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Thirsty Places

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THIRSTY PLACES

Priya Baskaran*

Abstract

The United States, among the wealthiest and most prosperous nations in the world, regularly fails to provide clean, potable water to many of its citizens. Recent water crises occur within communities categorized as Geographically Disadvantaged Spaces (“GDS”), which often encompass urban and rural areas. What is more, people of color and economically vulnerable populations are often located within GDS, disproportionately burdening these groups with the economic and public health consequences of failing water infrastructure. This Article provides a novel, comparative analysis of communities lacking potable water in Flint, Michigan, and southern West Virginia. This analysis highlights entrenched structural problems present in rural and urban contexts, as implicating compound socioeconomic and race-related inequalities that transcend such seeming geographic divides. Lastly, this Article advocates for infrastructure development policies that address the underlying structural issues plaguing GDS—both rural and urban—and examines whether the Green New Deal could serve as an effective solution.

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INTRODUCTION

The United States is undergoing a national infrastructure crisis, with roads, bridges, electrical grids, and water systems in various states of distress from overuse and poor maintenance.¹ The sheer scale of existing infrastructure serves as both a testament to American ingenuity and a grim reminder of the widespread negative impacts caused by system failures. A network of interstate highways connects major cities to rural areas, making it possible for people and goods to travel freely from coast to coast.² Miles of underground pipes connect major metropolises³ and national parks to drinking water, with some of these systems dating back to the early days of American independence from British rule.⁴ Yet despite the remarkable vision and vastness of this notable human undertaking, The American Society of Civil Engineers awarded U.S. Infrastructure a C-, noting that the infrastructure is largely sub-standard, showing signs of “deterioration,” and “some elements exhibit significant deficiencies in conditions and functionality, with increasing vulnerability to risk.”⁵

This Article provides a novel, comparative analysis of two communities that, at first blush, appear dissimilar—Flint, Michigan and McDowell County in southern West Virginia. Flint, located in the urban flatlands of Michigan, has a population of

¹ See AM. SOC’Y OF CIV. ENG’RS, 2021 REPORT CARD FOR AMERICA’S INFRASTRUCTURE (2021), <https://www.infrastructurereportcard.org> [<https://perma.cc/2UYD-SPXK>] [hereinafter 2021 REPORT CARD] (giving U.S. infrastructure a “C-”).

² See generally Federal-Aid Highway Act of 1956, Pub. L. No. 84-627, 70 Stat. 374 (creating a 41,000-mile national system of interstate highways); Press Release, U.S. Senate, Congress Approves the Federal-Aid Highway Act (June 26, 1956), https://www.senate.gov/artandhistory/history/minute/Federal_Highway_Act.htm [<https://perma.cc/Z8RS-3M85>] (noting that the legislation “turned a jumble of unconnected local roads into a national transportation network that stretched from coast to coast”).

³ JAMES SALZMAN, DRINKING WATER: A HISTORY 109 (2013).

⁴ *Id.* at 60–62.

⁵ AM. SOC’Y OF CIV. ENG’RS, WHAT MAKES A GRADE? (2021), <http://www.infrastructurereportcard.org/making-the-grade/what-makes-a-grade/> [<https://perma.cc/VVN6-Q28Y>]; 2021 REPORT CARD, *supra* note 1.

nearly 100,000.⁶ In stark contrast, the southern coalfield communities in McDowell County are sparsely populated and tucked into the hills and hollows of Appalachia.⁷ Nevertheless, both places can be categorized as “Geographically Disadvantaged Spaces” (GDS),⁸ or communities that experience significant spatial inequality. The term spatial inequality, or spatial disparities, refers to an unequal distribution of key resources—like housing, schools, economic opportunity, and public infrastructure—within specific geographic boundaries.⁹ Spatial disparities are created by structural forces, perpetuating historically low or limited investment by both the public and private sectors, resulting in a heightened concentration of poverty within certain communities—or GDS. GDS communities are also subject to interlocking systems of subordination based on race and class. Thus, vulnerable populations—African Americans, Latinos, Native Americans, and other racially and economically disenfranchised communities—are too often exposed to the human and economic consequences of spatial disparities.¹⁰

Adopting a comparative approach further illustrates that structural problems are endemic to the entire country, superseding the urban versus rural divide omnipresent in current policy, politics, and mainstream media narratives.

This Article specifically uses GDS as a framework for understanding infrastructure degradation and economic stability, focusing on one fundamental and essential system—drinking water. The truth is both baffling and profoundly troubling—the United States, despite its wealth and prosperity,¹¹ regularly fails to provide clean, potable water to some of its citizens and communities.¹² Although

⁶ U.S. CENSUS BUREAU, *QuickFacts: Flint City, Michigan*, <https://www.census.gov/quickfacts/flintcitymichigan> [<https://perma.cc/DP5D-R574>] (last visited Oct. 13, 2020) (estimating the 2018 population of Flint as 95,538).

⁷ U.S. CENSUS BUREAU, *QuickFacts: McDowell County, West Virginia*, <https://www.census.gov/quickfacts/mcdowellcountywestvirginia> [<https://perma.cc/LS2L-DWJT>] (last visited Oct. 13, 2020) (estimating the 2018 population of McDowell County as 17,624).

⁸ Priya Baskaran, *Respect the Hustle: Necessity Entrepreneurship, Returning Citizens, and Social Enterprise Strategies*, 78 MD. L. REV. 323, 339 (2019) [hereinafter Baskaran, *Respect the Hustle*].

⁹ *Id.* at 339, 345. It is important to note that disparities exist when resources are unaffordable, inaccessible, unreliable, or wholly absent from the community.

¹⁰ KRISTI PULLEN FEDINICK, STEVE TAYLOR & MICHELE ROBERTS, NAT. RES. DEF. COUNS., WATERED DOWN JUSTICE 5 (Sept. 2019), <https://www.nrdc.org/sites/default/files/watered-down-justice-report.pdf> [<https://perma.cc/T24Z-XU4M>].

¹¹ *Global Wealth Report 2018: US and China in the Lead*, CREDIT SUISSE (Oct. 18, 2018), <https://www.credit-suisse.com/about-us-news/en/articles/news-and-expertise/global-wealth-report-2018-us-and-china-in-the-lead-201810.html> [<https://perma.cc/D9UD-WTCK>].

¹² See Kevin Longley, *Take Some Time Today to Imagine a Day Without Water*, 2017 INFRASTRUCTURE REPORT CARD (Oct. 23, 2019), <https://www.infrastructurereportcard.org/take-some-time-today-to-imagine-a-day-without-water/> [<https://perma.cc/BVL4-CJ44>].

drinking water is recognized as a core human right by the United Nations,¹³ many water systems are plagued with ongoing problems that compromise the water quality and lead directly to public health concerns,¹⁴ such as the well-publicized lead crises in Flint.¹⁵ Other systems are so dilapidated that they become unreliable, with frequent shut-offs and flow and pressure issues.¹⁶ This makes it impossible for residents to access water for routine tasks like cooking or bathing.¹⁷

Water infrastructure crises are gaining in frequency, manifesting in GDS throughout the United States, like recent crises in Newark and the Navajo Nation.¹⁸ Adding insult to injury, GDS communities are quite literally paying for water insecurity as the water bill unfailingly arrives on time, even when service is unreliable or the water unpotable.¹⁹ Such persistent failure of water infrastructure

¹³ The United Nations General Assembly explicitly recognizes the human “right to safe and clean drinking water and sanitation” and acknowledged that clean drinking water and sanitation are “essential for the full enjoyment of life and all human rights.” G.A. Res. 64/292, at 2 (Aug. 3, 2010).

¹⁴ See generally Nick Corasaniti, *Newark Water Crisis: Racing to Replace Lead Pipes in Under 3 Years*, N.Y. TIMES (Sept. 23, 2019), <https://www.nytimes.com/2019/08/26/nyregion/newark-lead-water-pipes.html> [<https://perma.cc/JN2L-4W9P>] (reporting an issue with removing lead from tap water in Newark, New Jersey); Nathalie Baptiste, *Their Water Became Undrinkable. Then They Were Ordered to Pay More for It*, MOTHER JONES (Nov. 20, 2018), <https://www.motherjones.com/environment/2018/11/when-water-in-this-impooverished-county-became-undrinkable-residents-were-ordered-to-pay-more-for-it/> [<https://perma.cc/LBH5-FVBG>] (discussing the water crisis in Martin County, Kentucky); Aria Bendix, *11 Cities with the Worst Tap Water in the US*, BUS. INSIDER (Mar. 19, 2019, 9:13 AM), <https://www.businessinsider.com/cities-worst-tap-water-us-2019-3#milwaukee-health-officials-may-have-failed-to-warn-families-whose-children-tested-positive-for-lead> [<https://perma.cc/U5D7-RZ7N>] (noting water contamination and subpar tap water in twelve cities).

¹⁵ See *infra* Section I.B.

¹⁶ PULLEN FEDINICK ET AL., *supra* note 10, at 18–23.

¹⁷ See DIG DEEP RIGHT TO WATER PROJECT & U.S. WATER ALLIANCE, CLOSING THE WATER ACCESS GAP IN THE UNITED STATES: A NATIONAL ACTION PLAN 56 (2019), http://uswateralliance.org/sites/uswateralliance.org/files/Closing%20the%20Water%20Access%20Gap%20in%20the%20United%20States_DIGITAL.pdf [<https://perma.cc/2GRT-PN4P>].

¹⁸ See, e.g., Mona Hanna-Attisha, Jenny LaChance, Richard Casey Sadler & Allison Champney Schnepf, *Elevated Blood Lead Levels in Children Associated with the Flint Drinking Water Crisis: A Spatial Analysis of Risk and Public Health Response*, 106 AM. J. PUB. HEALTH 283, 288 (Jan. 21, 2016), <https://ajph.aphapublications.org/doi/10.2105/AJPH.2015.303003> [<https://perma.cc/PB9J-PDA5>] (“As our aging water infrastructures continue to decay, and as communities across the nation struggle with finances and water supply sources, the situation in Flint, Michigan, may be a harbinger for future safe drinking-water challenges. Ironically, even when one is surrounded by the Great Lakes, safe drinking water is not a guarantee.”); Corasaniti, *supra* note 14; see also PULLEN FEDINICK ET AL., *supra* note 10, at 25, 29.

¹⁹ Brady Dennis, *Flint Residents Must Start Paying for Water They Still Can’t Drink*

carries repercussions at both the individual and community-wide level, resulting in deleterious and sometimes deadly health effects for American households²⁰ and the economic ruin of an entire town or county.²¹ Increasingly, the devastating human consequences of water insecurity crises are borne by the most vulnerable populations—poor communities and people of color.²²

GDS find themselves in a difficult situation with regard to infrastructure, particularly water systems. federal policies championed during the New Deal era, as well as corporate dominance and influence, created spatial disparities, channeling investment into more affluent, racially homogenous (e.g. white) suburbs.²³ GDS, unlike the growing American suburbs, were unable to partake in the bevy of benefits from the post-war construction boom—housing developments, highways, and new water and sewer systems. Thus, the infrastructure in a GDS are often invariably older

Without a Filter, WASH. POST (Feb. 28, 2017, 9:44 AM), <https://www.washingtonpost.com/news/energy-environment/wp/2017/02/28/flint-residents-must-start-paying-for-water-they-still-cant-drink-without-a-filter/> [<https://perma.cc/V4CY-GNK2>].

²⁰ See Nadia Kounang, *Study Estimates 15,000 Cancer Cases Could Stem from Chemicals in California Tap Water*, CNN HEALTH (Apr. 30, 2019, 9:23 AM), <https://www.cnn.com/2019/04/30/health/water-quality-cancer-risk-california-study/index.html> [<https://perma.cc/RR5R-MKWF>].

²¹ See MELISSA S. KEARNEY, BENJAMIN H. HARRIS, BRAD HERSHBEIN, ELISA JÁCOME & GREGORY NANTZ, THE HAMILTON PROJECT, IN *TIMES OF DROUGHT: NINE ECONOMIC FACTS ABOUT WATER IN THE UNITED STATES 7–10* (Oct. 2014), <https://www.brookings.edu/wp-content/uploads/2016/06/nineeconomicfactsaboutuswaterkearneyharris.pdf> [<https://perma.cc/58GC-H5ZN>].

²² Newark Mayor Ras Baraka stated in an open letter to President Trump that “[t]his crisis, mainly, affects older black and brown cities with limited resources and serious health issues that are systemically overlooked by every level of government.” Ras J. Baraka, *Open Letter to President Donald Trump from Mayor Ras J. Baraka*, CITY OF NEWARK NEWS (Jan. 15, 2019), <https://www.newarknj.gov/news/open-letter-to-president-donald-trump-from-mayor-ras-j-baraka> [<https://perma.cc/T7S2-CWNV>]. Newark is still embroiled in its own water crisis involving dangerously high lead levels. In fact, the neighborhoods most impacted by the crisis in Newark “are predominantly low-income and African American.” Lauren Aratani, *‘Damage Has Been Done’: Newark Water Crisis Echoes Flint*, THE GUARDIAN (Aug. 25, 2019, 1:00 AM), <https://www.theguardian.com/us-news/2019/aug/25/newark-lead-water-crisis-flint> [<https://perma.cc/6PQR-MRS3>].

²³ For a full discussion of this phenomenon in Flint, Michigan, see *infra* Section I.B. This Article limits discussion to New Deal era policies. However, a number of government initiatives and incentives throughout history have promoted class and race-based segregation. See generally ROBERT O. SELF, *AMERICAN BABYLON: RACE AND THE STRUGGLE FOR POSTWAR OAKLAND* (2003) (describing the transformation of Oakland, California in the 1950s and 1960s, including the impact of race in the community); Michael E. Lewyn, *The Urban Crisis: Made in Washington*, 4 J.L. & POL’Y 513 (1996) (discussing various federal programs including the Federal Highway Transportation Act’s contribution to white flight and urban disenfranchisement).

and poorly maintained, as beleaguered local governments often lack the financial resources to reinvest and repair their systems.²⁴

After decades of divestment, GDS find it extremely difficult to make essential upgrades due to the high costs of such an undertaking.²⁵ The existing funding mechanisms for drinking water infrastructure development often disadvantage GDS.²⁶ Communities with limited local resources can apply for additional funding from federal and state sources for drinking water projects. However, these programs require a certain level of fiscal health and financial contribution from local government.²⁷ Unfortunately, many GDS struggle to meet financial thresholds set by federal agencies to secure financing.²⁸

Even when effective, the existing funding regime offers too perfunctory of a solution,²⁹ neglecting to treat the underlying disease that creates and enables repeated infrastructure failures—the economic disenfranchisement of GDS.³⁰ Water

²⁴ See U.S. EPA, DRINKING WATER INFRASTRUCTURE NEEDS SURVEY: SECOND REPORT TO CONGRESS 48 (Feb. 2001); U.S., EPA, DRINKING WATER INFRASTRUCTURE NEEDS SURVEY AND ASSESSMENT: FIFTH REPORT TO CONGRESS 6 (Apr. 2013) (“Systems that have been unable to rehabilitate or replace mains may have proportionally more aged infrastructure, and therefore a higher level of need. In addition, some pipe materials tend to degrade prematurely . . .”). See generally U.S. WATER ALLIANCE, AN EQUITABLE WATER FUTURE: A NATIONAL BRIEFING PAPER (2017), http://uswateralliance.org/sites/uswateralliance.org/files/publications/uswa_waterequity_FINAL.pdf [<https://perma.cc/TH36-SW64>] [hereinafter EQUITABLE WATER FUTURE BRIEFING] (reporting on the impact of water challenges in vulnerable, low-income communities).

²⁵ Kasey M. Faust, Dulcy M. Abraham & Shawn P. McElmurry, *Water and Wastewater Management in Shrinking Cities*, 21 PUB. WORKS MGMT. & POL’Y 1, 4–5 (Sept. 28, 2015); U.S. GOV’T ACCOUNTABILITY OFF., GAO-16-785, WATER INFRASTRUCTURE: INFORMATION ON SELECTED MIDSIZE AND LARGE CITIES WITH DECLINING POPULATIONS (2016).

²⁶ See *infra* Section II.C.

²⁷ The Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182, §1452, 110 Stat. 1613 (1996); 42 U.S.C. §300j-12 (2019).

²⁸ See *infra* Section II.C.

²⁹ In general, state and federal funding sources provide additional financing for infrastructure improvement projects such as building or upgrading physical infrastructure. Although some funds like the Drinking Water State Revolving Funds can be used to consolidate struggling water systems to ensure continued water service and compliance with federal and state regulations, they are not intended to address persistent fiscal issues on the local level. See *Drinking Water State Revolving Fund—Statutory Authority and Program Regulation*, EPA, <https://www.epa.gov/dwsrf/drinking-water-state-revolving-fund-statutory-authority-and-program-regulation> [<https://perma.cc/BE87-AXZS>] (last visited Oct. 13, 2020) [hereinafter *DWSRF*]. Common issues—like ongoing operations and maintenance costs—often fall outside state and federal funding regimes. See generally MARY TIEMANN, CONG. RSCH. SERV., R45304, DRINKING WATER STATE REVOLVING FUND (DWSRF): OVERVIEW, ISSUES, AND LEGISLATION 12 (2018), <https://crsreports.congress.gov/product/pdf/R/R45304> [<https://perma.cc/4PR2-9H8E>]. For a more detailed discussion of common funding sources, see *infra* Section II.B.

³⁰ See generally EQUITABLE WATER FUTURE BRIEFING, *supra* note 24; GAO-16-785,

system failures can easily be traced to a lack of consistent and proactive investment in infrastructure, which is impossible for a community struggling with financial insolvency. Many GDS, like Flint and McDowell County, served as important economic engines or provided key natural resources during the war-time and post-war industrial boom.³¹ In a post-industrial society, they require recovery measures to help stabilize their local economies and chart a course for sustainable growth, with infrastructure being one important component. Any effective water system solution must acknowledge, and work to address, the underlying structural issues of poverty within GDS. The continued failure to do so relegates poor communities, and particularly poor communities of color, in the United States to cycles of poverty and water insecurity.

No single city, county, or region holds a monopoly on this wholesale failure of the funding mechanism to assist poor communities. Rather all GDS, whether Flint or Appalachia, are equally unable to access the requisite resources and funding to prevent further decimation of their local economies and adequately provide water for their residents.

This Article uses a comparative approach to illustrate the shared structural issues underlying water insecurity in the United States and explores whether a comprehensive policy initiative, like the Green New Deal, would be a more effective alternative to the existing drinking water funding system. Part I is a normative analysis of Flint and McDowell County, drawing important connections between the current water crises in both rural and urban GDS. As part of this analysis, Part I explores historic factors that shaped spatial disparities in these two seemingly dissimilar locations, including the role of race and class-based policies. Part II provides an outline of the existing funding regime and design flaws that lead to the persistent exclusion of GDS. Part III advocates for national-level reinvestment in drinking water infrastructure to rectify the systemic disenfranchisement experienced by GDS and examines whether elements of the Green New Deal would be an effective solution.

I. COMPARATIVE GDS ANALYSIS: FLINT AND WEST VIRGINIA

A. *Geographically Disadvantaged Spaces Defined*

Economists, geographers, and other scholars have long documented the existence and impact of spatial disparities, which play an important role in conceptualizing GDS. Spatial disparities are commonly understood as a lack of

WATER INFRASTRUCTURE, *supra* note 25, at 16 (“Midsize and large cities with declining populations are generally more economically distressed, with higher poverty and unemployment rates and lower per capita income than growing cities.”).

³¹ NICHOLAS STUMP, REMAKING APPALACHIA: ECOSOCIALISM, ECOFEMINISM, AND LAW 10 (2021) (chronicling that “Appalachian coal, in particular, helped fire the Industrial Revolution and thereafter much of the nation’s twentieth-century economic ‘progress’”).

resources and opportunities within specific geographic boundaries.³² The dearth of safe and affordable housing options or limited opportunities for participation in labor markets are examples of spatial disparities. These resources play pivotal roles in building the economic health and stability of a community. The presence of “good” public schools, green spaces, water and wastewater systems, and public transportation are all monikers of a desirable community. Conversely, the absence of these factors often results in the concentration of poverty within these places, called GDS.³³

Spatial disparities enrich our understanding of poorly resourced and disenfranchised communities by conceptualizing problems in geographic and temporal terms. By studying the presence and creation of spatial disparities, one can map the movement of capital and resources away from certain places over time.³⁴ This approach provides insight into systemic and structural challenges manifesting within GDS, connecting government policies and corporate actions with their place-based impact.³⁵ For example, under this approach, it would be easy to map the reduction in public expenditures and private investment in the urban core within the United States that began in the post-war era and continued for decades.³⁶ Incorporating a temporal analysis reiterates that the relevant political, social, and market-based forces are not static, but are often compounded over time. Thus, it is imperative to expand the discussion beyond merely cataloging the lack of physical proximity to resources and assiduously document systemic forces that impact access and drive divestment in GDS.

Infrastructure is a useful tool for documenting the presence of spatial disparities, mapping their development and evolution, and connecting private and public activities that contributed to the growth of these disparities within GDS. At its core, infrastructure is a type of social investment, indicative of a government’s commitment to a place and the people who reside there.³⁷ Water infrastructure, in particular, is crucial to human survival and economic health. In the United States,

³² See generally Audrey G. McFarlane, *Race, Space and Place: The Geography of Economic Development*, 36 SAN DIEGO L. REV. 295 (1999) (examining to what extent federal economic opportunity zones can be viewed as a neutral and effective policy choice); DAVID HARVEY, *THE URBANIZATION OF CAPITAL: STUDIES IN THE HISTORY AND THEORY OF CAPITALIST URBANIZATION* (1985); Brooke Neely & Michelle Samura, *Social Geographies of Race: Connecting Race and Space*, 34 ETHNIC & RACIAL STUD. 1933, 1933–52 (2011); Lisa R. Pruitt, *Gender, Geography & Rural Justice*, 23 BERKELEY J. GENDER, L. & JUST. 338 (2008).

³³ Baskaran, *Respect the Hustle*, *supra* note 8, at 339.

³⁴ See generally DAVID HARVEY, *JUSTICE, NATURE, AND THE GEOGRAPHY OF DIFFERENCE* 208 (1996) (exploring difference between populations based on population and environmental concerns).

³⁵ See generally DAVID HARVEY, *SOCIAL JUSTICE AND THE CITY* (2009) (describing social justice applied in urban contexts).

³⁶ For a more detailed discussion of the movement of capital and resources from the urban core to newly developing suburbs, see *infra* Section I.B.1(a).

³⁷ Laura Pulido, *Flint, Environmental Racism, and Racial Capitalism*, 27 CAPITALISM NATURE SOCIALISM 3, 5 (2016).

the U.S. Presidential Policy Directive officially categorized water and sewer infrastructures as “critical infrastructure”—a term used to identify assets required for a functional society and economy.³⁸ As one scholar noted, “[t]he decision to neglect infrastructure so that it becomes toxic must be seen as a form of violence against those who are considered disposable.”³⁹ Increasingly, these disposable communities are trapped in GDS, the direct result of structural racism and class-based subordination.

This Article advocates for using the GDS framework as a timely and much-needed vehicle to build important interlinkages between seemingly disparate communities in urban, suburban, and rural spaces. Legal scholars have studied the impacts of specific spatial disparities within communities, such as education,⁴⁰ housing,⁴¹ environmental justice,⁴² transportation,⁴³ and water infrastructure.⁴⁴ Legal

³⁸ Press Release, Office of the Press Sec’y, Presidential Policy Directive—Critical Infrastructure Security and Resilience (Feb. 12, 2013), <https://obamawhitehouse.archives.gov/the-press-office/2013/02/12/presidential-policy-directive-critical-infrastructure-security-and-resil> [<https://perma.cc/JF3R-7FEP>]; *Critical Infrastructure Sectors*, CYBERSECURITY & INFRASTRUCTURE SEC. AGENCY, <https://www.cisa.gov/critical-infrastructure-sectors> [<https://perma.cc/UJL6-AHK4>] (last visited May 17, 2021).

³⁹ Pulido, *supra* note 37, at 5.

⁴⁰ See generally Sheryll Cashin, *Place, Not Race: Affirmative Action and the Geography of Educational Opportunity*, 47 U. MICH. J.L. REFORM 935, 935–65 (2014); Lisa R. Pruitt, *Spatial Inequality as Constitutional Infirmity: Equal Protection, Child Poverty and Place*, 71 MONT. L. REV. 1 (2010); Erika K. Wilson, *The New School Segregation*, 102 CORNELL L. REV. 139 (2016).

⁴¹ See Deborah N. Archer, *The New Housing Segregation: The Jim Crow Effects of Crime-Free Housing Ordinances*, 118 MICH. L. REV. 173 (2019); Norrinda Brown Hayat, *Section 8 Is the New N-Word: Policing Integration in the Age of Black Mobility*, 51 WASH. U. J. L. & POL’Y 61 (2016); RASHMI DYAL-CHAND, *COLLABORATIVE CAPITALISM IN AMERICAN CITIES: REFORMING URBAN MARKET REGULATIONS* (2018).

⁴² Sheila Foster, *Environmental Justice in an Era of Devolved Collaboration*, 26 HARV. ENV’T L. REV. 459 (2002); Edna Sussman, David C. Major, Rachel Deming & Pamela R. Esterman, *Climate Change Adaptation: Fostering Progress Through Law and Regulation*, 18 N.Y.U. ENV’T L.J. 55 (2010); Noah D. Hall, *Toward a New Horizontal Federalism: Interstate Water Management in the Great Lakes Region*, 77 U. COLO. L. REV. 405, 405–56 (2006). Emily Hammond, *Toward a Role for Protest in Environmental Law*, 70 CASE W. RES. L. REV. 1039 (2020).

⁴³ Edward W. De Barbieri, *Community Engagement and Transportation Equity*, 44 FORDHAM URB. L.J. 1103 (2017).

