY. L. REV. 293 (2020).

193 HOLT, *supra* note 182, at 91.

soft on criminals or simply to save money on a perceived low priority.¹⁹⁴ Formerly incarcerated people and their advocates have organized protests to bring attention to extreme temperatures¹⁹⁵ and filed hundreds of lawsuits against state prison systems for Eighth Amendment and statutory violations.¹⁹⁶ Some of these efforts have been successful: an investigation by the DOJ into Mississippi prisons found inadequate staffing and cooling, forcing change upon the state's facilities.¹⁹⁷

There are many adaptation strategies that will reduce the risks to both personnel and people who are incarcerated. Many of these will also reduce the environmental harms created by carceral facilities. There have been some initial explorations within the correctional field, such as the Green Corrections Initiative sponsored by the National Institute of Corrections.¹⁹⁸ Publications emerging from this initiative encouraged creating green spaces and nature-based programming such as farms and gardens within correctional institutions, as well as

194 See, e.g., Michael Kunzelman, *Louisiana Spends \$1 Million to Fight Air Conditioning on Death Row*, PORTLAND PRESS HERALD (June 14, 2016), <https://www.pressherald.com/2016/06/13/louisiana-spends-1-million-to-fight-air-conditioning-on-death-row/>.

195 See, e.g., Amanda Rabines, *Prison Reform Activists Demand A/C amid 'Sweltering Heat' Within Florida State Prisons*, ORLANDO SENTINEL (July 23, 2022), <https://www.orlandosentinel.com/news/breaking-news/os-ne-protest-lake-eola-air-conditioning-prisons-20220723-h6ulk2rdbfbrvefwaws5ia2fmm-story.html>.

196 Julianne Skarha et al., *An Overlooked Crisis: Extreme Temperature Exposures in Incarceration Settings*, 110 AM. J. PUB. HEALTH PERSP. S41, S41–S42 (2020). For example, lawsuits in Louisiana and Texas have charged prisons with allowing temperatures that reached dangerous levels, especially for incarcerated people particularly vulnerable to heat-related illness. Matt Clarke & Christopher Zoukis, *Litigation Heats Up Over Extreme Temperatures in Prisons, Jails*, PRISON LEGAL NEWS (June 29, 2018), <https://www.prisonlegalnews.org/news/2018/jun/29/litigation-heats-over-extreme-temperatures-prisons-jails>. The Pack Unit lawsuit in Texas alleged that excessive temperatures violated the constitutional rights of incarcerated people under the Eighth Amendment as well as violated the Americans with Disabilities Act and Rehabilitation Act. *Id.* The Pack Unit housed many who were disabled, elderly, or had other medical conditions. *Id.* The court granted preliminary injunctions and the parties ultimately agreed to keep the indoor heat index under eighty-eight degrees in areas where heat-sensitive prisoners were held. *Id.*

197 Mina Corpuz, *After 121 Scalding Mississippi Summers, Parchman Prison is Getting Air Conditioning*, MISS. TODAY (July 19, 2022), <https://mississippitoday.org/2022/07/19/parchman-mississippi-prisons-air-conditioning/>; Molly Minta, *U.S. DOJ Says Parchman Conditions Violate the Constitution*, MISS. TODAY (April 20, 2022), <https://mississippitoday.org/2022/04/20/u-s-doj-says-parchman-conditions-violate-the-constitution/>.

198 See generally *Green Corrections*, NAT'L INST. OF CORRECTIONS, <https://nicic.gov/projects/green-corrections> (last visited Mar. 8, 2023).

turning jails and prisons into more sustainable and “green” facilities.¹⁹⁹ A small but growing body of literature assessing nature-based interventions in correctional settings is showing generally favorable impacts on mental health, community cohesion, job training, and reduced recidivism through therapeutic horticulture, animal-assisted therapies, care farming, and virtual-reality-based simulations of natural environments.²⁰⁰ Sustainability initiatives such as the American Correctional Association’s sustainability committee and Green Prisons have worked to reduce the use of toxic cleaning products, poor waste management practices, and inefficient energy production and use, as well as pursuing green job training.²⁰¹ These efforts are not yet scaled, and there is ample opportunity for initiatives to improve the welfare of correctional personnel while reducing harms to the people they house. Dedicated funding, personnel, training, and technical assistance are necessary to scale up these efforts.

III. TYING THE THREAT MULTIPLIER TOGETHER: RESPONDING TO DISASTERS AND THEIR LONG AFTERMATH

Disasters are the most acute expression of threat multipliers. In extreme weather events, as well as other disasters like earthquakes or acts of terrorism, law enforcement is thrust into dual roles as both police and emergency management support.²⁰² Jails and prisons face the intensely

199 See generally Mindy Feldbaum et al., *The Greening of Corrections: Creating a Sustainable System*, NAT’L INST. CORRECTIONS (Mar. 2011), <https://s3.amazonaws.com/static.nicic.gov/Library/024914.pdf>.

200 See, e.g., Chris Moeller et al., *Nature-Based Interventions in Institutional and Organisational Settings: A Scoping Review*, 28 INT’L J. ENV’T HEALTH RSCH. 293, 299–301 (2018); Alan Farrier et al., *Mental Health and Wellbeing Benefits from a Prison Horticultural Programme*, 15 INT’L J PRISON HEALTH 91, 96 (2019); August John Hoffman, *Going “Green” From Gray: Providing Opportunities of Community Development and Sustainability Within a Correctional Facilities Program*, 48 J. PREVENTION & INTERVENTION CMTY. 272, 272, 278 (2020); Barb Toews et al., *Impact of a Nature-Based Intervention on Incarcerated Women*, 14 INT’L J. PRISON HEALTH 232, 232, 236–37 (2018); A-Young Lee et al., *Horticultural Therapy Program for Mental Health of Prisoners: Case Report*, 10 INTEGRATIVE MED. RSCH. 1, 3 (2020); Malcolm Burnley, *How Prison Gardens Help Inmates and Save Money*, NEXT CITY (July 25, 2017), <https://nextcity.org/urbanist-news/prison-gardens-help-inmates-save-money>; Sander Van Der Linden, *Green Prison Programmes, Recidivism, and Mental Health: A Primer*, 25 CRIM. BEHAV. & MENTAL HEALTH 338, 338–39 (2015).

201 Becky Lewis, *Greening Corrections Impacts More Than the Environment*, TECHBEAT 8 (Apr. 2018), <https://www.ojp.gov/pdffiles1/nij/nlectc/251688.pdf>.

202 See, e.g., FEMA, EMERGENCY SUPPORT FUNCTION #13 – PUBLIC SAFETY AND SECURITY ANNEX ESF 13–4 (2016) [hereinafter EMERGENCY SUPPORT FUNCTION #13].

stressful demands of evacuation.²⁰³ Some disasters threaten the homes, families, and communities of CJ personnel, adding stress that reduces their work performance during these critical times—if they are even able to travel to work at all.²⁰⁴ Once the immediate disaster subsides, a long recovery period begins, delivering a slew of other threat multiplier concepts to bear on all sectors of the CJ system. As weather-related disasters become more common and widespread,²⁰⁵ they demonstrate the clear need for the CJ system to take the climate and environmental crises seriously and to shift their practices to mitigate and adapt. This Section explores several of these risks in turn, focusing on police, jails, and prisons, suggesting adaptive strategies throughout.

A. Law Enforcement Responding During a Disaster

Disasters test LEOs to their utmost, stretching them to their limits in their dual roles as emergency first responders and protectors of public safety.²⁰⁶ Depending on the scale and nature of the event, they may be tasked with assisting evacuation, search and rescue, or crowd control.²⁰⁷ They may be working in inhospitable and dangerous

²⁰³ Clarke, *supra* note 185.

²⁰⁴ BERNARD D. ROSTKER, WILLIAM M. HIX & JEREMY M. WILSON, RECRUITMENT AND RETENTION: LESSONS FOR THE NEW ORLEANS POLICE DEPARTMENT 2-3 (RAND, 2007) (“At a personal level, most officers suffered the same displacement of families and loss of property that other citizens suffered. The rising waters engulfed their homes and their families. . . . Most police vehicles were under water.”).

²⁰⁵ CTR. FOR RSCH. ON THE EPIDEMIOLOGY OF DISASTERS, THE HUMAN COST OF DISASTERS: AN OVERVIEW OF THE LAST 20 YEARS (2000-2019) 6 (2020) (“Between 2000 and 2019, there were 510,837 deaths and 3.9 billion people affected by 6,681 climate-related disasters. This compares with 3,656 climate-related events which accounted for 995,330 deaths (47% due to drought/famine) and 3.2 billion affected in the period 1980-1999.”). See generally WORLD WEATHER ATTRIBUTION, <https://www.worldweatherattribution.org/> (last visited Sept. 15, 2022) (explaining why and to what extent storms and their power can be attributed to climate change).

²⁰⁶ ROSTKER ET AL., *supra* note 204, at 3 (describing “enormously stressful, even primitive, conditions” faced by New Orleans police officers working during Hurricane Katrina). See generally TERRI M. ADAMS & LEIGH R. ANDERSON, POLICING IN NATURAL DISASTERS: STRESS, RESILIENCE, AND THE CHALLENGES OF EMERGENCY MANAGEMENT (2019).

²⁰⁷ See, e.g., Lewis Eakins, *Integrating Law Enforcement & Emergency Management*, DOMESTIC PREPAREDNESS (Jan. 21, 2015), <https://www.domesticpreparedness.com/preparedness/integrating-law-enforcement-emergency-management/> (“Patrol officers often are the first response personnel at the scene of any natural or manmade disaster and must have the requisite skills to make an assessment, perform rescue operations, maintain perimeter integrity, and ensure scene containment until additional support arrives.”).

conditions with highly stressed or vulnerable populations while bearing their own personal worries about their homes, loved ones, friends, and communities.²⁰⁸ They may also be working in reduced numbers or with reduced capabilities due to the event,²⁰⁹ exacerbating the strain, challenges, and risks of operating during disasters.²¹⁰

This stress operates as a threat multiplier to CJ personnel and the communities they serve. These threats are further multiplied when communication and information systems fail. During Hurricane Katrina, the communications systems collapsed,²¹¹ and the void was filled with rumors and false claims of widespread violence and looting that were “validated” by a credulous media.²¹² These alleged criminal acts were attributed to Black New Orleanians and other people of color; in the words of Rebecca Solnit, “It was as though a levee had broken and a huge flood of deadly stereotypes was pouring in on the already beleaguered people of New Orleans.”²¹³ This triggered what Kathleen Tierney calls “elite panic.”²¹⁴ As she explains:

Such panic takes a variety of forms, including: pathological fear of social disorder and of segments of the population that are not part of the elite; practices designed to protect private property and other elite prerogatives; and postevent efforts to identify and punish scapegoats and hastily usher in new “reforms.” Elite panic was shockingly evident during Katrina,

208 See, e.g., ROSTKER ET AL., *supra* note 204, at 2–3 (“At a personal level, most officers suffered the same displacement of families and loss of property that other citizens suffered. The rising waters engulfed their homes and their families. . . . Most police vehicles were under water.”); Byars, *supra* note 6.

209 ROSTKER ET AL., *supra* note 204, at 2–3 (“Many police units found themselves isolated, without the ability to respond or communicate. Police headquarters and three of eight district headquarters were under water. . . . Primary communications were down. Most police vehicles were under water.”).

210 Wu & Felder, *supra* note 189, at 264–67.

211 Alan D. Campen, *Hurricane Katrina Represents a Failure to Communicate*, AFCEA (Dec. 1, 2005), <https://www.afcea.org/signal-media/hurricane-katrina-represents-failure-communicate>.

212 Retrospective reports have linked devastating consequences to the media’s misleading reports of lawlessness in the wake of Hurricane Katrina. See, e.g., Mark Guarino, *Misleading Reports of Lawlessness After Katrina Worsened Crisis, Officials Say*, THE GUARDIAN (Aug. 16, 2015), <https://www.theguardian.com/us-news/2015/aug/16/hurricane-katrina-new-orleans-looting-violence-misleading-reports>; Ko Bragg, *The Lie of the Storm*, COLUM. JOURNALISM REV. (Nov. 10, 2021), https://www.cjr.org/special_report/new-orleans-hurtcane-katrina-ida-looting.php.

213 REBECCA SOLNIT, *A PARADISE BUILT IN HELL* 241–42 (Penguin Books 2010).

214 Kathleen Tierney, *Hurricane Katrina: Catastrophic Impacts and Alarming Lessons*, in RISKING HOUSE AND HOME: DISASTERS, CITIES, PUBLIC POLICY 119, 131 (John M. Quigley & Larry A. Rosenthal eds., 2008).

as evidenced by media and public officials' obsessions with looting and lawlessness, the issuing of shoot-to-kill orders arising primarily out of a concern with property crime, and the rush to act upon rumors that circulated regarding the "savage" behavior of lower-class community residents, immigrants, and people of color. . . . Although many of the media reports and official actions undertaken in response to Katrina in New Orleans seem reprehensible now, at the time they made sense both to political elites and to many Americans.²¹⁵

Stress *plus* a false information sphere *plus* elite panic is a *prima facie* example of a threat multiplier: these are critical ways that disasters multiply threats to the CJ system and the communities they serve. During Katrina, influenced by faulty rumors of roving violent gangs and widespread looting, New Orleans mayor Ray Nagin expressed elite panic by ordering the New Orleans Police Department ("NOPD") to abandon evacuation and safety duties to focus on proactive enforcement; incredibly, officers were even allowed to shoot looters.²¹⁶ Believing that the rumored violence made rescue operations too dangerous for unarmed personnel, police turned away search and rescue teams, buses, and Amtrak trains that arrived to facilitate evacuation and encouraged hospitals *not* to evacuate.²¹⁷ Similarly credulous, police from the neighboring suburb of Gretna blockaded bridges, trapping thousands of New Orleans residents and tourists at the convention center and elsewhere by preventing them from simply walking out of the city to unflooded suburban areas and disaster response sites.²¹⁸

Elite panic also triggered outright violence.²¹⁹ There were several unjustified police shootings of civilians.²²⁰ There were also instances of vigilante violence: a number of white property owners deputized themselves to protect their neighborhoods from "hoodlums."²²¹ An unknown number of them assaulted and murdered Black New

215 *Id.*

216 Sabrina Shankman, *After Katrina, New Orleans Cops Were Told They Could Shoot Looters*, PROPUBLICA (July 24, 2012), <https://www.propublica.org/article/nopd-order-to-shoot-looters-hurricane-katrina>.