⁴⁴ RHETT LARSON, *JUST ADD WATER: SOLVING THE WORLD’S PROBLEMS USING ITS MOST PRECIOUS RESOURCE* (2020); Camille Pannu, *Drinking Water and Exclusion: A Case Study from California’s Central Valley*, 100 CALIF. L. REV. 223 (2012); K. Sabeel Rahman, *Infrastructural Exclusion and the Fight for the City: Power, Democracy, and the Case of America’s Water Crisis*, 53 HARV. C.R.-C.L. L. REV. 533 (2018) [hereinafter Sabeel Rahman, *Infrastructural Exclusion*]; Nathaniel Logar, James Salzman & Cara Horowitz, *Ensuring Safe Drinking Water in Los Angeles County’s Small Water Systems*, 32 TUL. ENV’T L.J. 205 (2019); Tom I. Romero II, *The Color of Water: Observations of a Brown Buffalo on Water Law and Policy in Ten Stanzas*, 15 U. DENV. WATER L. REV. 329 (2012).

scholars have also taken a broader approach, analyzing the intersection of various spatial disparities through the lens of specific geographies. Numerous legal scholars have written extensively on the plight of urban America, including Professors Audrey McFarlane, Michelle Anderson, Richard Rothstein, and many others.⁴⁵ Likewise, other legal scholars like Professors Lisa Pruitt, Annie Eisenberg, Ezra Rosser, Maybell Romero, and Hannah Haksgaard⁴⁶ have addressed challenges faced by rural communities. Additionally, several scholars including Professors Stacy Leeds, Angelique Eaglewoman, and Aila Hoss have written on tribal and indigenous law topics, which often dovetail with broader rural legal issues.⁴⁷ Unfortunately, these discourses have largely existed in silos within legal academia. By definition, GDS creates a cohesive category based on systemic inequality within geographic bounds, creating connections between communities with vastly different densities and geographic footprints, but experiencing similar interlocking systems of

⁴⁵ Audrey G. McFarlane, *The New Inner City: Class Transformation, Concentrated Affluence and the Obligations of the Police Power*, 8 U. PA. J. CONST. L. 1 (2006); Michelle Wilde Anderson, *Cities Inside Out: Race, Poverty, and Exclusion at the Urban Fringe*, 55 UCLA L. REV. 1095 (2008); RICHARD ROTHSTEIN, *THE COLOR OF LAW: A FORGOTTEN HISTORY OF HOW OUR GOVERNMENT SEGREGATED AMERICA* (2017).

⁴⁶ See generally Lisa R. Pruitt, *Rural Rhetoric*, 39 CONN. L. REV. 159 (2006) (investigating the law's constitutive rhetoric about rural people, places, and livelihoods); Lisa R. Pruitt, *Toward a Feminist Theory of the Rural*, 2007 UTAH L. REV. 421 (2007) (asserting that the hardships and vulnerability that mark the lives of rural women and constrain their moral agency are overlooked or discounted by a contemporary cultural presumption of urbanism); Lisa R. Pruitt, Amanda L. Kool, Lauren Sudeall, Michele Statz, Danielle M. Conway & Hannah Haksgaard, *Legal Deserts: A Multi-State Perspective on Rural Access to Justice*, 13 HARV. L. & POL'Y REV. 15 (2018) (surveying access to justice for rural populations in six states); Ann Eisenberg, *Economic Regulation and Rural America*, 98 WASH. U. L. REV. 737 (2021) (discussing the potential of strategic economic regulation in sustaining rural communities); Ann Eisenberg, *Rural Blight*, 13 HARV. L. & POL'Y REV. 187 (2018) (proposing a definition and solutions for rural blight); Ezra Rosser, *Rural Housing and Code Enforcement: Navigating Between Values and Housing Types*, 13 GEO. J. ON POVERTY L. & POL'Y 33 (2006); Maybell Romero, *Viewing Access to Justice for Rural Mainers of Color Through a Prosecution Lens*, 71 ME. L. REV. 227 (2019) (exploring access to justice for rural communities of color); Maybell Romero, *Rural Spaces, Communities of Color, and the Progressive Prosecutor*, 110 J. CRIM. L. & CRIMINOLOGY 803 (2020) (discussing progressive prosecution as applied to rural communities of color and noting the "whitewashing" of rurality); Hannah Haksgaard, *Court-Appointment Compensation and Rural Access to Justice*, 14 U. ST. THOMAS J.L. & PUB. POL'Y 88 (2020) (discussing the impacts of the rural lawyer shortage for court appointed legal representation).

⁴⁷ Stacy L. Leeds, *Moving Toward Exclusive Tribal Autonomy over Lands and Natural Resources*, 46 NAT. RESOURCES J. 439 (2006) (discussing the intersection between tribal lands, natural resources, and property law); Angelique EagleWoman, *Tribal Nations and Tribal Economics: The Historical and Contemporary Impacts of Intergenerational Material Poverty and Cultural Wealth Within the United States*, 49 WASHBURN L.J. 805 (2010) (exploring the wealth gap and intergenerational poverty on tribal lands created by legal and policy regimes); Aila Hoss, *A Framework for Tribal Public Health Law*, 20 NEV. L.J. 113 (2019) (offering a framework for Public Health laws as applied to Tribes).

subordination. From this new, broader, and more integrated sample, policymakers can effectively map private and public actions that can spur inequality and explore new initiatives that work to disassemble broken systems.

The following sections implement the GDS framework to better understand the current water crises in Flint and West Virginia, including mapping the structural racism and economic disenfranchisement that created spatial disparities and continue to impact water infrastructure investment.

B. Flint

In 2014, local media outlets began covering the water crisis in Flint, Michigan. Residents were alarmed by their tap water, which they described as discolored and having an unpleasant odor.⁴⁸ Many residents believed the water was causing a negative impact on their health, citing the sudden appearance of rashes and other ailments.⁴⁹ By January of 2016, the national media began reporting on the deeply troubling story of an entire American city exposed to lead contamination through their drinking water.⁵⁰

Ample scientific evidence has established that no amount of lead in the blood is safe.⁵¹ High levels of lead in children have been linked to brain damage, kidney failure, impaired neurobehavioral development, diminished intellectual capacity, cognitive development issues, hearing impairment, and a variety of other growth and development issues.⁵²

⁴⁸ Susan J. Masten, Simon H. Davies & Shawn P. McElmurry, *Flint Water Crises: What Happened and Why?*, 108 J. AM. WATER WORKS ASS'N 22 (2016).

⁴⁹ Anna Clark, *'Nothing to Worry About. The Water Is Fine': How Flint Poisoned Its People*, THE GUARDIAN (July 3, 2018, 1:00 AM), <https://www.theguardian.com/news/2018/jul/03/nothing-to-worry-about-the-water-is-fine-how-flint-michigan-poisoned-its-people> [<https://perma.cc/7N8L-5B4V>].

⁵⁰ Denise Robbins, *Analysis: How Michigan and National Reporters Covered the Flint Water Crisis*, MEDIAMATTERS (Feb. 2, 2016, 12:09 PM), <https://www.mediamatters.org/research/2016/02/02/analysis-how-michigan-and-national-reporters-co/208290#howmedia-covered> [<https://perma.cc/2YZN-AFRF>].

⁵¹ Emily Benfer, *Contaminated Childhood: How the United States Failed to Prevent the Chronic Lead Poisoning of Low-Income Children and Communities of Color*, 41 HARV. ENVTL L. REV. 493, 495 (2017). Although most reporting and the ongoing narrative centers on lead exposure, the Flint Water Crises also resulted in an outbreak of Legionnaire's disease that proved deadly for some residents and left others with ongoing health consequences. For a full discussion of the outbreak and attendant consequences, cf. Nicholas J. Schroeck, *The Flint Water Crisis and Legionella: Harm to Public Health from Failure to Warn*, 18 J.L. SOC'Y 155, 156 (2018).

⁵² Hanna-Attisha et al., *supra* note 18, at 283 (stating “[l]ead is a potent neurotoxin, and childhood lead poisoning has an impact on many developmental and biological processes, most notably intelligence, behavior, and overall life achievement”); see also Talia Sanders, Yiming Lu, Virginia Buchner & Paul B. Tchounwou, *Neurotoxic Effects and Biomarkers of Lead Exposure: A Review*, 24 REVS. ENV'T HEALTH 15, 17 (2009).

To date, state authorities have estimated that 8,000–9,000 children may have been exposed to lead in Flint.⁵³ Adults, too, suffered health consequences from exposure, with numerous reports of rashes, hair loss, and miscarriages.⁵⁴ Even five years later, many residents are still left without potable water.⁵⁵ The fallout from this disaster was largely borne—to this day—by low-income and African American households in Flint.⁵⁶

The exposure of poor, African American residents to high levels of lead can be attributed in large part to spatial disparities. Over time, public and private forces enabled the concentration of poverty within the city’s borders and simultaneously redirected investment, including infrastructure development, to the growing ring of suburbs in Genesee County.⁵⁷ Even before the national news coverage of Flint’s drinking water crisis, the once industrious metropolis known as “Vehicle City” had already fallen on hard times.⁵⁸ Hailed as the birthplace of General Motors (GM), the

⁵³ Ryan Felton, *‘It’s Affected Everybody’: Flint Children on the Frontline of the Water Crisis*, THE GUARDIAN (Mar. 24, 2016, 3:01 PM), <https://www.theguardian.com/us-news/2016/mar/24/flint-children-water-crisis-lack-of-data-lead> [https://perma.cc/VJ45-W39J] (“Still, state officials have advised that children under six in the city—roughly 8,000 to 9,000 in total—should be treated as having been exposed.”).

⁵⁴ Ryan Felton, *Flint’s Tainted Water May Have Led to Rashes and Hair Loss, Investigation Finds*, THE GUARDIAN (Aug. 23, 2016, 3:14 PM), <https://www.theguardian.com/us-news/2016/aug/23/flint-lead-tainted-water-crisis-skin-rashes-hair-loss-michigan> [https://perma.cc/5YJG-6DFB].

⁵⁵ Lead lines need to be replaced in order to eliminate all possibility of exposure. Due to the high number of lead lines in the city, the work is slow-going. As a result, residents in some areas are required to use filters; but many remain understandably skeptical and use bottled water. See Emma Winowiecki, *Does Flint Have Clean Water? Yes, but It’s Complicated.*, MICH. RADIO NPR (Aug. 21, 2019), <https://www.michiganradio.org/post/does-flint-have-clean-water-yes-it-s-complicated> [https://perma.cc/3SSF-SXGY].

⁵⁶ FLINT WATER ADVISORY TASK FORCE, FINAL REPORT 54 (Mar. 2016), https://www.michigan.gov/documents/snyder/FWATF_FINAL_REPORT_21March2016_517805_7.pdf [https://perma.cc/5XAE-FA6P] (“Flint residents, who are majority Black or African American and among the most impoverished of any metropolitan area in the United States, did not enjoy the same degree of protection from environmental and health hazards as that provided to other communities.”).

⁵⁷ See Dominic Adams, *Here’s How Flint Went from Boom Town to Nation’s Highest Poverty Rate*, MLIVE (Sept. 21, 2017), https://www.mlive.com/news/flint/2017/09/heres_how_flint_went_from_boom.html [https://perma.cc/CX5L-N7EA]; Genesee County is the County in which Flint is located. See *Maps & Data*, GENESEE CNTY. https://www.gc4me.com/departments/gis/maps_and_services.php [https://perma.cc/BK3A-WC3W] (last visited Oct. 15, 2020).

⁵⁸ For vehicle city moniker, see CANDY J. COOPER & MARC ARONSON, POISONED WATER: HOW THE CITIZENS OF FLINT, MICHIGAN, FOUGHT FOR THEIR LIVES AND WARNED THE NATION 13 (2020); see also Emily Bingham, *Michigan History: Why Flint’s ‘Vehicle City’ Nickname Has Nothing to Do with Cars*, MLIVE (Jan. 19, 2019), https://www.mlive.com/entertainment/2017/05/flint_vehicle_city_name_history.html [https://perma.cc/AF9X-JJG4]. For economic decline prior to the water crisis, see ERIC SCORSONE, PH.D. &

city once boasted one of the strongest-growing middle classes in the United States, thanks to stable wages and numerous employment options in the auto industry and other manufacturers.⁵⁹ Some of these benefits, like wages and jobs, even extended to Flint's African-American residents, although never to the same scale as white workers.⁶⁰ In 1960, Flint reached its peak population at 196,940 residents and the city was majority White (82%).⁶¹

Half a century later, the population and demographics of Flint have shifted dramatically. In 2014, the year of the water crisis, the population had shrunk considerably to a mere 99,002.⁶² The city was 51.5% African American, with over 40% of the total population living at or below the poverty line—the highest poverty rate of any city in Michigan with at least 65,000 people.⁶³ The consistent out-migration from Flint began during the post-war era and continued to accelerate through the industrial collapse of the 1980s and well into the 2000s, with 18% of the population leaving the city between 2000–2010.⁶⁴ As the city's population declined, the now smaller and less affluent residents find themselves in an untenable position: Flint's remaining population was now responsible for shouldering the financial burdens of maintaining the city, including its aging infrastructure.⁶⁵ Moreover, this massive infrastructure was designed to support a far larger residential population, as well as the needs of manufacturing operations and other commercial enterprises in the city.⁶⁶

Flint's water system showcased the practical impact of this ongoing financial predicament, with numerous service and operation issues plaguing the city even prior to the lead contamination crisis. In Flint, the average water main was eighty

NICOLETTE BATESON, LONG-TERM CRISIS AND SYSTEMIC FAILURE: TAKING THE FISCAL STRESS OF AMERICA'S OLDER CITIES SERIOUSLY 1–8 (2011), https://www.cityofflint.com/wp-content/uploads/Reports/MSUE_FlintStudy2011.pdf [https://perma.cc/HT8Q-2B29]; Kayla Ruble, *The Unraveling of Flint: How 'Vehicle City' Stalled Long Before the Water Crisis*, VICE NEWS (Jan. 26, 2016, 1:25 PM), https://www.vice.com/en_us/article/mbn5b4/the-unraveling-of-flint-how-vehicle-city-stalled-long-before-the-water-crisis [https://perma.cc/V72M-FC22]; Adams, *supra* note 57.

⁵⁹ ANNA CLARK, *THE POISONED CITY: FLINT'S WATER AND THE AMERICAN URBAN TRAGEDY* 3 (2018) ("Flint had one of the highest per capita income in the nation and, despite being severely segregated, it was a magnet for African American migrants from the South.")

⁶⁰ Although African American workers in Flint still received less compensation and were relegated to more menial labor, the population in Flint fared far better financially than African Americans in other industrial cities or rural areas. *See generally* ANDREW R. HIGHSMITH, *DEMOLITION MEANS PROGRESS: FLINT, MICHIGAN, AND THE FATE OF THE AMERICAN METROPOLIS* (2015).

⁶¹ SCORSONE & BATESON, *supra* note 58, at 4.

⁶² LEONIDAS MUREMBYA & ERIC GUTHRIE, *DEMOGRAPHIC AND LABOR MARKET PROFILE: CITY OF FLINT* 8 (Apr. 2016), https://milmi.org/Portals/198/publications/Flint_City_Demographic_and_Labor_Mkt_Profile.pdf [https://perma.cc/AKM9-H6MT].

⁶³ *Id.*

⁶⁴ *Id.* at 5.

⁶⁵ CLARK, *supra* note 59, at 35.

⁶⁶ *Id.*

years old, and the system lost a significant percentage of water through leaky pipes⁶⁷ and water main breaks,⁶⁸ which only further compromised the aging infrastructure. Typically, pipes and other parts of a water system should be replaced proactively, rather than waiting for a water main break, as this can lead to contamination and negative public health consequences.⁶⁹ Additionally, low pressure and water flow in pipes cause these parts to corrode and degrade faster, as they are designed to accommodate fast-moving water.⁷⁰ Unfortunately, Flint's water authority was strapped for cash and could not bear the financial burden of proactive replacement.⁷¹

Ironically, although the water system was facing a major funding deficit, Flint residents were continuing to pay ever-increasing amounts of money for residential water service.⁷² Households in Flint had some of the most expensive water bills in the country,⁷³ despite over 40% of the city's population living below the poverty line.⁷⁴ How did residents find themselves in this strange situation? Water rates are supposed to generate enough income to cover operations, maintenance,

⁶⁷ See ROWE PRO. SERVS. CO. & POTTER CONSULTING, CITY OF FLINT WATER RELIABILITY STUDY: DISTRIBUTION SYSTEM 9 (Dec. 2013), https://www.michigan.gov/documents/snyder/Rowe_2013_Reliability_Study_compressed_515343_7.pdf [<https://perma.cc/V6Y2-B8LF>]; Ron Fonger, *10 Easy Pieces: Key Facts About Flint's Water System in New Report*, MLive (Jan. 19, 2019), https://www.mlive.com/news/2016/06/ten_troubling_facts_about_flin.html [<https://perma.cc/4CTU-BXAE>].

⁶⁸ Steve Carmody, *Flint to Pressure Water Customers to Pay Their Overdue Bills*, MICH. RADIO NPR (Mar. 28, 2014), <https://www.michiganradio.org/post/flint-pressure-water-customers-pay-their-overdue-bills> [<https://perma.cc/Y8MZ-NGFP>].

⁶⁹ Marc Edwards, *Understanding Flint's Water Infrastructure Crisis: Water Infrastructure Inequality in America*, FLINT WATER STUDY UPDATES (Dec. 9, 2016), <http://flintwaterstudy.org/2016/12/understanding-flints-water-infrastructure-crisis-water-infrastructure-inequality-in-america/> [<https://perma.cc/8FL9-UAAL>].

⁷⁰ *Id.* (“Second, water moves very slowly through a pipe system with fewer people, which can actually make corrosion damage of pipes worse, and increase the rate of damage and costs for repair. Unlike highways which degrade faster the more, they are used, water systems can actually degrade more quickly with less water use.”).

⁷¹ CLARK, *supra* note 59, at 35–36 (“Replacing them is very expensive, and money for infrastructure is harder than ever to come by. In 1976, two years after the Safe Drinking Water Act passed, federal funding provided utilities with \$17 billion to keep their infrastructure in good condition. By 2014, that had fallen to \$4.3 billion. Also, a full upgrade would take years to complete, extending well beyond any individual's elected term. And water infrastructure is rarely a top priority for residents.”).

⁷² John Wisely, *Flint Residents Paid America's Highest Water Rates*, DETROIT FREE PRESS (Feb. 17, 2016, 8:52 AM), <https://www.freep.com/story/news/local/michigan/flint-water-crisis/2016/02/16/study-flint-paid-highest-rate-us-water/80461288/> [<https://perma.cc/83FM-E957>].

⁷³ *Id.*; see Carmody, *supra* note 68 (noting the high water rates generally).

⁷⁴ CLARK, *supra* note 59, at 14–15 (“Long before the emergency managers came to town, residents had urged their leaders to relieve the burden of pricey water. Monthly rates in Flint were among the most expensive in the country, and yet 42 percent of residents live below the federal poverty level. And the rates kept rising . . .”).

administrative costs, etc.⁷⁵ Rates are often increased to cover large renovation or repair projects, like burst water pipes or replacing outdated infrastructure.⁷⁶ Rates are also adjusted if there is a significant population decline or the water system will face a deficit.⁷⁷ As the population fell in Flint, the various maintenance, administrative, and operational costs were now distributed over a smaller number of households, thus increasing each individual water bill. Under these increasing financial pressures, the number of unpaid bills mounted, as did incidences of water theft—with desperate residents using illegal water connections for their homes.⁷⁸

Water systems are intended to be financially self-sufficient, funding operations, maintenance, and even reserves—savings for future projects—through water bills.⁷⁹ However, thanks to Flint’s slow and deliberate economic decline, the city could no longer generate the necessary revenue through water bills alone.⁸⁰ The tax base had not only shrunk in numbers, but also changed in composition, making it impossible

⁷⁵ Carmody, *supra* note 68 (“The rates that you charge for a service should cover the costs of providing the service.”); see generally *Understanding Your Water Bill*, EPA, <https://www.epa.gov/watersense/understanding-your-water-bill> [<https://perma.cc/D8B7-C6UH>] (last visited Jan. 30, 2020) (explaining the costs in a standard water bill).

⁷⁶ David Harrison, *Why Your Water Bill Is Rising Much Faster than Inflation*, WALL ST. J. (Mar. 15, 2018, 5:30 AM), <https://www.wsj.com/articles/who-is-paying-to-fix-outdated-water-and-sewer-systems-you-are-1521106201> [<https://perma.cc/X887-LJ96>].

⁷⁷ *Id.*

⁷⁸ Molly Young, *Flint Officials Confirm ‘Massive’ Water Theft Investigation, Crackdown*, MLIVE (Jan. 19, 2019), https://www.mlive.com/news/flint/2014/09/flint_officials_confirm_massiv.html [<https://perma.cc/8L9R-9NB8>].

⁷⁹ Donald A. Forrer, Jacob Boudreau, Elizabeth Boudreau, Sheronia Garcia, Christopher Nugent, Dean Allen & Alexis C. Lubin, *The Effects of Water Utility Pricing on Low Income Consumers*, 5 J. INT’L ENERGY POL’Y 9, 9 (2016) (“There was a time when water was a commodity that families took for granted and cost was not a consideration in the budget. However, that is no longer the case. Increasing costs in capital, debt, personnel, chemicals, retrieval, and production have dramatically increased the price of water. In addition to the listed issues is the fact that water is becoming harder to find and maintain as municipalities face revenue issues that must be addressed through the pricing model utilized by government utilities . . . Public utilities are required to be self-sufficient by ensuring that income covers expenses.”).

⁸⁰ See John Counts, *Flint Water Crisis Got Its Start as a Money-Saving Move in Department of Treasury*, MLIVE (Jan. 19, 2019), https://www.mlive.com/news/2016/05/flint_water_crisis_got_its_sta.html [<https://perma.cc/K7TC-USB3>]; see also Curt Guyette, *A Deep Dive into the Source of Flint’s Water Crisis*, METROTIMES (Apr. 19, 2017), <https://www.metrotimes.com/detroit/a-deep-dive-into-the-source-of-flints-water-crisis/Content?oid=3399011> [<https://perma.cc/LT3V-WFXD>]; Annie Snider, *Flint’s Other Water Crisis: Money*, POLITICO (Mar. 7, 2016, 8:56 PM) <https://www.politico.com/story/2016/03/flint-lead-water-contamination-money-220391> [<https://perma.cc/GY4R-7YTS>] (reporting on repeated revenue transfers from Flint’s water and sewer fund to the city’s general operating budget). Revenue transfers resulted in both rising rates for residents and the depletion of the water and sewer funds, making it impossible to address infrastructure issues. *Id.*

to rely on tax revenue as an additional funding source.⁸¹ State funds were no longer an option due to considerable cuts in the State's revenue sharing program.⁸² Federal funding regimes for water infrastructure were also less robust. Thus it was difficult for the city to access desperately needed funds from these sources.⁸³ This financial predicament led to the fateful decision to switch water sources for the city of Flint.⁸⁴

The decision to change water sources was made by a politically appointed Emergency Financial Manager (EFM), one of many tasked with the supposed stewardship of failing school systems and local governments throughout Michigan under a controversial law.⁸⁵ The EFM had the authority to make all major operational decisions for Flint, making both the Mayor and City Council obsolete, thus subrogating the democratic will of the people by eliminating their only voice in governing affairs—their local elected officials.⁸⁶ The EFM's directive was to move

⁸¹ See generally MICH. CIV. RTS. COMM'N, *THE FLINT WATER CRISIS: SYSTEMIC RACISM THROUGH THE LENS OF FLINT* 109–10, https://www.michigan.gov/documents/mdcr/VFlintCrisisRep-F-Edited3-13-17_554317_7.pdf [https://perma.cc/P2YM-EV9D] [hereinafter *THE FLINT WATER CRISIS*] (examining key issues that played a role in creating Flint's financial emergencies); see also Snider, *supra* note 80; SCORSONE & BATESON, *supra* note 58, at 4.

⁸² CLARK, *supra* note 59, at 5 (“[B]etween 1998 and 2016, Michigan diverted more than \$5.5 billion that would ordinarily go to places such as Flint to power streetlights, mow parks, and plow snow. Instead, the state used the money to plug holes in its own budget . . . For Flint, this translated into a loss of about \$55 million between 2002 and 2014. That amount would have been more than enough to eliminate the city's deficit, pay off its debt, and still have a surplus.”); see also Peter J. Hammer, Director, Damon J. Keith Ctr. for Civ. Rts., Hammer Statement to the Michigan Civil Rights Commission on The Flint Water Crisis, KWA and Strategic-Structural Racism 8 (July 18, 2016), https://www.michigan.gov/documents/mdcr/Hammer_Peter_Flint_water_and_strategic-structural_racism_final_552225_7.pdf [https://perma.cc/ES6J-VXHN]. Michigan has a state sales tax, the revenue from this sales tax is typically redistributed to local governments to help them balance their budgets. The state decreased revenue sharing program and instead used the funds to balance state level budgets. This was a major financial setback for local governments like Flint that relied on their portion of the sales tax revenue to balance their books. See Dominic Adams, *Report Says Flint Lost Out on Nearly \$55 Million in Revenue Sharing in Last Decade*, MLIVE (Jan. 20, 2019), https://www.mlive.com/news/flint/2014/03/report_says_flint_lost_out_on.html [https://perma.cc/FLZ3-2YFM].

⁸³ CLARK, *supra* note 59, at 35–36 (“In 1976, two years after the Safe Drinking Water Act passed, federal funding provided utilities with \$17 billion to keep their infrastructure in good condition. By 2014, that had fallen to \$4.3 billion . . .”).

⁸⁴ *Id.* at 16 (“The city has had virtually no control over managing its most important resource and service, and that is the water.”).

⁸⁵ Oona Goodin-Smith, *Flint's History of Emergency Management and How It Got to Financial Freedom*, MLIVE (May 20, 2019), https://www.mlive.com/news/flint/2018/01/city_of_the_state_flints_histo.html [https://perma.cc/XV5K-3NKZ].

⁸⁶ CLARK, *supra* note 59, at 14 (explaining that the point of the emergency manager was to “lead Flint out of serious financial distress” and “held the full power of both the mayor's office and the City Council to do what needed to be done to stabilize the community”); David

the city towards financial solvency, and, as part of that directive, in 2014, the EFM focused heavily on the financially troubled water system in Flint.⁸⁷

The EFM's initial focus on the water system was not completely baseless. Residents and lawmakers had long believed that Flint was overpaying for water service, provided to the city and Genesee County by the Detroit Water and Sewerage Department (DWSD).⁸⁸ In 1964, Flint entered into a contract with the DWSD to provide the growing city with water, which was drawn from Lake Huron, treated, and then sold at wholesale prices to Flint.⁸⁹ The DWSD charged more for delivering water across longer distances and Flint, located at the very end of DWSD's service area, was charged a fairly high premium for service.⁹⁰ As a more economical alternative, Flint and Genesee County decided to build their own water authority—the Karengodi Water Authority (KWA).⁹¹

The KWA was estimated to save the region \$200 million over twenty-five years, lowering water bills for residents in both the city and the rest of Genesee County.⁹² Although the project would take nearly five years to complete, the EFM and other parties in Genesee County deemed it a sound investment and commenced construction.⁹³ In the interim, however, the future customers of the KWA would still need water. Motivated by cost concerns, Flint's EFM decided to use the Flint River as the city's short-term water source.⁹⁴ In contrast, the Genesee County suburbs continued to contract with DWSA.⁹⁵

The switch to the Flint River proved disastrous. Inadequate corrosion control during the water treatment process compromised the pipes, and a number of

Fasenfest & Theodore Pride, *Emergency Management in Michigan: Race, Class, and the Limits of Liberal Democracy*, 42 CRITICAL SOCIO. 331, 331–34 (2016).

⁸⁷ CLARK, *supra* note 59, at 16 (“The city has had virtually no control over managing its most important resource and service, and that is the water.”).

⁸⁸ *Id.* at 14–15 (“Long before the emergency managers came to town, residents had urged their leaders to relieve the burden of pricey water.”). This sentiment was even shared by suburban communities surrounding Flint.

⁸⁹ *Id.* at 29–30.

⁹⁰ *Id.* at 15.

⁹¹ *Id.* at 15–16.

⁹² Merrit Kennedy, *Lead-Laced Water in Flint: A Step-By-Step Look at the Makings of a Crisis*, NPR (Apr. 20, 2016, 6:39 PM), <https://www.npr.org/sections/thetwo-way/2016/04/20/465545378/lead-laced-water-in-flint-a-step-by-step-look-at-the-makings-of-a-crisis> [<https://perma.cc/8DQQ-EAPJ>].

⁹³ Ron Fonger, *Genesee County Starts on Design of Lake Huron Water Pipeline Intake*, MLIVE (Jan. 20, 2019), https://www.mlive.com/news/flint/2012/03/genesee_county_starts_on_desig.html [<https://perma.cc/JN3C-3SJY>] (claiming that continuing to buy water from Detroit will cost the region \$2.1 billion during the next 25 years, in comparison to building a pipeline that would cost \$1.9 billion over the same period, according to the KWA website).

⁹⁴ Bridge Staff, *Who Approved Switch to Flint River? State's Answers Draw Fouls*, BRIDGE MICH. (Jan. 21, 2016), <https://www.bridgemi.com/michigan-truth-squad/who-approved-switch-flint-river-states-answers-draw-fouls> [<https://perma.cc/JW5X-5PJH>].

⁹⁵ CLARK, *supra* note 59, at 17.

contaminants were introduced into the water, including lead.⁹⁶ Continued oversight failures by state and local authorities enabled the crisis to continue until thousands upon thousands of residents had been exposed.⁹⁷ The water in Flint was unpotable, yet the water bills continued to rise to cover the costs of construction for the KWA.⁹⁸ Rates became the highest in the country, despite the promise of cost savings motivating the switch from the DWS to the Flint River.⁹⁹ The human cost of the Flint Water crisis is staggering. As Dr. Mona Haddad framed it: “Increased lead-poisoning rates have profound implications for the life course potential of an entire cohort of Flint children already rattled with toxic stress contributors (e.g., poverty, violence, unemployment, food insecurity).”¹⁰⁰

1. *Historical Factors Impacting GDS and Infrastructure Development*

The current circumstances of Flint’s water crisis cannot be discussed without revisiting race and class issues embedded in corporate agendas and government initiatives. Collectively, these racially aligned divestment and reinvestment forces heavily influenced infrastructure development and created spatial disparities in Flint, laying the foundation for the modern crisis. First, the corporate dominance of GM, the largest employer and largest consumer of water in the city, meant the company exerted a great deal of power and influence over local government. This corporate dominance enabled GM to virtually dictate the distribution of public resources to best suit its needs, eventually co-opting city resources to benefit GM’s suburban manufacturing sites.¹⁰¹ In addition to their financial agenda, GM also drove racial segregation and inequality through racist employment practices and place-making initiatives that explicitly excluded African Americans.¹⁰² Second, the Federal

⁹⁶ Terese Olson, *The Science Behind the Flint Water Crisis: Corrosion of Pipes, Erosion of Trust*, THE CONVERSATION (Jan. 28, 2016, 5:46 AM), <https://theconversation.com/the-science-behind-the-flint-water-crisis-corrosion-of-pipes-erosion-of-trust-53776> [<https://perma.cc/NZ9Z-QNA2>] (describing that anti-corrosives are a regular addition to most municipal water treatment processes. If the water is corrosive, it can eat away at the pipes, compromising and weakening the water mains. Corrosion also causes metal to leech into the water. As the water slowly causes the pipes to disintegrate, heavy metals are introduced into the water traveling through the pipes. If the water system includes lead pipes, lead gets introduced into the water as the pipes begin to corrode).

⁹⁷ K. Sabeel Rahman, *Constructing Citizenship: Exclusion and Inclusion Through the Governance of Basic Necessities*, 118 COLUM. L. REV. 2447 (2018) [hereinafter Sabeel Rahman, *Constructing Citizenship*] (stating that among the most egregious steps taken by the EFM and state officials were repeated assertions that the water met Safe Drinking Water Act and other standards despite selective site testing).

⁹⁸ Steve Carmody, *Consultant Says Flint Needs to Charge More for Water and Sewer Service*, MICH. RADIO NPR (Apr. 10, 2014), <https://www.michiganradio.org/post/consultant-says-flint-needs-charge-more-water-and-sewer-service> [<https://perma.cc/Z369-LQFR>].

⁹⁹ Wisely, *supra* note 72.

¹⁰⁰ Hanna-Attisha et al., *supra* note 18, at 286.

¹⁰¹ See HIGHSMITH, *supra* note 60, at 10; *infra* Section I.B(a)(i).

¹⁰² See *infra* Section I.B(a)(ii).

Housing Administration's development agenda created huge economic disparities across race and class lines, channeling investments away from the urban core and into racially and economically homogenous suburbs.¹⁰³

(a) *GM and Corporate Dominance*

For decades, GM was the economic engine that drove manufacturing, employment, and prosperity in Flint and the surrounding areas.¹⁰⁴ During its heyday, GM was the dominant corporate power in Flint, employing over 80,000 workers in the metro area.¹⁰⁵ The region was also home to other manufacturing companies—ranging from textiles to paint—and commercial businesses, including restaurants and cafes.¹⁰⁶ Although GM was not the only employer in town, it was the most powerful. The company carefully cultivated a general sentiment among local power brokers—and even many residents—that the fates of Flint and GM were intertwined.¹⁰⁷ This created an environment in which GM became an unofficial constituent of the City, with politicians carefully weighing how decisions—of any scale—would impact the car company.¹⁰⁸

¹⁰³ See *infra* Section I.B(b)(ii). During the 1940s, “the FHA and local bankers rewarded Flint’s outer-ring neighborhoods with a rash of postwar construction . . . over four thousand new building permits for homes located in racially restricted subdivisions in the city’s outermost census tracts.” HIGHSMITH, *supra* note 60, at 139. In contrast, “by the early 1950s, the FHA and local lenders had redlined over 90 percent of the vacant, construction-ready properties inside the city.” *Id.* at 238.

¹⁰⁴ *Id.* at 26.

¹⁰⁵ SCORSONE & BATESON, *supra* note 58, at 11 (“In 1978, over 80,000 Flint-area residents were employed by GM. By 1990 the number of employees decreased to 23,000. It was reported to be as low as 8,000 in 2006.”).

¹⁰⁶ CLARK, *supra* note 59, at 3; HIGHSMITH, *supra* note 60, at 132 (describing retail and services in the Central Business District in Flint during the mid-twentieth century). See also Noel Bankston, Automobile Industry Growth from 1916 to 1989: The Effect on Flint, Michigan Climate 1 (July 2014) (M.S. thesis, Old Dominion University), https://digitalcommons.odu.edu/cgi/viewcontent.cgi?article=1005&context=ots_masters_projects [<https://perma.cc/AB4R-VQCZ>] (“These plants supported countless numbers of small businesses ranging from cafeterias, restaurants, metal fabrication companies, tool and die making businesses, to auto body shops.”).

¹⁰⁷ This view has persisted with Mayor Matthew Collier stating, “Flint is GM and GM is Flint.” Doron P. Levin, *FLINT JOURNAL: Tribute to a 1908 Durant in the Auto’s Future*, N.Y. TIMES (Dec. 9, 1988), <https://www.nytimes.com/1988/12/09/us/flint-journal-tribute-to-a-1908-durant-in-the-auto-s-future.html> [<https://perma.cc/5WBT-JRY2>].

¹⁰⁸ CLARK, *supra* note 59, at 50; see also HIGHSMITH, *supra* note 60, at 91, 133 (noting “GM’s near-obsessive efforts to dominate local politics” and that “connections between the city government and the company were often so close as to obliterate any meaningful distinctions between public policy and private corporate interests”).

(i) *GM's Suburban Strategy*

GM's influence over the local government greatly impacted the city's investment in infrastructure. There is perhaps no better example than the company's impact on water infrastructure and consumption in the city. Industrial users consumed an average of 54% of the water supply from the Flint water system and yet generated only 37% of the revenue thanks to the favorable rate negotiated with the city.¹⁰⁹ In contrast, residents used 30% of the water but constituted 50% of the revenue.¹¹⁰ Residents were, in essence, subsidizing industry with their household water bills.

The period from 1940–1960 was one of rapid expansion and growth for GM, and the auto giant began building new manufacturing facilities in Flint's underdeveloped suburbs.¹¹¹ The ring of small, rustic towns surrounding Vehicle City, however, lacked the capacity to support manufacturing. In particular, GM needed massive amounts of water for production, and many suburbs did not have well-developed municipal water systems.¹¹² Fortunately, Flint officials—ever eager to be seen as a friend to GM—were persuaded to connect these suburban facilities to Flint's water system.¹¹³ Flint's local leaders even agreed not to upcharge the new suburban facilities.¹¹⁴ New plants would enjoy the same generous rate as plants operating within city limits.¹¹⁵

Some residents stridently opposed connecting the new suburban factories to Flint's water infrastructure.¹¹⁶ Critics correctly cited that suburban expansion would not translate to economic benefits for Flint.¹¹⁷ The tax regime—corporate, personal income, and property—is a major source of municipal revenue.¹¹⁸ The new factories fell outside the jurisdiction of Flint, and thus did not generate any new tax revenue

¹⁰⁹ Andrew Highsmith, *Beyond Corporate Abandonment: General Motors and the Politics of Metropolitan Capitalism in Flint, Michigan*, 40 J. URB. HIST. 31, 35 (2014) [hereinafter Highsmith, *Beyond Corporate Abandonment*].

¹¹⁰ *Id.*

¹¹¹ *Id.* at 31–33 (discussing that these plants were designed to accommodate new modes of mechanized and automated production that were incompatible with the existing facilities in the city).

¹¹² *Id.* at 35 (“[O]ther municipal services generally unavailable in Flint's suburbs.”).

¹¹³ HIGHSMITH, *supra* note 60, at 130–31 (quoting Commissioner Craig as stating “without GM, Flint wouldn't exist. I don't believe in taxing or throwing them out of business . . .”). It is worth noting that Flint not only supplied water, but also built roads to the new suburban factories and provided sewage hookups, as well. *Id.*

¹¹⁴ Highsmith, *Beyond Corporate Abandonment*, *supra* note 109, at 35 (noting that the city did charge a flat premium rate for supplying the suburban factories; however, this premium was not particularly costly and the generous per gallon rate still resulted in a fairly significant subsidy for the corporation).

¹¹⁵ *Id.*

¹¹⁶ HIGHSMITH, *supra* note 60, at 130–31.

¹¹⁷ *See id.* at 131.

¹¹⁸ Hammer, *supra* note 82.

for the city.¹¹⁹ In fact, the construction of these new facilities actually reduced Flint's existing revenue stream. Newer facilities replaced older plants located within the city.¹²⁰ Additionally, the new plants featured greater automation, which meant fewer workers were employed in the new suburban facilities.¹²¹ When coupled with layoffs from the now obsolete plants in the urban core, few new jobs were actually created by the suburban facilities.¹²²

GM's slow exodus from Flint into the suburbs altered the allocation of resources in the region, creating spatial disparities between the white suburbs and an increasingly black city. The suburbs provided almost none of the start-up infrastructure costs associated with the new GM plants, but reaped all of the tax benefits.¹²³ Erstwhile, residents of Flint subsidized the new roads and water systems in the suburbs while sacrificing jobs and plants—a vital revenue source—located in the urban core.¹²⁴ This resource divestment began slowly, accelerated, and ultimately resulted in the transformation of the once lauded Vehicle City into a GDS.

Once again, the consequences of GM's suburban strategy were felt keenly by African American and lower-income residents of Flint. The racial demographics clearly indicate Flint had more African American residents compared to the growing suburbs.¹²⁵ Thus, as the city continued to hemorrhage financially to the benefit of the 'burbs, this burden was increasingly borne by the African American population.

¹¹⁹ HIGHSMITH, *supra* note 60, at 130 (noting that GM enjoyed “all of the major services rendered by the city, including fire and police protection; water and sewage disposal—everything except the doubtful privilege of paying city taxes”).

¹²⁰ Highsmith, *Beyond Corporate Abandonment*, *supra* note 109, at 33 (“General Motors and the Politics of Metropolitan Capitalism in Flint, Michigan.”). For example, the new facilities featured greater automation, resulting in the closure of older plants like the Chevy-in-the-Hole plant—one of GM's oldest operations. *Id.*

¹²¹ *Id.* at 36 (detailing that “GM's postwar expansion coincided with decline in employment due to automation”).

¹²² *Id.* (“To many workers in Flint, the company's suburban strategy seemed to amount to a zero-sum game in which new highly automated suburban jobs came at the expense of obsolete urban jobs.”).

¹²³ CLARK, *supra* note 59, at 30 (“Flint also provided water to the GM plants that were increasingly being built in the suburbs. The taxes paid by GM would fund the development of these young communities, which would eventually compete with the core city for residents and business.”).

¹²⁴ HIGHSMITH, *supra* note 60, at 130–31.

¹²⁵ See generally U.S. CENSUS BUREAU, FIFTEENTH CENSUS OF THE UNITED STATES—1930 POPULATION, VOL. I: NUMBER AND DISTRIBUTION OF INHABITANTS, SECTION 6, MICH., 509, 512, 521, 534, 537–39 (1930); U.S. CENSUS BUREAU, CENSUS OF POPULATION, VOL. I: NUMBER INHABITANTS, SECTION 7, MICH., 22-1, 11, 16, 23–24, 26 (1950); U.S. CENSUS BUREAU, CENSUS OF POPULATION, VOL. I: CHARACTERISTICS OF THE POPULATION, MICH., 24-7, 9, 25, 27, 35, 43, 45, 53 (1980) (noting the changing demographics between the City of Flint and its suburbs).

(ii) *GM Inside Flint—Racial Inequality*

Long before the post-war expansion—or rather, relocation—into the suburbs, GM was responsible for creating spatial inequality within the city. GM created and reinforced economic inequality along racial lines in Flint, concentrating poverty within African American neighborhoods. GM both diminished the economic potential of African American workers by relegating them to low-paying, often dangerous positions and enabled residential racial segregation.¹²⁶

GM actively engaged in place-making as a recruitment and retention strategy, creating neighborhoods that would be attractive to its workforce.¹²⁷ GM invested its own resources in building housing and deployed its political clout to have public amenities placed in close proximity to its residential developments.¹²⁸ For example, the company constructed modern housing, complete with indoor plumbing, during the early 1900s in order to attract skilled workers to its factories.¹²⁹ The company offered generous home loans with low interest and required only 10% for down payments.¹³⁰ GM even convinced the Flint School Board to place schools in areas housing their workers to serve as a recruitment and retention device for their private workforce.¹³¹

African American denizens of Flint were expressly excluded from the benefits of GM's place-making efforts. Much of the modern housing constructed by GM contained racially restrictive covenants to prevent integration.¹³² In doing so, GM was following a trend in the city to reinforce strictly segregated neighborhoods, a system endorsed by local government, other real estate developers, and real estate agents alike.¹³³ African American residents of Flint found themselves compressed into overcrowded and poorly maintained parts of the city. Even during the Vehicle City's economic prime, these black neighborhoods were subject to the bare minimum in public investment and upkeep.¹³⁴ As the financial health of the city declined, the historically black neighborhoods—and their infrastructure—deteriorated even more rapidly. The unequal investment over time would be reflected in the impact of the modern-day lead crisis, with older neighborhoods

¹²⁶ See HIGSMITH, *supra* note 60, at 82–84, 131–32.

¹²⁷ See *id.* at 31–32.

¹²⁸ *Id.* at 32.

¹²⁹ *Id.*

¹³⁰ *Id.* (“The company also offered generous financing terms that included loans at 6 percent interest and down payments of only 10 percent”).

¹³¹ *Id.* (“In their attempts to lure young families with children, GM officials persuaded members of the Flint Board of Education to construct two new public schools to serve the neighborhoods.”).

¹³² *Id.* at 32–34 (noting that GM attached deed restrictions).

¹³³ *Id.*

¹³⁴ *Id.* at 156 (“[F]aulty wiring, leaky roofs, overcrowding, and other hazards were exceedingly common in Flint’s densely populated black neighborhoods.”).

experiencing greater levels of lead and other contaminants than newer developments.¹³⁵

GM utilized Flint's public resources—schools, water infrastructure, etc.—for its own benefit. When GM's long-term plans no longer included investing in the urban core, the company slowly abandoned the city.¹³⁶ Ultimately, this corporate dominance resulted in the concentration of poverty within the city.

(b) *New Deal Era Housing Policies—HOLC & FHA*

Public actors also played a pivotal role in transforming the Vehicle City into a GDS by bankrolling the suburbs. Prior to the 1940s, the towns surrounding Flint were largely rural, consisting of hastily assembled, self-built houses that some real estate surveyors disparagingly referred to as “shanty-towns.”¹³⁷ Most communities lacked water or sewer infrastructure, with residents relying on wells and outhouses.¹³⁸ The metamorphosis of Flint's suburbs into affluent, racially homogenous, planned communities replete with modern amenities was part of a larger, national commitment to suburban development.¹³⁹ In Flint and Genesee County, carefully crafted housing policies and programs during the New Deal were largely responsible for the shift from city to suburbs.¹⁴⁰

The federal policies discussed in this Article are in no way neutral. Rather, the U.S. government was explicitly affirming deep-seated existing racism and class-

¹³⁵ See CLARK, *supra* note 59, at 92. A large portion of the City's older homes contain lead service lines. In a shocking development, only newer homes were selected for testing in 2014, delaying the state's ability to identify and respond to the lead crisis. Nearly 25% of them, came from a single stretch of Flushing Road in Flint, where the city had replaced a lengthy section of water main in 2007. Not surprisingly, all of those samples measured very low for lead. See also Paul Egan, *State's Handling of Flint Water Samples Delayed Action*, DETROIT FREE PRESS (Dec. 24, 2015, 10:09 AM), https://www.freep.com/story/news/politics/2015/12/23/states-handling-flint-water-samples-delayed-action/77367872/?utm_content=bufferf86b9&utm_medium=social&utm_source=twitter.com&utm_campaign=buffer [<https://perma.cc/ZWT5-8DFE>].

¹³⁶ For GM divesting from the city, see THE FLINT WATER CRISIS, *supra* note 80, at 50. For GM using public resources for its own benefit with regard to schools, see HIGHSMITH, *supra* note 60, at 32. For GM using public resources for its own benefit with regard to water infrastructure, see Highsmith, *Beyond Corporate Abandonment*, *supra* note 109, at 35.

¹³⁷ HIGHSMITH, *supra* note 60, at 28.

¹³⁸ *Id.* at 107.

¹³⁹ Richard Rothstein, *Modern Segregation*, ECON. POL'Y INST. 5 (Mar. 6, 2014), <https://www.epi.org/publication/modern-segregation/> [<https://perma.cc/ZR8D-FKEG>] (“The Federal Housing and Veterans Administrations recruited a nationwide cadre of mass-production builders who constructed developments on the East Coast like the Levittowns in Long Island, Pennsylvania, New Jersey, and Delaware; on the West Coast like Lakeview and Panorama City in the Los Angeles area, Westlake (Daly City) in the San Francisco Bay Area, and several Seattle suburbs developed by William and Bertha Boeing; and in numerous other metropolises in between.”).

¹⁴⁰ See *id.*

based bias through federal policy.¹⁴¹ Although the government did not invent bias, it helped entrench bias by providing the laws and funds to ensure racial and economic segregation.¹⁴²

(i) *HOLC*

The Roosevelt Administration created a series of programs designed to help promote homeownership and incentivize the development of new, middle-class communities. As the federal government worked to stabilize housing and promote residential development, it did so with programs that explicitly discriminated on the basis of race and class.¹⁴³ For example, the Home Owners Loan Corporation (HOLC) is credited with categorizing residential integration as a significant mortgage risk factor.¹⁴⁴ HOLC's stated purpose was to refinance existing home mortgages at risk of foreclosure, or in active default, in order to stabilize the housing market.¹⁴⁵ As part of its directive, it engaged in creating a so-called "security map" of Flint and 238 other residential areas across the United States.¹⁴⁶ HOLC's surveyors and administrators determined neighborhoods with the following characteristics were too risky for investment: class composition, presence of undesirable groups (blacks, foreign-born residents, families receiving assistance),¹⁴⁷ proximity to other neighborhoods that were racially mixed without a buffer, unemployment, utility services, and housing quality.¹⁴⁸ The information gathered by HOLC was ultimately preserved in color-coded maps, with the riskiest neighborhoods marked in red.¹⁴⁹ The FHA expanded on the system initially created

¹⁴¹ Jacob Walker, *The New Deal Didn't Create Segregation*, JACOBIN MAG. (Jun. 18, 2019), <https://jacobinmag.com/2019/06/the-color-of-law-richard-rothstein-review> [<https://perma.cc/JAB8-4WFY>].

¹⁴² *Id.*

¹⁴³ Rothstein, *supra* note 139, at 5–8.

¹⁴⁴ See Camila Domonoske, *Interactive Redlining Map Zooms in on America's History of Discrimination*, NPR (Oct. 19, 2016), <http://www.npr.org/sections/thetwoway/2016/10/19/498536077/interactive-redlining-map-zooms-in-on-americas-history-of-discrimination> [<https://perma.cc/3L4W-HC2C>] ("In the aftermath of the Great Depression, the U.S. government set out to evaluate the riskiness of mortgages—and left behind a stunning portrait of the racism and discrimination that has shaped American housing policy In the late 1930s, the HOLC 'graded' neighborhoods into four categories, based in large part on their racial makeup. Neighborhoods with minority occupants were marked in red—hence 'redlining'—and considered high-risk for mortgage lenders.").

¹⁴⁵ See The Homeowners Loan Act of 1933, Pub. L. No. 73-43, 48 Stat. 128 (1970) (current version at 12 U.S.C. §§ 1461–1468); see also Peter M. Carrozzo, *A New Deal for the American Mortgage: The Home Owners' Loan Corporation, the National Housing Act and the Birth of the National Mortgage Market*, 17 U. MIAMI BUS. L. REV. 1, 13 (2008).

¹⁴⁶ HIGHSMITH, *supra* note 60, at 10.

¹⁴⁷ *Id.* at 40.

¹⁴⁸ *Id.* at 43–44.

¹⁴⁹ *Id.* at 39.

by HOLC—assessing neighborhood stability based on race and class—and categorizing (or redlining) these communities as too risky for investment.¹⁵⁰

(ii) *FHA*

The Federal Housing Administration (FHA) was created in 1934 after the passage of the National Housing Act.¹⁵¹ The FHA worked to further stabilize the private housing market through the use of long-term, low-interest, fully amortized loans.¹⁵² The FHA offered insurance on home mortgages issued by local lenders, reducing the risk and encouraging private banks to issue more mortgages.¹⁵³ However, FHA programs contained explicit race and class-based biases that excluded—or “redlined”—communities of color and low-income populations.¹⁵⁴ The FHA appraised neighborhoods for *new* investment and, like HOLC, categorized neighborhoods as either risky or sound investments.¹⁵⁵ Risk was correlated to the presence of non-whites, dilapidated housing, quality and quantity of rental housing, as well as the lack of infrastructure.¹⁵⁶ The FHA incorporated these factors into the economics and statistics used to create the actuarial tables and grant loans.¹⁵⁷

In practice, exclusion from FHA programs was explicitly racially motivated, with African American residents and other communities of color serving as markers of instability and thus ineligible for investment from the federal government.¹⁵⁸ The

¹⁵⁰ *Id.* at 10 (“Across the United States, local lenders and officials from the Federal Housing Administration (FHA) adopted the HOLC’s racist standards for measuring mortgage risk and systemically redlined neighborhoods occupied by African Americans and other people of color . . . [I]n the Flint area, redlining helped to widen economic gaps between cities and suburbs while hardening the color lines surrounding minority neighborhoods.”).

¹⁵¹ The National Housing Act of 1934, Pub. L. No. 73-479, 48 Stat. 1246 (1934).

¹⁵² *Id.*, § 203; Rothstein, *supra* note 139, at 5–8.

¹⁵³ This program proved very successful. See HIGHSMITH, *supra* note 60, at 45 (“Between 1934 and 1972, the FHA insured eleven million mortgages, helping to increase home-ownership rates nationwide from 44 to 63 percent.”).

¹⁵⁴ *Id.* at 46 (“[T]he FHA rated residential areas . . . based on a wide variety of factors including a neighborhood’s economic stability, the proximity of “undesirable” groups and adverse environmental influences, the quality of schools and Utility Services Officials from the FHA did not always use the same color scheme as the HOLC, but their racial and spatial logic was essentially the same.”).

¹⁵⁵ *Id.*

¹⁵⁶ Rothstein, *supra* note 139, at 5.

¹⁵⁷ HIGHSMITH, *supra* note 60, at 46 (quoting Homer Hoyt, real estate theorist who worked at the FHA’s Economics and Statistics Division, as stating “[o]n the other hand . . . where rents are high, the percentage of owner occupancy is high, the condition of the buildings good and there is no race other than white, there will be found areas that rate high for loan purposes”).