217 SOLNIT, *supra* note 213, at 249–261 (describing panic that ensued from blocking residents and tourists from evacuating during Katrina).

218 *Id.*

219 *Id.*

220 *Id.* See also Peter Sharf & Stephen Phillippi, *The New Orleans Police Department was Troubled Long Before Hurricane Katrina*, THE CONVERSATION (Aug. 27, 2015), <https://theconversation.com/the-new-orleans-police-department-was-troubled-long-before-hurricane-katrina-46381>.

221 SOLNIT, *supra* note 213, at 249–261.

Orleanians who were trying to evacuate; none of these vigilantes were prosecuted.²²²

Together, these breakdowns and acts of violence undermined effective disaster response. As Tierney noted, “[R]esident-to-resident helping behavior was prevented or suppressed because people were afraid to venture out to help their neighbors out of fear of being killed or arrested”²²³ How many people experienced health harms, trauma, or even death as a result of decisions made in this infosphere that prolonged their exposure to heat, humidity, trauma, flooding, and lack of food and water?

There is a myriad of adaptation strategies that police agencies could pursue to improve their capabilities during disaster response operations.²²⁴ Improving the infosphere and reducing elite panic are obviously necessary, and improving communications would be an important step in that direction. Emergency telecommunications systems must be improved to ensure they are resilient and interoperable so emergency personnel can talk to each other. The federal government has funded efforts to pursue these goals and should see them to fruition.²²⁵

Better communication systems will only help if better information is communicated. This requires a commitment to data integrity during disasters, including building the capacity to develop and process high-quality, real-time, on-the-ground situational awareness that is objective and free of racial tropes, combined with a willingness and capacity to fact-check and stop misinformation. Building this capacity requires funding for government employees and contractors, and a commitment to and funding for journalists who do the necessary work to avoid repetitions of rumors and promulgation of misinformation, which is often wrongly

²²² *Id.*

²²³ Tierney, *supra* note 214, at 132. FEMA’s after-action report for Hurricane Sandy theorized that federal assistance by way of the DHS Surge Capacity Force was less effective than it might otherwise have been because some of its members were wearing law enforcement apparel, which may have deterred survivors from approaching them for assistance. FEMA, HURRICANE SANDY FEMA AFTER-ACTION REPORT 34 (2013).

²²⁴ See, e.g., Dave Philipps, *Seven Hard Lessons Federal Responders to Harvey Learned from Katrina*, N.Y. TIMES (Sep. 7, 2017), <https://www.nytimes.com/2017/09/07/us/hurricane-harvey-katrina-federal-responders.html>.

²²⁵ See, e.g., *Public Safety Communications Program*, NAT’L INST. STANDARDS & TECH. (2021), <https://www.nist.gov/programs-projects/public-safety-communications-program>; *Strategic Intent*, CYBERSECURITY & INFRASTRUCTURE SEC. AGENCY 12 (Aug. 2019), https://www.cisa.gov/sites/default/files/publications/cisa_strategic_intent_s508c.pdf.

reported, repeated, and accepted as fact.

Messaging should be developed in advance to preemptively reduce the level of elite panic that might otherwise arise during a major disaster. Pre-preparing a communications strategy regarding property crime might help lower the “temperature” of the infosphere, public, and commentariat. Clarity of mission is the first step: under the Federal Emergency Management Agency’s (“FEMA’s”) Emergency Support Framework, participating public safety and security agencies should give “priority to life safety missions first, followed by missions that address security and the protection of infrastructure/property.”²²⁶ This prioritization should be more widely communicated and implemented, with a heavy emphasis on life safety missions. Elite panic might be reduced through external communications plans featuring pre-prepared talking points articulating this clear life-safety mission, emphasizing that life is more important than property (especially insured property) and that a “zero tolerance” policy toward property crime is not a realistic description of how communities *ever* function.

Internal messaging and training based on a comprehensive understanding of the economic, health, and mobility reasons why some people do not, will not, or cannot evacuate may lead to better evacuation planning and operations. Internal communications and training strategies helping first responders understand those reasons may alleviate the tendency among some police officers to morally blame people who remain (as “opportunists,” “deadbeats,” and the like). This might, in turn, contribute to higher empathy, or, at least, improved knowledge of best practices which might boost clarity and effectiveness in their emergency response roles.²²⁷

Another adaptive strategy is to build relationships. There is a deep literature and history regarding police efforts to engage communities and improve their relationships, through efforts such as

²²⁶ EMERGENCY SUPPORT FUNCTION #13, *supra* note 202, at 13–4.

²²⁷ Useful resources may include existing FEMA communication plans and police de-escalation trainings, especially if trauma-informed disaster response training is included. *See, e.g.*, FEMA, KEY PLANNING FACTORS & CONSIDERATIONS FOR RESPONSE TO & RECOVERY FROM A CHEMICAL INCIDENT 120 (2022); Yasmeen I. Krameddine & Peter H. Silverstone, *How to Improve Interactions Between Police and the Mentally Ill*, 5 FRONTIERS IN PSYCHIATRY 186 (2014); Amy Wolkin & Anita Everett, *Using Trauma-Informed Care to Guide Emergency Preparedness and Response*, PUB. HEALTH MATTERS BLOG (Jul. 9, 2018), <https://blogs.cdc.gov/publichealthmatters/2018/07/trauma-care/> (introducing the concept and importance of trauma-informed emergency response).

community policing,²²⁸ and effective community outreach is essential before and during disasters.²²⁹ Improving relationships with neighboring communities—or at least formalizing a working relationship—might also help avoid some of the costs of bad blood, as was seen between New Orleans and its suburbs during Hurricane Katrina.²³⁰

Finally, improved infrastructure might reduce the scale of disasters or prevent them entirely. As mentioned throughout this Article, there are many infrastructure and land use strategies that CJ leaders could promote or support using their respected platforms. Not all options are as expensive as building bigger and better levees; many nature-based solutions will likely provide immediate quality of life and public safety benefits to the people who live, work, and patrol in at-risk areas.²³¹

B. Jails and Prisons During Disasters

In jails and prisons, the most acute multiplied risks of climate change manifest during disasters.²³² Disasters exacerbate any pre-existing problems like overcrowding, understaffing, vulnerable incarcerated populations, or inadequate infrastructure²³³ and expose failures to plan, train, and practice any plans that are created.²³⁴ They also expose the costs of building in questionable locations.²³⁵ Ultimately, disasters expose many of the most problematic elements of our CJ system, and

228 See, e.g., BUREAU JUST. ASSISTANCE, U.S. DEP'T JUST., UNDERSTANDING COMMUNITY POLICING: A FRAMEWORK FOR ACTION (Aug. 1994).