¹⁵⁸ *Id.* at 47 (“From the 1930s until well into the 1960s most American neighborhoods with African American occupants simply could not obtain high enough ratings to qualify for either FHA-insured mortgages or conventional home loans. Even if a black neighborhood

mania went one step further, with proximity to these communities being considered possibly dangerous and unstable as well. FHA redlining practices also furthered class-based subordination, prioritizing new construction¹⁵⁹ and more affluent neighborhoods.¹⁶⁰

Although the suburbs of Flint were racially homogenous (e.g., white), they were poor and underdeveloped.¹⁶¹ Thus, initial FHA investment was limited to all-white neighborhoods located within Flint, and these locations were quickly saturated.¹⁶² To expand into the suburbs, the FHA began using the promise of loans as an incentive, forcing suburbs eager for funds and development to build the requisite infrastructure and attract wealthy residents to their growing towns.¹⁶³ Local suburban governments further leveraged the promise of FHA funding to aggressively pursue new residential and commercial projects, issuing bonds and partnering with real estate developers.¹⁶⁴

As the suburbs were booming, the FHA's race-based policies prevented significant investment in Flint. The FHA funneled money to newer, white suburbs in Genesee County while redlining large parts of the city.¹⁶⁵ Thus, the New Deal-era housing policies disenfranchised communities based on race and class considerations, creating spatial inequity between the city and the suburbs. The combined impact of the FHA and GM was a reallocation of public and private investment from the urban core into the surrounding suburbs. The slow abandonment resulted in the concentration of poverty within Flint. The city's infrastructure experienced a "death spiral"—a negative feedback cycle where population loss spurred rate increases leading to more people leaving the city due to financial hardship.¹⁶⁶

scored highly based on ostensibly non-racial factors such as utility services or access to public transportation, FHA officials instructed appraisers to crunch numbers to ensure a [low] grade."); *see id.* ("According to the FHA's leaders, neighborhoods that contained black people were 'unquestionably slums,' or well on their way toward becoming them, and thus ineligible for federal mortgage insurance.").

¹⁵⁹ *Id.* ("FHA officials exhibited a strong preference for insuring mortgages on new homes over existing structures. Because cities contained a disproportionate number of older homes, the FHA's policies thus reflected a strong antiurban bias.").

¹⁶⁰ *Id.* at 104. ("[F]rom the mid-1930s until well into the 1950s, the FHA systematically redlined suburban areas that possessed inadequate building and zoning regulations, utilities, services, and schools.").

¹⁶¹ *Id.* at 28.

¹⁶² *Id.* at 47 ("[L]enders and government underwriters initially . . . adhered to the HOLC's approach by . . . favoring modern all-white neighborhoods in the city over poorly serviced, predominantly jerrybuilt suburbs.").

¹⁶³ *See id.* at 108–11.

¹⁶⁴ *See id.* at 110–13 (discussing how the town of Davison "grew faster than any other area of Genesee County during the two decades bracketing World War II" because of FHA-backed mortgages for homebuyers which led to more tax dollars to fund new development).

¹⁶⁵ *See also supra* text accompanying note 103.

¹⁶⁶ Edwards, *supra* note 69.

Flint's water crises, and the structural forces that created it, are not unique. As Dr. Hadad noted in her study: "As our aging water infrastructures continue to decay, and as communities across the nation struggle with finances and water supply sources, the situation in Flint, Michigan, may be a harbinger for future safe drinking-water challenges."¹⁶⁷ In fact, this grim reality has already manifested in rural communities, and current water troubles in Southern West Virginia very much mirror the experiences of Flint.

C. *Keystone and Gary, West Virginia*

Nestled in the Southern Coalfields of West Virginia, the towns of Gary and Keystone are facing their own water crises. Keystone has been under a boil water advisory¹⁶⁸—a typically temporary measure designed to respond to sudden changes in water quality—since 2012.¹⁶⁹ In January of 2018, the town experienced a temporary shutdown of the water system when the central pumping mechanism broke.¹⁷⁰ In neighboring Gary, cracked pipes have led to dirty, discolored water and unreliable service.¹⁷¹ Keystone and Gary are trapped in an infrastructure death spiral

¹⁶⁷ Hanna-Attisha et al., *supra* note 18, at 288.

¹⁶⁸ See Linda Golodner & Stephen A. Hubbs, *Understanding Boil Water Advisories and Notices*, WATER QUALITY & HEALTH COUNCIL (Jul. 13, 2018), <https://waterandhealth.org/safe-drinking-water/drinking-water/understanding-boil-water-advisories-and-notice/> [<https://perma.cc/SP2K-UKZN>]. In Keystone, the sustained state of the boil advisory runs counter to the temporary nature of boil water advisories and may be indicative of a larger, systemic issue. See David Horak, *Aged Water Mainline, Budget Both Under Pressure for City of Keystone*, WVNS-59 NEWS (Jan. 11, 2018), <https://www.wvnstv.com/local-news/mcdowell-county/aged-water-mainline-budget-both-under-pressure-for-city-of-keystone/909713317> [<https://perma.cc/F3JW-8HXR>].

¹⁶⁹ Caitly Coyne, *Reliable, Safe Water a Struggle for Many in WV*, HERALD DISPATCH (Dec. 31, 2018), https://www.herald-dispatch.com/news/reliable-safe-water-a-struggle-for-many-in-wv/article_212e7a0c-fb56-5dc2-b920-d924027344c5.html [<https://perma.cc/7H6V-77AN>]; Memorandum from Wendy Braswell, Staff Att'y, on *Appalachian Power Company v. Keystone Municipal Water Works*, to Ingrid Ferrell, Exec. Sec'y (Oct. 2, 2015), <http://www.psc.state.wv.us/scripts/WebDocket/ViewDocument.cfm?CaseActivityID=435725&NotType> [<https://perma.cc/4ATS-W6RX>] (documenting the water shortages experienced by residents due to broken pumping mechanisms or pipes, including stoppages that lasted for two weeks).

¹⁷⁰ David Horak, *Aged Water Mainline, Budget Both Under Pressure for City of Keystone*, CBS FOX 59 (Jan. 11, 2018, 4:55 AM), <https://www.wvnstv.com/local-news/mcdowell-county/aged-water-mainline-budget-both-under-pressure-for-city-of-keystone/909713317> [<https://perma.cc/PMH2-PR73>]; Caitly Coyne, *Broken Pump Leaves More than 400 Families in Gary Without Water*, CHARLESTON GAZETTE-MAIL (July 27, 2020), https://www.wvgazette.com/news/broken-pump-leaves-more-than-400-families-in-gary-without-water/article_7e6eb54e-2096-5178-8791-4da525a734b7.html [<https://perma.cc/3LX9-FX74>] [hereinafter Coyne, *Broken Pump*].

¹⁷¹ Caitly Coyne, *In Southern W.Va., Days Without Water Are a Way of Life*, 100 DAYS IN APPALACHIA (Dec. 25, 2018), <https://www.100daysinappalachia.com/2018/12/25/in->

far too common for GDS, creating water insecurity and exacerbating the already precarious economic conditions.¹⁷² Demonstrating once again that race and class are an important feature of GDS, both towns also challenge the presumptive narratives of race in West Virginia. Gary had a significant African American population until the 2015 census¹⁷³ and Keystone remains majority African American.¹⁷⁴

No shortage of recent prestige publications has popularized the narrative of West Virginia as “Trump Country”—evoking an image of West Virginia as exclusively white, working-class, drug-addicted, poor, and angry in the wake of cultural reforms that place their personal values at odds with modern progressive politics.¹⁷⁵ This narrative is misleading and destructive as it erases people of color from the coalfields, both in the present day and historically.¹⁷⁶ Many African

southern-w-va-days-without-water-are-a-way-of-life/ [https://perma.cc/B7QF-E4R3] [hereinafter Coyne, *In Southern W.Va.*]; Coyne, *Broken Pump*, *supra* note 170 (stating that the latest of these water woes in Gary, WV have left over 400 families without running water during the COVID-19 Pandemic).

¹⁷² See generally Caity Coyne, *Once a Booming Town, Keystone Struggles to Hold on*, CHARLESTON GAZETTE-MAIL (Feb. 18, 2018) https://www.wvgazette.com/news/once-a-booming-town-keystone-struggles-to-hold-on/article_fc44b588-61be-5e11-a6cf-04262135dd21.html [https://perma.cc/65GC-UKDV] [hereinafter Coyne, *Once a Booming Town*] (describing recent struggles of the town of Keystone); *Gary, West Virginia (WV Poverty Rate)*, CITY-DATE.COM, <http://www.city-data.com/poverty/poverty-Gary-West-Virginia.html> [https://perma.cc/TQB6-JX9E] (showing the town of Gary as having 28.7% of residents with income levels below poverty compared to 16% of West Virginia); Samuel Stebbins & Michael B. Sauter, *These Are the 25 Worst Counties to Live in. Did Yours Make the List?*, USA TODAY (Mar. 13, 2019, 6:00 AM), <https://www.usatoday.com/story/money/2019/03/13/worst-places-live-us-counties-ranked-poverty-life-expectancy/39163929/> [https://perma.cc/MFE8-E7U5] (listing McDowell County as number four on the “worst counties to live in” within the United States).

¹⁷³ U.S. CENSUS BUREAU, *QuickFacts About Gary, West Virginia*, <https://www.census.gov/quickfacts/fact/table/garycityindiana#> [https://perma.cc/F4J8-TQZL] (last visited Oct. 13, 2020).

¹⁷⁴ U.S. CENSUS BUREAU, *QuickFacts About Keystone, West Virginia*, <https://www.census.gov/quickfacts/fact/table/keystoneindiana#> [https://perma.cc/V93R-685T] (last visited Oct. 13, 2020).

¹⁷⁵ Priya Baskaran, *The Economic Justice Imperative for Lawyers in “Trump Country,”* 7 TENN. J. RACE, GENDER, & SOC. JUST. 161 (2018) [hereinafter Baskaran, *Economic Justice Imperative*]; see also Wilma A. Dunaway, *The Legacy of Social Darwinism in Appalachian Scholarship, in Southern Laboring Women: The Gendered Boundaries of Race, Ethnicity, and Class in Antebellum Appalachia, 1700–1860*, VA. TECH LIBR., https://scholar.lib.vt.edu/faculty_archives/appalachian_women/ethnicit.htm [https://perma.cc/HYV5-P6S6] (last visited May 17, 2021); Elizabeth Catte, *There Is No Neutral There: Appalachia as a Mythic “Trump Country,”* MEDIUM (Oct. 17, 2016), <https://medium.com/@elizabethcatte/there-is-no-neutral-thereappalachia-as-a-mythic-trump-country-ee6ed7f300dc> [https://perma.cc/4T L2-NZM4].

¹⁷⁶ See RENIQUA ALLEN, *IT WAS ALL A DREAM: A NEW GENERATION CONFRONTS THE BROKEN PROMISE TO BLACK AMERICA* (2019); KARIDA L. BROWN, *GONE HOME: RACE AND*

Americans moved to West Virginia following the Civil War, seeking opportunities post-emancipation. Even Booker T. Washington briefly worked as a coal miner in Kanawha County shortly after obtaining his freedom.¹⁷⁷ African Americans were actively recruited by coal companies as the demand from coal—“the dominant fuel of the industrial revolution”¹⁷⁸—required ample labor for mines. Although the jobs were dangerous and the location remote, African American workers were drawn to the mines by the promise of strong wages and the hopes of escaping the worst of the Jim Crow South.¹⁷⁹ Between 1900 and 1940, the African American population in Appalachia nearly tripled, with the majority settling into communities in West Virginia.¹⁸⁰

Although the total number of African Americans living in the state has decreased over time, many still reside within GDS like Gary and Keystone—small, poor communities in West Virginia’s southern coalfields.¹⁸¹ Grappling with historical and structural forces that impacted the African American communities in McDowell County is essential. The failure to do so effectively erases these populations and their struggles, making it impossible to create equitable and effective infrastructure solutions.

1. Historical Factors in McDowell County

McDowell County in southern West Virginia was once called the “Free State of McDowell”—a phrase intended to express pride and solidarity for the growing black community.¹⁸² The county enjoyed a high concentration of black proletariat

ROOTS THROUGH APPALACHIA (2018); *Black in Appalachia: Black Coal Miners and the Great Migration*, BLACK IN APPALACHIA (Sept. 19, 2020), <https://www.blackinappalachia.org/podcast/episode/34d42dbb/black-in-appalachia-black-coal-miners-and-the-great-migration> [<https://perma.cc/YU3N-DS9D>].

¹⁷⁷ JOE WILLIAM TROTTER, COAL, CLASS, AND COLOR: BLACKS IN SOUTHERN WEST VIRGINIA, 17, 24 (1990); BROWN, *supra* note 176, at 22–23; *see also* LARRY SCOTT DEANER, HOME IN THE MCDOWELL COUNTY COALFIELDS: THE AFRICAN-AMERICAN POPULATION OF KEYSTONE, WEST VIRGINIA 42 (2004).

¹⁷⁸ RICHARD B. DRAKE, A HISTORY OF APPALACHIA 131–32 (2004).

¹⁷⁹ ALLEN, *supra* note 176 (noting that African American coal miners earned approximately \$118 a month in 1930, compared to an annual salary of \$537 for African American workers nationwide); Michael H. Burchett, *Promise and Prejudice: Wise County, Virginia and the Great Migration, 1910–1920*, 82 J. AFRICAN AM. HIST. 312 (1997) (noting the autonomy afforded to African American miners in comparison to traditional agricultural work in the American South).

¹⁸⁰ BROWN, *supra* note 176, at 22–23; *see also* JAMES GREEN, THE DEVIL IS HERE IN THESE HILLS: WEST VIRGINIA’S COAL MINERS AND THEIR BATTLE FOR FREEDOM 69 (noting that the total number of foreign born and black-miners in West Virginia colliers outnumbered the total number of white miners during the early twentieth century).

¹⁸¹ *See also supra* text accompanying note 172.

¹⁸² *Id.* at 32.

and professionals alike,¹⁸³ accounting for 30% of the population in 1910.¹⁸⁴ In McDowell, African American lawyers, doctors, and entrepreneurs enjoyed relative wealth and prosperity compared to other parts of the American South.¹⁸⁵ The allure of the “Free State” extended to the working class as well, and the number of African American miners rose steadily during the early twentieth century.¹⁸⁶

The contributions of African American miners in McDowell played a pivotal role in labor organizing efforts in the region.¹⁸⁷ Leaders like Henry G. Young advocated for much needed reforms in the mines and challenged the welfare capitalism cultivated by coal companies.¹⁸⁸ African American miners were “persistent unionists”¹⁸⁹ and the bedrock of class solidarity, in some instances even challenging the interests of the black bourgeoisie who maintained an uneasy political and economic allyship with bad corporate actors.¹⁹⁰

Although McDowell County was home to several communities with significant African American populations, Gary and Keystone, served as cultural and political power centers for the black community in West Virginia. Keystone was commonly referred to as the “Harlem” of West Virginia, and was home to the State’s predominantly African American newspaper—The McDowell Times.¹⁹¹ The neighboring town of Gary was home to the first chapter of the NAACP and the State’s first African American General in the US Armed forces.¹⁹² By 1965, African

¹⁸³ TROTTER, *supra* note 177, at 17, 29–32. *See also* RONALD L. LEWIS, *BLACK COAL MINERS IN AMERICA: RACE, CLASS, AND COMMUNITY CONFLICT, 1780–1980* 121 (1987) (noting “particularly in southern West Virginia, blacks came closer to finding economic equality than in any other coalfield, and perhaps anywhere else, in America.”).

¹⁸⁴ TROTTER, *supra* note 177, at 66.

¹⁸⁵ DEANER, *supra* note 177, at 56, 59 (noting opportunities for home and business ownership in places like Keystone, West Virginia).

¹⁸⁶ U.S. CENSUS BUREAU, *Statistical Abstract of the United States: 1965* (July 1965), <https://www.census.gov/library/publications/1965/compendia/statab/86ed.html> [<https://perma.cc/PU9K-AUWT>] [hereinafter *Statistical Abstract of the United States: 1965*]; TROTTER, *supra* note 177, at 63; *see also* BROWN, *supra* note 176, at 22–23.

¹⁸⁷ GREEN, *supra* note 180, at 308, 334–35.

¹⁸⁸ *See* TROTTER, *supra* note 177, at 65; *see also* GREEN, *supra* note 180, at 335.

¹⁸⁹ GREEN, *supra* note 180, at 335.

¹⁹⁰ *Id.* at 105, 334; *see also* TROTTER, *supra* note 177, at 54.

¹⁹¹ *About the McDowell Times*, LIBR. OF CONG., <https://chroniclingamerica.loc.gov/lccn/sn86092050/> [<https://perma.cc/W9BP-QX85>] (last visited Oct. 13, 2020).

¹⁹² Douglas Imbrogno, *West Virginia’s First Black General Looks Back on a Storied Career*, CHARLESTON GAZETTE-MAIL (Feb. 4, 2017), https://www.wvgazette.com/life/west-virginia-s-first-black-general-looks-back-on-a/article_c3e03763-5285-5d0c-9821-7451fb9897f0.html [<https://perma.cc/H5EF-R4MC>]; *see* Alice E. Carter, *Segregation and Integration in the Appalachian Coalfields: McDowell County Responds to the Brown Decision*, W. VA. DEP’T OF ARTS, CULTURE & HIST. (1995), http://www.wvculture.org/history/journal_wvh/wvh54-5.html [<https://perma.cc/74A3-QJRM>].

Americans composed 30% of the county, compared to only 3% of the total state population, lending them considerable power and influence in the region.¹⁹³

Gary and Keystone remain legacies of diversity in West Virginia, even as the economic power and number of residents have dwindled. Today, these historical places are also experiencing acute water insecurity, thanks in large part to class and race-based systems of oppression. Much like Flint, two forces have played a central role in transforming the Free State of McDowell into a GDS. First, the impact of extractive industries and subsequent coal-based mono-economy ensured limited investment in the region, creating spatial disparities.¹⁹⁴ Second, federal, state, and local governments prioritized political agendas and subrogated the interests of the people, further concentrating and entrenching poverty.¹⁹⁵

(a) *King Coal and Corporate Dominance*

Extractive industries in Appalachia created exploitive systems designed to maximize profits, and one industry in particular—“King Coal”—emerged as the dominant corporate actor in the region.¹⁹⁶ In today’s world, coal seems antiquated and outdated, a topic for think pieces centered on party politics.¹⁹⁷ However, coal played a central role in the United States economy for much of the nineteenth and early twentieth centuries. Coal mines in Appalachia literally fueled the industrialization of the United States.¹⁹⁸ Special bituminous coal was shipped to Pittsburgh and other cities to fuel the huge steel mills.¹⁹⁹ Coal was also used to fuel factories, homes, steamships, and locomotives.²⁰⁰ Industry insiders referred to it as

¹⁹³ *Statistical Abstract of the United States: 1965*, *supra* note 186.

¹⁹⁴ Nicholas F. Stump & Anne Marie Lofaso, *De-Essentializing Appalachia: Transformative Socio-Legal Change Requires Unmasking Regional Myths*, 120 W. VA. L. REV. 823, 829 (2018); Ann M. Eisenberg, *Just Transitions*, 92 S. CAL. L. REV. 273, 301 (2019).

¹⁹⁵ Baskaran, *Economic Justice Imperative*, *supra* note 175, at 166–70.

¹⁹⁶ See generally Stump & Lofaso, *supra* note 194, at 829 n.42; Patrick C. McGinley, *From Pick and Shovel to Mountaintop Removal: Environmental Injustice in the Appalachian Coalfields*, 34 ENV’T L. 21, 27 (2004).

¹⁹⁷ See, e.g., Elaina Plott, *Hope and Change in an Alabama Coal Mine*, ATLANTIC (July 31, 2018), <https://www.theatlantic.com/politics/archive/2018/07/trump-coal-alabama/566282/> [<https://perma.cc/92HU-7XGC>]; Walter E. Block, *Stop Trying to Make Coal Great Again*, N.Y. TIMES (June 4, 2019), <https://www.nytimes.com/2019/06/04/opinion/trump-coal.html> [<https://perma.cc/4DNR-VKJ3>]; Gaurav Sharma, *Trump Vowed to Save Coal But U.S.’ Largest Mining Basin Remains in Decline*, FORBES (Apr. 14, 2019, 8:08 PM), <https://www.forbes.com/sites/gauravsharma/2019/04/14/trump-vowed-to-save-coal-but-u-s-largest-mining-basin-sees-decline/#6e5d683f1d74> [<https://perma.cc/24GT-EXAN>].

¹⁹⁸ RONALD G. GARAY, U.S. STEEL AND GARY, WEST VIRGINIA: CORPORATE PATERNALISM IN APPALACHIA xxi (2011) (“Coal is the most valuable mineral in the world,” and referring to West Virginia as the “El Dorado of the soft coal industry.”).

¹⁹⁹ DRAKE, *supra* note 178, at 133–34.

²⁰⁰ Stuart McGehee, *A History of Coal in West Virginia*, FRIENDS OF COAL,

“black gold” and were determined to extract as much value as possible from the hills and mountains of Appalachia.²⁰¹

Coal was not a homegrown industry, but was rather dominated by corporations largely based outside Appalachia.²⁰² From the late 1800s onwards, coal companies consolidated political and economic power, subjecting West Virginians and other Appalachians to legal and political systems designed to preserve the industry’s supremacy.²⁰³

Coal companies focused on creating an efficient production system, one that enabled them to extract the natural resource from isolated regions in Appalachia and transport it to the end consumer with minimal costs.²⁰⁴ Companies consolidated corporate ownership of land by leveraging existing legal regimes²⁰⁵ and built railroads to transport coal to the nation’s industrial centers.²⁰⁶ In lock-step with land acquisition, companies began building coal mines and mine infrastructure.²⁰⁷ Much like GM’s auto-manufacturing facilities, coal mines required massive amounts of water for their industrial operations, necessitating the construction of water systems to service the mines.²⁰⁸ Eventually, the coal camps and company towns that housed workers also received residential water from these systems—however, this was a secondary purpose.²⁰⁹

<https://www.friendsofcoal.org/education/a-history-of-coal-in-west-virginia.html> [<https://perma.cc/2KDU-QDHW>] (last visited Oct. 13, 2020).

²⁰¹ Sarah Terpstra, *Coke Ovens*, FRIENDS OF THE CUMBERLAND TRAIL, <http://www.friendsofthecumberlandtrail.org/history-and-culture/coke-ovens/> [<https://perma.cc/RW9P-XF62>] (last visited Oct. 13, 2020); JACK M. HOLLANDER, *THE REAL ENVIRONMENTAL CRISIS: WHY POVERTY, NOT AFFLUENCE, IS THE ENVIRONMENT’S NUMBER ONE ENEMY* 132 (2003) (“Once called ‘black gold,’ coal truly provided the energy resource base of the industrial revolution.”).

²⁰² See generally STUMP, *supra* note 31, at 42 (chronicling that in the nineteenth century, “millions of surface land acres in addition to both mineral and timber resources were transferred from Appalachian landowners to absentee corporate owners”).

²⁰³ See SHANNON ELIZABETH BELL, *FIGHTING KING COAL: THE CHALLENGES TO MICROMOBILIZATION IN CENTRAL APPALACHIA 17–18* (2016) (discussing absentee landownership in Appalachia that has led to deficiency in tax revenue for public services).

²⁰⁴ GREEN, *supra* note 180, at 20.

²⁰⁵ CRANDALL SHIFFLETT, *COAL TOWNS: LIFE, WORK, AND CULTURE IN COMPANY TOWNS OF SOUTHERN APPALACHIA* 27 (1995).

²⁰⁶ DRAKE, *supra* note 178, at 147; SHIFFLETT, *supra* note 205, at 1.

²⁰⁷ SHIFFLETT, *supra* note 205, at 29–32.

²⁰⁸ GARAY, *supra* note 198, at 37.

²⁰⁹ Janet W. Greene, *Strategies for Survival: Women’s Work in the Southern West Virginia Coal Camps*, 49 W. VA. HIST. 37 (1990), http://www.wvculture.org/history/journal_wvh/wvh49-4.html [<https://perma.cc/99KY-NL4F>]. Coal companies created a tiered caste system within coal camps based on occupation. *Id.* High level employees—engineers, mine foremen, etc.—were assigned better housing, often connected to water system. *Id.* In contrast, miners—the most fungible class of employee—were assigned smaller, ramshackle housing that may or may not be connected to water systems. *Id.*

Labor was fungible and the least important aspect of mine operations; thus, only after securing land and infrastructure did the corporate powers shift their focus to hiring workers for the mines.²¹⁰ In West Virginia, coal companies created corporate fiefdoms, building coal camps and company towns on an unprecedented scale.²¹¹ Coal towns were intentionally designed to create “a system of closed, artificial communities which functioned to limit the growth of social freedom and self-determination.”²¹² A coal company’s economic control over its workers was alarmingly comprehensive. Miners in coal towns lived in company-owned housing, purchased groceries and other necessities at the company store, were treated by the company doctor, and prayed in the company-owned church.²¹³ Many workers were not even paid in U.S. currency, but received wages in the form of company scrip, further entrenching them in the “closed” corporate system.²¹⁴ Corporate control extended to local politics, with workers voting for the company slate during elections, ensuring only industry-approved candidates remained in power.²¹⁵

Coal’s prevalence in the region effectively undercut any ability for workers to build economic independence, security, and mobility. Unlike auto-manufacturing, coal created very little additional industry within the state, trapping workers within the coal-based mono-economy.²¹⁶ The complexity of auto manufacturing created a market for smaller manufacturers specializing in everything, from ball bearings to fabric.²¹⁷ The network of manufacturing outlets also fostered retail and other service-based businesses in urban areas.²¹⁸ In stark contrast, the coal companies effectively owned the majority of the central business district in their company towns, owning both the mines as well as the main street.²¹⁹ “As raw materials, natural resources, and wealth flowed out of West Virginia for over a century, the companies reinvested only the bare minimum required to keep the system operational.”²²⁰ When the mines

²¹⁰ SHIFFLETT, *supra* note 205, at 32 (“With the purchases of land and mineral rights and the laying of railroad lines, the coal operators could turn their attention to the subsequent stages of hiring labor . . .”).