229 *Community Engagement During Times of Crisis: Covid-19 and Beyond*, POLICING PROJECT (May 20, 2020), <https://www.policingproject.org/news-main/2020/5/20/community-engagement-during-times-of-crisis-covid-19-and-beyond>.

230 See, e.g., SOLNIT, *supra* note 213, at 233–237.

231 See, e.g., *Nature-Based Solutions*, FEMA, <https://www.fema.gov/emergency-managers/risk-management/nature-based-solutions> (last updated March 28, 2023) (providing resources for building community resilience with nature-based solutions).

232 See generally Sharona Hoffman, *Preparing for Natural Disaster: Protecting the Most Vulnerable in Emergencies*, 42 U.C. DAVIS L. REV. 1491 (2009); Melissa Anne Savilonis, *Prisons and Disasters* (Dec. 2013) (Ph.D. dissertation, Northeastern University) (on file with Northeastern University Library).

233 See generally Hoffman, *supra* note 232.

234 Prisons and jails often do not have clear evacuation or emergency preparedness plans for disaster events like wildfires, floods, hurricanes, or tornadoes. See, e.g., Hoffman, *supra* note 232, at 1504–05.

235 See, e.g., Jenn Hayes, *Toxic Floodwaters Threatened a Florida Jail. Nearly 800 Were Locked Inside*, SOUTHERLY (Aug. 11, 2021), <https://southerlymag.org/2021/08/11/toxic-floodwaters-threatened-a-florida-jail-nearly-800-were-locked-inside/>.

this is just a partial list.

As with LEOs in the preceding Section, disaster response is highly stressful. Correctional staff—like other disaster response workers—carry heightened mental and physical strain due to the pressures of the moment plus their worries about their homes, loved ones, and communities, if they are able to arrive at work at all.²³⁶ (Recall the introductory story of Bert Slone, the jailer of Letcher County, WV, whose truck washed away.²³⁷) For incarcerated people, the many stresses of disasters will be piled on top of the punishments they already face.²³⁸

The particular context of each facility and event defines the threat multipliers of any disaster. Some themes have emerged from prior events. Wind creates hazards: during Hurricane Ike, a Texas prison experienced winds over 100 miles-per-hour that “shattered dormitory and cell windows and tore ventilation fans and sheet metal off roofs,” placing everyone at risk.²³⁹ For the reasons discussed in Sections II.C.2 and II.C.3 above, if electricity fails, violence and health risks may rise with the internal and external temperatures and with falling access to food, water, medicines, sanitation, and other basic needs.²⁴⁰ Flooding interferes with evacuation and sheltering-in-place, a particular concern where carceral facilities are located in floodplains and coastal areas.²⁴¹

Recent years have seen an increased number of tragic floods and failures to evacuate effectively, with significant health, safety, and trauma issues for personnel and people who are incarcerated.²⁴² During Hurricane Katrina, people held and working at the Orleans Parish Prison (which had no evacuation plan) were forced to remain inside the city’s jail as toxic waters flooded it up to chest level; even some guards were locked in to prevent them from abandoning their posts.²⁴³ Only days after the flooding were some evacuated to a highway overpass where everyone involved was exposed to the heat and humidity, surrounded

236 *Disaster Rescue and Response Workers*, U.S. DEPT. OF VETERANS AFFS. NAT’L CTR. FOR PTSD (last visted Mar. 13, 2023), https://www.ptsd.va.gov/professional/treat/type/disaster_response_work.asp.

237 Bennett, *supra* note 1.

238 Savilonis, *supra* note 232, at 30.

239 Clarke, *supra* note 185.

240 See Motanya & Valera, *supra* note 186, at E20.

241 Yolanda Martinez et al., *Prisoners and the Deluge*, THE MARSHALL PROJECT (Oct. 20, 2017), <https://www.themarshallproject.org/2017/10/20/prisons-and-the-deluge>.

242 See, e.g., Clarke, *supra* note 185; Motanya & Valera, *supra* note 186.

243 Michael Patrick Welch, *Hurricane Katrina Was a Nightmare for Inmates in New Orleans*, VICE (Aug. 29, 2015), <https://www.vice.com/en/article/5gjdxdn/hurricane-katrina-was-a-nightmare-for-inmates-in-new-orleans-829>.

by flood waters and with precious few resources, for four days.²⁴⁴ During Hurricane Rita, people held at United States Penitentiary, Beaumont in Houston remained in the jail with no food, only brown tap water to drink, no sanitation, and a black mold outbreak, causing bacterial infections and skin rashes.²⁴⁵ Some “found themselves up to their knees in water overflowing from toilets and contaminated with waste.”²⁴⁶ During Hurricane Maria, people held in first floor cells of some Puerto Rican prisons were moved to higher floors to avoid drowning and “forced to bunk five or six to a cell”; several prisoners escaped.²⁴⁷

These risks call for numerous adaptations. To borrow the language of emergency management, jails and prisons require extensive hazard mitigation efforts. These may include better land management, flood protection, stormwater management, upgraded facilities, or even relocation.

This incredible lack of emergency planning and preparation must be remedied. There is no nationwide standard for how jails or prisons should plan for or operate during emergencies, leaving room for piecemeal responses that have often proved inadequate.²⁴⁸ Such planning must address vulnerabilities among staff and the incarcerated population (such as health issues and disabilities). Disasters highlight problems with overcrowding in facilities: evacuation is harder and accepting emergency transfers is problematic. Contingency planning must account for an influx of evacuated detainees into other facilities: sudden arrivals present a wide array of logistics and safety risks, not the least of which is tracking transfers.²⁴⁹ A national standard, funding

244 *Id.* See also AM. CIV. LIBERTIES UNION NAT’L PRISON PROJ., ABANDONED & ABUSED: ORLEANS PARISH PRISONERS IN THE WAKE OF HURRICANE KATRINA (2006), <https://www.aclu.org/files/pdfs/prison/oppreport20060809.pdf> (detailing health harms, trauma, and deaths of prisoners).

245 Clarke, *supra* note 185.

246 Martinez et al., *supra* note 241.

247 Martinez et al., *supra* note 241.

248 Levenson, *supra* note 12, at 366–68; Motanya & Valera, *supra* note 186, at E20–21; WILLIAM OMOROGIEVA, SABIN CTR. FOR CLIMATE CHANGE L., COLUM. L. SCH., PRISON PREPAREDNESS AND LEGAL OBLIGATIONS TO PROTECT PRISONERS DURING NATURAL DISASTERS (May 2018), <http://columbiaclimatelaw.com/files/2018/05/Omorogieva-2018-05-Prison-Preparedness-and-Legal-Obligations.pdf>.

249 We should be careful to avoid repeating the experiences of the more than 6,500 people who, once finally evacuated from Orleans Parish Prison, were lost in the Louisiana correctional system for months. See Pamela R. Metzger, *Doing Katrina Time*, 81 TUL. L. REV. 1175, 1176–77 (2007). They ranged from people detained prior to arraignment (many for petty offenses) to pretrial detainees to people serving misdemeanor sentences to immigration detainees. *Id.* This became known as serving “Katrina time.” *Id.*

for training, dedicated personnel, technical assistance, and knowledge dissemination are desperately needed.

C. Risks During the Long Recovery Period

As a disaster recedes, its long aftermath begins. Disaster recovery usually takes far longer than the public, officials, and personnel anticipate.²⁵⁰ Recall the threat multiplier formulation presented in Section II: existing problems made worse *plus* new problems *plus* systems becoming more fragile *equals* a threat multiplier. The effects of the immediate disaster *plus* the dynamics of the long recovery period *multiply* public safety challenges in several ways. These include: (1) pre-existing crime rates and dynamics; (2) increased socioeconomic vulnerabilities; (3) opportunistic and predatory new crime; (4) increased stress and mental health vulnerabilities; (5) weakened support systems; and (6) reduced CJ system capabilities.

The first two are interrelated. Neighborhoods with high crime and socio-economic vulnerability prior to a disaster are at risk of becoming even more vulnerable. If neighborhoods are evacuated for prolonged stretches of time, there may be a temporary dip in crime while people are gone, but when they return, so will crime. Depending on the degree of social vulnerability preceding the disaster and that induced by the disaster, crime rates will follow.

Disasters also generate disaster-specific crimes. Scam artists and identity thieves target impacted people to steal their relief benefits or insurance payouts.²⁵¹ Predatory contractors pursue government and insurance contracts for which they provide deceptive practices, fraudulent billing, inadequate services, and unsafe working conditions.²⁵² Larceny of construction equipment, materials, and tools is common,

250 See, e.g., Daniel Teles & Carlos Martín, *Why Does Disaster Recovery Take So Long? Five Facts about Federal Housing Aid after Disasters*, URB. WIRE (Jan. 25, 2021), <https://www.urban.org/urban-wire/why-does-disaster-recovery-take-so-long-five-facts-about-federal-housing-aid-after-disasters> (explaining that recovery takes years).

251 Kelly Frailing, *Preventing Crimes in Communities Hit by Disasters*, SCHOLARS STRATEGY NETWORK (Feb. 23, 2016), <https://scholars.org/contribution/preventing-crimes-communities-hit-disasters>; *Disaster Fraud*, FEMA (2021), <https://www.fema.gov/about/offices/security/disaster-fraud> (last updated Dec. 2, 2021).

252 *Wisconsin Officials Warn of Predatory Contractors*, AP NEWS (Mar. 29, 2019), <https://apnews.com/article/62edec2ba2a8451ca7aabec29af24a97> (describing practices of predatory “storm chasers”); U.S. DEPT. JUST., HURRICANE KATRINA FRAUD TASK FORCE: SECOND YEAR REPORT TO THE ATTORNEY GENERAL (Sept. 2007), <https://www.justice.gov/sites/default/files/criminal-disasters/legacy/2012/07/30/09-04-07AG2ndyrprogrpt.pdf>.

and empty homes and buildings are sometimes harvested for copper and other materials.²⁵³

Disasters put significant stresses on people, exacerbating pre-existing vulnerabilities.²⁵⁴ Disaster-related trauma contributes to increases in domestic and gender-based violence.²⁵⁵ For example, there was a five-fold increase in reported child abuse in the counties affected by Hurricane Floyd.²⁵⁶

The support systems required to address local needs will have reduced capacity while needs increase. A key example is mental health services. Prior to disasters, most areas lack mental health services sufficient to meet local need or demand (even for people who do not stigmatize mental health services and have the means to pay out of pocket).²⁵⁷ After disasters, the number of people in need of services rises, but mental health and related services (as well as physical health services) may become even *less* available than they were beforehand.²⁵⁸

An acute manifestation of three of the threat multiplier factors mentioned above that brings major ramifications for public safety—namely, opportunistic and predatory new crime, increased stress and mental health vulnerabilities, and weakened support systems—is the influence of disasters upon street drug use and crime. Disasters can

253 See, e.g., Johnathan Manning, *Four Accused of Stealing Copper from Hurricane-Damaged Hotel*, 7 KPLC NEWS (Jul. 28, 2021), <https://www.kplctv.com/2021/07/28/four-accused-stealing-copper-hurricane-damaged-hotel/>.

254 *Effects of Disasters: Risk and Resilience Factors*, U.S. DEPT. OF VETERANS AFFS. NAT'L CTR. FOR PTSD, https://www.ptsd.va.gov/understand/types/disaster_risk_resilience.asp (last visited Mar. 13, 2023).

255 See, e.g., Virginie Le Masson, *Disasters, Climate Change, and Violence Against Women and Girls*, OXFORD RSH. ENCYC. NATURAL HAZARD SCI. (Mar. 23, 2022), <https://doi.org/10.1093/acrefore/9780199389407.013.393>.

256 WORLD HEALTH ORG., *VIOLENCE & DISASTERS* (2005), <https://perma.cc/9WVD-D9VX> (citing evidence of U.S. studies seeing surges in child abuse such as inflicted traumatic brain injuries following disasters, and tying a predicted increase in violent crime, sexual violence, human trafficking, and child abuse incidents to increases in stress, feelings of powerlessness, mental health problems, and disruptions of local economies). See also SAM SELLERS, *GLOB. GENDER & CLIMATE ALL., GENDER & CLIMATE CHANGE: A CLOSER LOOK AT EXISTING EVIDENCE* (2016), <https://wedo.org/wp-content/uploads/2016/11/GGCA-RP-FINAL.pdf>.

257 COMM. ON POST-DISASTER RECOVERY OF A CMTY.'S PUB. HEALTH, MEDICAL, & SOCIAL SERVICES, INST. MED. NAT'L ACADS., *HEALTHY, RESILIENT, & SUSTAINABLE COMMUNITIES AFTER DISASTERS: STRATEGIES, OPPORTUNITIES, & PLANNING FOR RECOVERY* 253 (2015), (“[A]ccess to behavioral health services can be challenging even in the absence of a disaster. Stigma, diminished capacity to provide such services, and cost contribute to the inadequate availability and utilization of such services.”).