²¹¹ DRAKE, *supra* note 178, at 147.

²¹² SHIFFLETT, *supra* note 205, at 1 (citation omitted).

²¹³ DRAKE, *supra* note 178, at 147–48; STEVEN STOLL, RAMP HOLLOW: THE ORDEAL OF APPALACHIA 213 (2017); GREEN, *supra* note 180, at 21 (noting “more West Virginia miners lived in company housing than in any other section of the country—nearly 79%”).

²¹⁴ DRAKE, *supra* note 178, at 147–48.

²¹⁵ See RONALD D. ELLER, UNEVEN GROUND: APPALACHIA SINCE 1945 33–35 (2008).

²¹⁶ Stump & Lofaso, *supra* note 194, at 829.

²¹⁷ See *supra* Section I.B.1.(a).

²¹⁸ See generally DRAKE, *supra* note 178, at 133–34 (comparing the development of additional industries in Pittsburgh to the limited development of coaltowns in neighboring West Virginia); see also CLARK, *supra* note 59, at 3; HIGHSMITH, *supra* note 60, at 132 (the development of a robust central business district and other industries in Flint, Michigan).

²¹⁹ See DRAKE, *supra* note 178, at 147. In contrast, Flint was home to a vibrant, independent commercial sector which benefitted from employees from GM and other manufacturing, but was not literally owned by them. See *supra* Section I.B.1.(a).

²²⁰ RONALD D. ELLER, MINERS, MILLHANDS, AND MOUNTAINEERS:

failed to be profitable, the companies began abandoning the communities they had quite literally created.²²¹ The towns of Gary and Keystone illustrate the impact of corporate abandonment in creating GDS in West Virginia's southern coalfields.

(i) *Corporate Control: Gary, West Virginia and U.S. Steel*

The town of Gary actually began as a series of coal camps attached to various mines owned by U.S. Steel.²²² U.S. Steel was committed to the concept of vertical integration—where a firm controls the entire supply chain for its production, distribution, and marketing.²²³ By owning or controlling the various raw materials needed for protection, means of transport, production facilities, and distribution channels—vertical integration shielded U.S. Steel from outside pressures.²²⁴ In the late 1800s, U.S. Steel turned its attention to securing an important raw material for steel production—metallurgical coal.²²⁵ Fortunately, West Virginia possessed both rich deposits of metallurgical coal and railroads, enabling easy shipment to steel manufacturing facilities in Pittsburgh, Indiana, and beyond.²²⁶ On December 31,

INDUSTRIALIZATION OF THE APPALACHIAN SOUTH 1880–1930 196–98 (1982); Baskaran, *Economic Justice Imperative*, *supra* note 175, at 168.

²²¹ For a detailed discussion of one such example of this phenomenon, see *infra* Section II.C.1.(a)(ii) discussing the corporate abandonment of Gary, West Virginia—a town created by U.S. Steel; see also Nelson Sorah, *Newest City Is Company Town*, CHARLESTON GAZETTE-MAIL (Jan. 14, 1971) <https://www.documentcloud.org/documents/5411085-Gary-Archive-Scan-Rotated-Edited.html> [<https://perma.cc/M84P-CGDA>]; Coyne, *In Southern W.Va.*, *supra* note 171.

²²² Caity Coyne, *Stirring the Waters: In Southern WV, Days Without Water Are a Way of Life*, CHARLESTON GAZETTE-MAIL (Dec. 6, 2018), https://www.wvgazette.com/report_for_america/stirring-the-waters-in-southern-wv-days-without-water-are-a-way-of-life/article_a1f7e3fd-d98f-5684-9fc5-d0c8b0a18713.html [<https://perma.cc/6XSQ-ETTE>] [hereinafter Coyne, *Stirring the Waters*] (“[T]he Gary area was a web of small towns and hollows surrounded by more than a dozen coal mines, all owned and operated by U.S. Steel Corporation.”).

²²³ GARAY, *supra* note 198, at xi–xii (“Originally Carnegie Steel Company, U.S. company, Steel rose to a new form of corporate entity because of its acquisitions. Carnegie Steel was known as an integrated (or, more precisely, a ‘vertically integrated’) corporation, meaning that Andrew Carnegie through the years had acquired either outright ownership of or exclusive access to everything needed ‘to make the firm immune to outside business pressures.’ Carnegie controlled the sources of raw material (coal and iron ore, for example) necessary for steelmaking; the transportation systems (by land and water) needed to move the raw materials; the steel plants themselves; the systems for delivering his company’s full line of manufactured products; and the distribution, marketing, and sale of those products. Thus, U.S. Steel inherited from Andrew Carnegie a sprawling integrated corporate enterprise that was virtually self-sufficient from top to bottom.”) (citations omitted).

²²⁴ *Id.*

²²⁵ *Id.* at 14–15 (discussing U.S. Steel’s founder, Andrew Carnegie purchasing stock in a coal company in 1882).

²²⁶ Tyler G. Moore, *A Southern West Virginia Mining Community Revisited*, 38

1901, U.S. Steel secured the rights to mine 50,000 acres of land in West Virginia's McDowell County, including the area that would eventually become the town of Gary, and arranged for transportation with the N&W Railway.²²⁷ U.S. Steel created a subsidiary, U.S. Coal and Coke Company (USSC), tasked with the construction and operation of the mines. USSC built the mines themselves, the coke ovens to process the metallurgical coal, and the water infrastructure that connected the various mines to the Tug River.²²⁸ As the mines began to take shape, USSC also planned and constructed several coal camps to house workers in the early 1900s.²²⁹

USSC constructed coal camps and, like many coal towns across Appalachia, the company exercised near complete control over the lives of residents.²³⁰ The towns were carefully crafted examples of welfare capitalism—provided minimal amenities as a means to secure worker loyalty and dependence on the company.²³¹ USSC owned the land and built the homes workers rented from the company,²³² conveniently deducted from their company paychecks.²³³ The lion's share of the amenities was reserved for the company's foremen and engineers—well designed and spacious homes that had the added luxury of being connected to the water infrastructure that primarily served the mines.²³⁴ The average miner was—in keeping with welfare capitalism—assigned more basic quarters with no running water and outhouses.²³⁵

In all other respects—from local commerce to governance—the USSC coal towns followed a familiar pattern long-established by extractive industries in

SOUTHEASTERN GEOGRAPHER 1, 4 (1998) (noting that the quality of the coal made it suitable for multiple markets extending “from the Eastern seaboard to the Midwest and Great Lakes”).

²²⁷ GARAY, *supra* note 198, at 34 (“[E]ffective December 31, 1901, of 50,000 acres of land in McDowell County for coal mining and coke production. Both coal and coke had to be shipped via the N&W ‘and its designated connections’ with ‘guaranteed freight rates as favorable as those of other routes and coal fields.’”).

²²⁸ See also Coyne, *In Southern W.Va.*, *supra* note 171; GARAY, *supra* note 198, at 37.

²²⁹ GARAY, *supra* note 198, at 35–37.

²³⁰ *Id.* at xiii (“*Gary’s population was bound inextricably to the fortunes of its colossus, benevolent patriarch, U.S. Steel. The ‘company,’ as U.S. Steel was known in these parts, integrated the needs and requirements of a commercial enterprise with those of a diverse population.*”) (emphasis added).

²³¹ GREEN, *supra* note 180, at 308 (describing corporate welfare); DAVID MONTGOMERY, *THE FALL OF THE HOUSE OF LABOR: THE WORKPLACE, THE STATE, AND AMERICAN LABOR ACTIVISM, 1865–1925* 238 (1987) (describing corporate concern about welfare); GARAY, *supra* note 198, at 57.

²³² See Sorah, *supra* note 221; GARAY, *supra* note 198, at 39–41.

²³³ GARAY, *supra* note 198, at 45–46.

²³⁴ See MARGARET M. MULROONEY, *A LEGACY OF COAL: THE COAL COMPANY TOWNS OF SOUTHWESTERN PENNSYLVANIA* 59 (1989); GARAY, *supra* note 198, at 39 (noting that housing with indoor bathrooms were reserved for superintendents and mine foremen).

²³⁵ ELLER, *supra* note 220, at 183–90; see also BROWN, *supra* note 176, at 19 (discussing U.S. Steel’s interests in pursuing welfare capitalism to discourage unionizing and promote “docile bodies”).

Appalachia.²³⁶ Workers and their families would buy dry goods, food tools, cloth, and other household items at the company store, often making purchases on credit against their future wages.²³⁷ The wages issued by USSC could also be deceptive as USSC made a number of deductions before issuing wages, including rental fees for assigned company housing, a flat-rate deduction for employing the town doctor, and deductions for the amount owed to the company store to cover the “credit” purchases.²³⁸ The remaining amount issued in actual wages could be less than \$1.²³⁹ The coal camps had no elected officials, but were overseen by a Superintendent—an official from USSC.²⁴⁰ The town was the property of the coal company, and the Superintendent could evict workers from company housing for poor performance in the mines or attempting to unionize.²⁴¹

As important places for industrialized America, both Gary and Flint rose to prominence in the 1940s as the war machine required steel for tanks, planes, ships, bombs, fencing, and a myriad of other steel products.²⁴² During the post-war period, both places continued enjoying economic prosperity and faced mounting pressures due to automation. Coal production in McDowell County boomed in the 1950s, but increasing mechanization resulted in changes to the workforce.²⁴³ By the early 1960s, families began leaving Gary, and by the late 1960s, early signs of global capitalism’s impact on West Virginia’s coal industry began manifesting.²⁴⁴

²³⁶ Workers and their families would buy dry goods, food, tools, cloth, and other household items at the company store, often making purchases on credit against their future wages.

²³⁷ GARAY, *supra* note 198, at 45–46.

²³⁸ *Id.*

²³⁹ *Id.* at 46.

²⁴⁰ *Id.* at 44 (detailing the responsibilities as general superintendent were not unlike those of a small-town mayor). Supervisors were “accountable to U.S. Steel for Gary’s ‘mining operation and the physical infrastructure that supported the mining operation including the miners’ houses, roads, sidewalks, sanitation, and garbage collections.’” *Id.* He was also authorized to evict residents from their homes based on his assessments of their job performance. *Id.*

²⁴¹ ELLER, *supra* note 220.

²⁴² GARAY, *supra* note 198, at 61–62; *see supra* text accompanying note 106.

²⁴³ Mark Myers, Coal Mechanization and Migration from McDowell County, West Virginia, 1932–1970 84 (2001) (M.A. thesis, East Tennessee State University), <https://pdfs.semanticscholar.org/eeff/af6fd36908bd547d9bf5fac5e1cf427b1ac8.pdf> [<https://perma.cc/9PEY-SDKE>] (“Throughout the late 1950s the coal industry in West Virginia continued to decline in both production and employment. Production fell from approximately 126 million tons in 1955 to about 112 million tons in 1960. More importantly, employment fell from 47,149 in 1955 to 35,089 in 1960. By 1960 coal mining was almost a completely mechanized process. Of the approximately 112 million tons produced in 1960, about ninety-nine million tons, or eighty-nine percent, was machine loaded, mostly by the continuous mining machine. McDowell County also followed the path to complete mechanization.”); *id.* at 80 (“By 1950 the expansion of mechanical loading continued in McDowell County.”).

²⁴⁴ GARAY, *supra* note 198, at 213–16 (“Gary, West Virginia, for all that it gave the

Of course, the impact of King Coal's labor policies often had an outsized effect on African American mine workers. African American miners "were often the first men to be fired and the last to be rehired by the bosses who had once praised their loyalty & productivity."²⁴⁵ The welfare capitalism of the benevolent company was merely window dressing and many African American miners found themselves discarded by U.S. Steel.²⁴⁶

(ii) *Corporate Abandonment of Gary, West Virginia*

By the late 1960s, the combination of changes in the global economy and mining technology translated to a shrinking population in Gary.²⁴⁷ Schools, theaters, recreation halls, and even company stores began closing as USSC began the quiet but steady process of separating itself from the coal towns.²⁴⁸ By December 1969, local political leaders and USSC officials began the process of formally incorporating Gary as a municipality.²⁴⁹ U.S. Steel began offering company houses for sale, giving "[c]ompany employees, widows, and pensioners first choice" before offering the homes to the general public.²⁵⁰ In July 1971, the deal was done and Gary was no longer a company town.²⁵¹ In a final public act of supposed benevolence, U.S. Steel provided the town with severance for its many years of loyal service—gifting the town \$20,000 to serve as "start-up revenue" and handing over various aging buildings and other infrastructure.²⁵² The largest and most important piece of this infrastructure "donation" were deeds to the water and wastewater systems.²⁵³

U.S. Steel's advocacy and support for the formal incorporation of Gary was not a benevolent measure to support greater democracy in the coalfields. The company's desire to sever itself from Gary and the mines was a purely financial decision. The 1970s and 1980s marked a continued decline in coal production and jobs in the region,²⁵⁴ siphoning what little economic stability remained in the southern

world, is known to few now. It is a symbol of industrial obsolescence. Coal was Gary's heart and soul. The mineral wealth of all the coal that was carried from Gary was enormous. But coal mining was Gary's singular industry and the economic foundation on which the livelihood of everyone who ever lived in Gary depended. The town literally had nothing else going for it. Gary's geographical boundaries would have prevented it from becoming much else than what it was. Fact is, had there been no coal, there would have been no Gary."

²⁴⁵ GREEN, *supra* note 180, at 335.

²⁴⁶ BROWN, *supra* note 176, at 174.

²⁴⁷ GARAY, *supra* note 198, at 100–03.

²⁴⁸ *Id.* at 102–03.

²⁴⁹ *Id.* at 103.

²⁵⁰ *Id.*

²⁵¹ *Id.*

²⁵² *Id.* at 104 ("U.S. Steel donated several aging company buildings to the new city of Gary, but many of its remaining structures simply were demolished.")

²⁵³ *Id.*

²⁵⁴ *Id.* at 117 ("Charles Davis noted in his well-researched study of McDowell County coal mining that 'the 1970s began with a generally downward trending of coal production in

coalfields. By 1986, U.S. Steel had closed the last mines surrounding Gary, devastating the remaining population as the coal-based mono-economy had ensured no substantial employment alternatives.²⁵⁵ The lack of employers certainly impacted individuals, and translated to financial disaster for the region which lost the only significant corporate taxpayer. But U.S. Steel took more than jobs and tax revenue when they closed the mines; they also took the last of the trained engineers needed to maintain the water system.²⁵⁶ Gary, like many other GDS, found itself poorer, smaller, and saddled with aging infrastructure it could no longer afford to operate or repair.

(iii) Long-Term Consequences of King Coal—Keystone, West Virginia

Much like Gary, Keystone was another coal town nestled in the rich coalfields of McDowell County. The city boasted a large African American population from its outset, offering opportunities for entrepreneurship, homeownership, and full enfranchisement.²⁵⁷ Keystone was called the Harlem of Coal Country and often rivaled Gary in the 1920s to become the epicenter of black culture in West Virginia.²⁵⁸ Keystone was named after the Keystone Coal & Coke Company which employed many of the town's workers. Unlike Gary, the town was formally incorporated fairly quickly in 1909,²⁵⁹ but was still subject to an elevated level of corporate control and influence. For example, Keystone Coal & Coke Company still owned much of the housing, as well as the water infrastructure.²⁶⁰

As with so many places in central Appalachia, Keystone depended on the coal for jobs and tax revenue, and suffered economically as the industry began to decline. The coal severance taxes paid by companies in the area “were not substantial enough to set Keystone up for long-term success.”²⁶¹ The town was also rocked by a

southern West Virginia.”) (citing Charles Peter Davis, *The Impact of the Coal Industry on McDowell County, West Virginia* 91–92 (1997) (M.A. thesis, San Jose State University)).

²⁵⁵ Mark Paxton, *Depopulated Coal Towns, Once Thriving, Head Toward Bottom*, L.A. TIMES (July 8, 1990, 12:00 PM), <https://www.latimes.com/archives/la-xpm-1990-07-08-mn-83-story.html> [<https://perma.cc/PWN6-LE8D>].

²⁵⁶ Coyne, *Stirring the Waters*, *supra* note 222 (“Without company support, there was no one left to maintain utility systems—trained engineers were some of the first to leave when coal mines began shutting down.”).

²⁵⁷ DEANER, *supra* note 177, at 59–61.

²⁵⁸ *Id.*

²⁵⁹ DEANER, *supra* note 177, at 13.

²⁶⁰ Coyne, *Once a Booming Town*, *supra* note 172.

²⁶¹ Caity Coyne, ‘*That’s Just How Things Go in Keystone*’: *Water Woes Indicative of Town’s Troubles*, CHARLESTON GAZETTE-MAIL (June 1, 2019), https://www.wvgazette.com/news/that-s-just-how-things-go-in-keystone-water-woes/article_9689f5c8-4857-58b3-aabb-88dca2f8dc8f.html [<https://perma.cc/LU3E-95L8>] [hereinafter Coyne, *That’s Just How Things Go in Keystone*].

significant banking scandal, resulting in a federal investigation in the 1990s, which dealt another economic blow to the already beleaguered town.²⁶²

Present-day Keystone is home to less than 200 residents, 58% of whom are African American.²⁶³ The majority of residents are in a financially difficult situation, with 40% living in poverty.²⁶⁴ City services, like police and maintenance, have been drastically reduced; issues plague the drinking water system which was built at the turn of the nineteenth century by Keystone Coal & Coke Company.²⁶⁵ The Keystone water system includes a web of underground pipes made from an assortment of materials, including terracotta, steel, and concrete; it has not been well maintained.²⁶⁶

Today, the town is water insecure as burst water mains regularly leave residents without water for a week or more.²⁶⁷ The water, when flowing, must be boiled as cracks in the pipes and the lack of a water system operator for the town means the water quality cannot meet safety standards.²⁶⁸ Coal trucks still pass through Keystone, though the companies they work for fall well outside the tax jurisdictions of the town itself.²⁶⁹ During illegal turn-offs, the pressure they cause during illegal leads buried pipes to burst from the pressure, further distressing the town's vulnerable infrastructure.²⁷⁰

(b) *Government Failures in West Virginia*

Although corporate dominance was the primary factor in creating GDS in McDowell County, the FHA and HOLC also played a role. Much like African American communities in urban areas, coal camps were largely excluded and redlined by the FHA.²⁷¹ Instead, the ring of new suburbs surrounding Charleston, Wheeling, and Huntington—a larger urban center in this extremely rural state—received the bulk of FHA support.²⁷²

The more pernicious government actions that economically hobbled West Virginia and many other Appalachian communities were largely the domain of state and local actors. In fact, coal's corporate dominance was facilitated by "local

²⁶² Jeffrey Cohan & Jonathan D. Silver, *A West Virginia Coal Town's Boom Turns to Bust*, PITT. POST-GAZETTE (Oct. 20, 1999), <http://old.post-gazette.com/regionstate/19991020knox1.asp> [<https://perma.cc/JFF2-RB6D>].

²⁶³ *About Keystone, WV*, VIZBUILDER, <https://datausa.io/profile/geo/keystone-wv/> [<https://perma.cc/32RY-C677>] (last visited Oct. 13, 2020).

²⁶⁴ *Id.*

²⁶⁵ Coyne, 'That's Just How Things Go in Keystone,' *supra* note 261.

²⁶⁶ *Id.*

²⁶⁷ *Id.*

²⁶⁸ *Id.*

²⁶⁹ *Id.*

²⁷⁰ *Id.*

²⁷¹ JERRY B. THOMAS, *AN APPALACHIAN NEW DEAL: WEST VIRGINIA IN THE GREAT DEPRESSION* 207 (1998).

²⁷² *Id.* at 206–08.

elites,²⁷³ the educated and powerful members of Appalachian society. These local power brokers engineered an environment that protected corporate abuse at the expense of Appalachian communities,²⁷⁴ serving as brokers and agents for absentee corporations.²⁷⁵ Appalachian elites held positions of formal and informal influence through a mixture of civil service appointments, high-level employment in the industry, elected posts, as well as general economic control over local communities.²⁷⁶ Their ubiquitous control continues to encompass local school boards, county commissions, the state legislature, and even the Governorship.²⁷⁷

Appalachian communities were trapped between two strong, interwoven forces that controlled economic and political power in the region, and they channeled this influence to best serve their own agendas.²⁷⁸ The coal industry's corporate dominance was engineered to create a system of economic dependency, ensuring maximum financial return from a captive labor force with few employment alternatives.²⁷⁹ Money flowed out of Appalachia along with the coal, leaving the region with limited financial resources. Local government and the democratic process, which should have enabled some form of representation and protection for

²⁷³ JOHN R. BURCH JR., *OWSLEY COUNTY, KENTUCKY AND THE PERPETUATION OF POVERTY* 11 (2008).

²⁷⁴ DAVID CORBIN, *LIFE, WORK, AND REBELLION IN THE COAL FIELDS: THE SOUTHERN WEST VIRGINIA MINERS, 1880–1922* 5–7, 10–13 (1981).

²⁷⁵ SHIFFLETT, *supra* note 205, at 27; *see* ELLER, *supra* note 220, at 54–58.

²⁷⁶ Moore, *supra* note 226, at 2, 9.

²⁷⁷ The political factions that controlled West Virginia politics during the early twentieth century were deeply connected to the coal establishment. Throughout the early years of the industry, the political establishment protected the interests of coal operators by controlling both members of the United States Congress and the governor. Mancur Olson, Jr., *Rapid Growth as a Destabilizing Force*, 23 J. ECON. HIST. 529 (1963); JOHN ALEXANDER WILLIAMS, *WEST VIRGINIA: A BICENTENNIAL HISTORY* 121–22 (1976); CORBIN, *supra* note 274, at 13–14. Current West Virginia Governor, Jim Justice, is a mine owner who has a history of mine-safety violations and accusations of environmental pollutions. Dylan Stafford & Grace Hauck, *Who Is Jim Justice, the West Virginia Governor Who Switched Parties?*, CNN POLITICS (Aug. 3, 2017), <https://www.cnn.com/2017/08/03/politics/jim-justice-west-virginia-governor-party-switch> [<https://perma.cc/CNP8-Y6PX>]; *see also* Mark Olalde, *Coal Tycoon Governor Jim Justice Uses Loophole to Leave Mines and Workers Idle*, CLIMATE HOME NEWS (Mar. 26, 2018), <https://www.climatechangenews.com/2018/03/26/coal-tycoon-governor-jim-justice-uses-loophole-leave-mines-workers-idle/> [<https://perma.cc/JW3R-WUYE>]; Lacie Pierson, *WV Supreme Court Rules Justice Coal Company Didn't Contaminate Wells*, CHARLESTON GAZETTE-MAIL (Apr. 8, 2018), https://www.wvgazette.com/news/legal_affairs/wv-supreme-court-rules-justice-coal-company-didnt-contaminate-wells/article_16b94c26-982b-52a1-b022-2c0cb3d2c588.html [<https://perma.cc/R9QY-DSNQ>].

²⁷⁸ ELIZABETH CATTE, *WHAT YOU ARE GETTING WRONG ABOUT APPALACHIA* 43 (2018) (“[W]hat actually came to the mountains was a vast system of economic exploitation, facilitated through violence and malice both by outside developers and compliant local elites.”); Baskaran, *Economic Justice Imperative*, *supra* note 175.

²⁷⁹ CATTE, *supra* note 278, at 43; Baskaran, *Economic Justice Imperative*, *supra* note 175.

the general populace, had been co-opted by Appalachian elites for their own personal gain. Under this system, corporations became the true constituency of local officials, to the continued detriment of individual Appalachians. The combined actions of Appalachian elites and King Coal played an essential role in the creation of spatial disparities. Money and resources continued leaving the region, with limited reinvestment, resulting in the concentration of poverty and lack of resources indicative of GDS.

D. GDS and Water Infrastructure—A Structural Problem

The previous normative discussion establishes the existence of spatial disparities in urban, suburban, and rural areas. This baseline analysis is important as it connects cycles of poverty to key structural forces, as opposed to specific geographies or populations. Thus, the systemic issues that plague Flint also impact the Appalachian towns of Gary and Keystone.²⁸⁰ Additionally, this comparative approach highlights the presence of compound oppressions within GDS.

While they have their own distinct conditions and nuances, ultimately, the communities in Flint and southern West Virginia are also subject to interlocking systems of subordination based on race and class. These systems of subordination created a plethora of adverse effects, including eroding economic stability through employment and wealth-building restrictions, restricting the civil liberties of the population, and even endangering general health and safety. Systems of subordination arise when individual oppressive forces are interwoven, amplifying their impact in already disenfranchised GDS communities. In this particular context, various government actions created and perpetuated structural inequality within GDS. As a prime example, the Fair Housing Administration incorporated and codified racism and class bias in its programming, connecting economic worth to whiteness and affluence. These standards heavily impacted both Flint's urban core and West Virginia's coal towns by excluding them from participating in essential wealth-building programs. The legacy of this exclusion continues to reverberate in these communities deemed "unworthy" by their own government. Likewise, local governments' complicity in enabling corporate dominance disenfranchised individual workers and entire communities in an effort to please corporate interests. The companies—GM and U.S. Steel—entered into marriages of convenience with localities, extracting resources and benefits and ultimately abandoning these spaces once they no longer proved profitable.

The assumptions that interlocking systems of subordination are somehow accidental must be confronted and refuted. While some laws, regulations, policies, or corporate plans may not explicitly seek to achieve class oppression or racist objectives, a valuation proposition is integral to these public and private actions. By valuing some things—whiteness, affluence—and devaluing other things—communities of color, low-income groups—the system creates inequality. This

²⁸⁰ It is important to note that such systemic issues are not homogenized or directly interchangeable per a materialist approach.

inequality then manifests on both the individual level, reflected as household income, and on the community level as spatial disparities. Compounded over time, inequality widens the opportunity and resource gaps between the “worthy” and “unworthy” population, concentrating the latter within GDS.

Today, GDS have reached a critical juncture with no clear path forward. Most GDS have experienced precipitous declines in population and municipal revenue, negatively impacting income once generated by water bills. As GDS have lost population, fewer rate-payers are left to shoulder the costs of operating and maintaining the water system, making drinking water more expensive per capita.²⁸¹ Approximately 75% to 80% of the infrastructure costs associated with water systems are fixed costs used to cover operations and capital reserves.²⁸² This predicament alone is very challenging for beleaguered local governments, most of whom struggle to find funds for an array of key services—like schools, transit, and police—on their extremely limited resources.²⁸³ The problem is further exacerbated by the physical infrastructure itself, which was often designed to meet the needs of a larger population and corporate interests, but is now presently difficult to adapt and repurpose.²⁸⁴

For example, industrial cities like Detroit and Flint provided water to manufacturing facilities within city limits, which produced several important sources of income at the time. First, the manufacturers did purchase water—albeit at a discount—and contributed to the city’s revenue through water bills. The corporations also contributed to the municipal coffers through corporate taxes and

²⁸¹ Faust et al., *supra* note 25, at 4.