258 *Id.* at 245.

increase demand for illicit drugs, reduce the accessibility of drug treatment and supportive services, render the drug supply more dangerous, and generate a wave of violent crime among sellers.²⁵⁹

To understand why disasters increase the demand for street drugs, it is important to remember that people who use drugs often consume them for their pain- and stress-relieving properties.²⁶⁰ The more severe the disaster, the higher the amount of psychological distress and substance use following the disaster.²⁶¹ The greatest demand is among people experiencing substance use disorders (“SUD”). SUDs are generally rooted in the misuse of substances like drugs or alcohol as a form of self-medication for mental health disorders and/or relief from intense psychological pain and stress.²⁶²

While the need for treatment and other support services for people with SUD increases, the accessibility of services may decrease. Drug treatment, mental health services, harm reduction programs (such as syringe exchanges), peer coaches, and other critical supports may be dispersed or face funding shortages. In New York City, after Hurricane Sandy, disruptions in opioid management programs left 70% of participants unable to access sufficient prescribed doses of medication to avoid withdrawal and subsequent cravings.²⁶³ Of them, 60% experienced withdrawal; many turned to street drugs to avoid withdrawal.²⁶⁴ This demonstrates increases in the risk that people in recovery may return to use. It also suggests an increase in their likelihood of committing crimes to raise funds to purchase illicit drugs.

Disasters can also unsettle drug markets, prompting public safety crises.²⁶⁵ This was seen after Hurricane Katrina, where New Orleans’s entire drug market was reformulated due to the city’s evacuation.²⁶⁶

259 Adam C. Alexander & Kenneth D. Ward, *Understanding Postdisaster Substance Use and Psychological Distress Using Concepts from the Self-Medication Hypothesis and Social Cognitive Theory*, 50 J. PSYCHOACTIVE DRUGS 177, 177–82 (2018).

260 See, e.g., *id.* at 177–82; Anthony M. Kopak & Bethany Van Brown, *Substance Use in the Life Cycle of a Disaster: A Research Agenda and Methodological Considerations*, 64 AM. BEHAV. SCIENTIST 1095, 1095–99 (2020).

261 Alexander & Ward, *supra* note 259, at 177–82.

262 See, e.g., *id.*; GABOR MATÉ, *IN THE REALM OF HUNGRY GHOSTS: CLOSE ENCOUNTERS WITH ADDICTION* ch. 3 (N. Atl. Books 2008).

263 Enrique R. Pouget et al., *Immediate Impact of Hurricane Sandy on People Who Inject Drugs in New York City*, 50 SUBSTANCE USE & MISUSE 878, 878–83 (2015).

264 *Id.*

265 Eloise Dunlap et al., *Stages of Drug Market Change During Disaster: Hurricane Katrina and Reformulation of the New Orleans Drug Market*, 23 INT’L J. DRUG POL’Y 473, 478 (2013).

266 *Id.*; Kopak & Van Brown, *supra* note 260, at 1095–99; Patrick Walsh & Ronal Serpas,

Established drug sellers did not simply return to their established turf.²⁶⁷ Instead, there was a surge of competition for territory among people returning or newly arriving, triggering significant drug market violence.²⁶⁸

Another aspect of this public safety crisis is that disasters can make the street drug supply more dangerous. Due to its illicit nature, the street drug supply chain is not regulated. People who use drugs frequently or chronically rely on their own experience as a stand-in for supply chain safety regulation, knowing which dealers they trust and how to manage their dosage amounts.²⁶⁹ Even before the rise of fentanyl and its analogs, sudden shifts in the supply led to increased overdose mortality.²⁷⁰ Disasters can lead to these shifts, as trusted drug sellers evacuate and new sellers replace them, possibly selling from different suppliers. Not only did the Crescent City's supply become more dangerous, but so did the supply in places where the evacuated city's drug sellers relocated.²⁷¹ New Orleans-area neighborhoods with high levels of poverty and displacement had higher rates of substance use, and the rate of substance use-related hospitalizations increased by approximately 35%.²⁷²

CJ agencies are expected to deter or respond to the many public safety concerns discussed in this Section, but disasters can seriously undermine whatever capabilities agencies previously had. Widespread flooding has devastating impacts on facilities and personnel.²⁷³ For example, Hurricane Katrina flooded NOPD headquarters and several

Changes in the Illegal Drug Market in New Orleans after Hurricane Katrina and the Law Enforcement Response, in CRIME & CRIM. JUST. IN DISASTER 215 (Dee Wood Harper & Kelly Frailing eds., Carolina Acad. Press 3rd ed. 2016).

267 Dunlap et al., *supra* note 265, at 478.

268 *Id.* at 478–79.

269 Jennifer J. Carroll et al., *The Protective Effect of Trusted Dealers Against Opioid Overdose in the U.S.*, INT'L J. DRUG POL'Y, April 2020, at 1, 7.

270 Camille Zolopa et al., *A Rapid Review of The Impacts of "Big Events" on Risks, Harms, and Service Delivery Among People who Use Drugs: Implications for Responding to COVID-19*, INT'L J. DRUG POL'Y, June 2021, at 1, 3, 11 (cataloguing research on the relationship between changes in the drug supply and overdose deaths following disasters).

271 Dunlap et al., *supra* note 265, at 473, 478; Kopak & Van Brown, *supra* note 260, at 1099; Walsh & Serpas, *supra* note 266, at 215.

272 Imelda K. Moise & Marilyn O. Ruiz, *Hospitalizations for Substance Abuse Disorders Before and After Hurricane Katrina: Spatial Clustering and Area-Level Predictors*, *New Orleans, 2004 and 2008*, PREVENTING CHRONIC DISEASE, Oct. 13, 2016, at 3–5.

273 *See, e.g.*, CATERINA GOUVIS ROMAN ET AL., URB. INST. JUST. POL'Y CTR., AFTER KATRINA: WASHED AWAY? JUSTICE IN NEW ORLEANS 3 (2007), <https://www.urban.org/sites/default/files/publication/46651/411530-After-Katrina-Washed-Away-.PDF>.

of its district headquarters, one third of its cruisers, the crime lab, the district attorney's office, the courthouse, the basement evidence rooms, and the jail.²⁷⁴ Establishing temporary facilities takes time and must still deliver constitutionally-mandated justice.²⁷⁵ Rebuilding or replacing permanent facilities takes far longer, in part because the federal recovery funding process is slow.²⁷⁶ Meanwhile, operating budgets may fall as fewer tickets or other fees are collected and the local tax base shrinks temporarily²⁷⁷ (or, conceivably, permanently²⁷⁸).

Reduced CJ capabilities do not go unnoticed by the public or those who opportunistically commit crimes.²⁷⁹ Public pressure to “do something” about spikes in crime adds occupational stress and burnout on top of the heavy load CJ personnel carry from their occupational and personal experiences participating in disaster response and from trying to do their jobs during the recovery.²⁸⁰ Most critically, officers and other CJ personnel often experience multiple forms of primary and vicarious trauma during disaster response and recovery periods.²⁸¹ This may feed

274 *Id.*

275 *See generally*, Brandon L. Garrett & Tania Tetlow, *Criminal Justice Collapse: The Constitution After Hurricane Katrina*, 56 DUKE L.J. 127 (2006).