²⁸² BIPARTISAN POL’Y CTR., SAFEGUARDING WATER AFFORDABILITY 15 (2017), <https://bipartisanpolicy.org/wp-content/uploads/2019/03/BPC-Infrastructure-Safeguarding-Water-Affordability.pdf> [<https://perma.cc/FQD2-4EZT>].

²⁸³ Faust et al., *supra* note 25, at 6 (“For other infrastructure Services, which rely largely on tax basis, the lower average income results in a tax base that is decreasing not only due to rban decline but also do the lower incomes of existing residents.”). *See also* ALAN MALLACH & ERIC SCORSONE, PH.D., CTR. FOR CMTY. PROGRESS, LONG-TERM STRESS AND SYSTEMIC FAILURE: TAKING SERIOUSLY THE FISCAL CRISIS OF AMERICA’S OLDER CITIES 13–14 (2011) <https://community-wealth.org/sites/clone.community-wealth.org/files/downloads/paper-mallach-scorstone.pdf> [<https://perma.cc/3U8F-DXGZ>]. The COVID-19 pandemic has only increased financial pressures on distressed municipal budgets, leading to even more cuts to essential services. Jim Zarroli, *Cities Have Never Seen a Downturn Like This, and Things Will Only Get Worse*, NPR (May 20, 2020, 3:46 PM) <https://www.npr.org/2020/05/20/859713720/american-cities-and-towns-face-financial-challenges-during-the-pandemic> [<https://perma.cc/3JHU-TQ7G>]; Adam Harris, *The Other Way the Coronavirus Will Ravage Our Cities*, ATLANTIC: POLITICS (Apr. 1, 2020); <https://www.theatlantic.com/politics/archive/2020/04/coronavirus-cities-bankruptcy/609169/> [<https://perma.cc/Z664-ERV>] (discussing how the coronavirus has impacted municipal budgets nationwide).

²⁸⁴ This phenomenon of shrinking infrastructure is often referred to as “right-sizing.” GAO-16-785, WATER INFRASTRUCTURE, *supra* note 25, at 22, 35; *see also* Faust et al., *supra* note 25, at 7. For specific examples of now defunct manufacturing needs, see Highsmith, *Beyond Corporate Abandonment*, *supra* note 109, at 35.

employing residents.²⁸⁵ As manufacturing facilities were closed or relocated, their financial contributions to the city disappeared.²⁸⁶ However, the pipes, water mains, and other physical infrastructure, designed to specifically accommodate the needs of industrial customers, remained part of the city's water system.²⁸⁷ The city was suddenly responsible for maintaining this vast, complex infrastructure designed not only to accommodate a larger population, but also meet the needs of significant corporate manufacturing interests. Moreover, this infrastructure had degraded over time as fiscal resources continued to be compressed by structural forces that spurred economic disenfranchisement.²⁸⁸

Of course, this phenomenon was not limited to the industrial Midwest. Small towns across Appalachia also experienced the same combination of significant population loss and corporate dominance,²⁸⁹ resulting in comparable negative impacts on rural drinking water systems. Water prices became more expensive per capita; municipal governments struggled to improve infrastructure intended to serve corporate needs without the benefit of corporate income.

GDS are ill-equipped to maintain or repair water infrastructure because of their financial circumstances, resulting from decades of disinvestment. One study found that GDS are the poorest places in a state, lagging behind other municipalities of similar size in individual income and economic growth.²⁹⁰ The solution has been to implement austerity measures, cutting services and staffing, which only accelerates the degradation of infrastructure and leads to even greater disrepair.²⁹¹ This, in turn,

²⁸⁵ Hammer, *supra* note 82, at 126; HIGHSMITH, *supra* note 60, at 130.

²⁸⁶ Michelle Wilde Anderson, *The New Minimal Cities*, 123 YALE L.J. 1118, 1133–34 (2014).

²⁸⁷ Faust et al., *supra* note 25, at 1–2.

²⁸⁸ *Id.*

²⁸⁹ Although the total number of municipal residents was always small in places like West Virginia due to geography and the boom and bust cycles created by extractive industries, Appalachian towns did experience significant population loss as the coal industry declined in the region. For example, Keystone declined from 2,594 residents in 1950 to only 474 in 2000, and then decreased an additional 40% to 282 by 2010. See U.S. CENSUS BUREAU, *Census of Population: 1950*, at 48–10 (1953), <https://www2.census.gov/library/publications/decennial/1950/population-volume-1/vol-01-51.pdf> [<https://perma.cc/UQ4J-3NRT>]; *Keystone, West Virginia Population: Census 2010 and 2000 Interactive Map, Demographics, Statistics, and Quick Facts*, CENSUS VIEWER <http://censusviewer.com/city/WV/Keystone> [<https://perma.cc/Q5SK-KKN5>] (last visited Oct. 13, 2020); see also Faust et al., *supra* note 25, at 25 (“[S]mall cities and towns throughout the United States are facing a multitude of issues related to urban decline that may be similar.”).

²⁹⁰ Faust et al., *supra* note 25, at 4–5.

²⁹¹ See Stephen Rushin & Roger Michalski, *Police Funding*, 72 FLA. L. REV. 277, 277 (2020) (“Much of this variation exists because police departments derive funding primarily from local sales and property taxes. Because of this funding mechanism, economically disadvantaged communities most in need of public-safety services can often least afford them.”). Scalar dumping—passing financial responsibility for various public goods onto state and local governments—often leads to austerity measures. Jaime Peck, *Austerity*

leads to even more population loss, further reducing the already limited tax base and other revenue streams.²⁹²

GDS need to transform their existing systems rather than repair them. They must build sustainable models that comport with their smaller populations and economic realities. This requires an infusion of cash resources and technical assistance to redesign their outdated and dilapidated systems—sometimes referred to as “right-sizing.”²⁹³ And yet, this is extremely difficult to achieve under the existing funding regime. As detailed in Part II, funding sources are limited and the total amounts allocated by federal and state governments have been steadily decreasing. Moreover, GDS are often unable to successfully compete for funding due to structural barriers involving their fiscal situations, managerial capacity, and project needs.²⁹⁴

II. FUNDING WATER INFRASTRUCTURE

For communities like Flint, Gary, and Keystone, securing capital to repair degrading infrastructure and maintain operations is an ongoing struggle. The very fact that GDS find themselves in this funding predicament is indicative of a serious structural problem resulting from continuous financial divestment. Drinking water systems were never intended to be financial burdens for localities, but an important asset that can serve as a municipal revenue source.²⁹⁵ At a minimum, systems were

Urbanism: American Cities Under Extreme Economy, 16 CITY: ANALYSIS OF URB. CHANGE, THEORY, ACTION 626 (2012); Wilde Anderson, *supra* note 286, at 1120–21 (noting austerity measures that result in reduction of public services in San Bernardino, CA and Camden, NJ).

²⁹² GAO-16-785, WATER INFRASTRUCTURE, *supra* note 25.

²⁹³ See JOHN HOORNBECK & TERRY SCHWARZ, SUSTAINABLE INFRASTRUCTURE IN SHRINKING CITIES: OPTIONS FOR THE FUTURE (2009); Faust et al., *supra* note 25; U.S. EPA, SMART GROWTH PROGRAM, OFFICE OF SUSTAINABLE CMTYS., MANAGING VACANT AND ABANDONED PROPERTY IN THE GREEN ZONE OF SAGINAW, MICHIGAN (2014), <https://www.epa.gov/sites/production/files/2014-07/documents/saginaw-sgia-report-final-071614.pdf> [<https://perma.cc/65NT-2ZE5>] [hereinafter SMART GROWTH PROGRAM].

²⁹⁴ The majority of state and federal funds are awarded through a competitive loan and grant application process. For a more complete discussion of GDS and relevant barriers, see *infra* Section II.C.

²⁹⁵ In actuality, the costs of operating water systems within GDS far outweigh the revenues, making it impossible for the system to operate in a sustainable manner. The water system is forced to make untenable choices to save money, leading to further degradation of aging infrastructure and exposing residents to water-related health and economic consequences. See discussion *supra* Sections II.B–C; see also BIPARTISAN POL’Y CTR., *supra* note 282, at 16 (noting “many utilities, while mostly able to recover their operating and management expenses through operating revenues, did not collect enough to also cover their depreciation expenses Any utilities in such a circumstance must use Reserve funds, transfers, or non-operating revenues to fill the gaps between day-to-day operation and maintenance expenses and their operating revenues, leaving little to no Revenue to cover Capital expenditures. Over the long-term, if rates at these utilities are not raised, costs or

designed to be financially self-sustaining, with the fees from rate-payers covering standard operating costs, maintenance expenses, and capital improvements.²⁹⁶ Capital improvements refer to upgrades to existing infrastructure, like water mains, reservoirs, or treatment facilities, and include new construction and technology, like investing in green infrastructure or expanding pipes to new neighborhoods. Water systems rely primarily on debt-based financing, which can prove problematic for communities in fiscal distress. GDS invariably carry significant existing debts with limited revenue streams, and thus struggle to secure infrastructure funding through the existing mechanisms.

A. Traditional Funding and Financing Mechanisms

A drinking water system, if operating as envisioned and designed, should be able to cover the costs of any upgrades or new construction through its own reserve funds.²⁹⁷ Water bills typically include a charge for a capital improvement or other reserve funds—essentially “rainy day” savings held for the express purpose of covering the costs of future projects.²⁹⁸ Water systems can engage in self-financing infrastructure projects by drawing from reserve funds or raising water rates charged to customers to increase revenue, allocating these new funds to capital projects.²⁹⁹

If a system lacks sufficient monies to fund the project through reserve funds or raising rates, it can turn to financing options.³⁰⁰ State and local governments commonly turn to municipal bonds to finance a variety of projects, including water systems.³⁰¹ Municipal bonds are a form of debt sold directly by a local government to the public or institutional investors.³⁰² The investor receives interest payments and

risks will shift from today’s customers to tomorrow’s, deferring needed Investments and threatening the intergenerational equity, and increase the possibility of a system failure.”).

²⁹⁶ Faust et al., *supra* note 25, at 4; *see also Pricing and Affordability of Water Services*, EPA, <https://www.epa.gov/sustainable-water-infrastructure/pricing-and-affordability-water-services> [<https://perma.cc/765B-JT8S>] (last visited Oct. 13, 2020) (“User fees typically generate funds for daily operation and maintenance and long-term capital investments for drinking water and wastewater systems.”).

²⁹⁷ Andy McCartney, *Cash Reserves Pt. 2: Capital Reserves, Debt Service & Rate Stabilization Reserves*, WATER FIN. & MGMT (Apr. 8, 2019), <https://waterfin.com/cash-reserves-pt-2-capital-reserves-debt-service-rate-stabilization-reserves/> [<https://perma.cc/WH8T-HJDH>].

²⁹⁸ *Cash Reserve Policy Guidelines*, AM. WATER WORKS ASS’N 6–7 (2018), <https://www.awwa.org/Portals/0/AWWA/ETS/Resources/awwacashreservepolicynew.pdf?ver=2018-12-17-161414-370> [<https://perma.cc/9K3S-QG4A>].

²⁹⁹ GAO-16-785, WATER INFRASTRUCTURE, *supra* note 25, at 2.

³⁰⁰ For purposes of this Article, funding refers to covering operating expenses and capital improvements through rates and existing reserve funds. In contrast, financing refers to seeking outside debt-servicing like loans, municipal bonds, etc.

³⁰¹ JASON HACKWORTH, THE NEOLIBERAL CITY: GOVERNANCE, IDEOLOGY, AND DEVELOPMENT IN AMERICAN URBANISM 20 (2007).

³⁰² *The State of State (and Local) Tax Policy*, TAX POL’Y CTR., <https://www.taxpolicy>

repayment of the principle over a fixed period of time. Municipal bonds are generally exempt from federal income tax.³⁰³ By issuing bonds, the system raises funds for the new project and slowly pays back the bonds over time. Increasingly, some state and local governments are also using bank loans to finance certain municipal projects as well.³⁰⁴

Unfortunately, these funding options are often foreclosed to GDS. Water systems often struggle to cover their general operating costs with revenue from customers, leaving little money—if any—for the capital improvement reserve funds, which typically cover the costs of infrastructure projects.³⁰⁵ Moreover, the required redevelopment and upgrades are a massive financial undertaking due to decades of minimal investment.³⁰⁶ For places like Flint and McDowell County, decades of divestment have left them insolvent, unable to afford basic municipal services, let alone major redevelopment projects.

Raising rates to generate additional revenue for capital improvements also presents significant challenges. Water systems within GDS are reluctant to raise rates out of concern for customers. They know increased costs may be an undue burden for the shrinking, economically disenfranchised communities they serve.³⁰⁷ Furthermore, many water systems struggle to collect payment on existing water bills; thus, raising rates would only push more customers into late payment or nonpayment.³⁰⁸ In addition to these practical considerations, there are political elements to rate increases that make them difficult to execute. In some jurisdictions, like Wisconsin, approval from elected officials may be required to implement a rate increase. Local politicians are rarely eager to endorse rate increases that increase financial burdens for their constituents. Even if direct approval is not required, local politics are aware of the economic fallout from rate increases. Rising rates can

center.org/briefing-book/what-are-municipal-bonds-and-how-are-they-used [https://perma.cc/J2YY-AWZZ] (last visited Oct. 13, 2020).

³⁰³ Note that municipal bonds can also be exempt from state income taxes in certain situations, depending on the residency of the purchaser. U.S. SEC, SEC Pub No. 134, MUNICIPAL BONDS: UNDERSTANDING CREDIT RISK 1 (2018), <https://www.sec.gov/investor/alerts/municipalbondsbulletin.pdf> [https://perma.cc/5VHF-A27M].

³⁰⁴ Robert Puentes & Patrick Sabol, *Building Better Infrastructure with Better Bonds*, BROOKINGS (Apr. 22, 2015), <https://www.brookings.edu/research/building-better-infrastructure-with-better-bonds/> [https://perma.cc/SU3V-KY7B].

³⁰⁵ BIPARTISAN POL'Y CTR., *supra* note 282, at 16. Interview with Jenny Newland, Expert, Downstream Water & Wastewater, in W. Va. (Jan. 18, 2020) [hereinafter *Jenny Newland Interview*].

³⁰⁶ CLARK, *supra* note 59, at 35–36 (noting that Flint residents experienced some of the highest water bills because the infrastructure and operations costs were distributed over a smaller population).

³⁰⁷ *Jenny Newland Interview*, *supra* note 305.

³⁰⁸ See Dan Kraker, *Old Pipes, Rising Rates: Duluth and Other Cities Invest in Water Infrastructure*, MPR NEWS (Feb. 8, 2019, 11:14 PM), <https://www.mprnews.org/story/2019/02/08/duluth-and-other-cities-invest-in-water-infrastructure> [https://perma.cc/B3CC-RBX6].

encourage residents to relocate to more affordable, neighboring towns.³⁰⁹ GDS also find it difficult to raise funds through municipal bonds, the most ubiquitous form of municipal financing.

Generally, bonds have a credit rating—an evaluation of the risk associated with the investment.³¹⁰ The better the credit rating, the more likely investors are to purchase the bonds.³¹¹ Many GDS are unable to secure a favorable credit rating for potential projects, making it difficult to use bond financing.³¹² One such recent example is the City of Newark, New Jersey. The city was rocked by its own lead poisoning crisis in 2019 and faced challenges in acquiring sufficient capital through municipal bonds due to its low rating.³¹³ Fortunately, the surrounding Essex County—the richest county in New Jersey, entered into an arrangement to “lend” its high rating to the City to assist in securing necessary funding.³¹⁴

³⁰⁹ CLARK, *supra* note 59, at 35 (quoting an administrative superintendent of the neighboring community of Beecher as stating, “I hope people read this article about high water rates in Flint and move to Beecher We’re the cheapest around.”); *see also* Wilde Anderson, *supra* note 286, at 1210 (“Such vacancies create a downward spiral of local disinvestment and abandonment, as falling quality of life and housing values push the most mobile residents to exit and leave behind an increasingly poor population.”).

³¹⁰ *The Importance of Municipal Bond Ratings*, GMS GROUP, <https://www.gmsgroup.com/muni-bond-ratings-standard-and-poors> [<https://perma.cc/X9SC-3A9J>] (last visited Oct. 13, 2020).

³¹¹ HACKWORTH, *supra* note 301, at 21–22, 33.

³¹² In fact, the EPA actually uses “low credit score/bond rating” as one indicator of a “community in need”—a financially insecure community that will need extra funding for capital improvement projects. Jeff Hughes, Richard Whisnant, Lynn Weller, Shadi Eskaf, Matthew Richardson, Scott Morrissey & Ben Altz-Stamm, *Drinking Water and Wastewater Infrastructure in Appalachia, An Analysis of Capital Funding and Funding Caps*, APPALACHIAN REG. COMM’N & UNC ENV’T FIN. CEN., ARC & UNC (July 2005), <https://efc.sog.unc.edu/sites/default/files/2017/Executive%20Summary%20Drinking%20Water%20and%20Wastewater%20in%20Appalachia.pdf> [<https://perma.cc/PY3A-DM4H>] (“Relatively few communities in Appalachia, especially in economically distressed counties, have credit ratings for water and wastewater purposes from major rating agencies. This lack of creditworthiness limits their direct access to the private capital market.”); *see also* U.S. EPA, TOOLS FOR FINANCING WATER INFRASTRUCTURE 48 (Mar. 2007), <https://www.epa.gov/sites/production/files/2016-01/documents/waterinfra2007.pdf> [<https://perma.cc/M4VQ-6TVK>].

³¹³ Corasaniti, *supra* note 14.

³¹⁴ George N. Saliba, *\$120M Bond Aims to Fix Newark’s Lead Water*, N.J. BUS. (Aug. 26, 2019), <https://njbmagazine.com/njb-news-now/120m-loan-aims-to-fix-newarks-lead-water/> [<https://perma.cc/7MQY-V3JV>] (noting the role of the Essex County Bond Rating in securing assistance for Newark); *see also* Vanessa Romo, *Flood of Money Could Fast-Track Newark’s Plan to Replace Lead Pipes Amid Water Crisis*, NPR (Aug. 26, 2019, 8:02 PM) <https://www.npr.org/2019/08/26/754537989/flood-of-money-could-fast-track-newarks-plan-to-replace-lead-pipes-amid-water-cr> [<https://perma.cc/277Y-JB7Q>] (explaining that the previous plan placed burden on Newark homeowners, but the new plan will save Newark years and “upwards of \$15 to \$20 million in interest over the life of the bond.”).

It is important to note that these strategies—self-financing and municipal bonds—do not exist in silos. Bond issuances are often accompanied by rate increases, with the new revenues covering the principal and interest payments for bondholders.³¹⁵ Thus, issuing bonds can further accelerate affordability concerns for GDS communities, forcing water systems to make a difficult choice between making much needed infrastructure investments and maintaining affordability for residents.³¹⁶ When self-financing or municipal bonds are inadequate, localities can also pursue federal and state funds specifically allocated for water infrastructure projects. As discussed in the next section, these funding sources are limited and may still prove inaccessible for GDS.

B. Federal and State Funding Sources

A number of federal agencies provide grants or low-interest loans for water and wastewater infrastructure, although this number is still far less than the demand. The total amount of funding from federal sources has steadily decreased, creating an enormous funding gap, and the focus of much concern from environmental activists, representatives from municipal and state governments, civil engineers, the GAO, the EPA, and even moderate policy groups like the AARP.³¹⁷ The predominant state and federal funding sources are discussed in greater detail below.

1. EPA and Drinking Water State Revolving Funds

The Environmental Protection Agency (EPA) provides the largest source of funding for drinking water infrastructure projects.³¹⁸ The majority of the funds are administered through the Drinking Water State Revolving Fund (DWSRF), a partnership between the Federal Government, all 50 states, and Puerto Rico, established via a 1996 amendment to the Safe Drinking Water Act.³¹⁹ Under the

³¹⁵ See generally Carol Thompson, *Struggling Lehigh County Authority Eyes Raising Allentown Rates as a Large Bond Payment Looms*, THE MORNING CALL (Apr. 27, 2018, 9:50 PM) <https://www.mcall.com/news/local/mc-nws-lca-debt-warning-20180423-story.html> [<https://perma.cc/X5TQ-77VE>].

³¹⁶ GAO-16-785, WATER INFRASTRUCTURE, *supra* note 25, at 29.

³¹⁷ See generally U.S. EPA, DRINKING WATER INFRASTRUCTURE NEEDS SURVEY AND ASSESSMENT: SIXTH REPORT TO CONGRESS (Mar. 2018); AM. SOC'Y OF CIV. ENG'RS, 2021 INFRASTRUCTURE REPORT CARD: DRINKING WATER (2021), <https://infrastructurereportcard.org/cat-item/drinking-water/> [<https://perma.cc/7T5H-Q23K>]; see also NEIL WALTERS, REPLACING THE NATION'S DETERIORATING WATER INFRASTRUCTURE WHILE MAINTAINING AFFORDABLE WATER RATES, AARP PUB. POL'Y INST. REPORT (2011) https://www.aarp.org/content/dam/aarp/research/public_policy_institute/cons_prot/2011/in_sight56.pdf [<https://perma.cc/5TXW-48ME>]; Danny Vinik, *Is Washington Creating More Flint's?*, POLITICO (May 25, 2016) <https://www.politico.com/agenda/story/2016/05/water-funding-washington-flint-000128> [<https://perma.cc/ET2P-6SGB>].

³¹⁸ TIEMANN, *supra* note 29, at 1.

³¹⁹ The Safe Drinking Water Act Amendments of 1996, Pub. L. No. 104-182, §1452, 110 Stat. 1613 (1996); 42 U.S.C. §300j-12 (2019).

DWSRF, the EPA is allocated funds to distribute to each state annually for water infrastructure improvement projects.³²⁰ Each individual state is responsible for contributing a 20% match for the amount awarded by the EPA.³²¹ The combined money from the EPA and state matching funds, minus any set-asides instituted by state governments, is then pooled into the state's "Drinking Water Revolving Loan Fund" or the State Revolving Fund (SRF).³²²

Each state is responsible for managing and operating its SRF, which typically distributes the money as low-interest loans.³²³ The SRF really operates as a financing portfolio for the entire state. Various public water systems³²⁴ apply for financing from the SRF for eligible projects limited in scope.³²⁵ As projects begin repaying the loans, this money can then be used to secure future financing for other water infrastructure projects in the state.³²⁶ It is vital that state officials carefully monitor, evaluate, and balance their SRF lending portfolio.³²⁷ Poor management and risky lending could prove financially dangerous for the revolving fund as a whole, undermining its sustainability.

³²⁰ Eligible projects under DWSRF include water treatment, transmission and distribution, source, storage, consolidation, and creation of new systems. *See DWSRF, supra* note 29.

³²¹ The Safe Drinking Water Act, 42 U.S.C. §300j-12.

³²² TIEMANN, *supra* note 29, at 2–4.

³²³ The Safe Drinking Water Act, 42 U.S.C. §300j-12.

³²⁴ Generally, only public water systems are eligible for the funding.

³²⁵ TIEMANN, *supra* note 29, at 1 ("Projects eligible for DWSRF assistance include installation and replacement of treatment facilities, distribution systems, and certain storage facilities. Projects to replace aging infrastructure are eligible if they are needed to maintain compliance or to further health protection goals. Projects to consolidate water supplies and enhance water system security may also be eligible. DWSRF funds may be used for preconstruction activities. They may not be used to pay for operation and maintenance activities or for projects needed primarily to accommodate growth.").

³²⁶ *See* U.S. EPA, HOW THE DRINKING WATER STATE REVOLVING FUND WORKS, <https://www.epa.gov/dwsrf/how-drinking-water-state-revolving-fund-works> [<https://perma.cc/4DEE-EYSJ>] (last visited Oct. 13, 2020).

³²⁷ U.S. EPA, SRF FUND MANAGEMENT HANDBOOK 12–14 (Mar. 2018), https://www.epa.gov/sites/production/files/2018-04/documents/fund_management_handbook_2018final.pdf [<https://perma.cc/Z5NP-SA2>]; U.S. GOV'T ACCOUNTABILITY OFF., GAO-15-567, STATE REVOLVING FUNDS: IMPROVED FINANCIAL INDICATORS COULD STRENGTHEN EPA OVERSIGHT (2015) (explaining that the SRF is meant to be sustainable through a return on investments and that states should carefully monitor and balance their return on investments).

2. USDA—Rural Water Development

The USDA provides funding for water infrastructure to rural communities through the Rural Utilities Services (RUS) program.³²⁸ To qualify for funding, communities must meet particular population and income requirements. Eligible communities must have populations of 10,000 or less and show economic need, qualifying as low income and lacking sufficient credit to secure loans through traditional lending.³²⁹ In previous years, the majority of RUS funding, approximately 75%, was distributed through direct loans or guarantees of third-party loans.³³⁰ The interest rate on the loans is set based on the economic health of the community, though all loans must be repaid within 40 years.³³¹

The RUS also provides a limited number of grants to communities. Generally, these funds are only available to prevent exorbitant rate increases per capita for poverty and intermediate rate income communities.³³² Additionally, these communities need to demonstrate some stability in terms of population loss, ensuring the drinking water infrastructure will serve the intended population when constructed, rather than being built only to find itself rapidly depopulated and ineffectual.³³³ Like so many other sources of infrastructure funding, the demand far outstrips the capacity. In 2016, USDA reported a \$2.5 billion backlog of requests for both water and wastewater projects.³³⁴

3. HUD—Community Development Block Grants

The U.S. Department of Housing and Urban Development (HUD) administers assistance for community and economic development activities to state and local governments through the Community Development Block Grant (CDBG) program. The program's primary objective is "to develop viable communities by providing decent housing and a suitable living environment, and by expanding economic

³²⁸ *Water and Environmental Programs*, U.S. DEP'T OF AGRIC., <https://www.rd.usda.gov/programs-services/all-programs/water-environmental-programs> [<https://perma.cc/9NVH-S2LV>] (last visited Oct. 13, 2020).