276 As of 2009, FEMA was still processing public assistance requests from Hurricane Katrina. *See Post Katrina Disaster Response and Recovery: Evaluating FEMA's Continuing Efforts in the Gulf Coast and Response to Recent Disasters: Hearing Before the Subcomm. on Econ. Dev., Pub. Bldgs., & Emergency Mgmt. of the H. Comm. On Transp. & Infrastructure*, 111th Cong. 79 (2009) (statement of David Garratt, Acting Deputy Administrator, and James W. Start, Assistant Administrator for Gulf Coast Recovery, Federal Emergency Management Agency, Department of Homeland Security).

277 Garrett & Tetlow, *supra* note 275, at 146–47; Jeff Adelson, *For the 1st Time Since Hurricane Katrina, Census Stats Show a Shrinking New Orleans*, NOLA (Apr. 18, 2019), https://www.nola.com/article_26c54f53-01a7-562e-b0a7-a85389f007ad.html (showing that, as of 2018, New Orleans had only returned to 80% of its pre-Katrina population).

278 *See generally* Christopher Favelle, *Climate Change is Bankrupting America's Towns*, N.Y. TIMES (Sept. 15, 2021), <https://www.nytimes.com/2021/09/02/climate/climate-towns-bankruptcy.html> (noting some small towns are experiencing so much outward migration due to climate change that they have lost their tax base and face bankruptcy or are merging into surviving neighboring jurisdictions).

279 *See* Sean P. Varano et al., *A Tale of Three Cities: Crime and Displacement after Hurricane Katrina*, 38 J. CRIM. JUST. 42, 44, 48 (2010).

280 *See, e.g.*, Sharf & Phillippi, *supra* note 220 (“It’s important to remember that in 2005 and 2006, the NOPD operated from a trailer with no working fax, Computer-Aided Dispatch or records management system. Right after the hurricane . . . pencils and paper were in short supply for NOPD officers, a fact limiting arrests.”).

281 *See* Howard Osofsky et al., *Hurricane Katrina's First Responders: The Struggle to Protect and Serve in the Aftermath of the Disaster*, 5 DISASTER MED. & PUB. HEALTH PREPAREDNESS S214, S214 (2011) (“A statistically significant decrease in the

post-traumatic stress and depression that lingers for months and years for personnel struggling to rebuild their homes and reconnect with their families (not to mention physical injuries from response efforts and exposure to toxins).²⁸² Risky coping techniques such as excessive alcohol consumption are common.²⁸³ Departments should strive to take adequate care of their personnel, which is hugely important for retention and effectiveness and may also help reduce the likelihood of inappropriate use of force, litigation risks, and other ripple effects.²⁸⁴ Taking adequate care may require departments to address resource constraints and cultural hostility toward mental health care.²⁸⁵

Departments face many retention challenges: if family members are dispersed and find new jobs or new schools elsewhere, CJ personnel may leave to join them. Burnout may run high due, at least in part, to the challenges of work conditions and inadequately addressed mental and physical health concerns. NOPD lost 18.4% of its sworn officers (321) in the 14 months after the storm, and it only managed to recruit 33 new officers.²⁸⁶ Attrition adds further stress to the job and feeds yet more attrition.²⁸⁷

symptoms of posttraumatic stress or depression was not found within 18 months of Hurricane Katrina.”).

282 See *id.*; Ctrs. for Disease Control & Prevention, *Health Hazard Evaluation of Police Officers and Firefighters After Hurricane Katrina - New Orleans, Louisiana, October 17-28 and November 30-December 5, 2005*, 55 MORBIDITY & MORTALITY WKLY REP. 449, 456 (2006) (examining rates of toxin exposure, illnesses, injury, and home and family separation in police officers and firefighters after Hurricane Katrina).

283 Sarah Cercone Heavey et al., *Law Enforcement Officers Involvement Level in Hurricane Katrina and Alcohol Use*, 17 INT’L J. EMERGENCY MENTAL HEALTH & HUM. RESILIENCE 267, 272 (2015) (“[H]eavy disaster exposure was associated with hazardous alcohol use among police officers.”).

284 Thomas J. Covey et al., *The Effects of Exposure to Traumatic Stressors on Inhibitory Control in Police Officers: A Dense Electrode Array Study Using a Go/NoGo Continuous Performance Task*, 87 INT’L J. PSYCHOPHYSIOLOGY 363, 372–73 (2013).

285 There are multiple reasons for this hostility, such as general stigma toward the notion of mental health, low mental health literacy, culturally inappropriate presentations of services, dissatisfaction with prior attempts at seeking mental health services, and concerns that utilizing services provided by employers will lead to negative repercussions for their careers. See, e.g., Carolyn Burns & Marla Buchanan, *Factors that Influence the Decision to Seek Help in a Police Population*, 17 INT’L J. ENV’T RSCH. PUB. HEALTH 6891 (2020).

286 ROSTKER ET AL., *supra* note 204, at 5–6.

287 David Jones, *NOPD Internal Retention Survey Shows Lack of Support, Stress, Flawed Disciplinary Process Contributing to Manpower Shortage*, Fox 8 (Mar. 18, 2022), <https://www.fox8live.com/2022/03/18/nopd-internal-retention-survey-shows-lack-support-stress-flawed-disciplinary-process-contributing-manpower-shortage> (“As the numbers go down and [officers] don’t feel valued, and they

CJ agencies and personnel *outside* disaster zones also face disaster-related ripple effects.²⁸⁸ Hundreds of thousands of people fled southeast and southwest Louisiana due to hurricanes Katrina and Rita.²⁸⁹ Baton Rouge, Houston, and Atlanta were three cities that saw large influxes of people.²⁹⁰ Many of these internally displaced people (“IDPs”) eventually returned home, but some stayed.²⁹¹ A year after Katrina, approximately 150,000 displaced people were still in Houston, yielding a 7% population increase.²⁹² Smaller municipalities hosting FEMA temporary housing sites also experienced an unanticipated, prolonged increase in population.²⁹³ These population shifts present local law enforcement with a number of challenges, including stress-induced domestic violence, surges in traffic on roads not designed for such traffic burdens, and possible shifts in drug trafficking and supply. That said, newcomers and FEMA trailer parks did not generate spikes in crime.²⁹⁴ Unfortunately, this did not prevent both from being treated with scorn based on false perceptions and rhetoric about their supposed criminality.²⁹⁵ It is conceivable that local politics may become unsettled due to racist attitudes toward IDPs and their arrival temporarily pushing wages down.²⁹⁶

How can CJ agencies adapt to the extraordinary challenges of disasters? One approach to combat the common tendency to avoid preparing for disasters is to focus on adaptations that offer benefits in normal life as well as during disasters and their long recovery. As mentioned in Section III.A, CJ leaders should advocate for safer facilities

don’t see reinforcements arriving, and the numbers continue to decline and they’re asked to work more overtime, then that’s going to accelerate the attrition rate. . . . [That’s] going to put even more stress on the remaining officers that are there.”).

288 Varano et al., *supra* note 279, at 48.

289 *Id.* at 43.

290 *Id.* See also Matthew R. Lee et al., *The FEMA Trailer Parks: Negative Perceptions and The Social Structure of Avoidance*, 27 SOC. SPECTRUM 741, 743 (2007); Craig Schneider & Mark Davis, *Katrina Evacuees Rebuild, Remember*, ATLANTA, J. CONST. (Aug. 30, 2015), http://specials.myajc.com/katrina-evacuees/?icmp=myajc_internallink_megamenu_link.

291 Varano et al., *supra* note 279, at 49 (“While many residents returned to their original community (some quickly, others over long periods of time), a large number have permanently left the affected zone.”).

292 *Id.* at 45.

293 Lee et al., *supra* note 290, at 759–765 (exploring misperceptions of crime connected to trailer parks for displaced communities).

294 *Id.*

295 *Id.*

296 ALICE C. HILL & LEONARDO MARTINEZ-DIAZ, *BUILDING A RESILIENT TOMORROW: HOW TO PREPARE FOR THE COMING CLIMATE DISRUPTION* 180 (Oxford Univ. Press, 2019).

and communities ahead of time. Leaders should focus on approaches that deliver multiple benefits, such as reducing hazards, reducing crime, improving public safety, improving community thriving, and improving the health and effectiveness of their personnel. Suggestions proposed earlier in this Article, such as green spaces and better stormwater management as discussed in Sections II.A and II.B, would also be advantageous.

Similarly, the most effective approach to reducing public safety problems connected to addiction and drug crime during and after disasters is to reduce addiction in the community now. Substance use is implicated in some three-quarters of incarcerations; two-thirds of the jail and prison populations have been determined to meet diagnostic criteria for addiction, and another fifth had substance-related factors in their incarceration.²⁹⁷ The CJ system makes nearly half of all SUD treatment referrals nationally,²⁹⁸ yet for those with opioid use disorder, only one in twenty receive evidence-based treatment.²⁹⁹ Accordingly, CJ leaders should advocate for an improved, evidence-based drug treatment, harm reduction, and mental health infrastructure within their communities and within the CJ system. In addition, they should advocate for scaling up emergency programs that create networks of service providers in non-affected areas nationwide who can deliver services.³⁰⁰

Care should also be taken in how law enforcement interacts with new and displaced populations, as well as those who remain. Disaster-impacted people require trauma-informed approaches, and recovery

297 PARTNERSHIP TO END ADDICTION, BEHIND BARS II: SUBSTANCE ABUSE AND AMERICA'S PRISON POPULATION 1–2 (2010).

298 Jessica Reichert & Lily Gleicher, *Probation Clients' Barriers to Access and Use of Opioid Use Disorder Medications*, HEALTH & JUST., 2019, at 2.

299 Noa Krawczyk et al., *Only One in Twenty Justice-Referred Adults in Specialty Treatment for Opioid Use Receive Methadone or Buprenorphine*, 36 HEALTH AFFS. 2046, 2046 (2017).

300 Two examples of efforts to create an on-call system in advance of possible disasters can be seen the Colorado Crisis Education and Response Network and the STORM collaboration being developed at the University of Texas Health Science Center at San Antonio. See *Colorado Crisis Education and Response Network*, COLO. DEPT. PUB. HEALTH & ENV'T, <https://cdphe.colorado.gov/colorado-crisis-education-and-response-network> (last visited Mar. 24, 2023); *Substance Use and Mental Health Training Opportunities for Disaster Response Management (STORM)*, UNIV. TEX. HEALTH SCI. CTR. SAN ANTONIO, <https://storm.training.uthscsa.edu/> (last visited Mar. 24, 2023). The Substance Abuse and Mental Health Services Administration also has resources for preparing and responding to disasters. *Disaster Preparedness, Response, and Recovery*, SUBSTANCE ABUSE & MENTAL HEALTH SERVS. ADMIN., <https://www.samhsa.gov/disaster-preparedness> (last updated Aug. 19, 2022).

workers should be protected. Many recovery workers take on hazardous duties, often with inadequate housing and health protections, and police should be directed and trained on how to protect these critical workers rather than engage in possible harassment.

CONCLUSION

Bernard Rostker and colleagues wrote of the police response to Hurricane Katrina:

Too little has been written about those who stayed and served under enormously stressful, even primitive, conditions. Primary communications were down. Most police vehicles were under water. Like the rest of the citizens, many of the police lacked the basics of life: food, clean water, and facilities for personal sanitation.³⁰¹

We agree. Part of the reason too little has been written is that too little attention has been given to the intersections between climate change, environmental degradation, crime, and public safety and how these intersections create risks to police, their CJ peers, and the communities they serve. It is time to start paying attention.

By mapping these collisions, we have identified many ways that the CJ system has harmed the climate and environment, that climate change and environmental degradation have increased and continue to increase crime and put CJ personnel in harm's way, and that CJ leaders can take action to mitigate and adapt to climate change. The strategies suggested in this Article are just a handful of the mutually beneficial strategies for improving the capability of the CJ system and society overall to address the root causes of current and new public safety challenges while limiting the scope of new fragility.

Taking climate change and environmental degradation seriously is essential for public safety. Imagining a future where GHG emissions are not sufficiently reduced is not a comfortable exercise. There are already American municipalities whose physical or legal existence is threatened; others face looming shortages of critical supplies like drinking water. External and internal migration will continue, which may have local, regional, national, and global destabilizing effects. Public safety responses and support are already unstable and at real risk of broader system failure as pressures mount.³⁰² While it can be

³⁰¹ ROSTKER ET AL., *supra* note 204, at 3.

³⁰² Agnew, *supra* note 12, at 22-24, 37.

tempting to dismiss these disturbing thoughts as unserious, fanciful, or alarmist, the need to adapt to our new circumstances is too great to give in to that temptation.³⁰³

The good news is that police and other CJ leaders are action-oriented. As they acknowledge and reckon with these collisions, their can-do attitudes and political capital can help push climate-smart and public safety-oriented policy into actual implementation. Using their bully pulpits would not threaten their agency budgets and might even help stretch budgetary dollars through greater efficiencies and improved resilience (particularly in crises). Acting now to mitigate and adapt to climate change can reduce the threat multiplier effect, yielding many benefits for the health and safety of CJ personnel, their families, and the communities they serve. Acting now can rewrite the threat multiplier equation.

303 IAN DUNLOP & DAVID SPRATT, *DISASTER ALLEY: CLIMATE CHANGE CONFLICT & RISK* 5 (2017), https://www.breakthroughonline.org.au/_files/ugd/148cb0_8c0b021047fe406dbfa2851ea131a146.pdf. (“Yet the evidence is clear that climate change already poses an existential risk to global stability and to human civilisation that requires an emergency response. . . . But this conversation is taboo, and the few who speak out are admonished as being overly alarmist.”).