³²⁹ JONATHAN L. RAMSEUR, ANNA E. NORMAND, EUGENE BOYD, CHARLES V. STERN, TADLOCK COWAN, MEGAN STUBBS, ELENA H. HUMPHREYS & MARY TIENANN, CONG. RSCH. SERV., RL30478, FEDERALLY SUPPORTED WATER SUPPLY AND WASTEWATER TREATMENT PROGRAMS 18 (2019), <https://fas.org/sgp/crs/misc/RL30478.pdf> [<https://perma.cc/A8NU-A3PU>].

³³⁰ *Id.* at 16 ("The split between loans and grants distributed from the regular infrastructure program, which is the large majority of spending, was about 75-25 in 2015 and 2016.32 There is no statutory distribution formula.").

³³¹ *Id.*

³³² *Water & Waste Disposal Loan & Grant Program*, U.S. DEP'T OF AGRIC., <https://www.rd.usda.gov/programs-services/water-waste-disposal-loan-grant-program> [<https://perma.cc/25ZV-U34Y>] (last visited Oct. 13, 2020).

³³³ See RAMSEUR ET AL., *supra* note 329, at 17.

³³⁴ *Id.* at 16.

opportunities, principally for persons of low and moderate income.”³³⁵ The CDBG funds are very flexible and can be used for a variety of economic development projects, including water infrastructure.³³⁶ Unfortunately, this same flexibility means this funding is not dedicated to water projects. These proposals must compete with other proposals, including building affordable housing, reviving commercial corridors, improving high-speed internet access, and a variety of other economic development projects.³³⁷

4. Department of Commerce—PWED

The Department of Commerce operates a Public Works and Economic Development Facilities (PWED) program through the Economic Development Administration. PWED funds revitalization, expansion, and upgrades of water and wastewater infrastructure.³³⁸ The projects must be connected to improving and diversifying the local economy, including attracting new industries or encouraging business retention or expansion.³³⁹ Grants are awarded directly to eligible applicants, but generally cannot exceed 50% of the total project cost.³⁴⁰ Additional funding for the project must be procured from elsewhere. Recent budget cuts to the EDA have also impacted the PWED, with no new appropriations made to program for 2020.³⁴¹

C. GDS Competitive Disadvantage

Section II.B. outlines the limited and ever-shrinking pool of funding for water infrastructure projects. However, even when such funding may be available, many GDS find it difficult to access these resources.³⁴²

As an initial barrier, GDS are often unable to pursue the predominant debt-based funding opportunities due to fiscal and managerial constraints. Water problems within GDS are persistent and develop continuously throughout the years. At various junctures, the local government or water system worked to address the worst problems by applying for funding—generally loans—to pay for necessary

³³⁵ 42 U.S.C. § 5301(c).

³³⁶ GAO-16-785, WATER INFRASTRUCTURE, *supra* note 25, at 11, 37.

³³⁷ *Community Development Block Grant Program—CDBG*, U.S. DEP’T HOUSING & URB. DEV., https://www.hud.gov/program_offices/comm_planning/communitydevelopment/programs [<https://perma.cc/SQ9L-CWY8>] (last visited Oct. 13, 2020).

³³⁸ RAMSEUR ET AL., *supra* note 329, at 40–41.

³³⁹ *Id.*

³⁴⁰ 42 U.S.C. § 3144.

³⁴¹ See Alexia Fernández Campbell, *Trump’s Budget Proposal Hurts the Rust Belt Factory Towns that Voted for Him*, VOX (Feb. 13, 2018, 2:50 PM), <https://www.vox.com/2018/2/13/17004590/trump-budget-cuts-manufacturing-michigan-west-virginia> [<https://perma.cc/GMJ6-YQL3>].

³⁴² Pannu, *supra* note 44 (noting that only ten percent of funds in 2009 were set aside to assist disadvantaged communities, and this despite the state’s commitment to recognizing water as a fundamental right for residents.).

renovations or upgrades.³⁴³ Community systems are still clearing debts from prior capital improvement projects when new problems arise.³⁴⁴ Localities are forced to determine whether they can shoulder new debt from SRF loans or other sources to address these present-day issues.³⁴⁵ As a reminder, the main form of revenue for a water system is payments from customers. These funds must cover existing debts and standard operating expenses; thus, adding a new loan could stretch the system beyond its financial limits.³⁴⁶ Localities are, understandably, cautioned by financial auditors and accountants that the additional debt may be impossible or ruinous, discouraging them from pursuing federal and state funding.³⁴⁷

Even when GDS are able to shoulder additional debt, these communities often encounter challenges during the application process. Grant and loan applications for water system funding sources are incredibly thorough and no small undertaking.³⁴⁸ Most require a number of supporting documents, including engineering studies outlining the design and technical specifications, financial audits attesting to the

³⁴³ Will Wright, Caity Coyne & Molly Born, *Why Many in Central Appalachia Lack Reliable, Clean Water*, GROUNDTRUTH PROJ. (Dec. 16, 2018), https://thegroundtruthproject.org/stirring_the_waters_appalachia/ [<https://perma.cc/5GPK-6KMP>] (“Today, low-interest loans are being utilized more and more, but even when they are low-interest, the debt can handicap small water systems” and “[t]he only real source of revenue for community water systems is by collecting bills from customers. As more and more people leave West Virginia and Eastern Kentucky—in the last 10 years, West Virginia is one of two states that have lost population nationally—water systems will be going to have less and less revenue.”).

³⁴⁴ Caity Coyne, *Who’s Going to Pay for It? : No Easy Answers to Resolve Water Issues*, CHARLESTON GAZETTE-MAIL (Dec. 6, 2018), https://www.wvgazette.com/report_for_america/whos-going-to-pay-for-it-no-easy-answers-to-resolve-water-issues/article_c9a01e2d-54f1-58f4-92ac-1dfed33b1634.html [<https://perma.cc/VE98-G7GF>]; *Jenny Newland Interview*, *supra* note 305.

³⁴⁵ Jackie Whetzel, *When the Water Runs Dry (with Video)*, REGISTER-HERALD (Feb. 1, 2020), https://www.register-herald.com/news/when-the-water-runs-dry-with-video/article_3a4aa280-ef0d-57ae-a032-d5223c44f15c.html [<https://perma.cc/JQ3A-6HEX>] (noting that the local Public Service District simply cannot accrue additional debt to make much needed upgrades and repairs; “[w]e have no way of paying loans with our current situation.”).

³⁴⁶ See JEFF HUGHES, MAUREEN BERNER, AUSTIN THOMPSON, LEIGH-ANNE KROMETIS, TIFFANY DRAPE, SHADI ESKAF, JULIA CAVALIER, GRANT MCMILLAN & ETHAN SMITH, AN EVALUATION OF APPALACHIAN REGIONAL COMMISSION FUNDING OF DRINKING WATER AND WASTEWATER INFRASTRUCTURE PROJECTS 16 (2020), <https://www.arc.gov/wp-content/uploads/2020/08/EvaluationARCFundingWaterWastewaterInfrastructureProjectsFY09-FY16.pdf#:~:text=ARC%20investments%20in%20the%20drinking%20water%20and%20wastewater,For%20every%20%241.00%20of%20ARC%20investment%20in%20water> [<https://perma.cc/MZ5W-TRUV>].

³⁴⁷ *Jenny Newland Interview*, *supra* note 305.

³⁴⁸ See generally DRINKING WATER STATE REVOLVING FUND 2022 PROJECT CONSTRUCTION EVALUATION FORM: INSTRUCTIONS AND GUIDANCE, COMMONWEALTH OF MASS. EXEC. OFFICE OF ENERGY & ENV’T AFFS., DEP’T OF ENV’T PROT. (2021), <https://www.srfmadep.com/state-revolving-fund-applications-forms/dw/dwpef.pdf> [<https://perma.cc/N4Q7-YTM4>] (demonstrating the level of detail and required supplemental studies and documentation).

sustainability of the project, and sometimes even legal opinions involving land use issues.³⁴⁹ Many successful applications are written by professional grant writers, individuals with a proven track record of securing funding and managing the application process.³⁵⁰ The fiscal situation for many GDS is too precarious to allocate extra funds for hiring the necessary technical experts (lawyers, engineers, etc.) or professional grant writers.³⁵¹ These communities also lack the manpower to manage a large project, as city services and personnel have been whittled away as part of austerity measures.³⁵²

Water systems routinely hire engineering firms to navigate and assemble an application for federal and state funding sources.³⁵³ The engineering firms prepare the application as part of their role as contractors for the project, meaning only those projects likely to generate adequate revenue receive attention and priority from the private firms.³⁵⁴ Another option is relying on state agencies for assistance, but these services vary wildly across jurisdictions. For example, West Virginia has no dedicated agency or department aiding communities in drafting applications for water infrastructure funding.³⁵⁵

³⁴⁹ *Jenny Newland Interview*, *supra* note 305 (describing the application process and barriers for small communities in West Virginia); *see also* DWSRF FINANCIAL ASSISTANCE APPLICATION BEFORE YOU START, CAL. WATER BDS., https://www.waterboards.ca.gov/drinking_water/services/funding/documents/srf/dw_before_you_start.pdf [<https://perma.cc/5HEA-2PYQ>] (listing required supplemental materials including a legal opinion, environmental report (“environmental package”), and financing and budget report (“financial security packages”)).

³⁵⁰ *Jenny Newland Interview*, *supra* note 305; Interview with Katherine Garvey, Professor and Dir. of the Land Use & Sustainable Dev. Clinic at W. Va. Univ. Coll. of L. (Feb. 4, 2020) [hereinafter *Katherine Garvey Interview*].

³⁵¹ *See generally* TECHNICAL ASSISTANCE (TA) FUNDING PROGRAM, CAL. WATER BOARDS STATE WATER RES. CONTROL BD. https://www.waterboards.ca.gov/water_issues/programs/grants_loans/tech_asst_funding.html [<https://perma.cc/NTB7-2F8K>] (last visited May 18, 2021) (showing that some states, like California, provide specialized technical assistance for GDS communities applying for such grants).

³⁵² *See* Caity Coyne, *O’Toole Residents Could Have Clean Water for First Time in 16 Years*, CHARLESTON GAZETTE-MAIL (Mar. 30, 2019), https://www.wvgazette.com/news/o-toole-residents-could-have-clean-water-for-first-time/article_1512ae51-9bbd-5693-9a21-c56618a4a927.html [<https://perma.cc/2GUT-HXJ5>]; *see also* Coyne, *In Southern W.Va.*, *supra* note 171.

³⁵³ *See generally* COLORADO’S STATE REVOLVING FUND LOAN PROGRAM ARCHITECTURAL AND ENGINEERING SERVICES PROCUREMENT, COLO. DEP’T OF PUB. HEALTH & ENV’T, <https://www.colorado.gov/pacific/sites/default/files/SRF-AE-Procurement-Fact-Sheet.pdf> [<https://perma.cc/XW97-NJ5V>] (last visited May 18, 2021) (describing the recommended bidding process for SRFs); MINGO COUNTY PSD REGIONAL WATER SYSTEM, THRASHER GROUP, <https://thethrasher.com/portfolio-item/mingo-county-psd-regional-water-system/> [<https://perma.cc/9BGJ-MF4E>] (last visited May 18, 2021) (listing the plan and construction services provided by a private firm).

³⁵⁴ *Katherine Garvey Interview*, *supra* note 350.

³⁵⁵ *Id.* Communities can seek assistance from other resources including the Land Use

Funding applications from GDS often paint a grim portrait. Engineering reports and accounting audits attached to loan and grant applications indicate to funders that these localities may not have the financial and staffing resources to implement a project.³⁵⁶ Additionally, these reports also list the number of households and customers, documenting the small and declining populations. As noted by one expert in West Virginia, the shrinking population makes it less likely for “decision-makers to commit loan dollars and make lenders leery of sending loan dollars to places like that (Wyoming County) where you may or may not get repayment.”³⁵⁷

The situation is further exacerbated by a mismatch between the funding priorities of programs like the SRF and the needs of GDS. SRFs “prioritize projects that address Safe Drinking Water Act and Clean Water Act compliance issues, such as acute violations of drinking water standards or health advisory levels.”³⁵⁸ In contrast, GDS often need funds for long-term planning and “right-sizing” assistance, which may include significant infrastructure investments.³⁵⁹ The reduction in federal funding allocations can also work to the detriment of GDS. The infrastructure needs of a major metropolitan area can easily require the lion’s share of a state’s annual funding.³⁶⁰ If the funding request is to address acute issues related to compliance, such a project is likely to receive priority, leaving smaller GDS with no funds and no options.

Although these factors may not disqualify GDS from receiving funding, collectively, they make for a less competitive application. Perhaps most troubling, GDS are once again—at least in operation—deemed risky investments. GDS are effectively excluded from accessing government funding for critical infrastructure, leaving vulnerable communities without water.

and Sustainable Development Clinic at West Virginia University, the Rural Water Association, certain planning commissions, or the Development Office within the West Virginia Department of Commerce. However, these groups have limited staffing and are also responsible for a plethora of other projects ranging from affordable housing to broadband infrastructure development. *See also What Is the Capacity Development Program*, W. VA. DEP’T OF HEALTH & HUM. RES., <http://www.wvdhhr.org/oehs/eed/iandcd/capdevinfo.asp> [<https://perma.cc/AY5L-E49K>] (last visited May 18, 2021) (noting the absence of grant drafting help).

³⁵⁶ *Jenny Newland Interview*, *supra* note 305.

³⁵⁷ Whetzel, *supra* note 345.

³⁵⁸ GAO-16-785, WATER INFRASTRUCTURE, *supra* note 25, at 43.

³⁵⁹ *See* HOORNBECK & SCHWARZ, *supra* note 293; Faust et al., *supra* note 25, at 4; SMART GROWTH PROGRAM, *supra* note 93.

³⁶⁰ Snider, *supra* note 80.

D. Misdiagnosing the Crisis

Imagining a community without running water in a wealthy, industrialized nation seems ludicrous. The uncomfortable truth is that water injustice is all too common in the United States, with GDS at the epicenter of the crisis.³⁶¹ Infrastructure is both an indicator of a community's economic health and an important element in maintaining economic vitality. A community ill-equipped to maintain a functional drinking water system, considered crucial infrastructure, is essentially broadcasting its financial failure. You cannot hope to build and maintain a vibrant community without reliable, potable water. No business is interested in staying, let alone expanding, when drinking water is unreliable. Few residents will want to remain if potable water is not accessible. Even those who do wish to stay may find themselves hard-pressed if businesses and employers leave for other, safer, and more stable places.³⁶²

Federal and state funding dedicated to drinking water systems is predicated on the assumption that such systems are an asset for local governments and are capable of self-sufficiency—if not a significant source of revenue generation.³⁶³ However, this belief in no way reflects the grim reality of many struggling water systems. Increasingly, reports are finding that the United States has many smaller systems that are not fiscally viable.³⁶⁴ Functional systems must cover routine operations and maintenance, but also proactively replace aging infrastructure. These smaller systems simply cannot afford necessary capital investments, and by forgoing

³⁶¹ See Katie Forcade, *Keystone Residents Left Without Water Due to Broken Pipe*, WVNS-TV (June 3, 2019, 5:44 PM), <https://www.wvnstv.com/news/west-virginia-news/mcdowell-county/keystone-residents-left-without-water-due-to-broken-pipe/> [<https://perma.cc/S8U5-2GSZ>] (discussing the impact living without water has had on Keystone resident Ed Todd as he struggles to take care of his sick wife: “My wife can’t get upstairs to a restroom. We have to keep her clean with just wipes. That’s the hard part of this is taking care of my wife.”).

³⁶² Pannu, *supra* note 44, at 235.

³⁶³ Faust et al., *supra* note 25, at 4.

³⁶⁴ See U.S. EPA, PROVIDING SAFE DRINKING WATER IN AMERICA 5 (2012) <https://www.epa.gov/sites/production/files/2014-07/documents/sdwacom2012.pdf> [<https://perma.cc/UE3T-GR8Z>] (“This disparity is often the result of differences in financial, administrative, and technical capacity between large and small systems. Small PWSs have a smaller customer base to support purchase and installation of needed infrastructure and to operate and maintain the system. Similarly, small PWSs may be unable or unwilling to charge consumers rates sufficient to cover the true cost of collecting, treating, and distributing the water. Lack of funding may cause small PWSs to delay needed capital improvements. Small PWSs (particularly non-community water systems) are often overseen by part-time administrators who are not environmental professionals, and the pay for the system operators may not be adequate to attract and keep someone with the necessary training and skills. If there are violations, small PWSs may not have the technical capabilities to correct the underlying problems.”).

proactive replacement, the systems fall into disrepair, which is only exacerbated over time.³⁶⁵

The cure for the infrastructure crisis in GDS is not as simple as increasing available funds for water systems. Increasing allocations to existing funding sources serves only to treat the symptom and completely ignores the underlying illness—economic disenfranchisement. GDS are unable to repair and maintain their water systems because of consistent disinvestment, often compounded over time, which concentrated poverty within specific geographic boundaries. The true remedy for the infrastructure crisis in GDS is an economic one, an opportunity to create a comprehensive plan to build a sustainable future for these forgotten places and invest in them accordingly.

III. THE GREEN NEW DEAL

“[W]e’ve been pouring money into Appalachia since the Roosevelt administration. At what point do we say, we’ve done what we can?”

—Peter Morici³⁶⁶

The epicenter of American infrastructure crises manifests in GDS, heavily impacting marginalized communities trapped in lengthy and pernicious cycles of economic abandonment and financial distress. The existing infrastructure funding system fails to reflect the economic realities of GDS, providing only temporary solutions to physical infrastructure without addressing the underlying structural problems. As the drinking water crises within GDS are symptoms of economic disenfranchisement, any purported solution must include significant economic transition planning and reinvestment. Thus, “we have done what we can” only when we commit to pursuing a just economic transition for Appalachia and other GDS.

One potentially promising policy proposal is “The Green New Deal”—a resolution introduced by Congresswoman Alexandria Ocasio-Cortez as a means of economic reinvestment and infrastructure development, with particular emphasis on targeting marginalized communities, like GDS.³⁶⁷ The resolutions outlined five primary goals:

³⁶⁵ See generally Coyne, *In Southern W.Va.*, *supra* note 171 (noting the challenges of raising capital for repairs and the damage to overuse of existing equipment in rural areas); see also Whetzel, *supra* note 345.

³⁶⁶ Morning Edition, *Two Economists with Opposing Political Views on the Trump Budget*, NPR, at 02:17 (Mar. 17, 2017, 4:49 AM), <https://www.npr.org/2017/03/17/520498604/two-economists-with-opposing-political-views-on-the-trump-budget> [<https://perma.cc/LV9M-6VRC>] (quoting leading conservative economist Pete Morici).

³⁶⁷ Kelly Stone, *Green New Deal: What It Is and What It Isn't*, ACTIONAID (Mar. 26, 2019), <https://www.actionaidusa.org/blog/green-new-deal-what-it-is-and-what-it-isnt/> [<https://perma.cc/A8J6-YD5J>]; H.R. Res. 109, 116th Cong. (2019); see also Thomas L. Friedman, *A Warning from the Garden*, N.Y. TIMES (Jan. 19, 2007), <https://www.nytimes.com/2007/01/19/opinion/19friedman.html?module=inline> [<https://perma.cc/Q7SD-4RQW>] (detailing an earlier proposal recommended by conservative thinkers).

(A) Achieve net-zero greenhouse gas emissions through a fair and just transition for all communities and workers;

(B) Create millions of good, high-wage jobs and ensure prosperity and economic security for all people of the United States;

(C) Invest in the infrastructure and industry of the United States to sustainably meet the challenges of the twenty-first century;

(D) Secure for all people of the United States for generations to come: clean air and water, climate and community resiliency; healthy food; access to nature; and a sustainable environment; and

(E) Promote justice and equity by stopping current, preventing future, and repairing historic oppression of indigenous peoples, communities of color, migrant communities, deindustrialized communities, depopulated rural communities, the poor, low-income workers, women, the elderly, the unhoused, people with disabilities, and youth (“frontline and vulnerable communities”).³⁶⁸

Often the Green New Deal is framed as a primarily environmental initiative with elements of workforce development.³⁶⁹ Unfortunately, the emphasis on decarbonization and job training captures only a portion of the Green New Deal’s intended aims, ignoring the important economic and justice mandates.³⁷⁰ The Green New Deal resolution explicitly references the current plight of “front-line and vulnerable communities.”³⁷¹ Moreover, in recognizing the disparate impact and historical forces, the proposal opens the door for collaborative and inclusive policy solutions prioritizing GDS. Thus, scholars and activists have supported either a

³⁶⁸ H.R. 109, 116th Cong. (2019).

³⁶⁹ See generally William Cummings, *Sen. Tom Cotton Blasts ‘Stalin-like’ Coverup of Ocasio-Cortez’s Green New Deal FAQ*, USA TODAY (Feb. 13, 2019, 11:16 AM), <https://www.usatoday.com/story/news/politics/onpolitics/2019/02/13/green-new-deal-criticism/2856874002/> [<https://perma.cc/C9VL-TUKY>]; Lisa Friedman, *What Is the Green New Deal? A Climate Proposal, Explained*, N.Y. TIMES (Feb. 21, 2019), <https://www.nytimes.com/2019/02/21/climate/green-new-deal-questions-answers.html> [<https://perma.cc/G74T-8EUN>]; Eillie Anzilotti, *The Green New Deal Is a Chance to Make Clean Energy Accessible to All*, FASTCOMPANY (June 27, 2019), <https://www.fastcompany.com/90366185/green-new-deal-100-percent-clean-energy-will-help-economy> [<https://perma.cc/29YD-SU5D>]; Joseph W. Kane, Mark Muro & Adie Tomer, *The Green New Deal Promises Jobs, but Workers Need to Be Ready to Fill Them*, BROOKINGS (Jan. 25, 2019), <https://www.brookings.edu/blog/the-avenue/2019/01/25/the-green-new-deal-promises-jobs-but-workers-need-to-be-ready-to-fill-them/> [<https://perma.cc/9S5D-MU2D>].

³⁷⁰ H.R. 109, 116th Cong. (2019).

³⁷¹ *Id.*

progressive or radical eco-socialist interpretation of the Green New Deal, which provides a more comprehensive and coordinated response to meet the economic and environmental objectives of the proposal.³⁷²

Although the Green New Deal failed to move beyond a resolution, it is still widely discussed in both policy circles and activist communities as an important foundation for future legislative efforts.³⁷³ With its explicit commitment to promoting both environmental and economic justice for marginalized communities, the Green New Deal presents an important opportunity to facilitate three much needed reforms for GDS. First, the Green New Deal can create an affirmative right to clean water, remedying this enormous oversight in existing U.S. law and policy. Second, the Green New Deal can create a space for inclusive governance models that are responsive to the needs and priorities of local residents and communities. Finally, the Green New Deal can serve as a just economic transition opportunity for GDS, working to address the fiscal problems in addition to the physical problems plaguing these communities

A. Creating a Right to Clean, Affordable Water

Despite the devastating public health and economic impact of water insecurity, there is no comprehensive right to water in the United States. The Safe Drinking

³⁷² Compare *Green New Deal Stimulates a Shift in Progressive Climate Change*, CLIMATE ADVISORS, <https://climateadvisers.org/climate-intel/the-green-new-deal-stimulates-a-shift-in-progressive-climate-change/> [<https://perma.cc/7REF-X9KY>] (last visited Oct. 27, 2020) (discussing how the GND addresses not only the economy, but also how addressing climate change should impact “economic and social priorities . . . including jobs, income equality, civil rights, social justice and poverty alleviation.”) with *An Ecosocialist Green New Deal: Guiding Principles*, DEMOCRATIC SOCIALISTS OF AM. ECOSOCIALISTS (Feb. 28, 2019), <https://ecosocialists.dsusa.org/2019/02/28/gnd-principles/> [<https://perma.cc/YC27-6ELK>] (focusing on a more dramatic impact beyond environmental change that would also encompass a “transition from exploitative capitalism to democratic ecological socialism.”); see generally Matasha Heenan & Anna Sturman, *Five Orientations to the Green New Deal*, PPE SYDNEY (Mar. 30, 2020), <https://www.ppesydney.net/5-orientations-to-the-green-new-deal/> [<https://perma.cc/AJ2C-HSW8>] (explaining the “five common orientations” to the Green New Deal, including progressive and radical interpretations).

³⁷³ David Roberts, *The Green New Deal, Explained*, VOX (Mar. 30, 2019, 8:23 AM), <https://www.vox.com/energy-and-environment/2018/12/21/18144138/green-new-deal-alex-andria-ocasio-cortez> [<https://perma.cc/PW2L-47NN>] (noting how the “hope” is that the development of the GND “can be a foundation for supporting research” and that the “more important thing for the draft legislation was always to have a platform for candidates to run on in 2020”); see also KATE ARONOFF, ALYSSA BATTISTONI, DANIEL ALDANA COHEN & THEA RIOFRANCOS, *A PLANET TO WIN, WHY WE NEED A GREEN NEW DEAL* (2019); David Roberts, *House Democrats Just Put Out the Most Detailed Climate Plan in US Political History*, VOX (June 30, 2020, 10:00 AM), <https://www.vox.com/energy-and-environment/2020/6/30/21305891/aoc-climate-change-house-democrats-select-committee-report> [<https://perma.cc/7YBV-58C3>].

Water Act and the Clean Water Act set minimum federal standards for water quality but do not create an actionable “right to water.”³⁷⁴ The U.S. has also refused to join the U.N. in recognizing water as a human right.³⁷⁵ Likewise, many state governments are also reticent to exercise their authority to create an affirmative “right to water.” To date, only Pennsylvania and Massachusetts have stated a “right to clean water” in their state constitutions.³⁷⁶ Even amongst these minority of jurisdictions, a lack of enforcement mechanisms renders the laws largely ineffective.³⁷⁷ Unsurprisingly, courts have also consistently refused to recognize a constitutional right to a clean environment or potable water.³⁷⁸

A national right to potable water forces action, requiring the design and implementation of functioning water systems throughout the United States. Absent a national mandate, the unending cycle of water insecurity for GDS continues. Thus, many notable scholars across a myriad of disciplines continue to advocate vociferously for the creation of national legislation “that ensures access to safe and affordable water for drinking, hygiene, and sanitation for *all* Americans.”³⁷⁹ The Green New Deal can codify this affirmative national right to water redressing this egregious oversight.³⁸⁰

³⁷⁴ See Martha Davis, *Let Justice Roll Down: A Case Study of the Legal Infrastructure for Water Equality and Affordability*, 23 GEO. J. ON POVERTY L. & POL’Y 355, 366–85 (2016) (outlining various statutory and regulatory tools for access to water); see also Derrick Howard, *The Appearance of Solidity: Legal Implementation of the Human Right to Water in the United States*, 11 APPALACHIAN J. L. 123, 134 (2011).

³⁷⁵ The U.S. has held firm in its opposition to recognizing water as a human right, despite its membership to the U.N. Human Rights Council during the period in which these resolutions were introduced and ratified. See Tamar Meshel, *Environmental Justice in the United States: The Human Right to Water*, 8 WASH. J. ENVTL. L. & POL’Y 264, 285–86 (2018).

³⁷⁶ MASS. CONST., art. XCVII; PA. CONST., art. I, § 27.

³⁷⁷ KEVIN MURRAY & SARA KOMINERS, PROGRAM ON HUM. RTS. & GLOB. ECON. NE. U. SCH. L., THE HUMAN RIGHT TO WATER IN THE UNITED STATES: A PRIMER FOR LAWYERS & COMMUNITY LEADERS 11, <https://www.northeastern.edu/law/pdfs/academics/phrge/water-primer.pdf> [<https://perma.cc/YGM9-L7F6>] (last visited Oct. 17, 2020).

³⁷⁸ See *Guertin v. Michigan*, 912 F.3d 907, 921–22 (6th Cir. 2019) (“[T]he Constitution does not guarantee a right to live in a contaminant-free, healthy environment.”); *Nat’l Sea Clammers Ass’n v. City of New York*, 616 F.2d 1222, 1238 (3d Cir. 1980), *vacated on other grounds sub nom. Middlesex Cnty. Sewerage Auth. v. Nat’l Sea Clammers Ass’n*, 453 U.S. 1 (1981) (“[T]here is no constitutional right to a pollution-free environment.”); *Lake v. City of Southgate*, No. 16-10251, 2017 WL 767879, at *4 (E.D. Mich. Feb. 28, 2017) (“[W]henver federal courts have faced assertions of fundamental rights to a ‘healthful environment’ or to freedom from harmful contaminants, they have invariably rejected those claims.”).

³⁷⁹ Sharmila L. Murthy, *A New Constitutive Commitment to Water*, 36 B.C.J.L. & SOC. JUST. 159, 163 (2016) (emphasis in original).

³⁸⁰ See generally Rhett B. Larson, *The New Right in Water*, 70 WASH. & LEE L. REV. 2181 (2013) (detailing how society should craft a right to water).

Once established, the national right to water must be fiercely protected through a robust administrative regime with funding and enforcement mechanisms.³⁸¹ Moreover, any such enforcement measures should be accountable and responsive to the interests of vulnerable communities and residents.³⁸² The Green New Deal can provide a platform to incorporate inclusive governance measures and ensure greater accountability to community stakeholders.³⁸³

B. Inclusive Governance by Design

Water insecurity has been framed by scholars as a form of exclusion, created and perpetuated by government policies that, in practice, favor corporate interests³⁸⁴ and better resourced communities, to the detriment of GDS.³⁸⁵ Specifically, a noted lack of democratic participation and community accountability mechanisms in state and local governance regimes can result in GDS being allocated unequal or inadequate resources.

Professor Camille Pannu has extensively documented this phenomenon of exclusion through governance in California's Central Valley.³⁸⁶ Despite the state's constitutional commitment to providing water for residents, rural communities of color are often water insecure. Professor Pannu notes that the role of non-democratic governance structures within state and local water authorities heavily contributes to increased water contamination and inequitable allocation of resources—including funding—to vulnerable communities. Through non-democratic governance regimes, local and state agencies may be captured by corporate interests to the detriment of local residents, with little or no recourse for impacted community members.³⁸⁷

This point is well illustrated by certain local water boards in California's Central Valley.³⁸⁸ Water boards set water rates for customers and approve infrastructure projects, essentially allocating funds and distributing resources within

³⁸¹ Rhett B. Larson, *Water Security*, 112 NW. U. L. REV. 139, 181 (2017) (noting that a lack of enforcement mechanisms makes the right to water “merely aspirational”).

³⁸² See Pannu, *supra* note 44, at 235.

³⁸³ H.R. Res. 109, 116th Cong. (2019).

³⁸⁴ Pannu, *supra* note 44, at 265.

³⁸⁵ Sabeel Rahman, *Constructing Citizenship*, *supra* note 97, at 2469–72.

³⁸⁶ Camille Pannu, *Bridging the Safe Drinking Water Gap for California's Rural Poor*, 24 HASTINGS ENV'T L.J. 253, 258–59 (2018); Pannu, *supra* note 44.

³⁸⁷ *Salyer Land Co. v. Tulare Lake Basin Water Storage Dist.*, 410 U.S. 719, 742 (1973) (Douglas, J., dissenting) (arguing that four corporations control the voting power of a water board and leaves “every individual inhabitant with a weak, ineffective voice. The result is a corporate political kingdom undreamed of by those who wrote our Constitution.”).

³⁸⁸ See Charlotte Weiner, *Untapped Opportunity: Local Water Boards and the Fight for Water Justice*, COMTY. WATER CTR. 5 (Mar. 2018), https://d3n8a8pro7vhm.cloudfront.net/communitywatercenter/pages/52/attachments/original/1522100531/CWC_Rept_UO_03.26.18b_web_hi.pdf?1522100531 [<https://perma.cc/9UWR-RC9Y>] (stating 75 of the 109 local water boards in the southern San Joaquin Valley had not held a single election in the last four years and only five boards were run entirely by directors who voters elected).

their service area.³⁸⁹ Members of the water board may be elected; however, enfranchisement can be limited to “land-owners.”³⁹⁰ In this troubling scenario, a corporation that owns farmland in the community has the right to vote. However, community members, many of whom live in rental housing, have no voting rights. In a turn of events eerily reminiscent of Appalachian coal towns, the water board is elected by the corporation and, thus, prioritizes corporate objectives over the interests of the townspeople.³⁹¹ The agricultural needs of the corporation, such as funding for irrigation or other agricultural projects, takes precedent over the concerns of residents regarding drinking water source contamination from these same agricultural activities.³⁹² A community may want to object to expanding certain agricultural activities, reallocating that funding to mitigating existing contamination to drinking water sources that jeopardize the health and safety of residents. However, without any actual ability to control the water board or force accountability for negative community impact, residents are powerless to effectuate change.

The struggles in the Central Valley reiterate that inclusive governance is necessary to serve as an important counterbalance to corporate dominance. The earlier discussion of Appalachian elites and city government failures in Flint outlines the role of public officials in aiding and abetting corporate dominance.³⁹³ Thus, a crucial step in inoculating communities against corporate monopolization of water resources is redesigning governance regimes to combat corporate capture of local government. Inclusive and democratic governance schemes must prioritize the interests of community members through increased community participation, accountability, and enforcement mechanisms. The rich literature on developing more democratic and accountable governance systems need not be revisited in this Article.³⁹⁴ Rather, this Article simply endorses the approach taken by many scholars,

³⁸⁹ CAL. WATER CODE §§ 35401, 35421, 35470 (West 2020) (California Water Districts); CAL. WATER CODE §§ 31005, 31007 (West 2020) (County Water Districts); CAL. WATER CODE §§ 71592, 71611, 71614 (West 2020) (Municipal Water Districts).

³⁹⁰ CAL. WATER CODE §§ 21553–2155, 35003–35006, 41000–41020 (West 2020).

³⁹¹ See generally Ezra David Romero, *All Tapped Out in a Tiny California Town*, NPR (May 2, 2015), <https://www.npr.org/2015/05/02/403719502/all-tapped-out-in-a-tiny-california-town> [<https://perma.cc/PE5V-Y46W>] (describing a similar result wherein local residents run out of water before the large agricultural farms).

³⁹² See STATE OF CAL., ANNUAL COMPLIANCE REPORT 2018 17, 58 https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/dwdocuments/acr_2018_final_20191220.pdf [<https://perma.cc/9XN3-ZG5M>] (stating that 1,271 public water systems violated at least one drinking water standard in 2018 with 207 community water systems, which serve at least 15 service connections or 25 yearlong residents, violating either maximum containment levels or treatment techniques).

³⁹³ *Supra* Section I.

³⁹⁴ See Audrey McFarlane, *When Inclusion Leads to Exclusion: The Uncharted Terrain of Community Participation in Economic Development*, 66 BROOK. L. REV. 861 (2000); Jaime Alison Lee, “Can You Hear Me Now?”: *Making Participatory Governance Work for the Poor*, 7 HARV. L. & POL’Y REV. 405 (2013); Orly Lobel, *The Renew Deal: The Fall of Regulation and the Rise of Governance in Contemporary Legal Thought*, 89 MINN. L. REV.

advocating for greater community participation through increased enfranchisement, strong community accountability measures, and enforcement mechanisms in local utilities and local governance structures.³⁹⁵

Although beyond the scope of this paper, we must acknowledge that reforming governance regimes is a herculean endeavor that requires a redistribution of power to the community. Previous efforts at inclusive governance, such as the Community Action Committees established under the Economic Opportunity Act, demonstrate the challenges raised by entrenched local political machines, corporate interests, and disconnected federal bureaucrats.³⁹⁶ However, the current water system continues to disenfranchise GDS, depriving vulnerable communities a fundamental human need—water.

The Green New Deal should leverage the new funding sources for infrastructure projects and deploy an array of tools to mandate inclusive governance and enforcement as a prerequisite for receiving funding. For example, the Green New Deal may require structural changes to water boards to ensure community representation, such as mandating a certain number of seats for community members and generally expanding voting enfranchisement. Another requirement may be establishing independent, community-based advisory committees to improve transparency and oversight over key decisions.³⁹⁷ Similarly, the Green New Deal could mandate enforcement mechanisms that prioritize community needs and offer an avenue to challenge decisions that run counter to community interests.³⁹⁸ Thus,

342 (2004); Ascanio Piomelli, *The Challenge of Democratic Lawyering*, 77 FORDHAM L. REV. 1383 (2009).

³⁹⁵ See Wilde Anderson, *supra* note 286, at 1157–79; Sabeel Rahman, *Infrastructural Exclusion*, *supra* note 44, at 547–61; Christopher J. Tyson, *From Ferguson to Flint: In Search of an Antisubordination Principle for Local Government Law*, 34 HARV. J. RACIAL & ETHNIC JUST. 1, 41–46, 51 (2018).

³⁹⁶ See ROBERT HALPERN, REBUILDING THE INNER CITY: A HISTORY OF NEIGHBORHOOD INITIATIVES TO ADDRESS POVERTY IN THE UNITED STATES 115–18 (1995); SUSAN YOUNGBLOOD ASHMOORE, THE WAR ON POVERTY AND THE CIVIL RIGHTS MOVEMENT IN ALABAMA, 1964–1972 59–61 (2008); JILL QUADAGNO, THE COLOR OF WELFARE: HOW RACISM UNDERMINED THE WAR ON POVERTY 35 (1994); THE WAR ON POVERTY: A NEW GRASSROOTS HISTORY, 1964–1980 31–130 (Annelise Orleck & Lisa Gayle Hazirjian eds., 2011); MICHAEL WOODSWORTH, BATTLE FOR BED-STUY: THE LONG WAR ON POVERTY IN NEW YORK CITY (2016); HUEY PERRY, THEY’LL Cut OFF YOUR PROJECT: A MINGO COUNTY CHRONICLE (2011); Economic Opportunity Act, Pub. L. No. 88-452, § 202(a), 78 Stat. 508, 516 (1964) (omitted 1967); Daniel S. Shah, *Lawyering for Empowerment: Community Development and Social Change*, 6 CLINICAL L. REV. 217, 227–31 (1999).

³⁹⁷ Pannu, *supra* note 44, at 264–65.

³⁹⁸ The city of Baltimore recently created an Office of Water—Customer Advocacy and Appeals, creating an official mechanism to investigate and challenge unfair decisions by the water authority. See generally *Baltimore City Passes Groundbreaking Affordability and Equity Bill*, FOOD & WATER ACTION (Nov. 18, 2019), <https://www.foodandwateraction.org/food/baltimore-city-passes-groundbreaking-affordability-and-equity-bill/> [https://perma.cc

using the Green New Deal to mandate inclusive governance elevates the impact beyond mere cash infusions to directly supporting communities through democratic and locally accountable regulatory schemes.

C. *Just Transition—Economic Rightsizing for GDS*

Whether marketed as renewal, redevelopment, or reinvestment—public-sponsored economic development programs often champion a pro-growth approach,³⁹⁹ regardless of whether this meets the needs, interests, and capacity of the community. Reinvestment programs for economically distressed areas largely center on “restructuring underperforming markets” by providing economic and other incentives to attract and retain private business. These initiatives include “smokestack chasing,”⁴⁰⁰ developing “Empowerment Zones,”⁴⁰¹ and the recent frenzy surrounding Amazon HQ2.⁴⁰² Repeated examples have demonstrated how these pro-growth programs often fail to have real economic outcomes for vulnerable populations, including displacing low-income groups via gentrification.⁴⁰³

[9UAD-26EZ]; Lee, *supra* note 394 (discussing “participatory governance” efforts and some of the baseline conditions which Lee argues are necessary for such efforts to succeed).

³⁹⁹ Critical commentators would say the economic system in the United States, neoliberal capitalism, supports the pursuit of maximum capital accumulation by elite interests, which requires perpetual growth. An indivisible part of this process is the exploitation and subordination of labor and nature. Pro-growth economic development policies are simply an extension of this existing system, resulting in few tangible gains for GDS and vulnerable populations. This discussion also implicates the degrowth and related discourses. See Michael M’Gonigle & Louise Takeda, *The Liberal Limits of Environmental Law: A Green Legal Critique*, 30 PACE ENVTL. L. REV. 1005, 1098–99 (2013) (discussing degrowth and related schools); Nicholas F. Stump, *Critical Legal Research and Contemporary Crises: Climate Change, Covid-19, and the Mass Black Lives Uprising* (unpublished manuscript) (on file with the author) (noting that “democratically effectuated ‘degrowth’ is therefore often discussed as an important dimension of post-capitalist transformations, involving, for instance, production for ‘use value’ and not ‘exchange value’ in the market”).

⁴⁰⁰ See generally Dan Black & Amitabh Chandra, *Chasing Smokestacks: An Analysis of Economic Development Incentives*, in KY. ANN. ECON. REP. 31 (1996) (defining smokestack chasing as the use of financial incentives to induce large businesses to relocate to specific states or localities); Robert C. Turner, *The Political Economy of Gubernatorial Smokestack Chasing: Bad Policy and Bad Politics?*, 3 ST. POL. & POL’Y Q. 270 (2003) (citing local and state political interests in improving the employment prospects of voters).

⁴⁰¹ Shah, *supra* note 396, at 242–46.

⁴⁰² Baskaran, *Respect the Hustle*, *supra* note 8, at 373.

⁴⁰³ See Michael Haber, *CED After #OWS: From Community Economic Development to Anti-Authoritarian Community Counter-Institutions*, 43 FORDHAM URB. L.J. 295, 308–13 (2016); See generally Scott L. Cummings, *Community Economic Development as Progressive Politics: Toward a Grassroots Movement for Economic Justice*, 54 STAN. L. REV. 399 (2001) (discussing how current CEDs inadequately address social issues); Richard C. Schragger, *Mobile Capital, Local Economic Regulation, and the Democratic City*, 123

The pro-growth approach largely assumes that the original economic model was beneficial and sustainable, ignoring any consequences resulting from dominant corporate interests and extractive industries, such as environmental degradation and attendant impacts on human health.⁴⁰⁴ This tacit endorsement of corporate dominance as the most effective means of economic stability prevents any comprehensive exploration of alternatives. Moreover, it largely excludes the voice of the community, preventing meaningful engagement, participation, and economic self-determination.⁴⁰⁵ Thus, these large, pro-growth efforts fail to fully account for the interests, needs, or capacity of the local community when designing and funding economic development efforts in GDS.⁴⁰⁶

Despite their popularity among state actors and private interests, the ineffective—and often exploitive—pro-growth approach is far from the only option for economic reinvestment. One community-oriented alternative focuses on seeking a “just economic transition” for GDS. A “just economic transition” is defined as a “principle, process, and practice” of achieving sustainable and healthy economic and environmental outcomes for “fenceline workers and frontline communities.”⁴⁰⁷ Thus, a just economic transition refutes the belief that labor and the environment are opposing interests that cannot co-exist. Rather, it contends that workers, residents, and communities need not sacrifice their health, environment, jobs, or financial stability in pursuit of a healthy environment and sustainable local economy. Equally important, a just economic transition recognizes that vulnerable communities,

HARV. L. REV. 482, 505 (2009) (noting that “a locality’s fiscal health is determined by the private generators of wealth in the jurisdiction, attracting high-value residents and firms and deflecting high-cost residents and firms are the municipality’s goals”); Patience A. Crowder, *Inequality, Economic Development, and the New Regional Community*, 43 SW. L. REV. 569; (2014) (seeking new ways to obtain economic justice for vulnerable populations); Alan Peters & Peter Fisher, *The Failures of Economic Development Incentives*, 70 J. AM. PLAN. ASSOC., 27 (2004) (noting the failures of economic incentive programs).

⁴⁰⁴ Ann M. Eisenberg, *Distributive Justice and Rural America*, 61 B.C. L. REV. 189, 249 (2020).

⁴⁰⁵ Shah, *supra* note 396.

⁴⁰⁶ The issue is quite complex as state and local actors desire greater economic participation for GDS, albeit the motivations can range from genuine concern to personal political and financial interests. However, separating the economic development and reinvestment efforts from the community capacity and interests has a long-standing record of disenfranchising vulnerable communities. Scholars and advocates have long noted how various market-based reinvestment programs have led to the displacement of economically vulnerable residents through gentrification. *See generally* Jason Richardson, Bruce Mitchell & Juan Franco, *Shifting Neighborhoods: Gentrification and Cultural Displacement in American Cities*, NAT’L CMTY. REINVESTMENT COAL. 4 (Mar. 19, 2019), <https://ncrc.org/gentrification/> [<https://perma.cc/AC6R-AJE6>] (discussing how investments and gentrification affect neighborhoods). Reinvestment programs have also inconsistently benefitted low-income or minority populations, simply incentivizing business with little actual positive employment or economic outcomes for target populations.

⁴⁰⁷ *What Is Just Transition?*, JUST TRANSITION ALL., <http://jtalliance.org/what-is-just-transition/> [<https://perma.cc/2Q2L-59KZ>] (last visited Oct. 16, 2020).

located within GDS, are heavily impacted by economic and environmental burdens. Accordingly, these communities should be at the forefront of legislative efforts, both in terms of policy priorities and inclusive leadership. Economic transition for GDS requires collaboratively redesigning physical spaces and local economies.

Self-determination is an essential component of a just economic transition. Too many GDS have suffered under the yoke of corporate dominance, which has enabled the prioritization of private interests over community well-being.⁴⁰⁸ Pro-growth economic development initiatives are extremely hierarchical, relying on local government officials to serve as proxies for the community. Thus, these efforts also fail to meaningfully incorporate community participation, democratic governance, and accountability measures discussed in the previous section.⁴⁰⁹ The recent fight over Amazon HQ2 in Queens, New York serves as an example of the shortcomings of pro-growth hierarchy. The state and city of New York collectively promised \$3 billion in tax incentives as part of their bid for Amazon's second headquarters, slated to create 25,000 jobs, and diversify the local economy.⁴¹⁰ Although stated economic benefits were said to be significant, little emphasis was placed on the costs to the community in Long Island City. Ironically, the impacts of Amazon's relocation would largely be borne by a community not consulted in the design and implementation of the plan.⁴¹¹ In response, the community protested their disenfranchisement, voicing concerns on rising housing costs and additional strain on existing transit systems.⁴¹² In addition to highlighting pragmatic concerns, the community also voiced a moral complaint against Amazon's anti-labor stance. The community directly challenged the morality of a predatory business with a clear monopoly receiving large public subsidies in a community struggling to preserve affordable housing.⁴¹³ Ultimately, in the wake of fierce opposition, the deal was nullified by Amazon.⁴¹⁴ As demonstrated by the events in Queens, a top-down approach to economic development squanders opportunities to collaborate with

⁴⁰⁸ *Supra* Introduction.

⁴⁰⁹ *Supra* Part III.

⁴¹⁰ Jacob Passy, *This Is What Amazon's 'HQ2' Was Going to Cost New York Taxpayers*, MARKETWATCH (Feb. 16, 2019, 4:13 PM), <https://www.marketwatch.com/story/what-amazons-hq2-means-for-taxpayers-in-new-york-and-virginia-2018-11-14> [<https://perma.cc/QA4Z-CUAJ>].

⁴¹¹ Eli Rosenberg & Reis Thebault, *Amazon Had New York City in the Bag. Then Left-Wing-Activists Got Fired Up.*, WASH. POST (Feb. 14, 2019, 8:21 PM), <https://www.washingtonpost.com/nation/2019/02/14/how-amazons-big-plans-new-york-city-were-thwarted-by-citys-resurgent-left-wing/> [<https://perma.cc/FHQ2-39HB>].

⁴¹² Ankita Rao, *Here's How Normal People Beat Jeff Bezos and Amazon*, VICE (Feb. 14, 2019, 12:03 PM), https://www.vice.com/en_us/article/pan33k/heres-how-normal-people-beat-jeff-bezos-and-amazon [<https://perma.cc/KDY7-B9X7>].

⁴¹³ Rosenberg & Thebault, *supra* note 411; Ankita Rao, *Amazon Is Bringing in Elite Lobbyists Amid Seething Rage over HQ2*, VICE (Dec. 6, 2018, 3:56 PM), https://www.vice.com/en_us/article/nepq7q/amazon-is-bringing-in-elite-lobbyists-amid-seething-rage-over-hq2 [<https://perma.cc/453A-4Y3R>].

⁴¹⁴ Rosenberg & Thebault, *supra* note 411.

communities as they envision and design a sustainable, local economy. It wastes time and resources, pursuing pro-growth initiatives that fail to yield the intended economic benefits, displace marginalized groups, and alienate and antagonize communities. Unlike Queens—a thriving community—GDS are even more vulnerable to risks arising from pro-growth agendas. The pro-growth approach—in courting private investment—can unwittingly recreate the company town dynamic by literally incentivizing business interests while subordinating the interests and voices of community members.

GDS must find a viable economic solution, but why restrict their options to only pro-growth models? GDS find themselves with numerous debts, declining revenues, dilapidated buildings, distressed infrastructure, limited resources, *and* a shrinking population. Survival requires rebuilding the local economy, scaling to sustainability rather than pursuing growth for the sake of growth. What many GDS need is just economic transition and the Green New Deal can serve as powerful means to this end. Not only does the language of the resolution specifically identify frontline communities, it also advocates for a comprehensive solution that does not bifurcate the interests of labor and the environment. However, to be truly impactful and transformative, the Green New Deal must mandate economic self-determination, incorporating community voices in asset mapping, design, and implementation of economic development efforts. By doing so, the Green New Deal can usher in much needed evolutions to the dominant state reinvestment approach—a largely unsuccessful locally targeted market-based strategies—to community-driven and managed solutions. To do anything less would result in the continued subordination of these frontline communities.

CONCLUSION

The plight of GDS is, in truth, a sobering and important reminder of the economic vulnerability of all communities. In the era of climate change and global pandemics, every community is in danger of becoming obsolete, given the right combination of political and economic factors. Permanent immunity from economic hardship and ecological devastation is no longer feasible.

The rich history of most GDS and their essential role during the industrial era serves as compelling evidence of this economic volatility. GDS fueled the rise of the United States as a super-power through raw materials, a war economy, consumer goods, and the creation of a strong American middle class. Places like Flint were part of the “Arsenal of Democracy”⁴¹⁵ and later, offered an opportunity for increased financial security for the average worker.⁴¹⁶ Yet today, these same places are relegated to the fringes of the national economy, receiving only limited planning and assistance in transitioning to a post-industrial society. Much of the concentrated

⁴¹⁵ CHARLES K. HYDE, ARSENAL OF DEMOCRACY: THE AMERICAN AUTOMOBILE INDUSTRY IN WORLD WAR II 58 (2013).

⁴¹⁶ Michael DeWilde, *Social Capital, Economic Diversity, and Civic Well-Being in Flint and Grand Rapids*, 22 SEIDMAN BUS. REV. 23, 23 (2016).

poverty in these GDS can be linked to government actions, whether directly through Federal Housing Policies or indirectly through the support and subsidization of corporate actors. Perhaps most troubling, communities of color and low-income communities are overrepresented in GDS, burdening these already vulnerable populations to the economic and public health consequences of failing water infrastructure. As GDS were created by continued public and private sector divestment, institutional actors and policymakers should mitigate historic injustices perpetuated by the state.

As of the writing of the Article, the Biden Administration and Congress have acknowledged the American infrastructure crisis. Each are crafting their own policy proposals to address these pervasive problems, including water and wastewater reforms. However, these nascent models fall well short of advocating for much needed just economic transition. Instead, these draft proposals largely increase funding for existing programs. In contrast, the Green New Deal can provide essential planning, resources, and support to help these GDS envision a sustainable future and transition from economically disadvantaged communities into thriving, albeit smaller, communities. The Green New Deal also has the potential to disrupt the existing narrative that pits the interests of labor against environmental concerns. Moreover, it can require funding and sponsored programs to be rooted in community participation, accountability, and transparency, an important and necessary departure from the dominant pro-growth economic development models. Critics may balk at the Green New Deal as an ambitious and daunting legislative undertaking, advocating for smaller victories such as focusing on decarbonization. However, these marginal efforts would be insufficient for GDS trapped at the nexus of economic and environmental devastation.

GDS offer important lessons in the vicissitudes of prosperity and a reminder to temper our national hubris that such a fate can never befall our own communities. Climate change alone will dramatically impact economic and ecological resources, leaving new cities and regions marked as GDS. Absent a concerted, national effort to redesign economically and environmentally sustainable communities, much of the nation will find itself in the same predicament as Flint and McDowell County.